CASCADE NATURAL GAS CORPORATION®

A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

2014
Integrated Resource Plan

Appendix Volume 1 (Sec A)

Appendix A

IRP Process

Cascade Natural Gas Corporation

Integrated Resource Plan
Technical Advisory Group Meeting #1

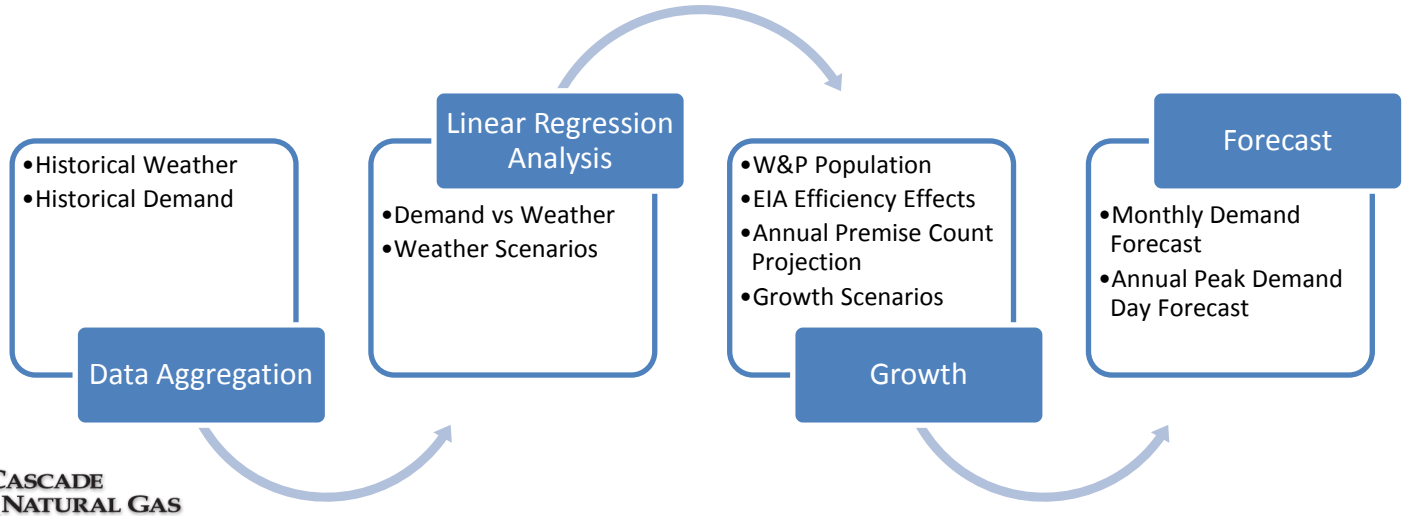
Tuesday, June 24, 2014

Portland International Airport
Conference Center

Demand Forecast Executive Summary

Overview

- The Cascade demand forecast developed for the IRP is an estimate of natural gas demand and peak demand for the next 20 years
- Cascade core load consists mostly of residential and commercial customers along with some industrial customers.



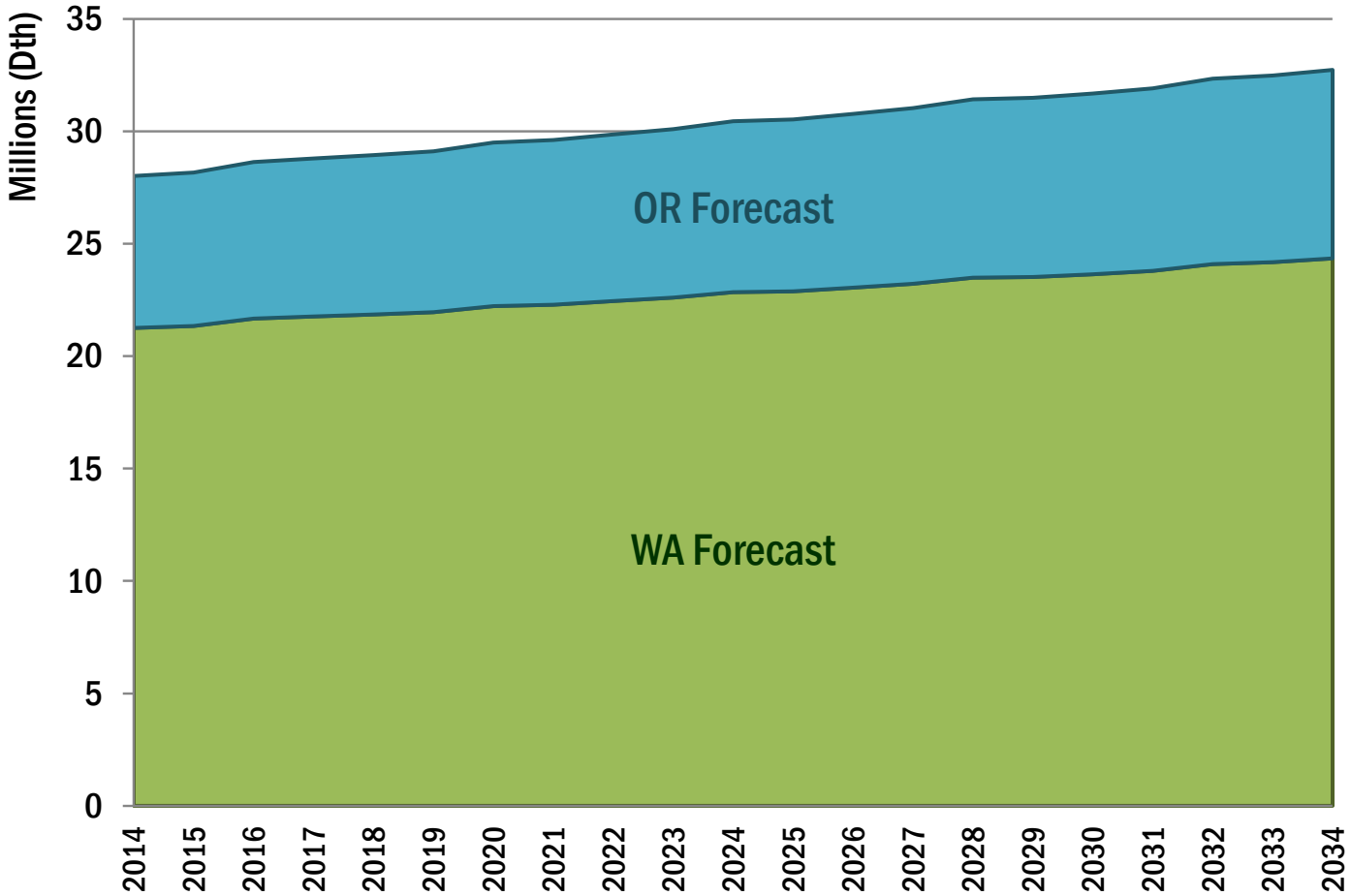
Overview

- Forecast demand at the citygate and demand loop level
- Demand loops are a group of citygates that service a similar area
- CNGC forecast model is flexible giving Cascade the ability to
  - Update input data (gas demand and weather)
  - Modify assumptions
  - Modify citygates and loops to be forecasted

Forecast Philosophy

- Cascade's demand is principally weather driven: colder the weather, the greater the demand
- This forecast doesn't predict weather
- Forecast considers historical weather scenarios – average year, cold year, warm year, extreme cold day, etc.
- Apply weather and demand to each of the 79 citygates
- Forecast uses statistical techniques to model gas demand from weather
- Growth factors are applied to the next 20 years of data, creating ultimate output presented today

Forecast Results



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Project Team

- Gelber & Associates - Energy Market Specialist



- MRE Consulting - Technology Systems, Consulting, Human Resources



- Cascade Natural Gas- Client, Local Distribution Company



Human Resources

Consulting Resources

- Arthur Gelber
  - President of G&A
  - 25 years working with the risk management and procurement for large energy purchasers
- Kent Bayazitoglu
  - Director of Analytics at G&A
  - MIT educated in Financial Engineering and Quantitative Analysis
  - Principle architect of the Cascade Demand Forecast

Consulting Resources cont.

- Evans Finger
  - Systems Analyst G&A
  - Univ. Of Virginia degree in Systems Engineering
  - Assisted with Demand Model, verified data integrity, main Cascade interface
- Micah Robinson
  - Project Manager MRE Consulting
  - Architect of user interface and automation
  - Cascade primary account representation

Inputs and Data Sources

Input Data

- Historical Demand
  - Used Pipeline actuals and Gas Management System (GMS)
  - Tested and rejected Customer Care and Billing (CC&B)
- Weather - NOAA
- Population - Woods & Poole
- Efficiency - EIA regional efficiency projection
- Premise Count - CC&B

Key Assumptions

- Seven weather locations effectively covers Cascade's weather area
- Heating demand does appreciatively start until average temps dip below 60F, therefore a 60 F HDD threshold used
- Heating demand reacts to temperature in a mostly linear fashion
- A 1% increase in population translates to a 1% increase in gas demand, before accounting for any efficiency gains.

Forecast Cases

- Base case assumes normal weather (30 year average) and average growth
- Cases for average, cold, and mild weather
- Cases with and without efficiency gains
- Cases for average, low, and high population/economic growth
- Daily peak demand cases

The Model

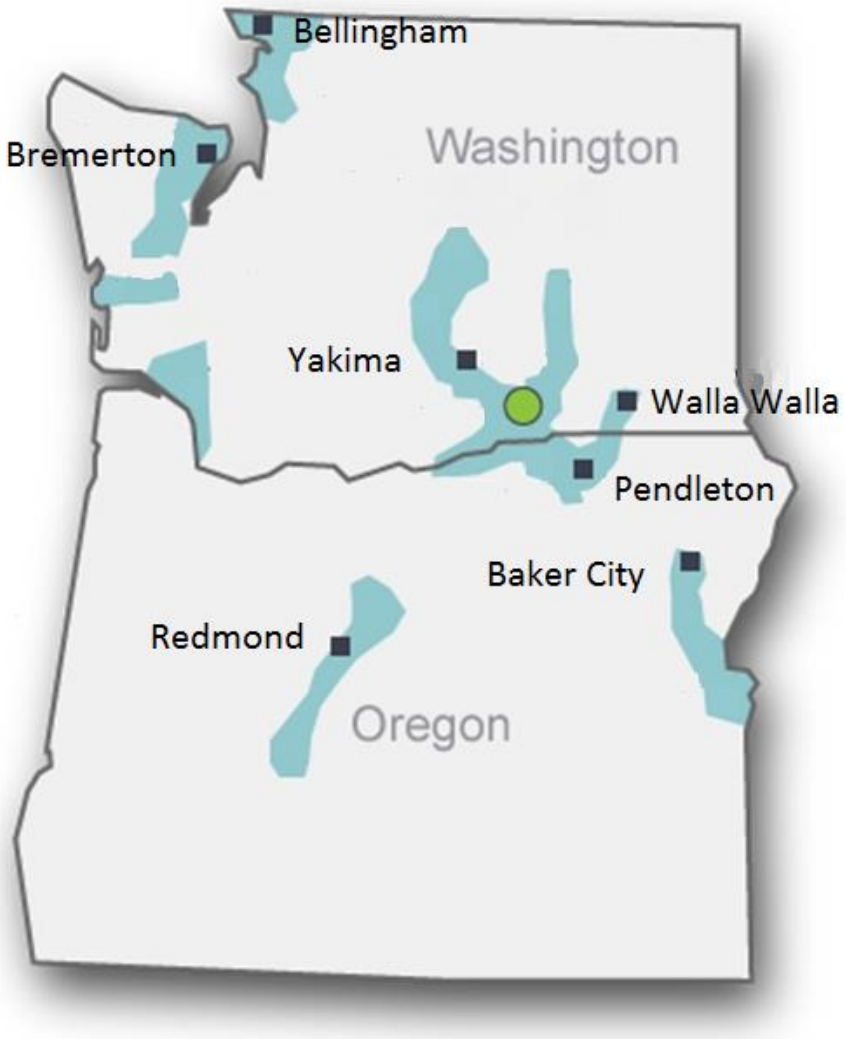
Demand Data

- Four years of historical demand was analyzed to create the CNGC forecast.
- Historical core monthly demand by citygate was primarily drawn from
  - Cascade's own Gas Management System (GMS)
  - Pipeline actuals from Electronic Bulletin Board (EBB)
- Also examined CC&B (Customer Care and Billing) for data verification and premise count information

Weather Data

- Define weather in terms of HDD's (Heating Degree Day)
- The greater the colder weather, the greater the HDD
- Last four years of weather data used for regression model
- 30 years of weather data (1983 – 2013) for seven weather stations was used to make weather scenarios
- Weather data is from the National Oceanic and Atmospheric Administration (NOAA) and Schneider Electric
- Assign a weather station to each citygate or demand loop

Weather Stations



- The seven weather stations are shown on the map
- Cascade's customer base is shaded in aqua
- Each citygate and loop is assigned to a weather station

Linear Regression Analysis

- Goal is to predict weather at each citygate based on given weather (HDD)
- Perform a linear regression or best fit analysis of monthly gas demand versus monthly HDD's at each citygate for the past four years of data
- Weather is the input variable and gas demand is the output

$$\boldsymbol{Demand = b \times WeatherHDD + C}$$

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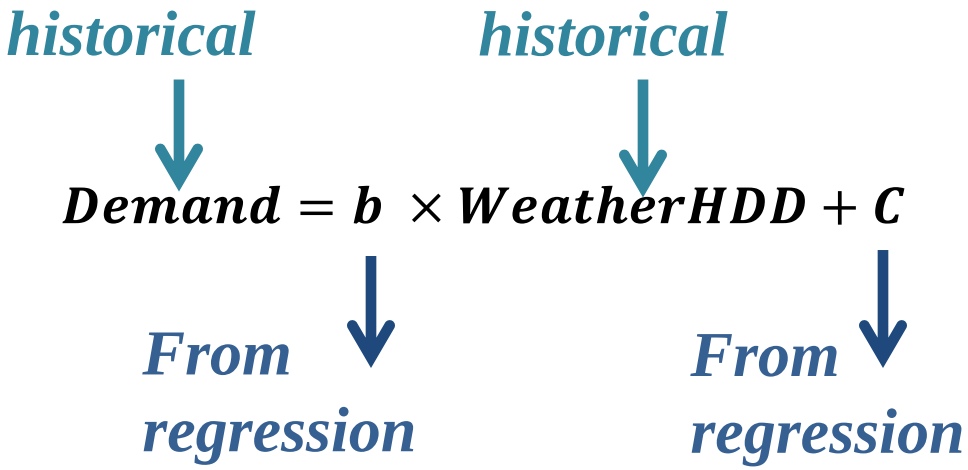
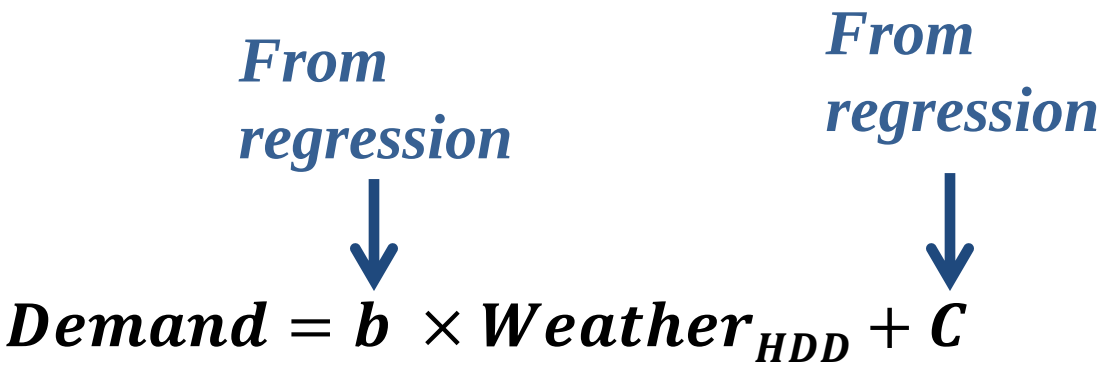
Linear Regression Analysis



- Linear regression or best fit analysis produces the best coefficient ***b*** and constant ***C*** for each citygate that minimizes error
- Model error is measured with R^2
- Higher the R^2, the lower the error and the stronger the relationship between weather and demand

Linear Regression Analysis



- Demand equation at each citygate uses ***b***'s and ***C***'s found through the regression
- Demand at each citygate can be found by plugging in an HDD (weather) from an average year, a cold year, or a mild year.

Linear Regression Analysis

GATE As Defined in Forecas	State	Weather Station	b	c	R^2
MCCLEARY (ABERDEEN/HOQUIAM)	Washington	Bremerton	102.58	527.67	0.96
ACME	Washington	Bellingham	1.74	5.18	0.98
ARLINGTON	Washington	Bellingham	100.94	470.78	0.98
ATHENA	Oregon	Pendleton	8.88	19.50	0.99
BAKER	Oregon	Baker City	56.38	94.97	0.99
BREMERTON (SHELTON)	Washington	Bremerton	609.25	1930.46	0.96
UMATILLA	Oregon	Pendleton	12.02	19.04	0.58
CASTLE ROCK	Washington	Bremerton	2.60	14.88	0.94
CHEMULT	Oregon	Redmond	0.86	2.49	0.93
WALLA WALLA	Washington	Walla Walla	216.53	815.88	0.99
GILCHRIST	Oregon	Redmond	3.73	7.65	0.97
DEMING	Washington	Bellingham	2.93	9.86	0.98
WENATCHEE	Washington	Yakima	67.15	448.84	0.98

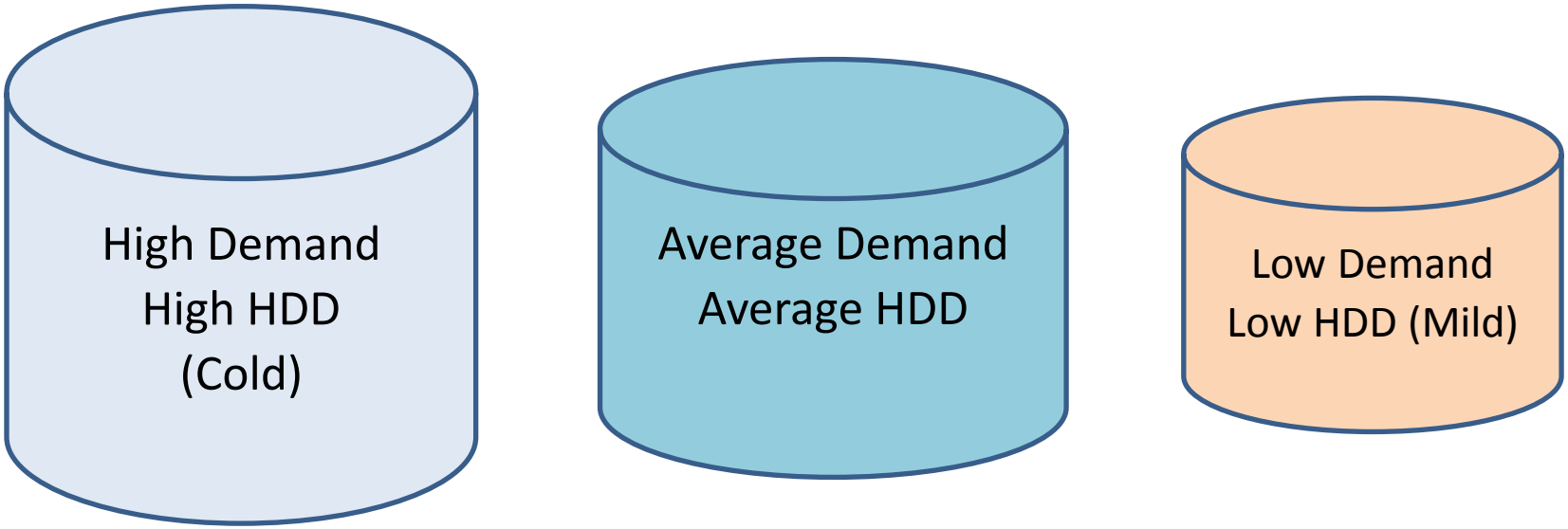
Weather Scenarios

- The average scenario forecast assumes weather (HDD) for 12 months of the year from a 30 year average
- Average weather scenario is the base case forecast
- The same logic and demand equations (***b***'s and ***C'***s) were used to create the peak demand day for each citygate

Weather Scenarios

- For weather scenarios, system wide HDD's are found that appropriately weight the weather stations that greater impact on system wide demand
- To determine the high HDD case weather scenario, the six coldest years were selected (20% of 30 years) that have the highest yearly total of HDD's.
- To determine the low HDD case weather scenario, the six warmest years were selected (20% of 30 years) that have the lowest yearly total of HDD's.

Weather Scenarios



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Heating Degree Day (HDD)

- Heating degree day measures coldest for modeling gas demand
- Heating degree day is calculated by:
  - Determine average high and low temperature for a given day
  - Daily average is subtracted from an HDD threshold (ex. 65°F)
  - If this produces a negative number, a value of zero is assigned
- Example
  - Daily high temperature = 60°F; Daily low temperature = 50°F
  - Calculate average → 55°F
  - Subtract from HDD threshold (we will use 65): 65-55 = 10
  - This example day has 10 HDD

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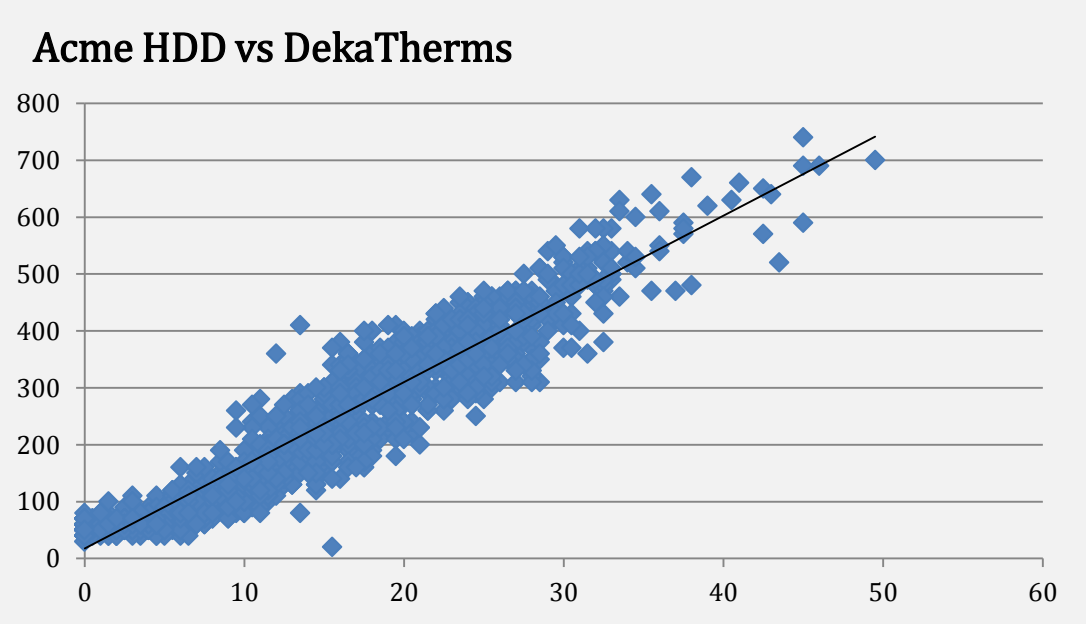
65 vs 60 HDD Threshold

- Traditional threshold for calculating HDD is 65°F
- It was determined that lowering the threshold to 60°F produces better results
- The graph shows that heating demand does not begin to increase until an HDD of five if the traditional 65°F is utilized



Population Growth

- To project the natural gas demand forward, growth factors for each year are applied to gas demand predicted after assuming a weather scenario (average, cold, mild)
- Forecast assumes that gas demand customer counts grows equally with population
- A 1% growth in population translates to a 1% increase in customer growth)

Population Growth Cont.

- Woods and Poole figures for employment, income, population, and housing demographics were reviewed
- Growth factors derived from W&P can manually be replaced by Cascade derived growth figures based on such factors such as premise growth, engineering estimates, and internal customer projections.
- Growth factors are primarily cumulative, growth in one year impacts growth subsequent years

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Non cumulative Impacts

- Forecast model allows for non cumulative impacts that modify demand at a specified citygate and time period.
- Examples include plant shut downs, seasonal impacts, etc.
- Normal demand resumes after the non cumulative impact event is over

Growth Scenarios

- Forecast assumes three different growth scenarios
- Base case assumes normal growth with figures primarily from W&P population growth forecast
- High growth scenario assumes high economic and population growth and boosts growth by a given percentage (20%)
- Low growth scenario assumes low economic and population growth and decreases growth by a given percentage (20%)

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Growth Model Sample

GATE As Defined in Forecast	Average Premise Trend	Average W&P Growth	Average Manually Assigned Growth	Apply EIA Efficiency	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
					6	7	8	9	10	11	12	13	14	15	16	17	18
MCCLEARY (ABERDEEN/HOQUIAM)	0.00%	0.4%	0.0%	Yes	0.5%	0.2%	0.7%	0.9%	0.7%	0.6%	0.7%	0.8%	1.0%	1.0%	1.1%	1.1%	1.2%
ACME	0.00%	1.7%	0.0%	Yes	2.0%	3.3%	5.2%	7.0%	8.2%	9.5%	11.2%	12.8%	14.4%	15.9%	17.4%	18.9%	20.5%
SEDRO/WOOLLEY	0.00%	1.3%	0.0%	Yes	1.5%	2.2%	3.6%	4.9%	5.6%	6.4%	7.5%	8.6%	9.7%	10.8%	11.7%	12.7%	13.8%
ARLINGTON	0.00%	1.4%	0.0%	Yes	1.6%	2.5%	4.1%	5.5%	6.4%	7.3%	8.6%	9.8%	11.1%	12.3%	13.4%	14.5%	15.7%
ATHENA	0.00%	0.6%	0.0%	Yes	0.6%	0.5%	1.1%	1.5%	1.4%	1.4%	1.7%	1.9%	2.2%	2.5%	2.6%	2.8%	3.1%
BAKER	-22.03%	0.1%	0.0%	Yes	0.1%	-0.5%	-0.4%	-0.5%	-1.1%	-1.5%	-1.7%	-1.9%	-2.1%	-2.3%	-2.6%	-2.9%	-3.0%
BREMERTON (SHELTON)	0.00%	1.0%	0.0%	Yes	1.1%	1.5%	2.6%	3.5%	3.9%	4.4%	5.2%	5.9%	6.7%	7.4%	8.0%	8.7%	9.4%
BELLINGHAM 1 (FERNDALE)	0.00%	1.7%	0.0%	Yes	2.0%	3.3%	5.2%	7.0%	8.2%	9.5%	11.2%	12.8%	14.4%	15.9%	17.4%	18.9%	20.5%
BEND	0.00%	1.9%	0.0%	Yes	2.4%	4.1%	6.4%	8.6%	10.2%	11.9%	13.9%	15.8%	17.8%	19.7%	21.4%	23.2%	25.2%
NORTH BEND	2.00%	1.9%	0.0%	Yes	2.4%	4.1%	6.4%	8.6%	10.2%	11.9%	13.9%	15.8%	17.8%	19.7%	21.4%	23.2%	25.2%
SOUTH BEND	1.30%	1.9%	0.0%	Yes	2.4%	4.1%	6.4%	8.6%	10.2%	11.9%	13.9%	15.8%	17.8%	19.7%	21.4%	23.2%	25.2%
WCT-CNG INTERCONNECT(BLAINE, ETC.)	-14.82%	1.7%	0.0%	Yes	2.0%	3.3%	5.2%	7.0%	8.2%	9.5%	11.2%	12.8%	14.4%	15.9%	17.4%	18.9%	20.5%
UMATILLA	0.00%	0.6%	0.0%	Yes	0.6%	0.4%	1.0%	1.3%	1.2%	1.1%	1.4%	1.6%	1.9%	2.1%	2.2%	2.4%	2.6%

EIA Efficiency Factor

- Future gas demand, by citygate, was modified utilizing a calculated efficiency factor derived the U.S. Energy Information Administration's (EIA) 2014 Annual Energy Outlook.
- Cascade used the EIA forecast data for the entire U.S.
- Pacific Region not used - too heavily influenced by California
- Cascade used figures from EIA's reference forecast case, or base case, to calculate the expected percentage change of natural gas consumption over the next 20 years.

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Annual Premise Count Projection

- The Annual Premise Count Projection by Year and citygate was based upon trend analysis of the Historical Premise Count data pulled from CC&B from 2010 to 2013 for each citygate, Year, and Tariff.
- Historical Premise Count by CityGate, Year, and Tariff was used to forward project premise count based upon the trend between premise count and time.
- This information is used as guide to assist Cascade when forecasting customer growth.

Final Demand Forecast

The Monthly Demand Forecast by year, month and citygate was based upon:

- Calculate demand after plugging in a weather scenario demand equation built from regression analysis
- For demand equations with poor regressions (R^2 less than 70%), recent demand is used
- Growth factors and efficiency gains are applied to all citygates

Demand Forecast

Forecast Tim	System Demand (Dth)	OR Forecast (Dth	WA Forecast (Dth	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS	MILTON-FREEWATER
Jan-15	4,487,401.28	1,070,999.79	3,416,401.48	7,542	61,720	9,970	769	3,252	88,731	1,634	6,819	36,132	6,924
Feb-15	3,643,722.02	891,556.41	2,752,165.61	5,988	48,545	7,891	652	2,751	69,735	1,256	5,798	30,545	5,492
Mar-15	3,151,494.00	769,614.48	2,381,879.51	4,754	39,346	6,200	586	2,453	53,501	952	5,274	27,184	4,292
Apr-15	2,299,911.94	574,158.76	1,725,753.18	3,153	27,895	4,043	454	1,884	33,481	610	4,156	20,818	2,893
May-15	1,522,868.33	388,672.69	1,134,195.64	1,793	17,174	2,196	308	1,245	16,082	275	2,938	13,654	1,893
Jun-15	881,520.98	202,631.55	678,889.44	822	8,076	890	165	621	4,014	6	1,716	6,681	1,263
Jul-15	664,931.23	151,927.76	513,003.47	617	3,484	605	91	299	1,212	-	1,110	3,066	1,199
Aug-15	640,074.94	120,941.28	519,133.66	619	3,776	609	94	308	1,246	-	1,128	3,167	1,202
Sep-15	1,008,739.07	231,085.68	777,653.39	910	9,891	1,010	174	663	5,136	61	1,797	7,149	1,305
Oct-15	2,168,836.77	518,031.68	1,650,805.09	2,961	27,511	3,776	395	1,621	30,843	591	3,666	17,870	2,799
Nov-15	3,510,550.29	841,870.14	2,668,680.16	5,629	45,727	7,391	621	2,611	64,777	1,154	5,563	28,965	5,196
Dec-15	4,632,517.33	1,155,445.83	3,477,071.51	7,972	61,788	10,552	820	3,474	94,169	1,636	7,247	38,614	7,335
Jan-16	4,540,632.71	1,087,524.25	3,453,108.46	7,585	61,774	10,023	774	3,270	89,270	1,636	6,975	36,243	6,966

High Case Peak Demand Day Forecast

- The Annual Peak Day Forecast ensures that Cascade can continue to provide adequate heating to its customers even under extreme conditions which are far colder than the norm.
  - To determine the system wide peak demand day, HDD's from all seven weather stations are considered, giving appropriate weight to the weather stations having the greater impact on system wide demand.
  - It was found that December 21, 1990 was the highest system weighted HDD for this period.
  - The peak demand day was then derived from the highest HDD by applying the actual HDD from the peak day for the 30 year period to the linear regression equation for each citygate . Thus all citygates associated with the Bellingham weather station, for example, use the HDD calculated for Bellingham for December 21, 1990, and similarly for all the other weather stations and citygates. This provides a highest demand scenario for peak demand load based on 30 years of weather history for each citygate.

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High Case Peak Demand Day Forecast

Forecast Tim	Peak Day Demand (Dth	OR Peak Day (Dth	WA Peak Day (Dth	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS
2014	307,863.13	85,193.19	222,669.94	618	4,074	829	63	272	7,548	115	531	3,030
2015	311,160.91	86,488.64	224,672.27	618	4,050	828	63	272	7,594	116	543	3,038
2016	314,918.51	87,827.31	227,091.20	621	4,054	832	64	274	7,640	116	556	3,048
2017	318,573.74	89,160.09	229,413.65	624	4,050	835	64	275	7,687	116	568	3,058
2018	321,925.32	90,470.23	231,455.10	623	4,027	834	64	274	7,734	116	581	3,068
2019	325,337.44	91,788.67	233,548.76	623	4,007	834	64	274	7,782	116	593	3,079
2020	328,963.90	93,125.43	235,838.46	625	4,000	836	64	275	7,829	116	606	3,090
2021	332,582.01	94,465.21	238,116.80	626	3,992	838	64	276	7,878	116	618	3,101
2022	336,208.51	95,805.54	240,402.97	628	3,984	840	64	277	7,926	117	631	3,113
2023	339,805.96	97,142.62	242,663.35	630	3,975	842	64	277	7,975	117	643	3,125
2024	343,366.23	98,478.27	244,887.96	631	3,964	843	65	278	8,024	117	656	3,137

Expected Peak Demand Day Forecast

- For the past 30 years, the coldest system wide day (highest system HDD) is found for each of the past 30 years
- The actual HDD for each weather station from each of those 30 peak dates is pulled
- The 30 years of HDD figures are averaged and then plugged into the forecast model for each citygate
- For citygates with poor demand model regressions, recent peaks demand figures are used
- Growth factors are applied to predict peak demand in future years

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Growth Scenarios

- Forecast assumes three different growth scenarios
- Base case assumes normal growth with figures primarily from W&P population growth forecast
- High growth scenario assumes high economic and population growth and boosts growth by a given percentage (20%)
- Low growth scenario assumes low economic and population growth and decreases growth by a given percentage (20%)

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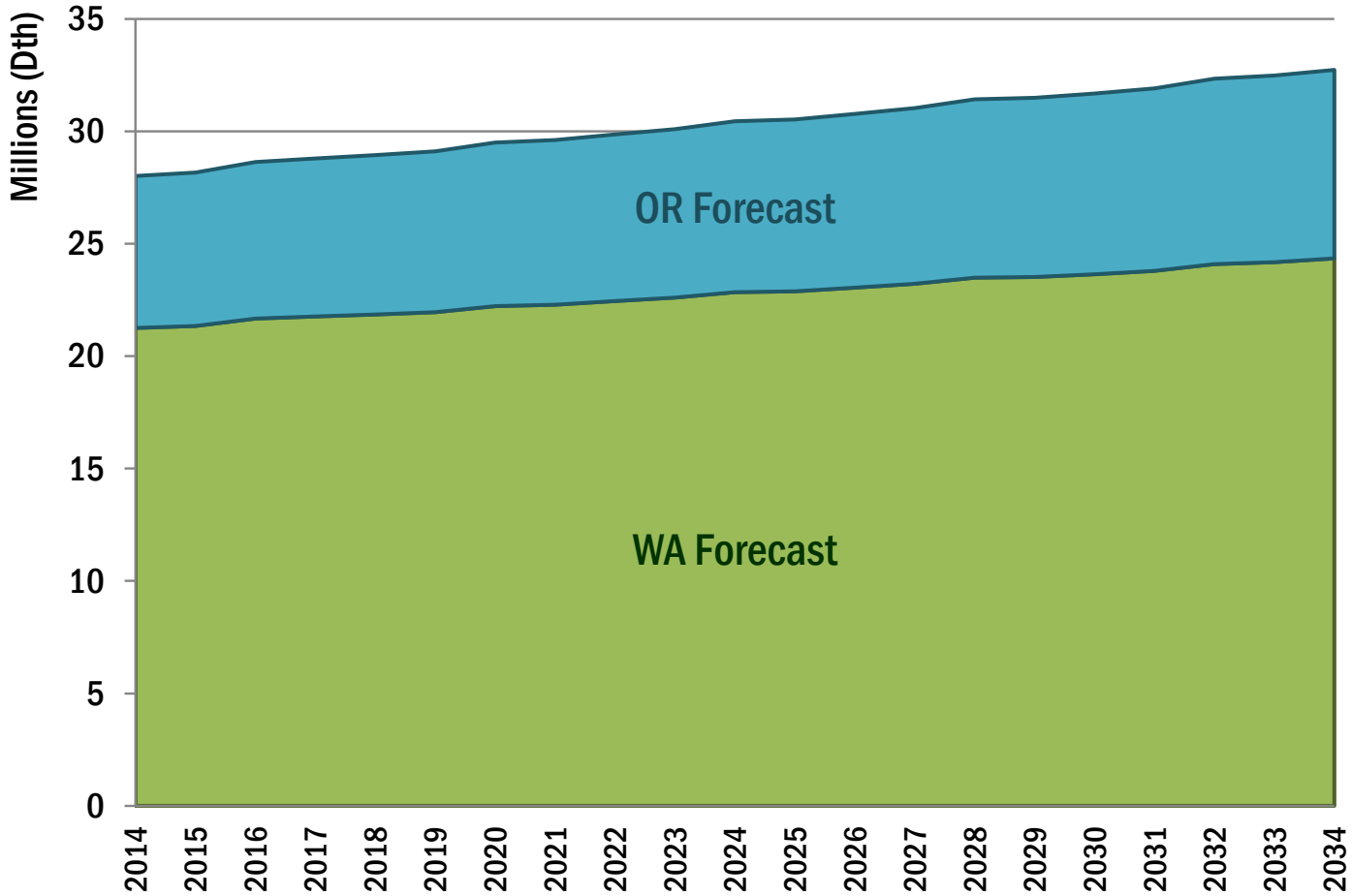
Expected Peak Demand Day Forecast

Forecast Tim	Peak Day Demand (Dth	OR Peak Day (Dth	WA Peak Day (Dth	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS
2014	231,938.71	60,667.79	171,270.92	450	3,096	602	44	189	5,440	86	372	2,093
2015	234,400.55	61,576.61	172,823.94	450	3,078	601	44	188	5,473	86	381	2,099
2016	237,208.35	62,517.62	174,690.73	452	3,080	604	44	189	5,506	86	390	2,106
2017	239,939.22	63,454.05	176,485.17	454	3,077	606	44	190	5,540	86	399	2,113
2018	242,441.73	64,373.37	178,068.36	454	3,060	606	44	190	5,574	86	407	2,120
2019	244,989.74	65,298.76	179,690.98	454	3,045	605	44	190	5,608	86	416	2,127
2020	247,699.17	66,237.86	181,461.31	455	3,040	607	44	190	5,643	86	425	2,135
2021	250,402.28	67,179.01	183,223.27	456	3,033	608	45	191	5,678	87	434	2,143
2022	253,111.81	68,120.60	184,991.20	458	3,028	610	45	191	5,713	87	443	2,151
2023	255,799.49	69,059.81	186,739.68	459	3,021	611	45	192	5,748	87	451	2,159
2024	258,459.16	69,997.87	188,461.29	459	3,012	612	45	192	5,783	87	460	2,168
2025	261,116.90	70,933.91	190,182.98	460	3,004	613	45	193	5,818	87	469	2,176

Forecast Results



Summary

- Cascade core customer demand is expected to grow modestly for the coming 20 years
- Growth is primarily dependent upon regional population dynamics tempered by natural gas efficiency gains
- Weather plays a big role in demand for any given year
- Forecast model is allows Cascade to consider numerous scenarios, including extremes, and is designed to be updated when new information becomes available

Cascade Natural Gas Technical Advisory Group Meeting #1
Portland International Airport in Portland, OR
June 24th, 2014 9:00 AM – 12:30 PM

Attachments:
Attachment A – Technical Advisory Group Meeting #1 slides
Attachment B – Attendance sheet

I.) **Introduction** – Mark Sellers-Vaughn opened the meeting with the introductions, agenda, and background information. A few notes that were stated:
- The IRP Guidelines and Content were discussed**.**
- Irion Sanger expressed concern on the 5 year lockdown on the conservation forecast. Jim Abrahamson said that they use the term lockdown but the forecast can change and is not necessarily a lockdown number.
- Mark Sellers-Vaughn noted the changes in the IRP timeline.
- Market Forecast and Planning Overview were discussed.

II.) **Demand Forecast Executive Summary** – Art Gelber discussed the overview of building a load forecast model.
- The question what are demand loops was asked. The answer was demand loops are a group of CityGates that service a similar area. A follow up question was how many loops does our model contain? The answer is 8.
- An idea of what the forecast results can look like was shown on slide 37. The preference from audience members was to have tables with actual numbers.
- Data input information was shown.
- Key assumptions and different forecast cases were discussed.

III.) **The Model** – Kent Bayazitoglu presented multiple aspects of what the forecast model uses for inputs and what it provides for the outputs.
- Where CNGC got their demand inputs, weather inputs, and premise count inputs were discussed.
- CNGC is using 7 weather locations from NOAA and Schneider Electric. Also, Kent discussed why CNGC will be using 60 degrees as a reference temperature when calculation HDD's.
- Multiple weather scenarios were discussed.
- W&P is the base for population growth while CNGC is allowed to override growth numbers using internal knowledge and research.
- High/Expected case peak demand day forecast was discussed. CNGC does a system wide peak as well as being able to do a CityGate peak.

IV.) **Action Items** – Many stakeholders asked important questions and left CNGC with many items to research and discuss.

- Need to look into EIA vs ETO.
- Slides for historic growth and a comparison to previous forecast to be provided.
- Woods & Poole methodology provided to WUTC and OPUC.
- An analysis on distance in weather location and R^2 to be provided.
- Historical use/customer to EIA efficiency analysis needs to be done.
- Infrastructure of core vs non-core in SENDOUT.

Attendance:

Presenters:
Mark Sellers-Vaughn
Art Gelber
Kent Bayazitoglu

Attendees:
Lance Kaufman
Robert Fonner
Suparna Bhattacharya
Ryan Bracken
Steve Storm
Irion Sanger
Nadine Hanhan
Jim Abrahamson
Brian Robertson

Call-in attendees:
Micah Robinson
Evans Finger
Joan Wilmotte
Carolyn Stone
John Klingele
Jon Whiting
Miki Bode
Jeremy Ogden
Pamela Archer
Becky Mellinger
John Cooley
Kevin Conwell
Monica Cowlisha
Sheila McElhinney
Amanda Sargent
Deborah Reynolds

Cascade Natural Gas Corporation

Integrated Resource Plan
Technical Advisory Group Meeting #2

Tuesday, January 13, 2015

Portland International Airport
Conference Center

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Agenda

- **Introductions**
- **Overview of Cascade**
- **CNGC Demand Study (High level view of the 20 year demand forecast)**
  - **Overview**
  - **Forecast Methodology and Philosophy**
    - **Inputs**
    - **Assumptions**
    - **Cases**
    - **The Model**
    - **Weather Data**
    - **Regressions**
    - **Weather Scenarios**
    - **Growth**
    - **Premise Count Projections**
  - **DRAFT Forecast Results**

- **Questions/Next Steps**

- **Adjourn**

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CASCADE DEMAND STUDY

High Level overview of the 20 Year demand forecast

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Demand Forecast
Executive Summary

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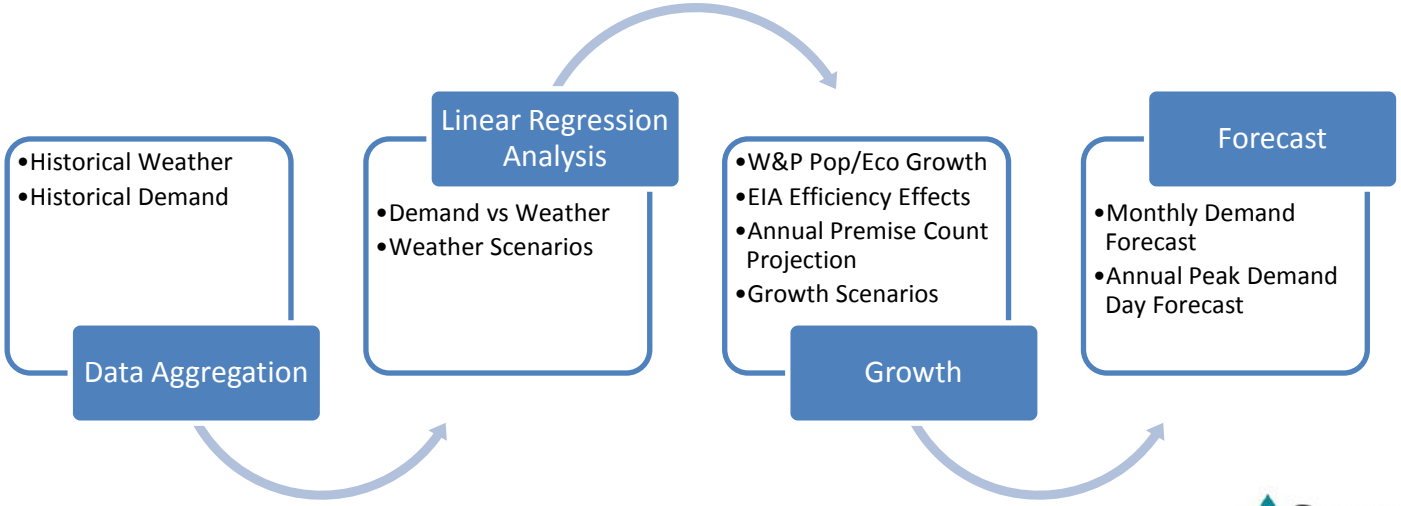
Overview

- The Cascade demand forecast developed for the IRP is an estimate of core natural gas demand and peak demand for the next 20 years
- Cascade core load consists mostly of residential and commercial customers along with some industrial customers.



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Overview

- Forecast demand at the citygate and demand loop level
- Demand loops are a group of citygates that service a similar area that are forecasted together due to pipeline operations and how data is available
- CNGC forecast model is flexible giving Cascade the ability to
  - Update input data (gas demand and weather)
  - Modify assumptions
  - Modify citygates and loops to be forecasted

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Forecast Philosophy

- Cascade's demand is principally weather driven: colder the weather, the greater the demand
- This forecast doesn't predict weather
- Forecasted under various weather scenarios – average year, cold year, warm year, extreme cold day, etc.
- Apply weather and demand to each of 79 citygates
- Model created by performing statistical techniques to gas demand and weather
- Growth factors are applied to the next 20 years of data, creating ultimate output presented today

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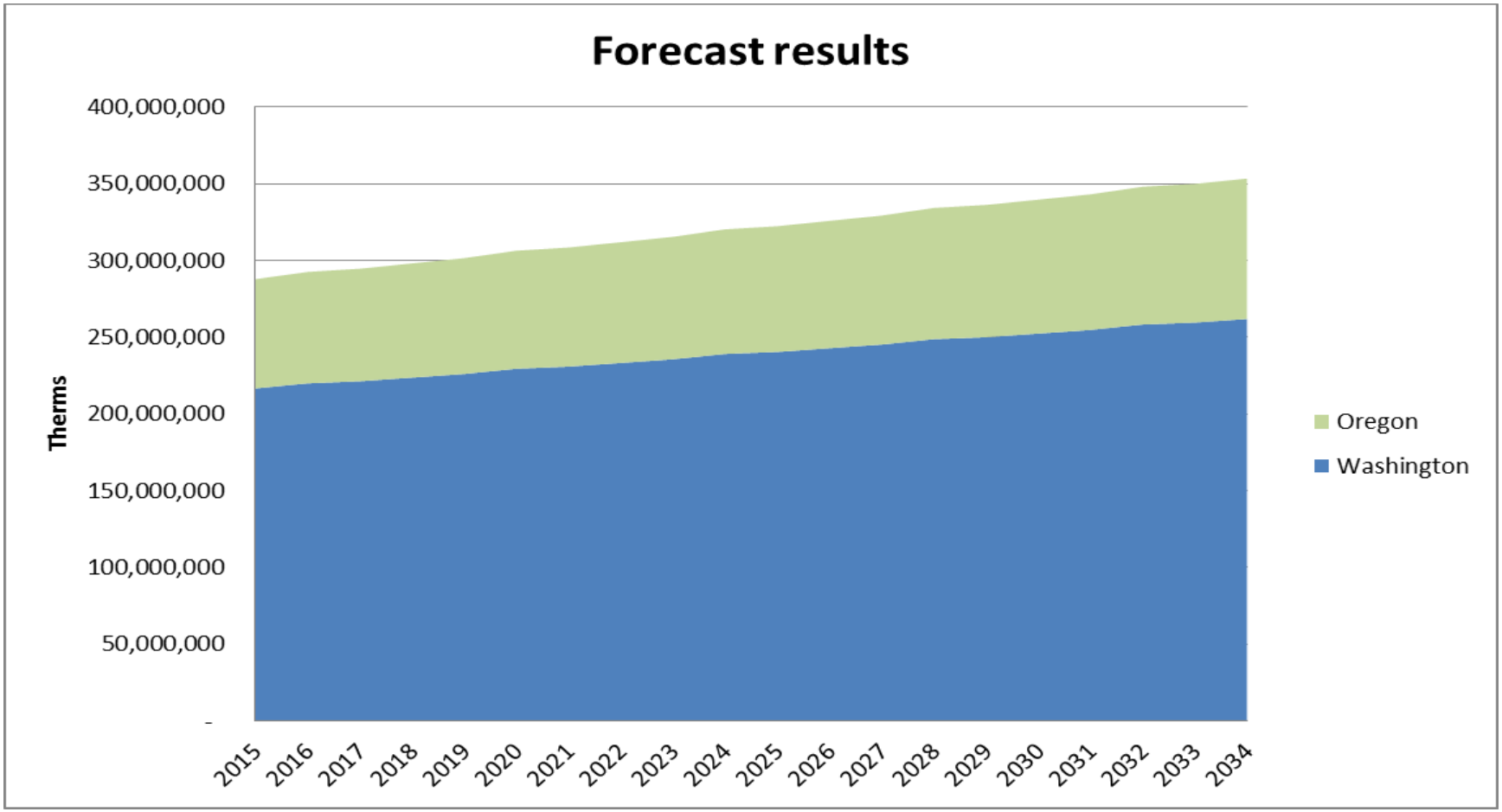
Forecast Results



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Inputs and Data Sources

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Input Data

- Historical Demand
  - Used Pipeline actuals and Gas Management System (GMS)
  - Tested and rejected Customer Care and Billing (CC&B)
- Weather
  - Schneider Electric/NOAA
- Population
  - Woods & Poole
- Efficiency
  - EIA regional efficiency projection
- Premise Count
  - CC&B

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Key Assumptions

- Seven weather locations effectively covers Cascade's weather area
- Heating demand does appreciatively start until average temps dip below 60F, therefore a 60 F HDD threshold used
- Heating demand reacts to temperature in a mostly linear fashion
- Using population growth assumes 1% increase in population translates to a 1% increase in gas demand, before accounting for any efficiency gains.

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Forecast Cases

- Base case regression correlation of weather to demand by citygate and loops
- Sensitivity capability for cold and warm weather
- Sensitivity for low and high efficiency gains
- Sensitivity for low and high population growth

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The Model

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Demand Data

- Ten years of historical demand was analyzed to create the CNGC forecast.
- Historical core monthly demand by citygate was primarily drawn from
  - Cascade's own Gas Management System (GMS)
  - Pipeline actuals from Electronic Bulletin Board (EBB)
- Also examined CC&B (Customer Care and Billing) for data verification and premise count information

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Weather Data

- Define weather in terms of HDD's (Heating Degree Day)
- The greater the colder weather, the greater the HDD
- Last ten years of weather data used for regression analysis
- 30 years of weather data (1983 – 2013) for seven weather stations was used to make weather scenarios
- Weather data is from the National Oceanic and Atmospheric Administration (NOAA) and Schneider Electric
- Assign a weather station to each citygate or demand loop

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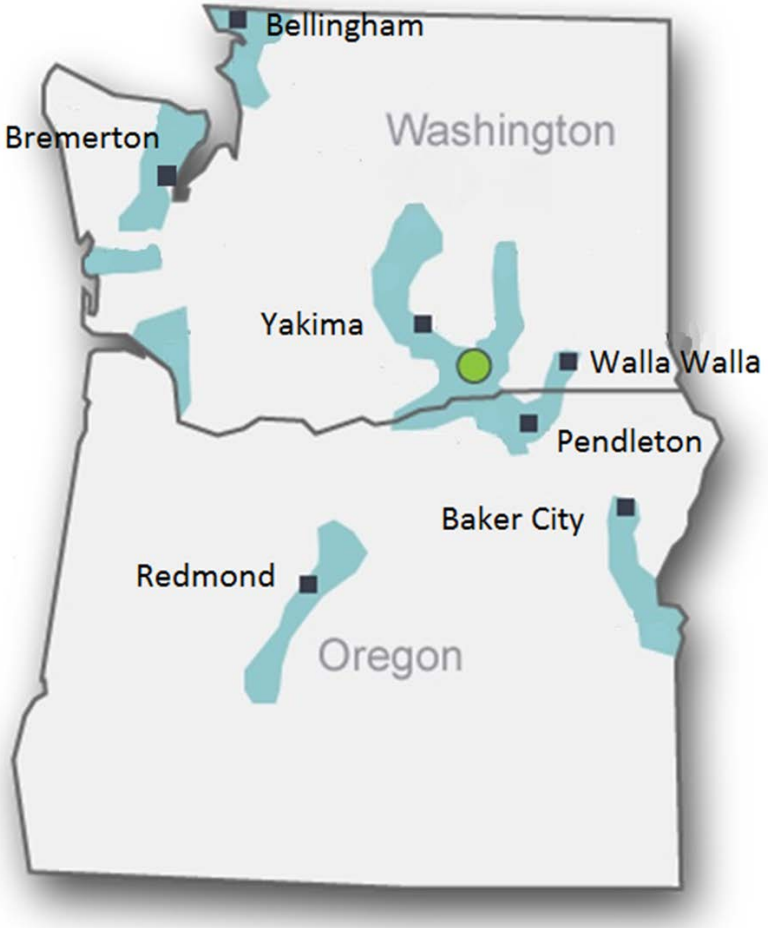
Weather Stations



- The seven weather stations are shown on the map
- Cascade's customer base is shaded in aqua
- Each citygate and loop is assigned to a weather station

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Linear Regression Analysis

- Goal is to predict weather at each citygate/loop based on given weather (HDD)
- Perform a linear regression or best fit analysis of monthly gas demand versus monthly HDD's at each citygate for the past ten years of data
- Weather is the input variable and gas demand is the output

$$\boldsymbol{Demand = b \times WeatherHDD + C}$$

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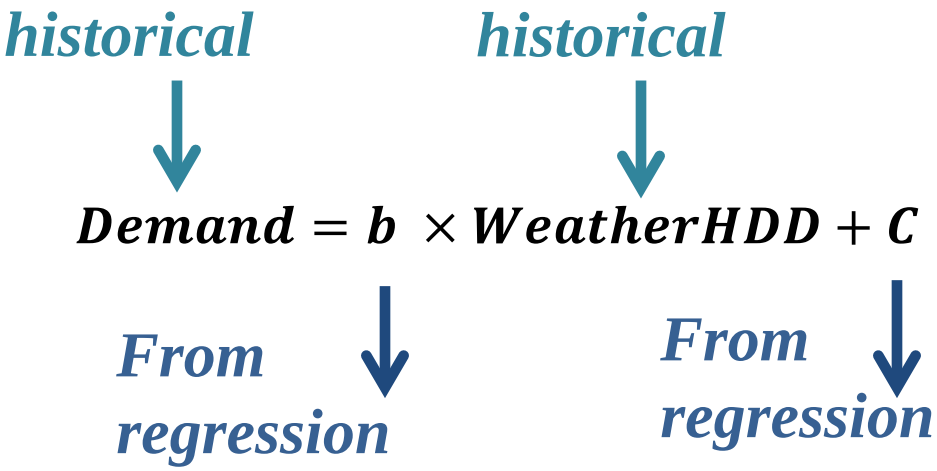
Linear Regression Analysis



- Linear regression or best fit analysis produces the best coefficient ***b*** and constant ***C*** for each citygate that minimizes error
- Model error is measured with R^2
- Higher the R^2, the lower the error and the stronger the relationship between weather and demand

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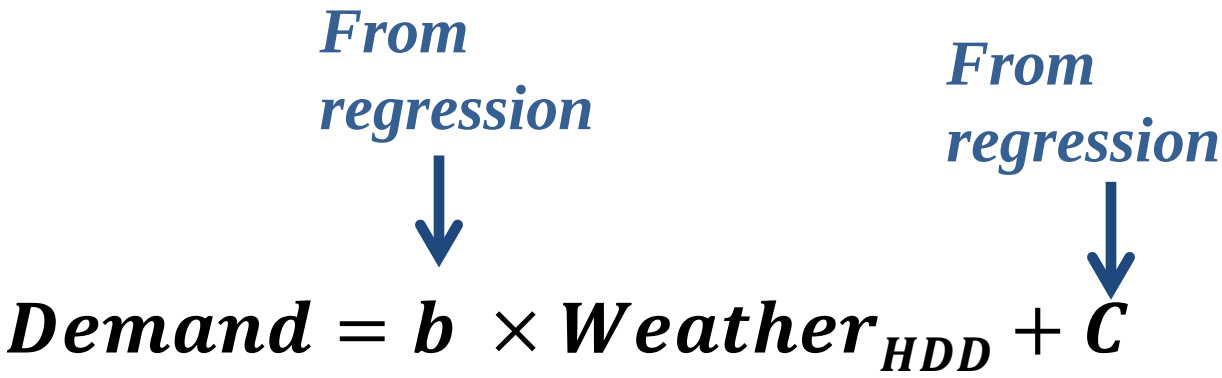
Linear Regression Analysis



- Demand equation at each citygate uses ***b***'s and ***C***'s found through the regression
- Demand at each citygate can be found by plugging in an HDD (weather) from an average year, a cold year, or a mild year.

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Linear Regression Analysis

GATE As Defined in Fore	State	Weather Station	b	c	R^2
MCCLEARY (ABERDEEN/HOQUIAM)	Washington	Bremerton	111.71	657.73	0.93
ACME	Washington	Bellingham	2.03	2.56	0.98
ARLINGTON	Washington	Bellingham	98.60	611.77	0.96
ATHENA	Oregon	Pendleton	9.45	45.45	0.89
BAKER	Oregon	Baker City	55.67	153.95	0.98
BREMERTON (SHELTON)	Washington	Bremerton	631.49	2429.23	0.96
UMATILLA	Oregon	Pendleton	19.86	105.52	0.83
CASTLE ROCK	Washington	Bremerton	2.79	15.72	0.85
CHEMULT	Oregon	Redmond	0.75	5.55	0.80
WALLA WALLA	Washington	Walla Walla	238.55	1098.85	0.99
GILCHRIST	Oregon	Redmond	3.81	9.05	0.91
DEMING	Washington	Bellingham	3.21	9.21	0.95
WENATCHEE	Washington	Yakima	72.16	436.45	0.95

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Weather Scenario

- The average scenario forecast assumes weather (HDD) for 12 months of the year from the 30 year average
- Average weather scenario is the base case forecast
- The same logic and demand equations (***b***'s and ***C'***s) were used to create the peak demand day for each citygate

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Weather Scenarios

- For weather scenarios, system wide HDD's are found that give appropriate weight to the weather stations that have greater impact on system wide demand.
- To determine the high case HDD weather scenario, the six coldest years were selected (20% of the coldest years out of 30). These years have with the highest yearly total of HDD's.
- To determine the low case HDD weather scenario, the six warmest years were selected (20% of the warmest years out of 30). These years have the lowest yearly total of HDD's.

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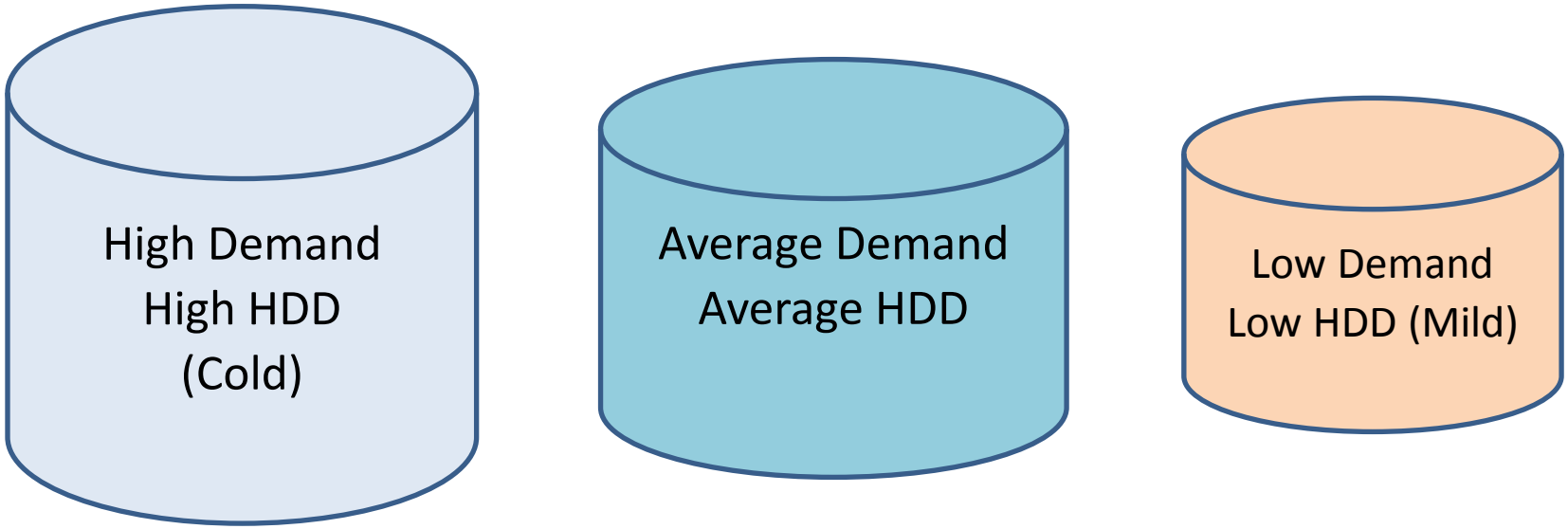
Weather Scenarios



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Heating Degree Day (HDD)

- Heating degree day is used as the unit of measure for weather in the linear regression analysis
- Heating degree day is calculated by:
  - Determine average high and low temperature for a given day
  - Daily average is subtracted from an HDD threshold (for example 65°F)
  - If this produces a negative number, a value of zero is assigned
- Example
  - Daily high temperature = 60°F; Daily low temperature = 50°F
  - Calculate average → 55°F
  - Subtract from HDD threshold (we will use 65): 65-55 = 10
  - This example day has 10 HDD

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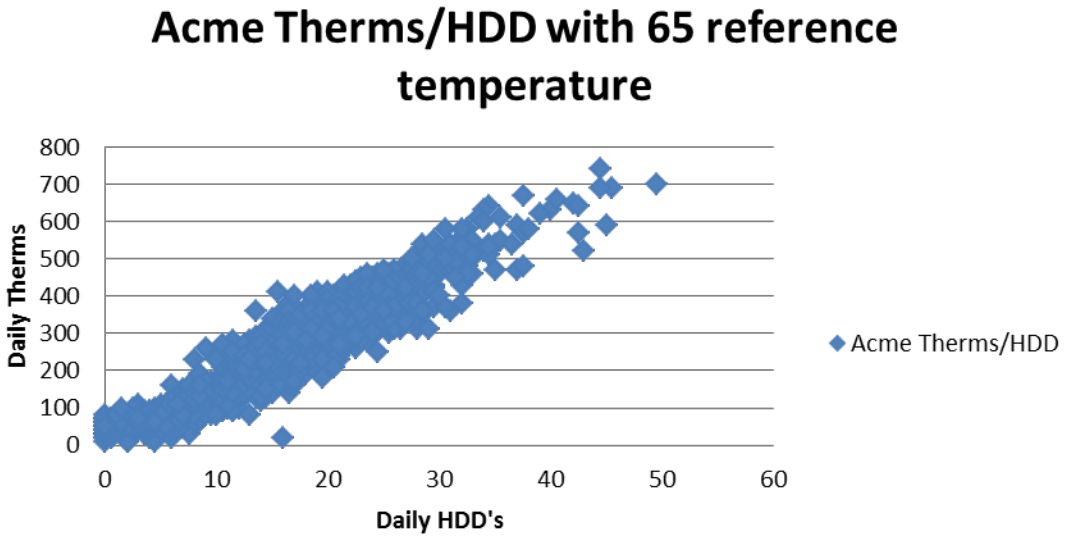
65 vs 60 HDD Threshold

- The historical threshold for calculating HDD has been 65°F
- It was determined that lowering the threshold to 60°F produces better results
- The graph shows that heating demand does not begin to increase until an HDD of five if the traditional 65°F is utilized



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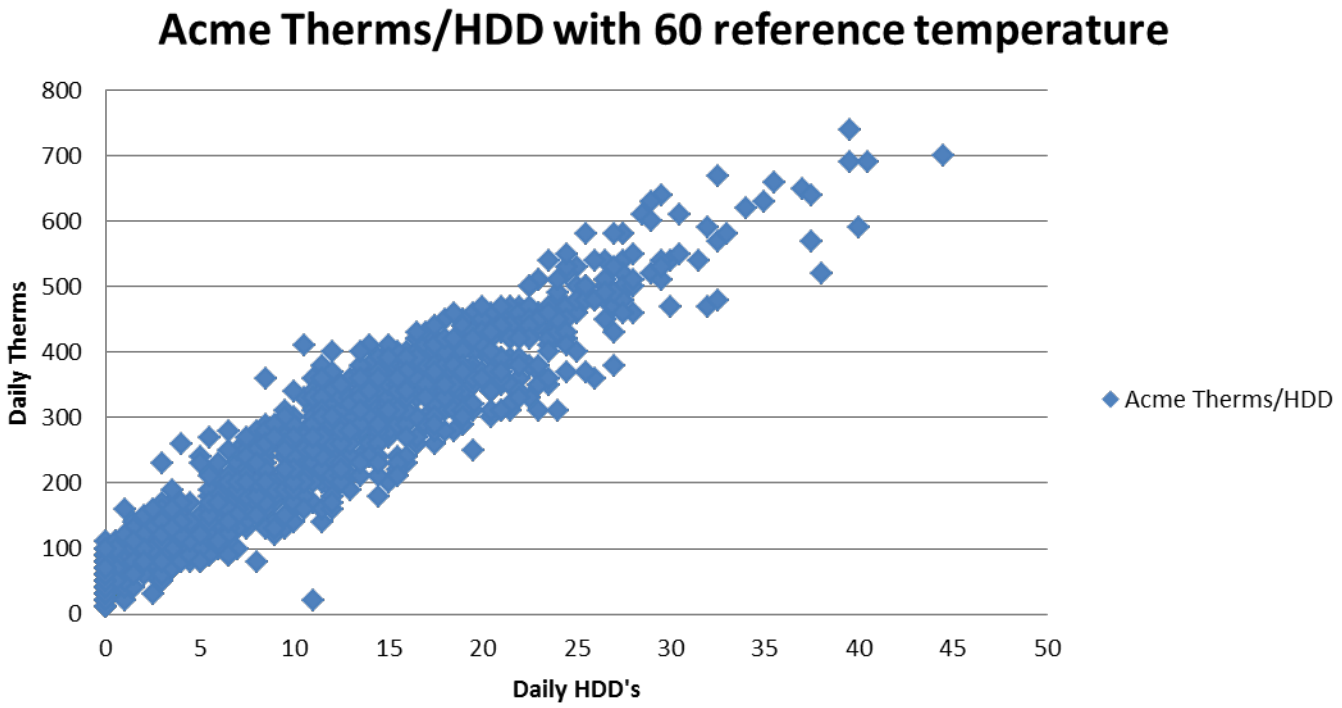
Acme Therms/HDD with 60 degree reference temperature



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Growth

- To project the natural gas demand forward, growth factors for each year are applied to gas demand predicted after assuming a weather scenario (average, cold, mild)
- Cascade uses regional economic demographics data formulated by Woods and Poole to derive a projected customer growth by town and year.
- Woods and Poole Employment, Income, Population, and Housing demographics were reviewed. Cascade derived Population and Economic growth factors formulated from Woods and Poole's forecasted population growth and Farm, Manufacturing, and Construction earnings.
- Growth factors derived from W&P can manually be replaced by Cascade derived growth figures based on such factors such as premise growth, engineering estimates, and internal customer projections.
- To project the natural gas demand forward, growth factors for each year are applied to gas demand predicted after assuming a weather scenario (average, cold, mild)

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Population Growth

- Cascade uses population growth data formulated by Woods and Poole to derive a projected customer growth by CityGate and year.
- Woods and Poole population growth forecast is provided by county and year and directly assigned to a CityGate. Cascade assumes a 1% growth in population translates to a 1% increase in customer growth

W&P Growth by CityGate was calculated utilizing the equations defined below:

$WP\_P_{[CityGate,Yr]} = \sum WP\_P_{[County,Yr]}$

$WP\_G_{[CityGate,Yr]} = (WP\_P_{[CityGate,Yr-1]} - WP\_P_{[CityGate,Yr]}) / WP\_P_{[CityGate,Yr]}$

Definitions:

- $WP\_P_{[Yr, County]}$: Woods and Poole annual population forecast based on numerous demographic factors by county and by year
- $WP\_P_{[CityGate,Yr]}$: Sum of all Woods and Poole annual population figures for all counties assigned to a CityGate
- **$WP\_G_{[CityGate,Yr]}$: Woods and Poole growth factor percentage calculated from Woods and Poole population forecast by CityGate and Yr**

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Economic Growth

- To create an economic growth figure, Woods and Poole's construction, manufacturing, and farming earnings where combined for each county and year (2013-2040) to produce a total earnings number.
- The sum of all raw earning growth figures assigned to a CityGate was used to calculate the Economic Growth by year for each CityGate.

W&P Economic Growth by citygate was calculated utilizing the equations defined below:

$$WP\_TE_{[County, Yr]} = (WP\_CE_{[County, Yr]} + WP\_ME_{[County, Yr]} + WP\_FE_{[County, Yr]})$$

$$WP\_TE_{[CityGate, Yr]} = \sum WP\_TE_{[County, Yr]}$$

$$WP\_EG_{[CG, Yr]} = (WP\_TE_{[CityGate, Yr-1]} - WP\_TE_{[CityGate, Yr]}) / WP\_TE_{[County, Yr]}$$

Definitions:

- $WP\_TE_{[County, Yr]}$: Woods and Poole total earnings from farming, manufacturing, and construction forecast by county and by year
- $WP\_TE_{[CityGate, Yr]}$: Sum of all total earning from farming, manufacturing, and construction forecast by county and by year allocated to a CityGate
- **WP_EG[CG, Yr]: Woods and Poole economic growth percentage by CityGate and year**

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Non cumulative Impacts

- Growth factors are primarily cumulative, growth in one year impacts growth subsequent years
- Forecast model allows for non cumulative impacts that modify demand at a specified citygate and time period.
- Normal demand resumes after non cumulative impact event is over

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Growth Scenarios

- Forecast assumes three different growth scenarios
- Base case assumes normal growth with figures primarily from growth factors derived from W&P population and economic earning forecast
- High growth scenario assumes high economic and population growth and boosts growth by a given percentage (50%)
- Low growth scenario assumes low economic and population growth and decreases growth by a given percentage (50%)

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Growth

GATE As Defined in Forecast	Average Premise Trend	Average Manually Assigned Growth	W&P population/economic growth	Apply EIA Efficiency	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
					9	10	11	12	13	14	15	16	17	18	19	20	21
(ABERDEEN/HOQUIAM)	0.00%	0.0%	Population Growth	No	0.0%	0.5%	0.9%	1.4%	1.9%	2.4%	2.9%	3.4%	3.8%	4.3%	4.8%	5.3%	5.7%
ACME	0.00%	0.0%	Population Growth	No	0.0%	1.9%	3.8%	5.8%	7.7%	9.7%	11.6%	13.6%	15.6%	17.5%	19.5%	21.5%	23.5%
SEDRO/WOOLLEY	0.00%	0.0%	Population Growth	No	0.0%	1.4%	2.9%	4.3%	5.7%	7.2%	8.6%	10.1%	11.6%	13.0%	14.5%	16.0%	17.4%
ARLINGTON	0.00%	0.0%	Population Growth	No	0.0%	1.6%	3.1%	4.7%	6.3%	7.9%	9.5%	11.1%	12.7%	14.4%	16.0%	17.6%	19.2%
ATHENA	0.00%	0.0%	Population Growth	No	0.0%	0.6%	1.2%	1.8%	2.4%	3.1%	3.7%	4.3%	5.0%	5.6%	6.3%	6.9%	7.5%
BAKER	0.00%	0.0%	Population Growth	No	0.0%	0.1%	0.2%	0.4%	0.5%	0.7%	0.8%	0.9%	1.1%	1.2%	1.4%	1.6%	1.7%
BREMERTON (SHELTON)	0.00%	0.0%	Population Growth	No	0.0%	1.1%	2.2%	3.3%	4.4%	5.5%	6.6%	7.7%	8.8%	10.0%	11.1%	12.2%	13.3%
BELLINGHAM 1 (FERNDALE)	0.00%	0.0%	Population Growth	No	0.0%	1.9%	3.8%	5.8%	7.7%	9.7%	11.6%	13.6%	15.6%	17.5%	19.5%	21.5%	23.5%
BEND	0.00%	0.0%	Population Growth	No	0.0%	2.3%	4.6%	6.9%	9.2%	11.5%	13.8%	16.1%	18.4%	20.7%	23.0%	25.3%	27.6%
NORTH BEND	0.00%	0.0%	Population Growth	No	0.0%	2.3%	4.6%	6.9%	9.2%	11.5%	13.8%	16.1%	18.4%	20.7%	23.0%	25.3%	27.6%
SOUTH BEND	0.00%	0.0%	Population Growth	No	0.0%	2.3%	4.6%	6.9%	9.2%	11.5%	13.8%	16.1%	18.4%	20.7%	23.0%	25.3%	27.6%
INTERCONNECT(BLAINE, ETC.)	0.00%	0.0%	Population Growth	No	0.0%	1.9%	3.8%	5.8%	7.7%	9.7%	11.6%	13.6%	15.6%	17.5%	19.5%	21.5%	23.5%
UMATILLA	0.00%	0.0%	Population Growth	No	0.0%	0.6%	1.2%	1.8%	2.4%	3.0%	3.7%	4.3%	4.9%	5.6%	6.2%	6.8%	7.5%

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W&P

Regional Economic Demographics (W&P)

- Regional economic demographics data formulated by Woods and Poole was used to derive projected customer growth by town and year.
- Woods and Poole Employment, Income, Population, and Housing demographics were reviewed.
- Population growth formulated by Woods and Poole was determined to provide the best relationship for use in the demand study.
- Woods and Poole population growth assumes that a 1% growth in population translates to a 1% increase in customer growth.

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EIA Efficiency Factor

- Future gas demand, by citygate, was modified utilizing a calculated efficiency factor derived the U.S. Energy Information Administration's (EIA) 2014 Annual Energy Outlook.
- Cascade used the 2014 EIA forecast data for the entire U.S. While Cascade considered using forecast data for the Pacific Region, a region that contains both Washington and Oregon, this region is heavily influenced by California and its high population which Cascade does not serve.
- Cascade used figures from EIA's reference forecast case, or base case, to calculate the expected percentage change of natural gas consumption over the next 20 years.

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Annual Premise Count Projection

- The Annual Premise Count Projection by Year and citygate was based upon trend analysis of the Historical Premise Count data pulled from CC&B from 2010 to 2013 for each citygate, Year, and Tariff.
- Historical Premise Count by CityGate, Year, and Tariff was used to forward project premise count based upon the trend between premise count and time.
- This information is used as guide to assist Cascade when forecasting customer growth.

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Final Demand Forecast

- The Monthly Demand Forecast by year, month and citygate was based upon:
  - The calculated forecast for weather dependent load plus the most recent year's (2013) non weather dependent core load with applied growth factors
  - Core load was forecasted by citygate utilizing linear regression equations, unless the R^2 of a citygate's linear regression was below a 70% threshold, meaning HDD is not a good predictor of demand.
  - If the R^2 was below the 70% threshold, the demand from the most recent year was used and forecasted forward using the growth factors

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Demand Forecast

System Demand (Dtl	OR Forecast (Dt	WA Forecast (Dt	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS	MILTON-FREEWATER
4,440,509.98	1,094,674.34	3,345,835.64	8,806	63,178	18,806	780	3,362	86,927	1,708	6,245	38,332	7,782
3,637,972.95	907,928.14	2,730,044.80	7,076	49,909	15,143	667	2,846	69,587	1,315	5,307	32,467	6,177
3,200,600.27	792,880.59	2,407,719.68	5,836	40,953	12,569	619	2,546	56,710	1,001	4,815	29,105	4,837
2,342,383.50	599,432.94	1,742,950.56	4,105	29,518	8,924	500	1,963	39,189	647	3,783	22,506	3,272
1,547,658.94	404,988.26	1,142,670.68	2,681	18,928	5,943	376	1,311	24,615	301	2,654	15,153	2,154
906,607.94	225,787.07	680,820.87	1,621	9,830	3,707	246	672	13,914	21	1,525	7,929	1,448
672,443.86	145,227.70	527,216.16	1,427	5,329	3,311	185	345	11,860	-	963	4,236	1,378
665,354.18	147,870.25	517,483.94	1,430	5,619	3,317	187	354	11,889	-	979	4,339	1,381
1,004,865.30	241,526.88	763,338.41	1,715	11,633	3,906	255	715	14,877	79	1,600	8,411	1,494
2,181,690.95	542,104.15	1,639,586.80	3,925	29,196	8,557	452	1,696	37,276	627	3,327	19,501	3,168
3,513,066.63	865,653.06	2,647,413.57	6,744	47,231	14,465	647	2,706	66,032	1,210	5,085	30,908	5,848
4,666,254.57	1,152,027.76	3,514,226.81	9,265	63,245	19,769	825	3,589	91,591	1,710	6,641	40,892	8,242
4,491,271.28	1,110,346.79	3,380,924.48	8,859	63,256	18,918	785	3,382	87,452	1,710	6,385	38,450	7,829

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High Case Peak Demand Day Forecast

- The Annual Peak Day Forecast ensures that Cascade can continue to provide adequate heating to its customers even under extreme conditions which are far colder than the norm.
  - To determine the system wide peak demand day, HDD's from all seven weather stations are considered, giving appropriate weight to the weather stations having the greater impact on system wide demand.
  - It was found that December 21, 1990 was the highest system weighted HDD for this period.
  - The peak demand day was then derived from the highest HDD by applying the actual HDD from the peak day for the 30 year period to the linear regression equation for each citygate . Thus all citygates associated with the Bellingham weather station, for example, use the HDD calculated for Bellingham for December 21, 1990, and similarly for all the other weather stations and citygates. This provides a highest demand scenario for peak demand load based on 30 years of weather history for each citygate.

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High Case Peak Demand Day Forecast

Forecast Tin	Peak Day Demand (Dt	OR Peak Day (D	WA Peak Day (D	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS
2015	328,251.50	85,605.12	242,646.38	683	4,195	1,444	59	279	6,862	124	501	3,168
2016	332,090.25	86,859.49	245,230.76	687	4,200	1,453	59	281	6,904	124	512	3,177
2017	335,951.88	88,118.65	247,833.23	691	4,205	1,462	60	283	6,946	124	523	3,188
2018	339,838.88	89,383.44	250,455.44	696	4,211	1,471	60	284	6,988	124	534	3,198
2019	343,744.71	90,652.34	253,092.37	700	4,217	1,479	60	286	7,031	124	546	3,210
2020	347,655.23	91,921.09	255,734.14	704	4,223	1,488	61	288	7,074	124	557	3,221
2021	351,588.25	93,195.04	258,393.21	708	4,230	1,497	61	290	7,118	125	568	3,233
2022	355,523.53	94,468.87	261,054.66	713	4,236	1,507	61	291	7,161	125	579	3,245
2023	359,457.96	95,741.71	263,716.25	717	4,242	1,516	62	293	7,205	125	591	3,258
2024	363,405.51	97,017.05	266,388.46	721	4,249	1,525	62	295	7,248	125	602	3,270
2025	367,339.20	98,288.49	269,050.71	726	4,255	1,534	63	297	7,292	125	613	3,283

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Expected Peak Demand Day Forecast

- Expected peak day demand in a given year is calculated based on the average of the peak demand days for each of the last 30 years. The actual HDD from each of those 30 peak days is averaged for each weather station resulting in an average peak HDD. Applying the associated average peak HDD to the forecast model for each citygate yields an expected peak demand for each citygate.
- For citygates where demand is not weather dependent, the peak demand day cannot be calculated by applying an associated HDD. Instead, peak demand for these citygates becomes the average daily demand for the month in which the system peak day falls. Cascade includes a multiplier to the average daily demand number to increase the figure to a more realistic peak demand.
- To determine both the high case and expected peak demand day for a given projected year, growth factors are applied. Peak day demand is in turn calculated for each citygate for each year of the twenty year forecast.

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Expected Peak Demand Day Forecast

Forecast Tin	Peak Day Demand (Dt	OR Peak Day (D	WA Peak Day (D	ATHENA	BAKER	UMATILLA	CHEMULT	GILCHRIST	HERMISTON	HUNTINGTON	LA PINE	MADRAS
2015	238,379.82	59,823.86	178,555.96	498	3,013	1,056	41	190	4,980	86	344	2,158
2016	241,162.21	60,690.50	180,471.71	501	3,017	1,062	41	191	5,010	86	352	2,165
2017	243,961.23	61,560.49	182,400.74	504	3,021	1,069	42	192	5,041	86	360	2,172
2018	246,778.70	62,434.44	184,344.26	507	3,025	1,075	42	194	5,072	86	367	2,179
2019	249,609.88	63,311.26	186,298.61	510	3,030	1,082	42	195	5,103	87	375	2,187
2020	252,444.49	64,187.99	188,256.50	513	3,034	1,088	43	196	5,134	87	383	2,195
2021	255,295.44	65,068.34	190,227.10	517	3,038	1,095	43	197	5,166	87	391	2,203
2022	258,148.06	65,948.62	192,199.44	520	3,043	1,101	43	198	5,197	87	398	2,211
2023	261,000.08	66,828.22	194,171.86	523	3,047	1,108	43	199	5,229	87	406	2,220
2024	263,861.65	67,709.57	196,152.08	526	3,052	1,115	44	201	5,260	87	414	2,228
2025	266,713.14	68,588.19	198,124.96	529	3,057	1,121	44	202	5,292	87	422	2,237

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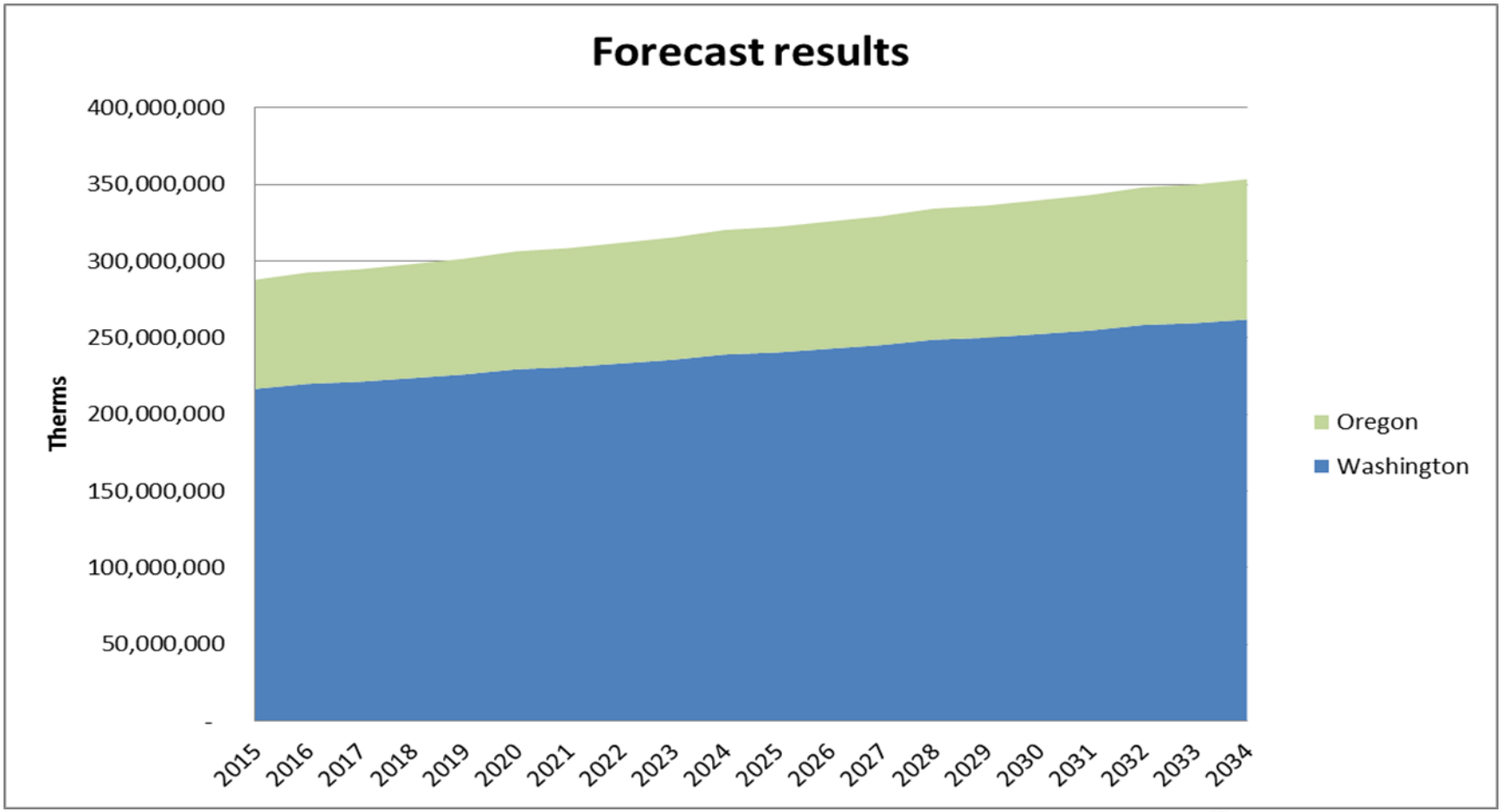
Forecast Results



Summary

- Cascade core customer demand is expected to grow modestly over the coming 20 years
- Growth is primarily dependent upon regional population and economical growth and natural gas efficiency gains
- Weather plays a big role in demand for any given year
- Unforeseen and unanticipated regional demand shifts are not included in the Forecast model

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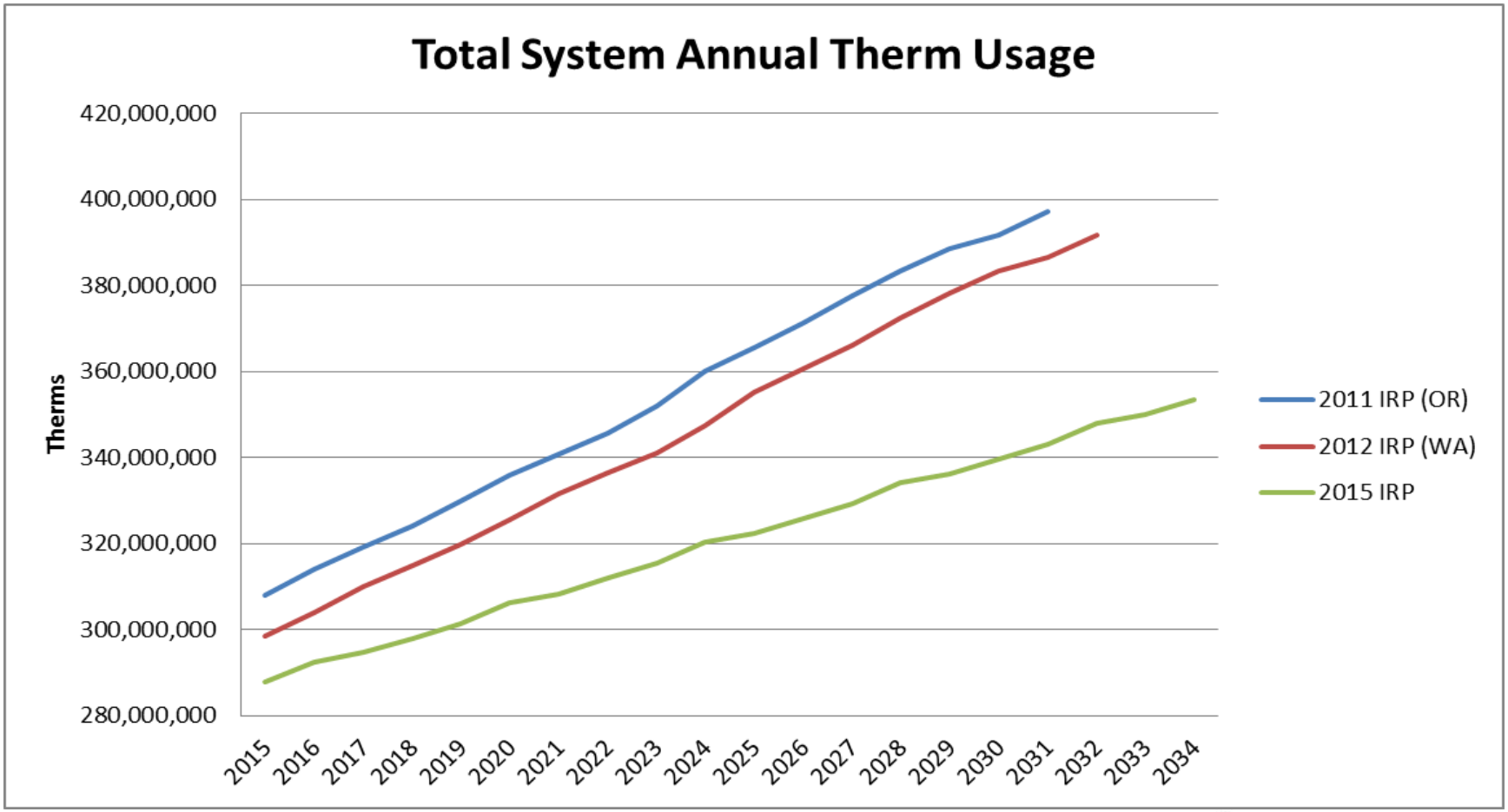
Total System



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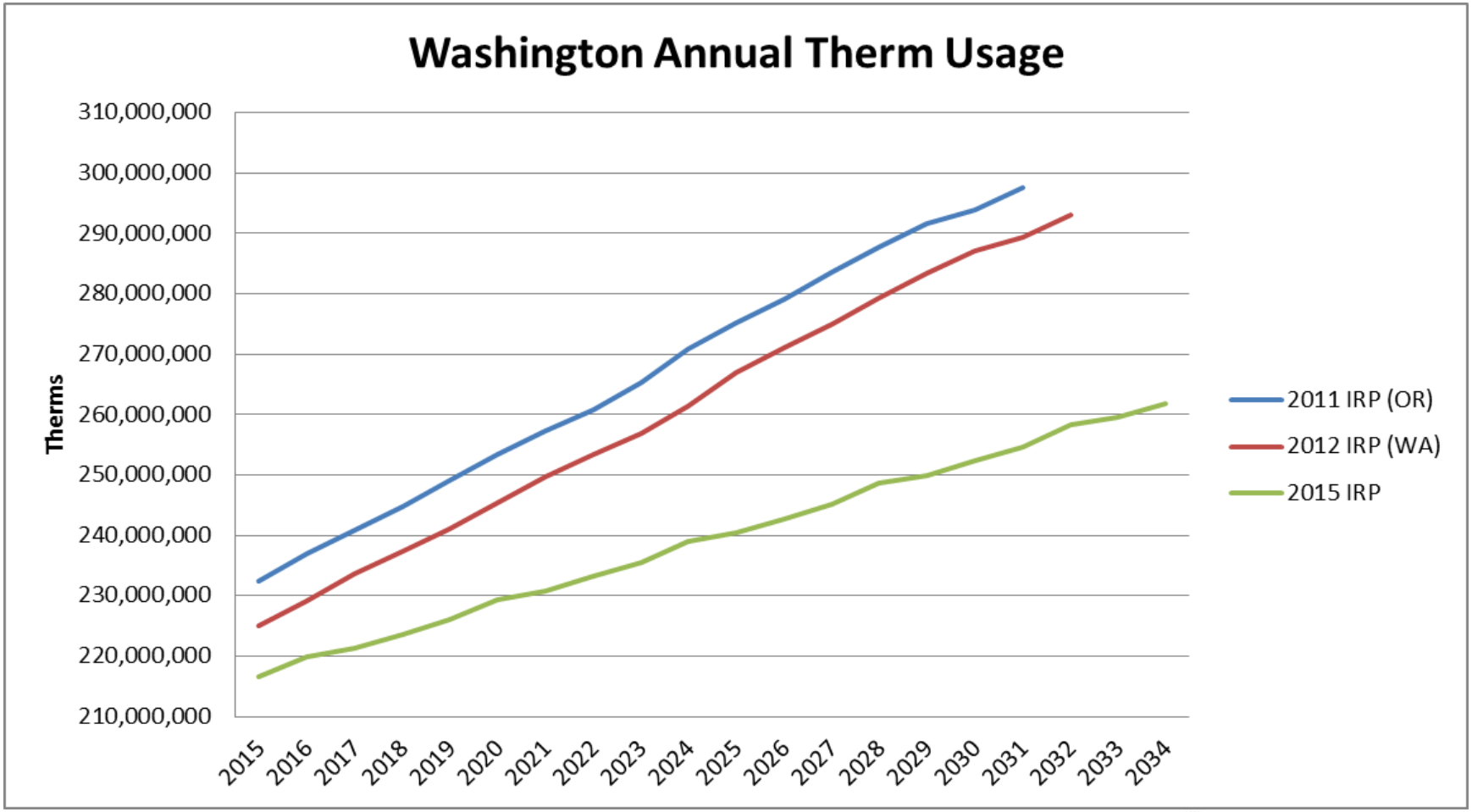
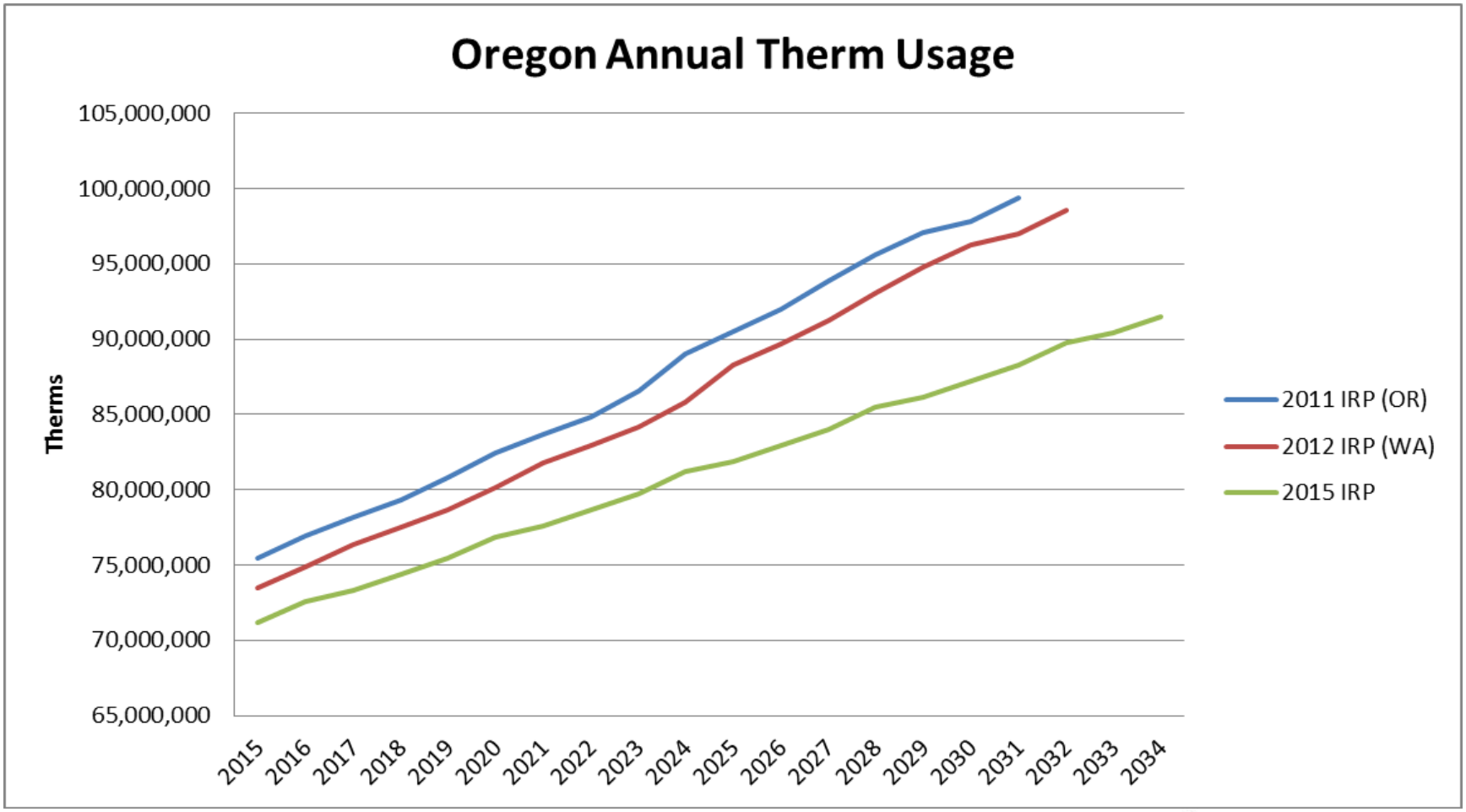
Washington


Washington Annual Therm Usage
Therms
310,000,000
300,000,000
290,000,000
280,000,000
270,000,000
260,000,000
250,000,000
240,000,000
230,000,000
220,000,000
210,000,000
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Oregon



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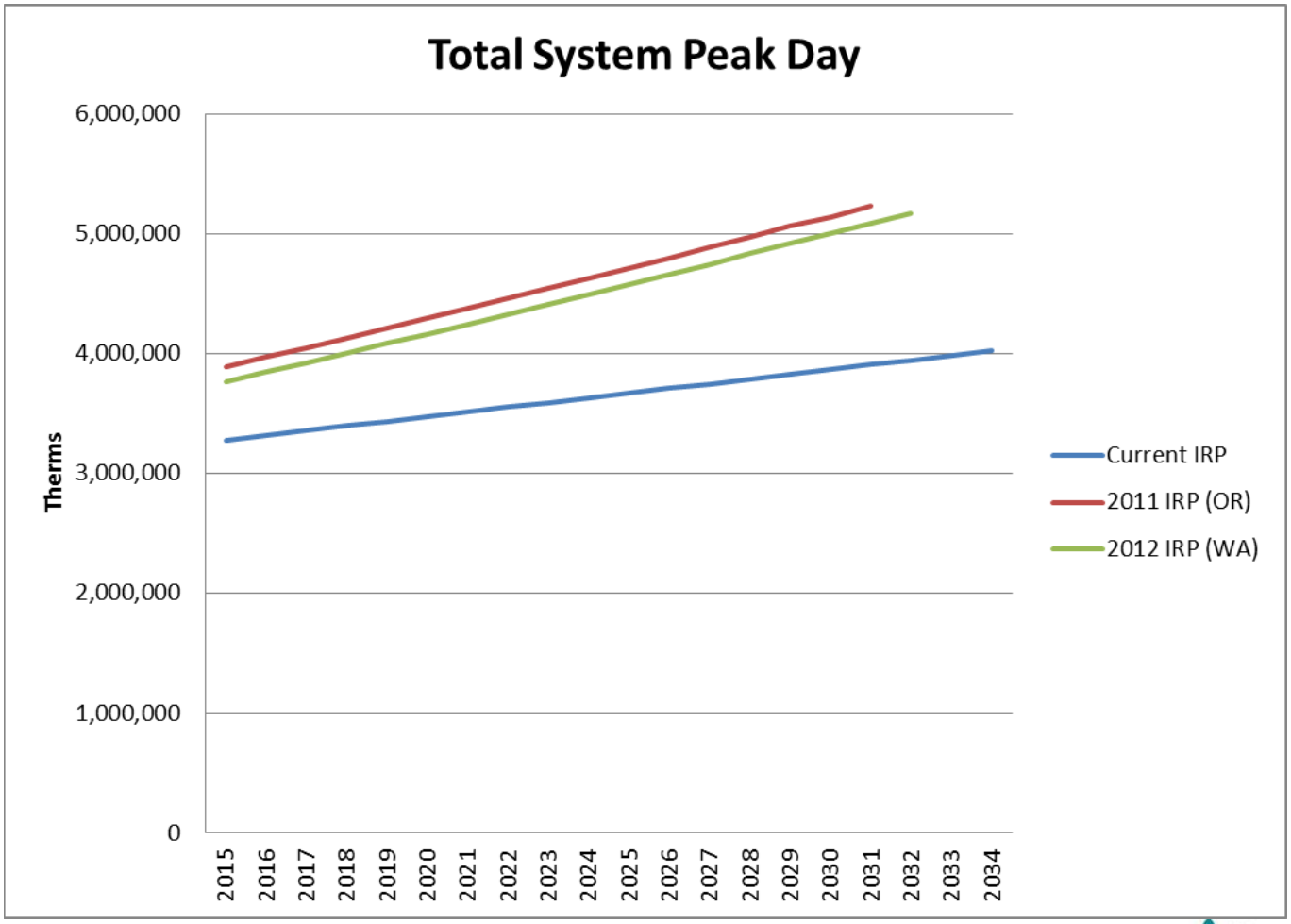
Total System Peak Day Comparison to previous IRP's



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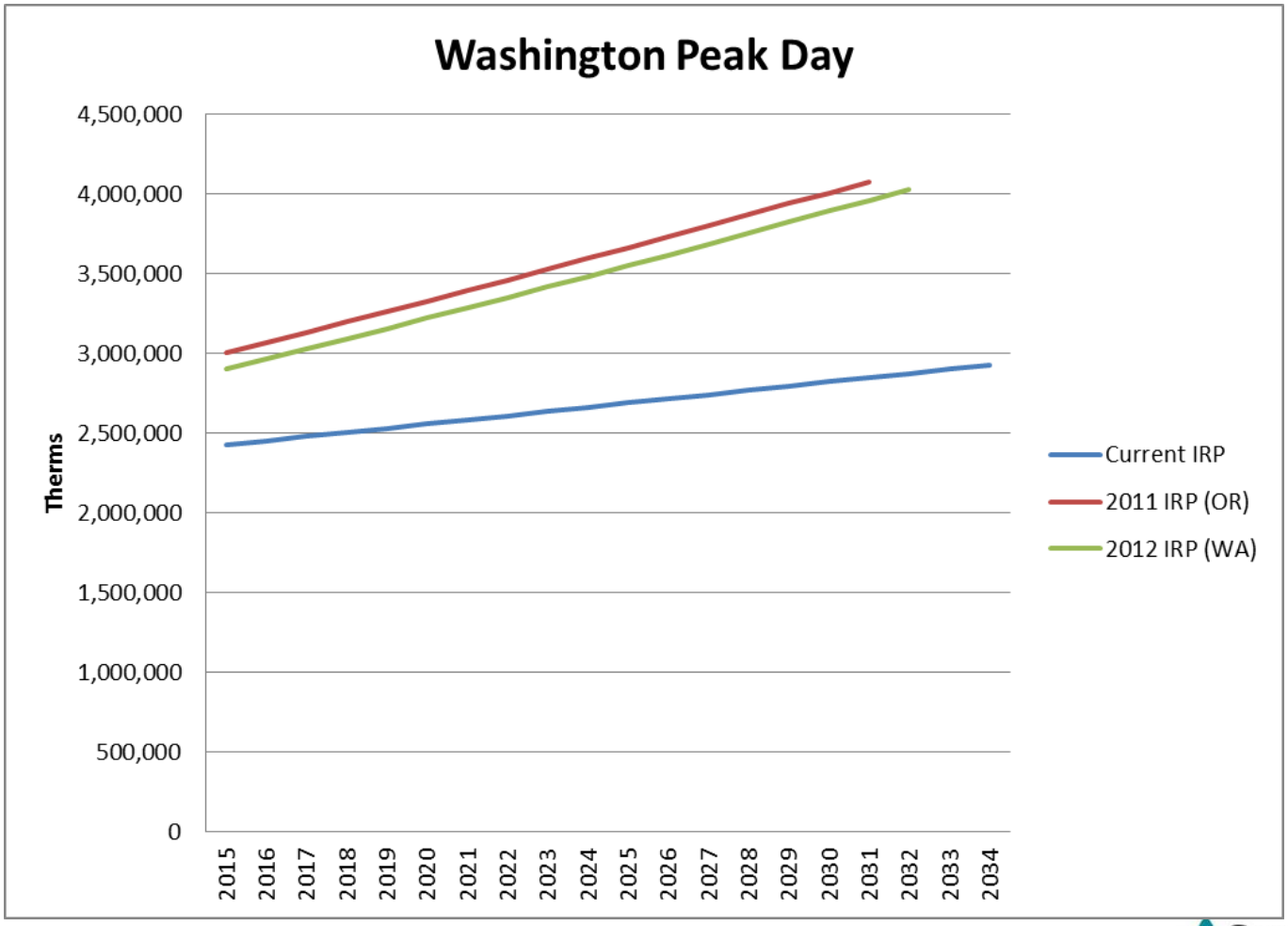
Washington Peak Day Comparison to previous IRP's



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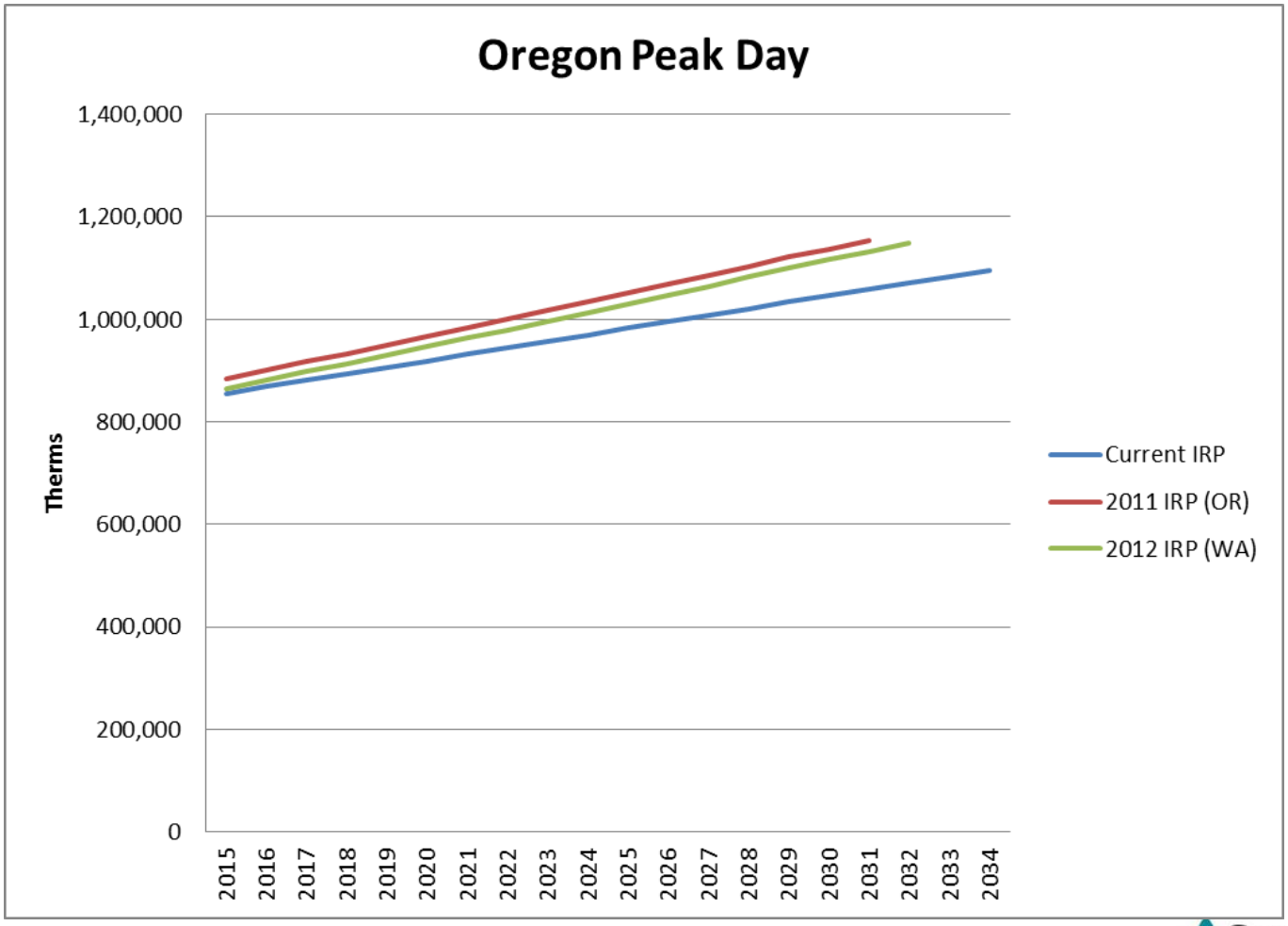
Oregon Peak Day Comparison to previous IRP's



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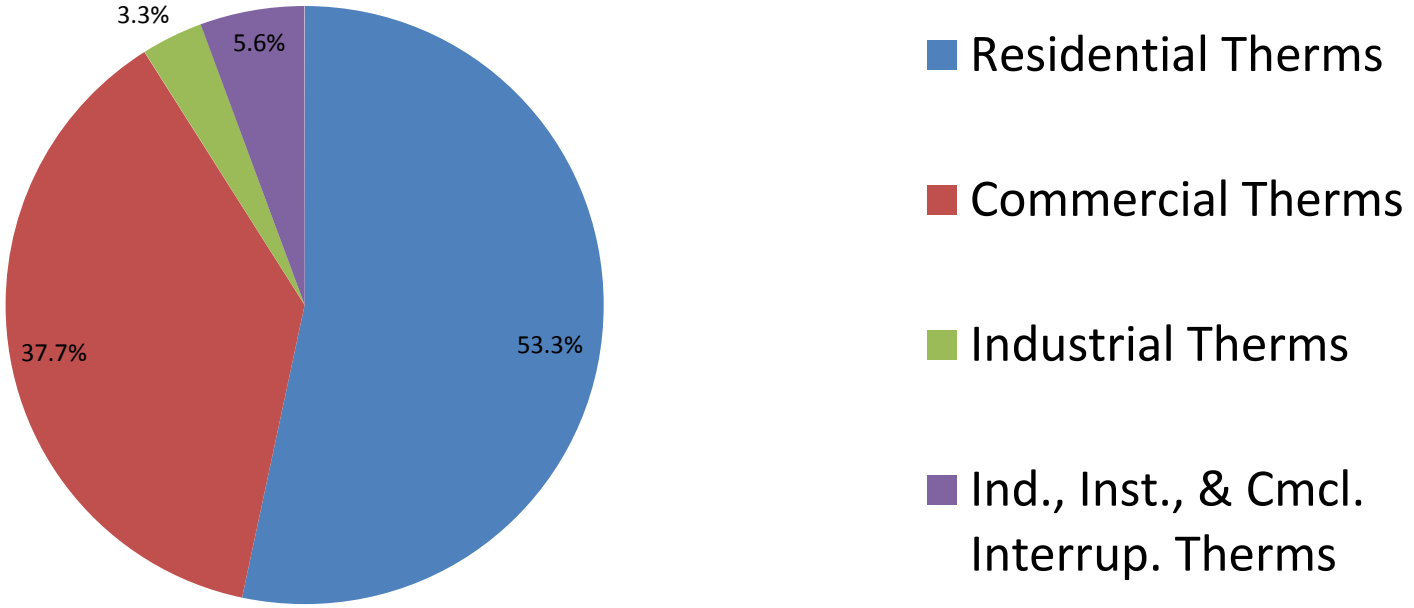
Oregon Tariff Breakout

Oregon



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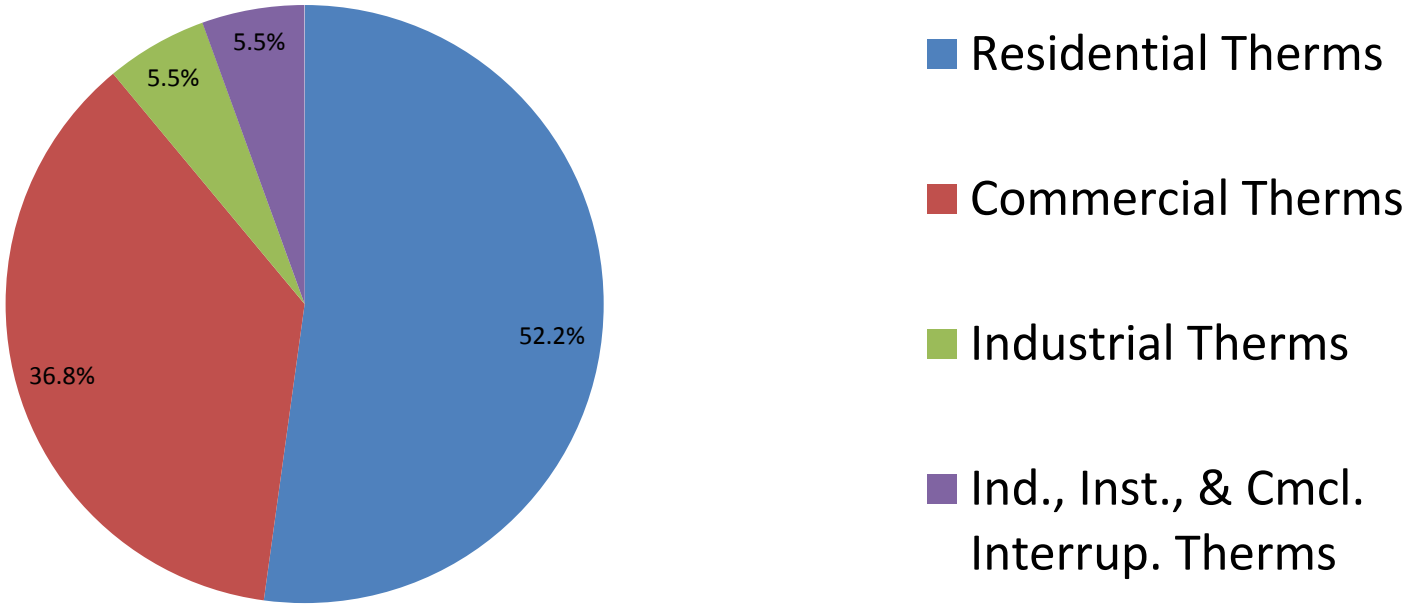
Washington Tariff Breakout

Washington



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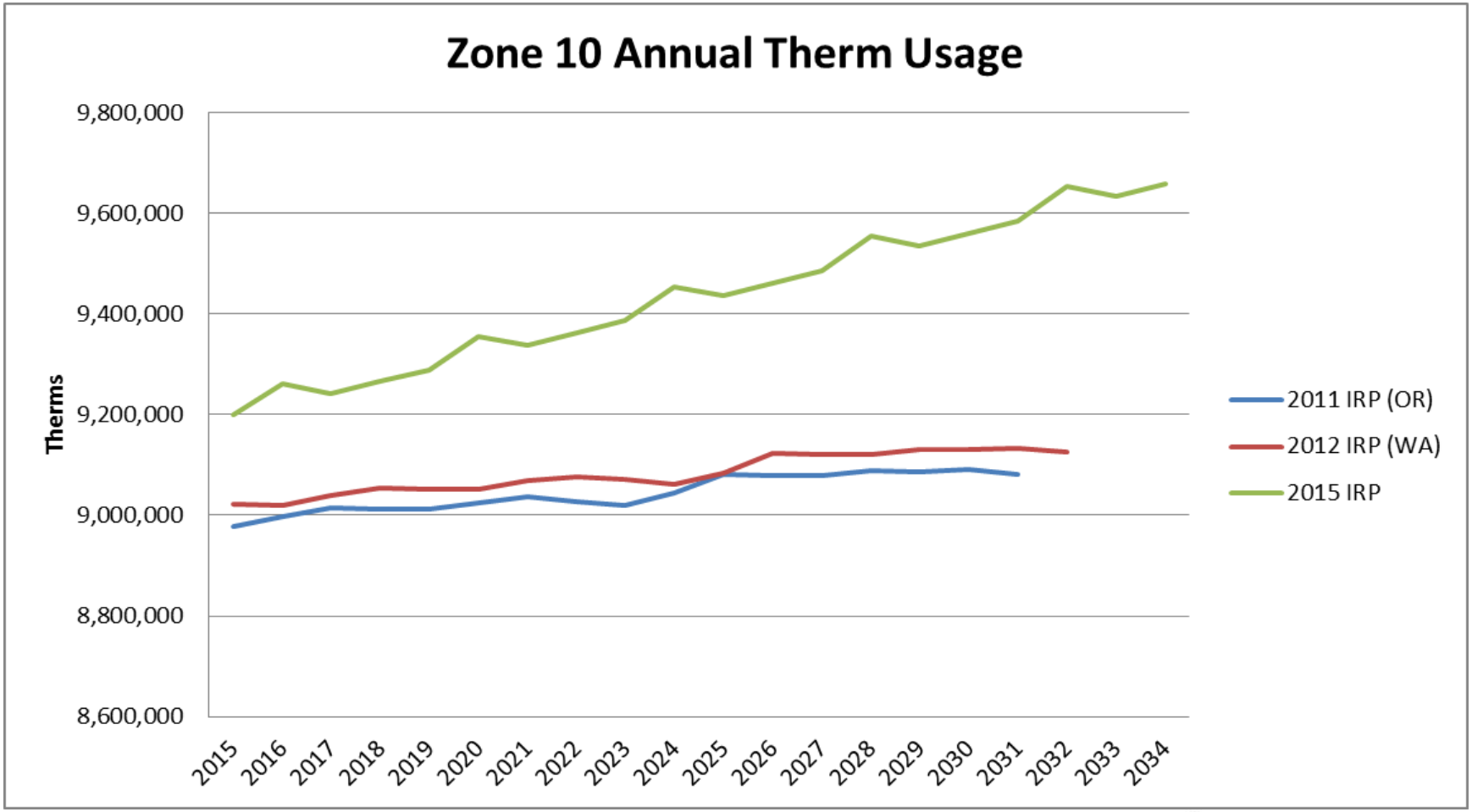
Zone 10



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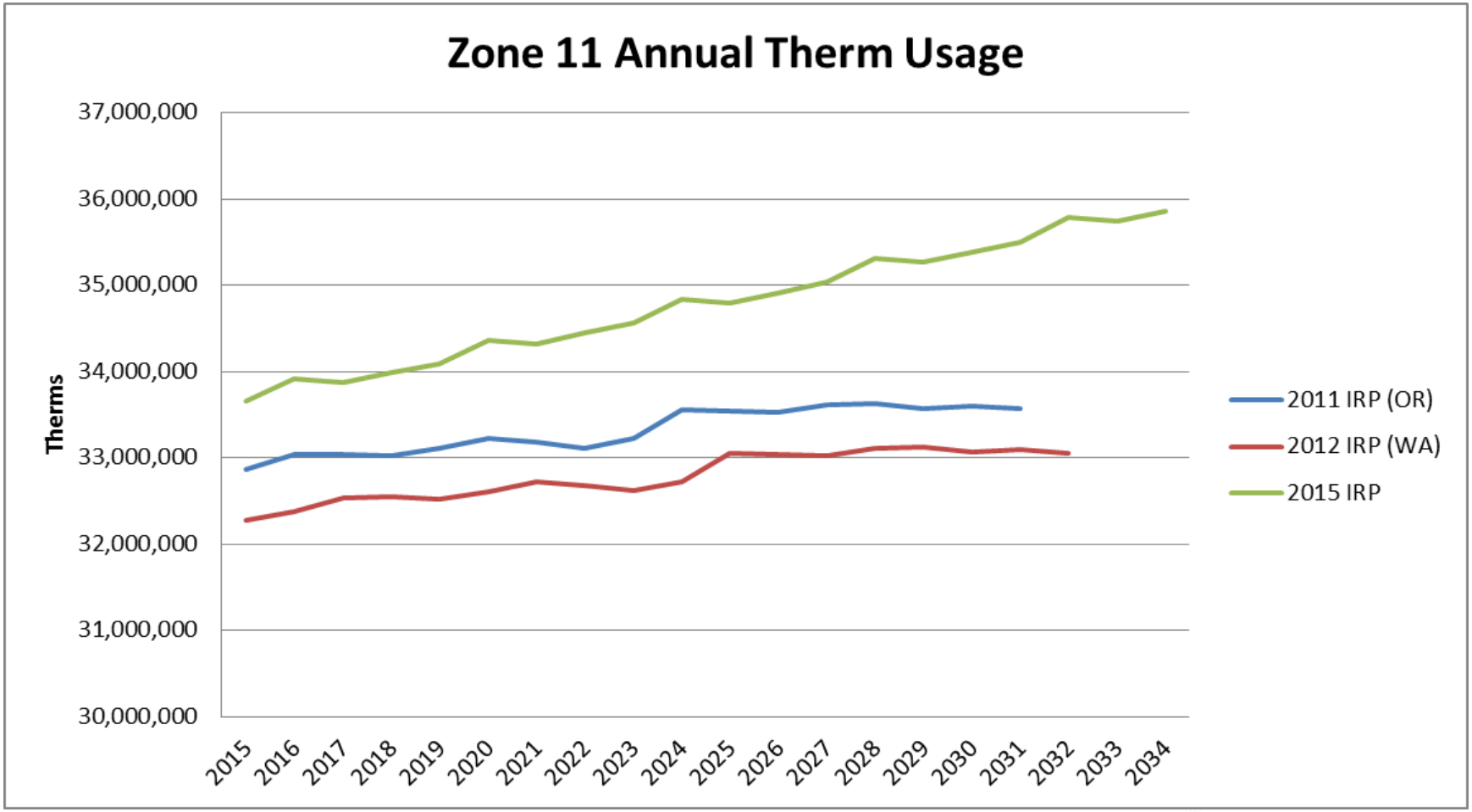
Zone 11


Zone 11 Annual Therm Usage
Therms
37,000,000
36,000,000
35,000,000
34,000,000
33,000,000
32,000,000
31,000,000
30,000,000
2015
2016
2017
2018
2019
2020
2021
2022
2023
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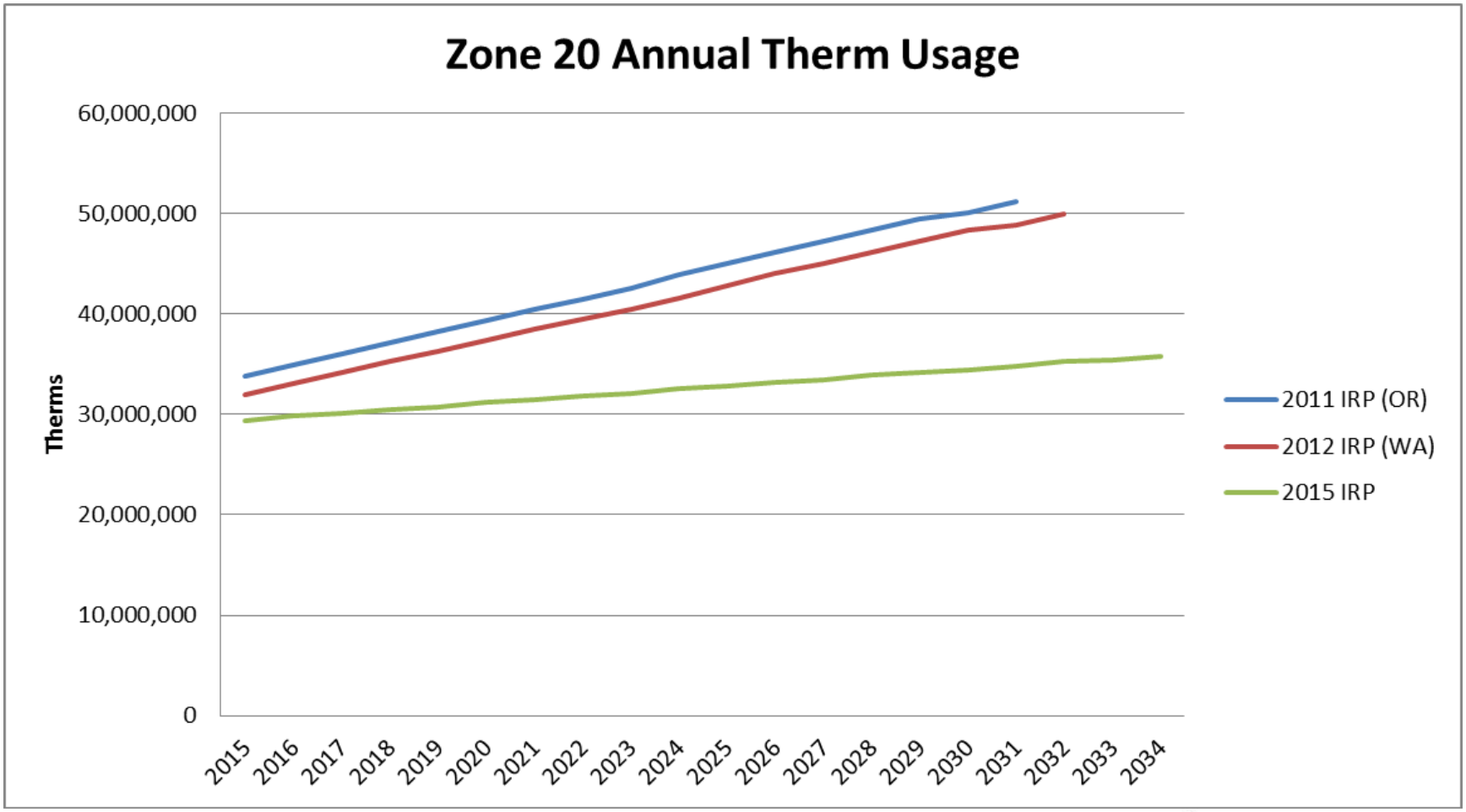
2028
2029
2030
2031
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone 20


Zone 20 Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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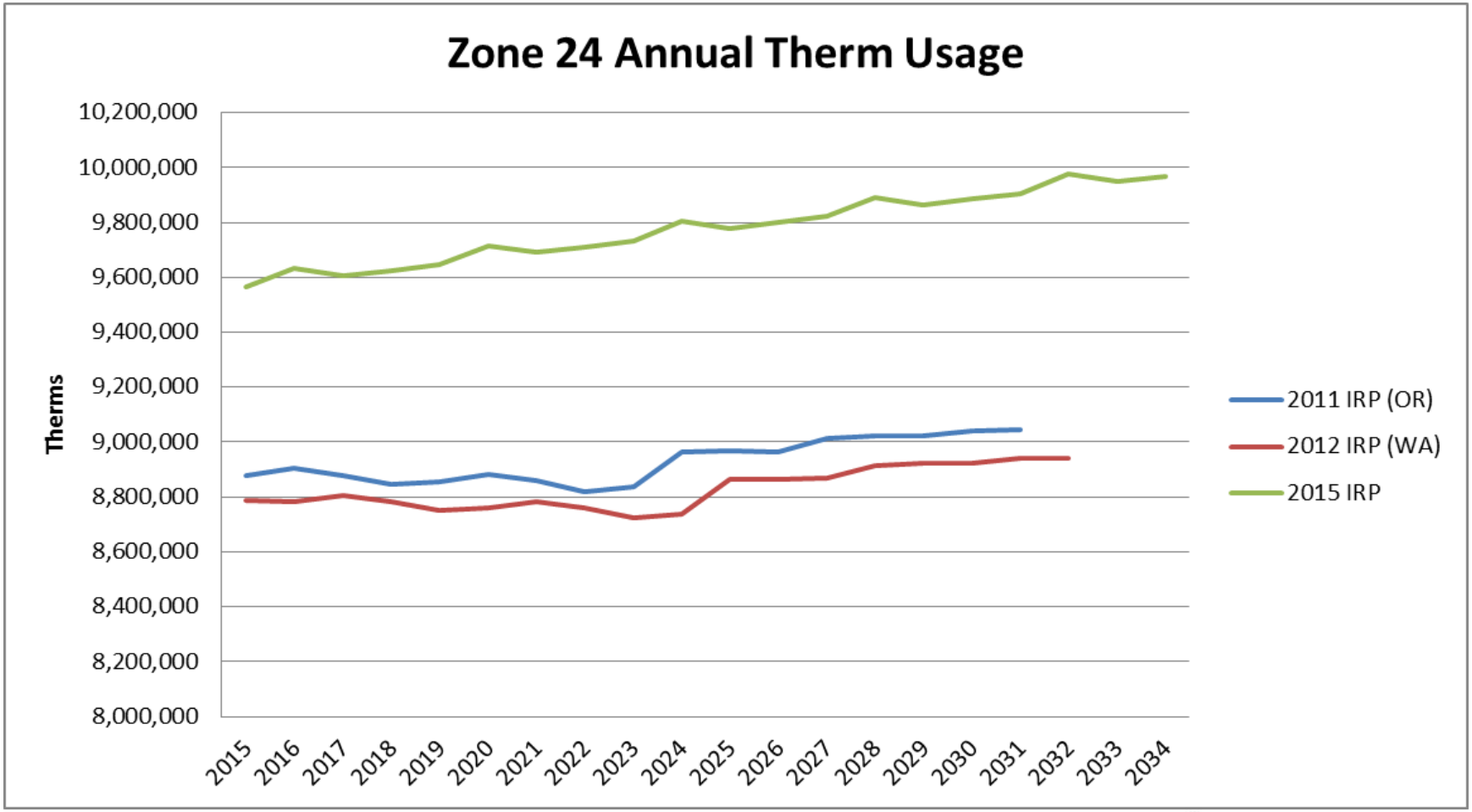
2028
2029
2030
2031
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone 24


Zone 24 Annual Therm Usage
Therms
10,200,000
10,000,000
9,800,000
9,600,000
9,400,000
9,200,000
9,000,000
8,800,000
8,600,000
8,400,000
8,200,000
8,000,000
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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2029
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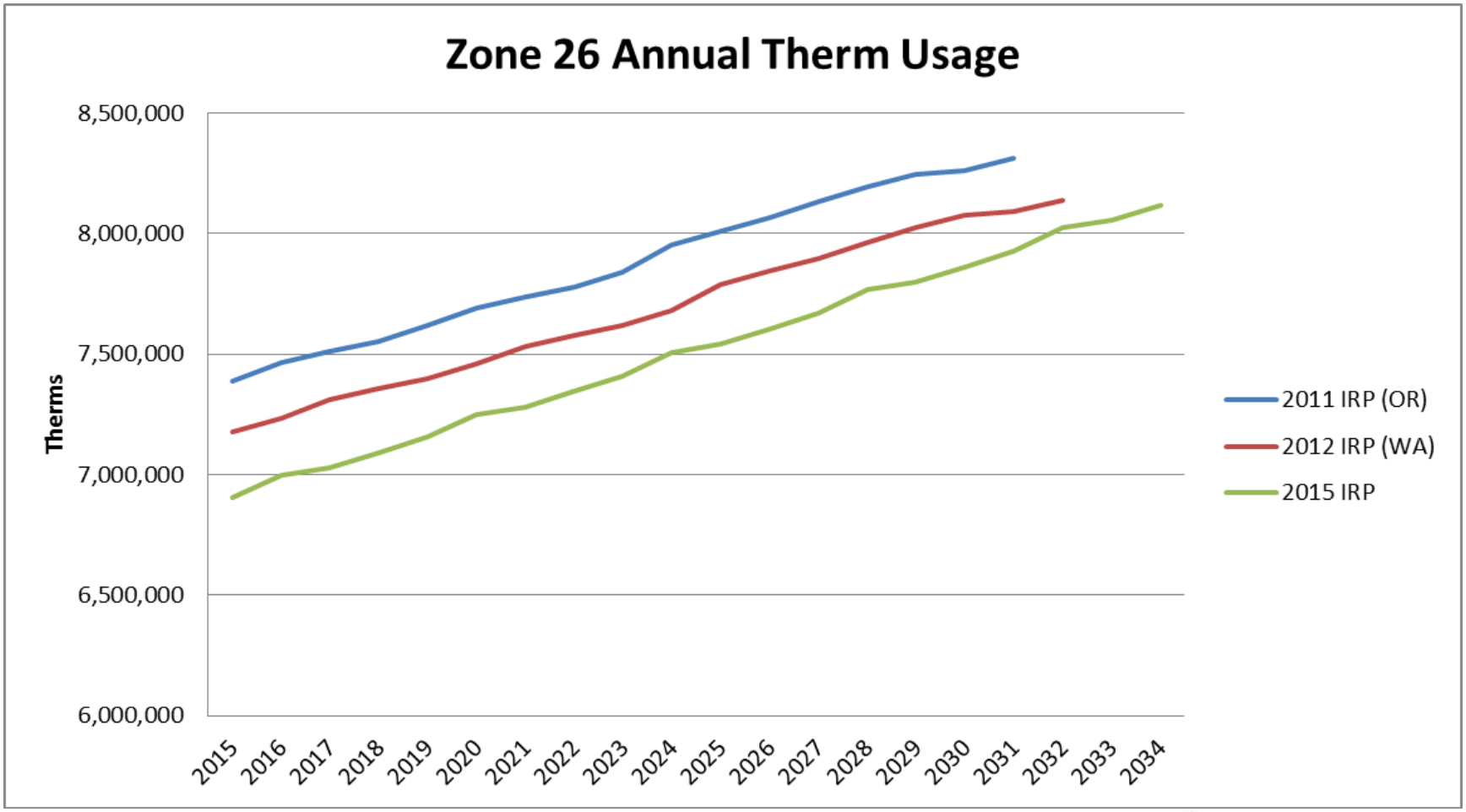
2031
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone 26


Zone 26 Annual Therm Usage
Therms
8,500,000
8,000,000
7,500,000
7,000,000
6,500,000
6,000,000
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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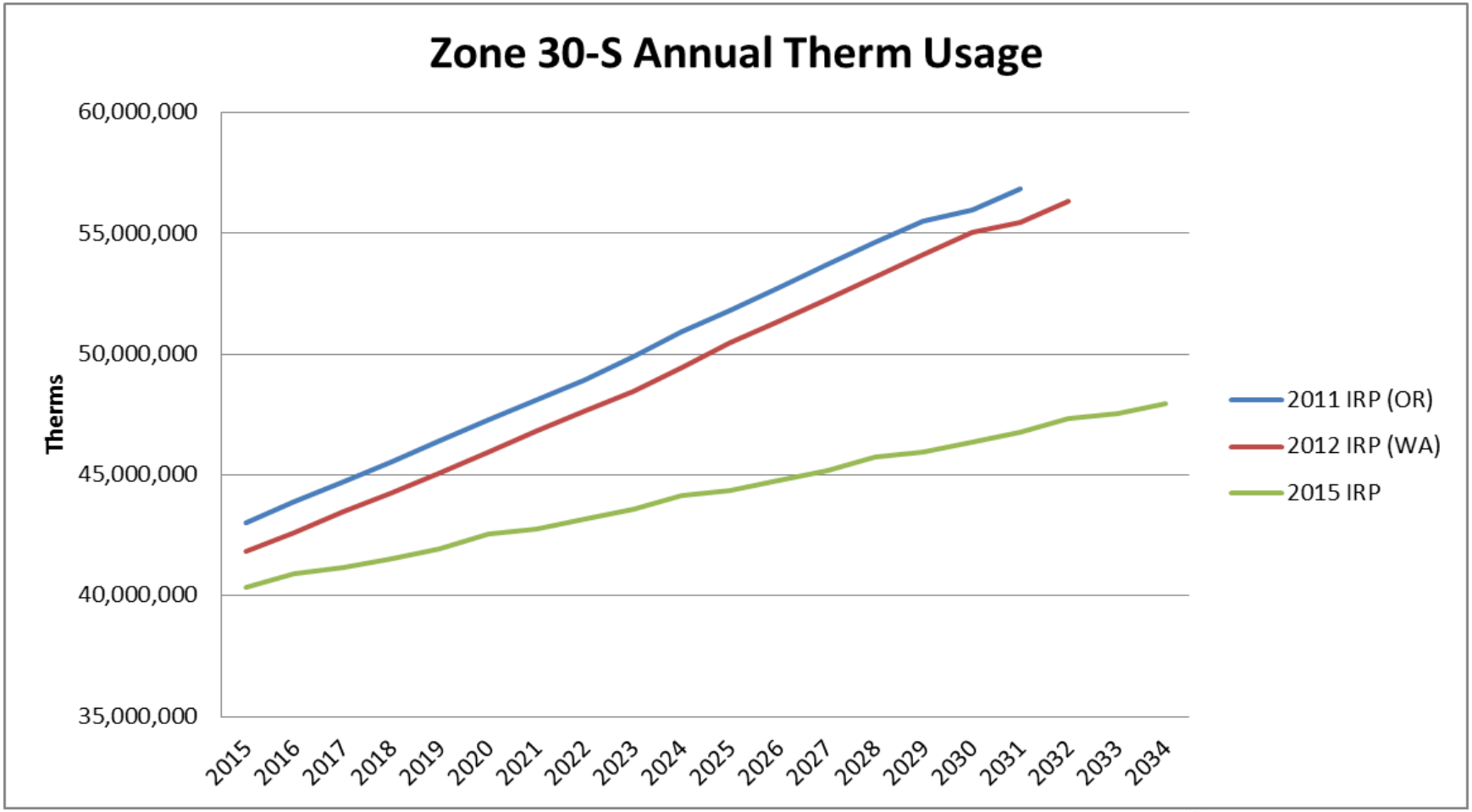
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone 30-S


Zone 30-S Annual Therm Usage
Therms
60,000,000
55,000,000
50,000,000
45,000,000
40,000,000
35,000,000
2015
2016
2017
2018
2019
2020
2021
2022
2023
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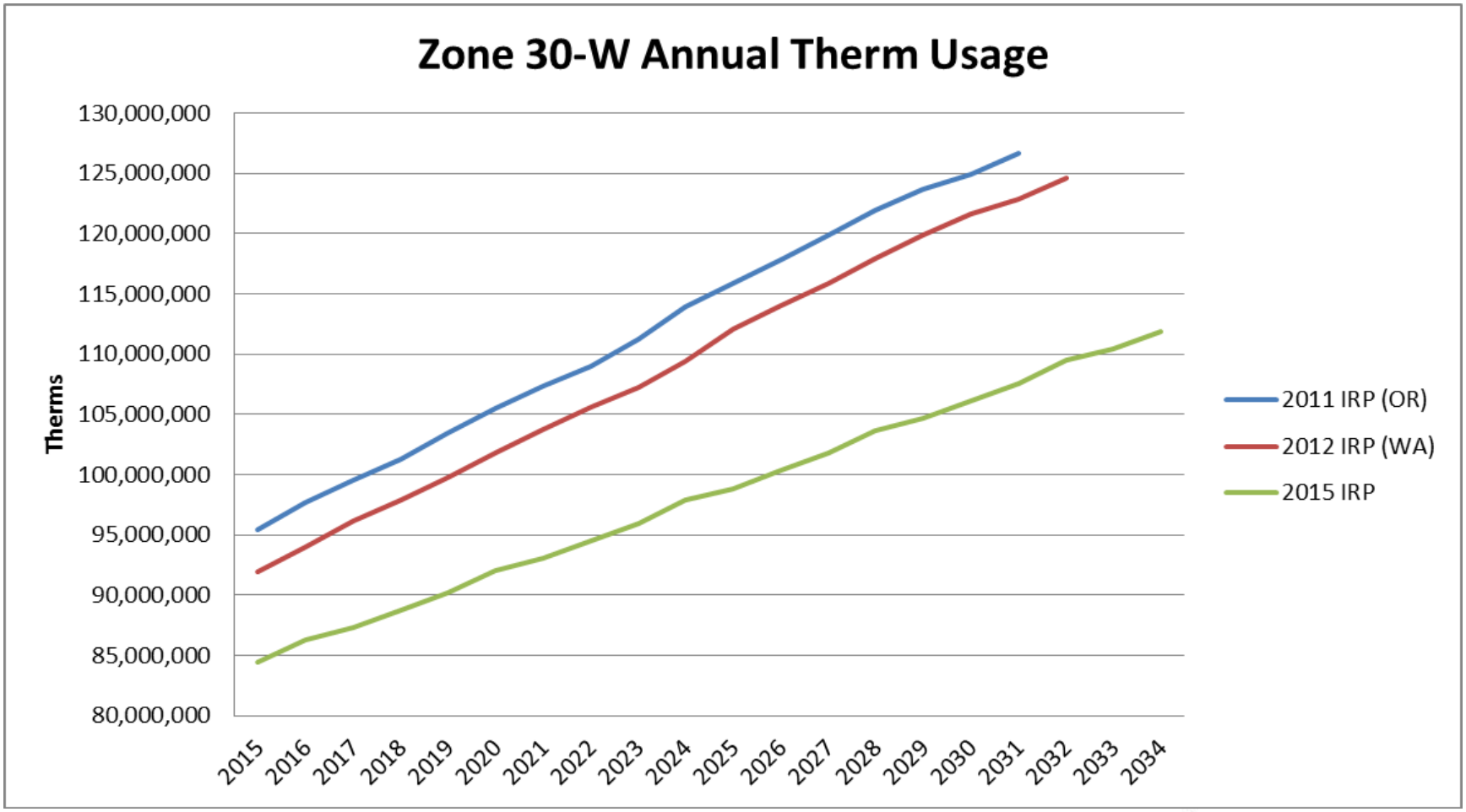
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone 30-W


Zone 30-W Annual Therm Usage
Therms
130,000,000
125,000,000
120,000,000
115,000,000
110,000,000
105,000,000
100,000,000
95,000,000
90,000,000
85,000,000
80,000,000
2015
2016
2017
2018
2019
2020
2021
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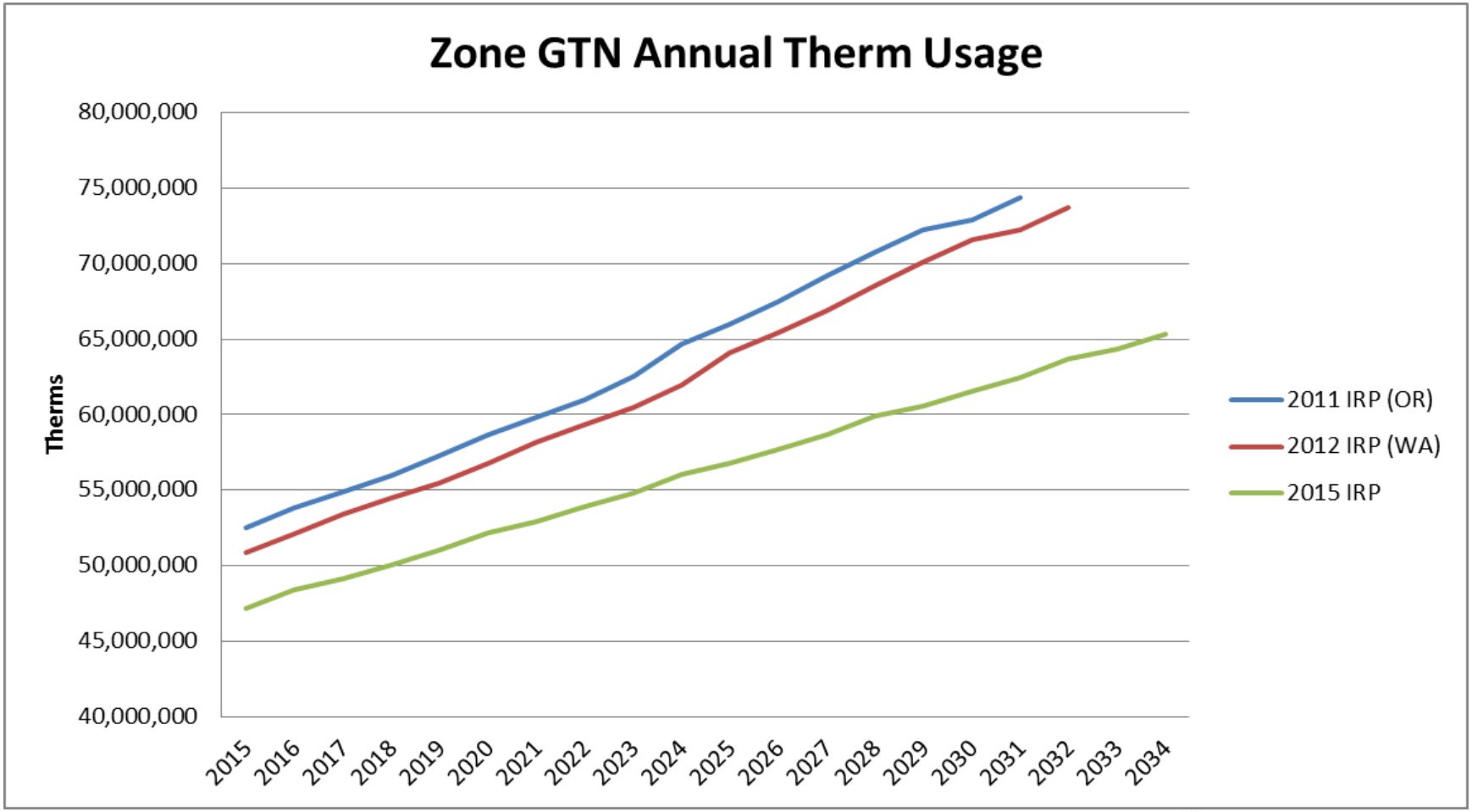
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone GTN


Zone GTN Annual Therm Usage
Therms
80,000,000
75,000,000
70,000,000
65,000,000
60,000,000
55,000,000
50,000,000
45,000,000
40,000,000
2015
2016
2017
2018
2019
2020
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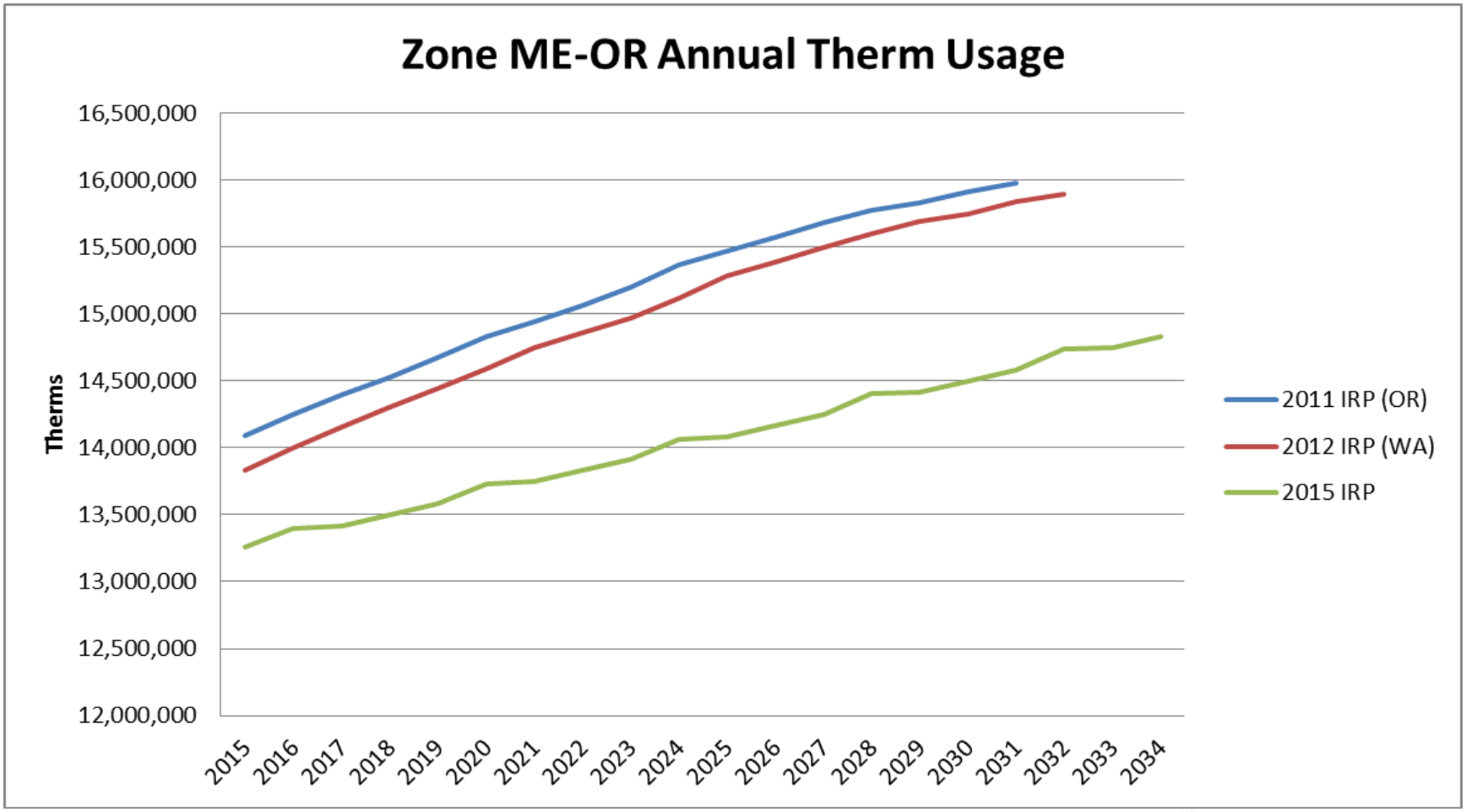
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone ME-OR


Zone ME-OR Annual Therm Usage
Therms
16,500,000
16,000,000
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
2015
2016
2017
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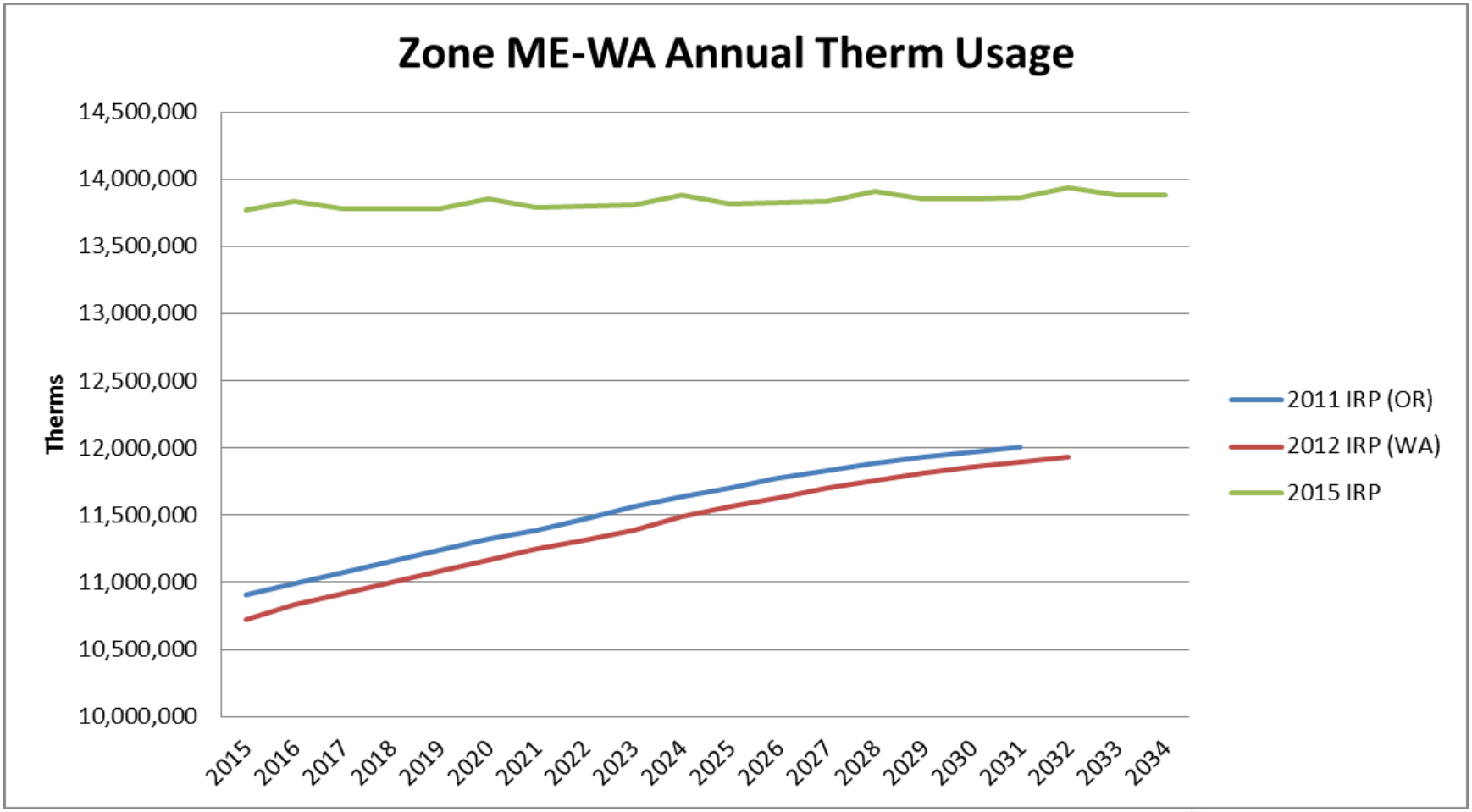
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Zone ME-WA


Zone ME-WA Annual Therm Usage
Therms
14,500,000
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
11,500,000
11,000,000
10,500,000
10,000,000
2015
2016
2017
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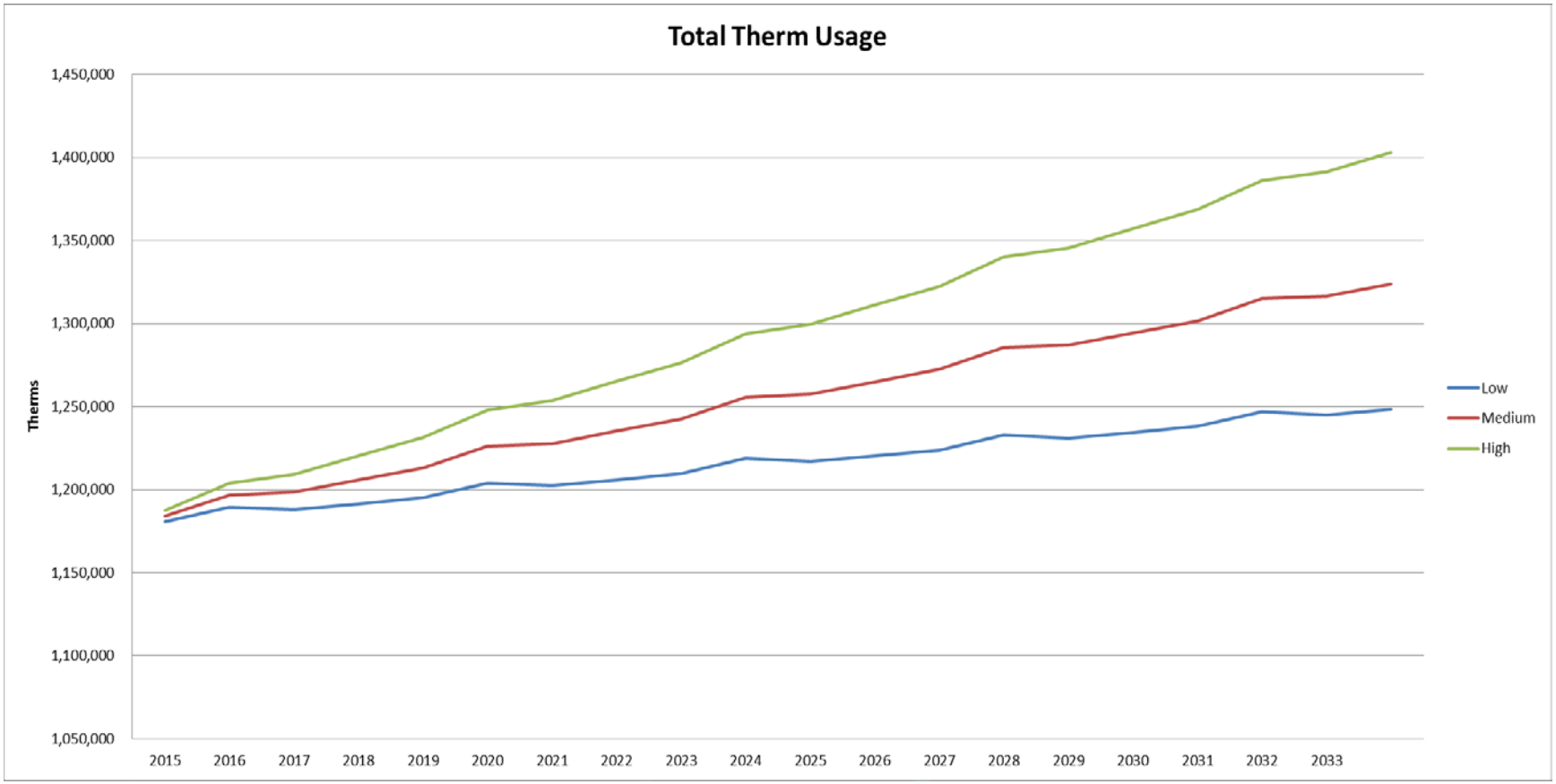
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2011 IRP (OR)
2012 IRP (WA)
2015 IRP

Umatilla With Average Weather



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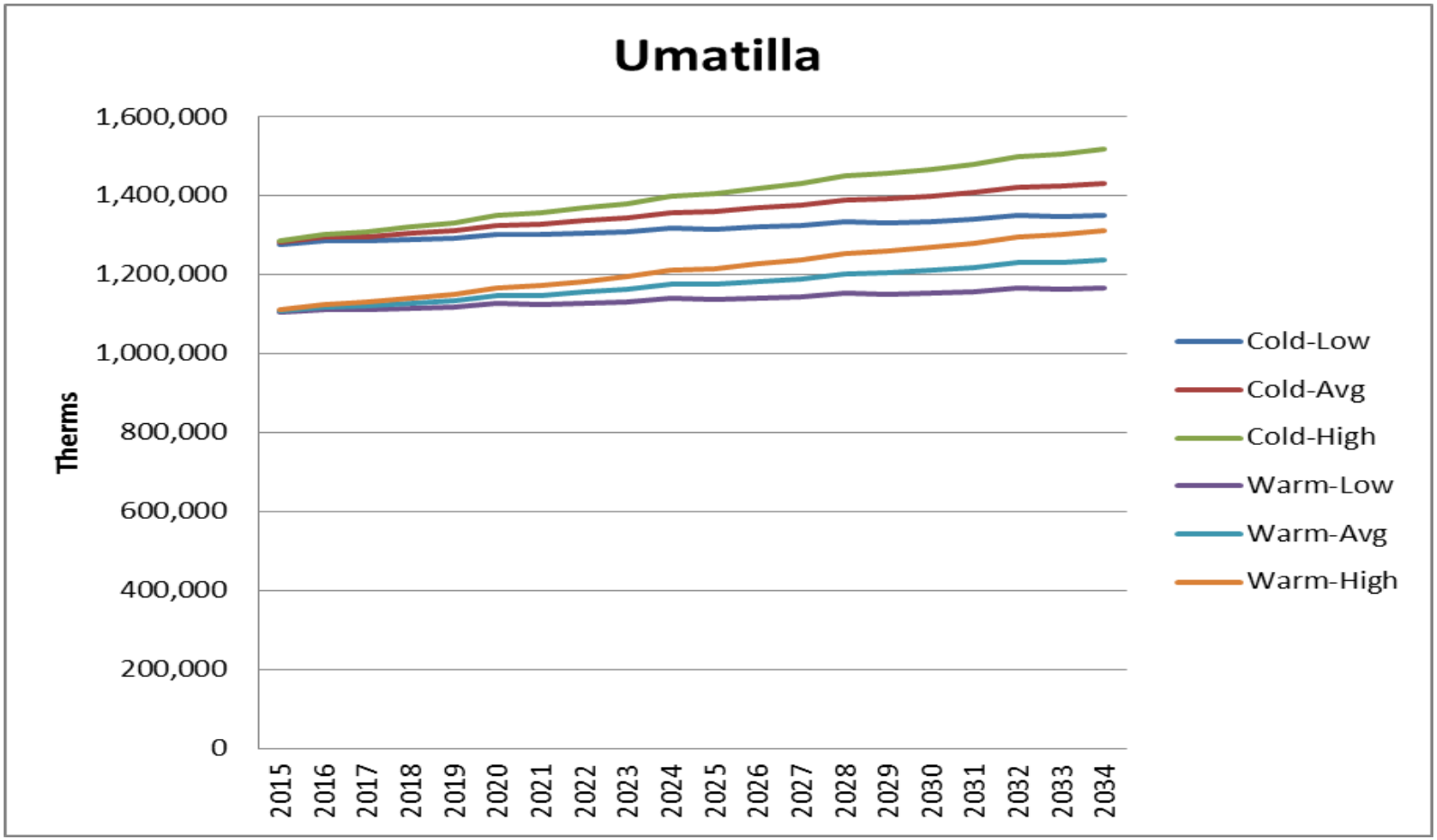
Umatilla with High and Low Weather Scenarios



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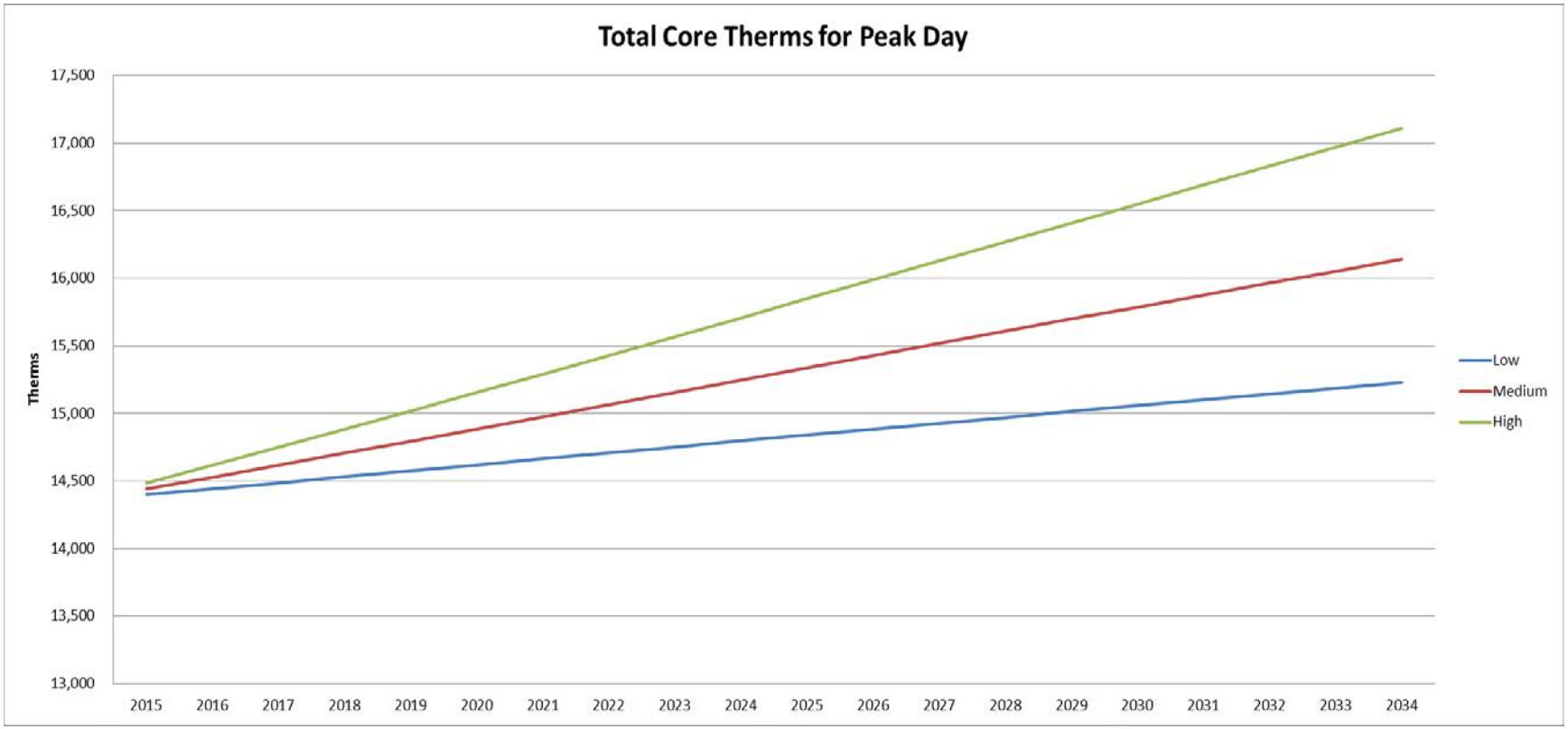
Umatilla Peak Day



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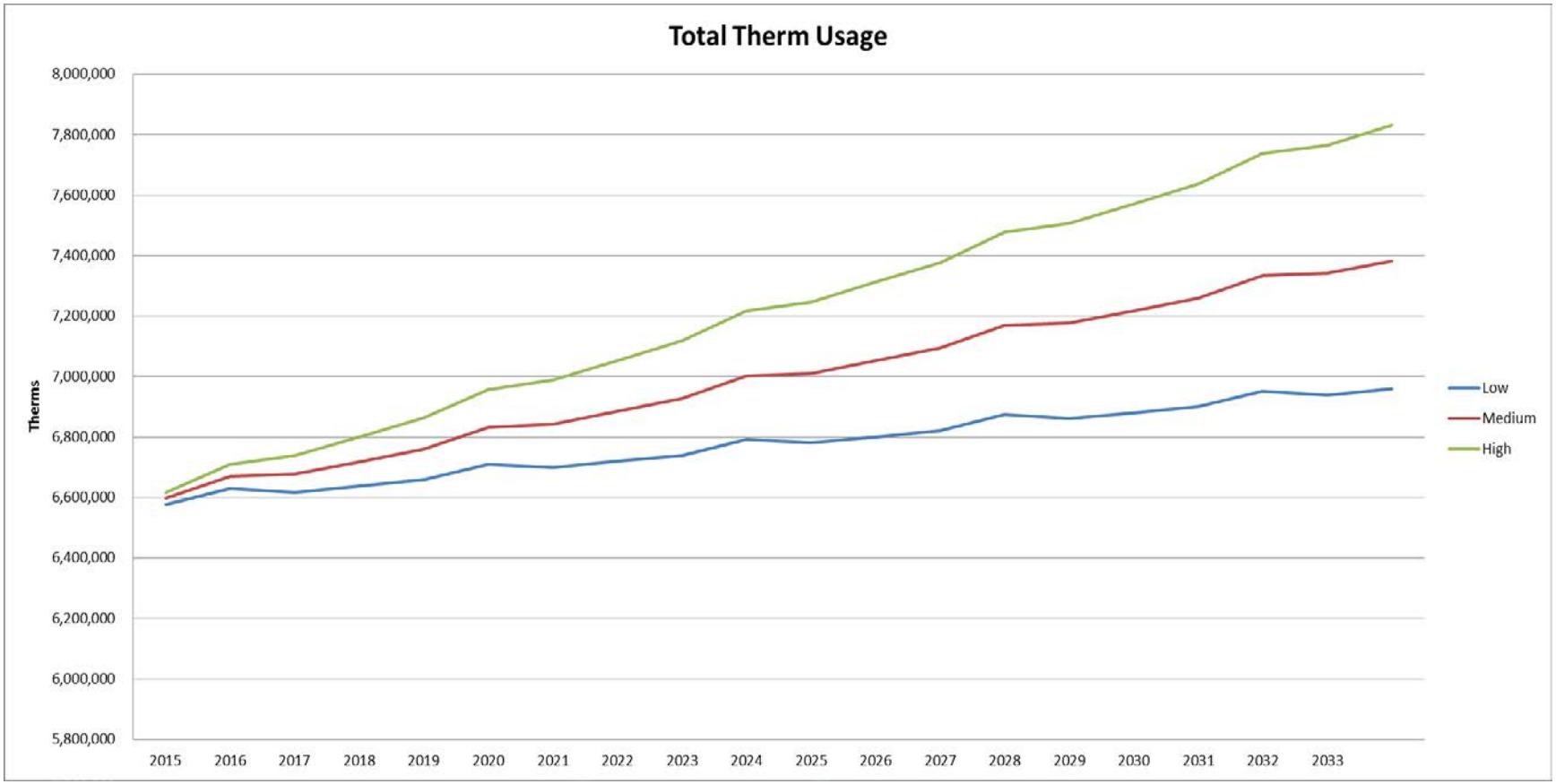
Pendleton with Average Weather



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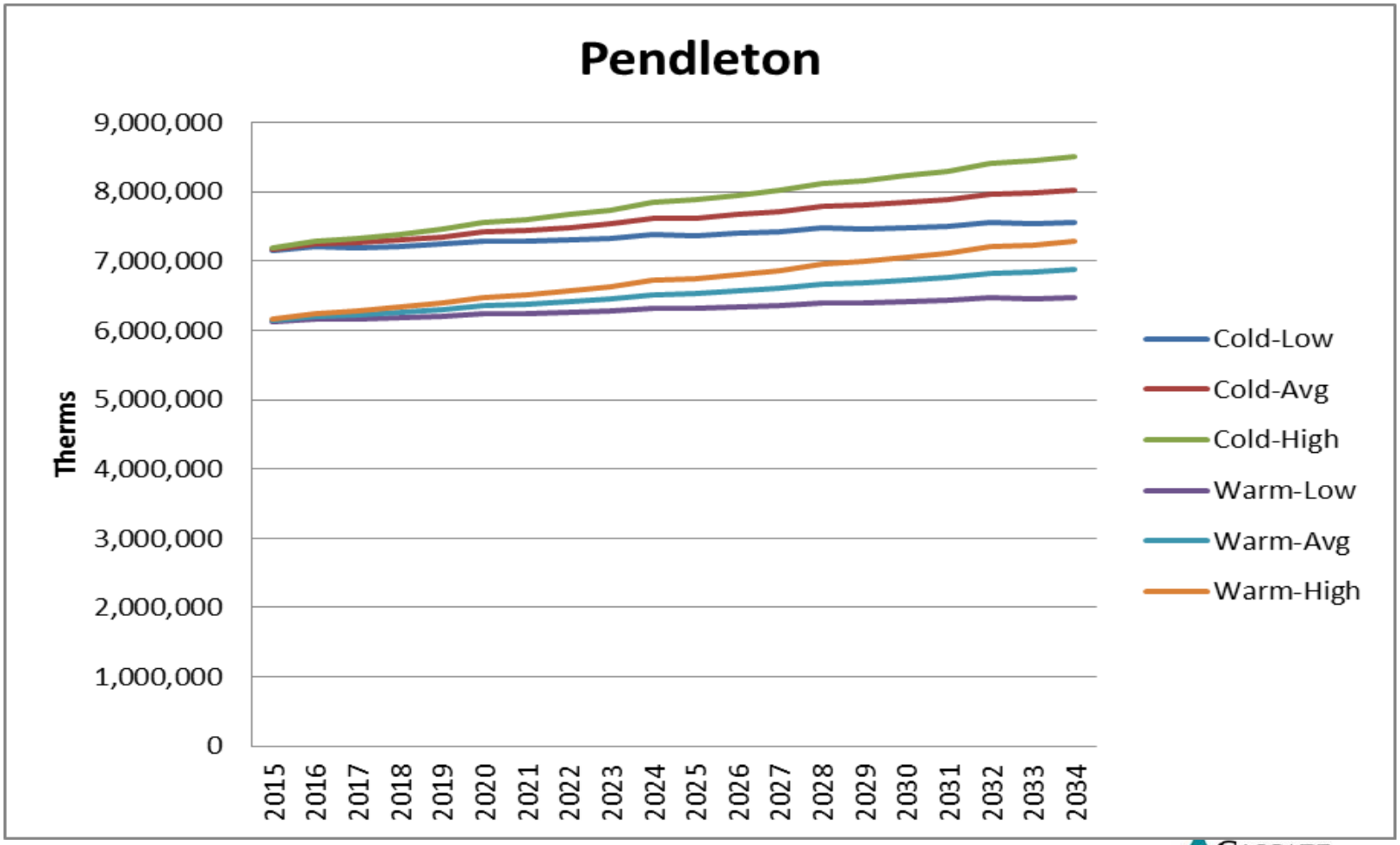
Pendleton with High and Low Weather Scenarios



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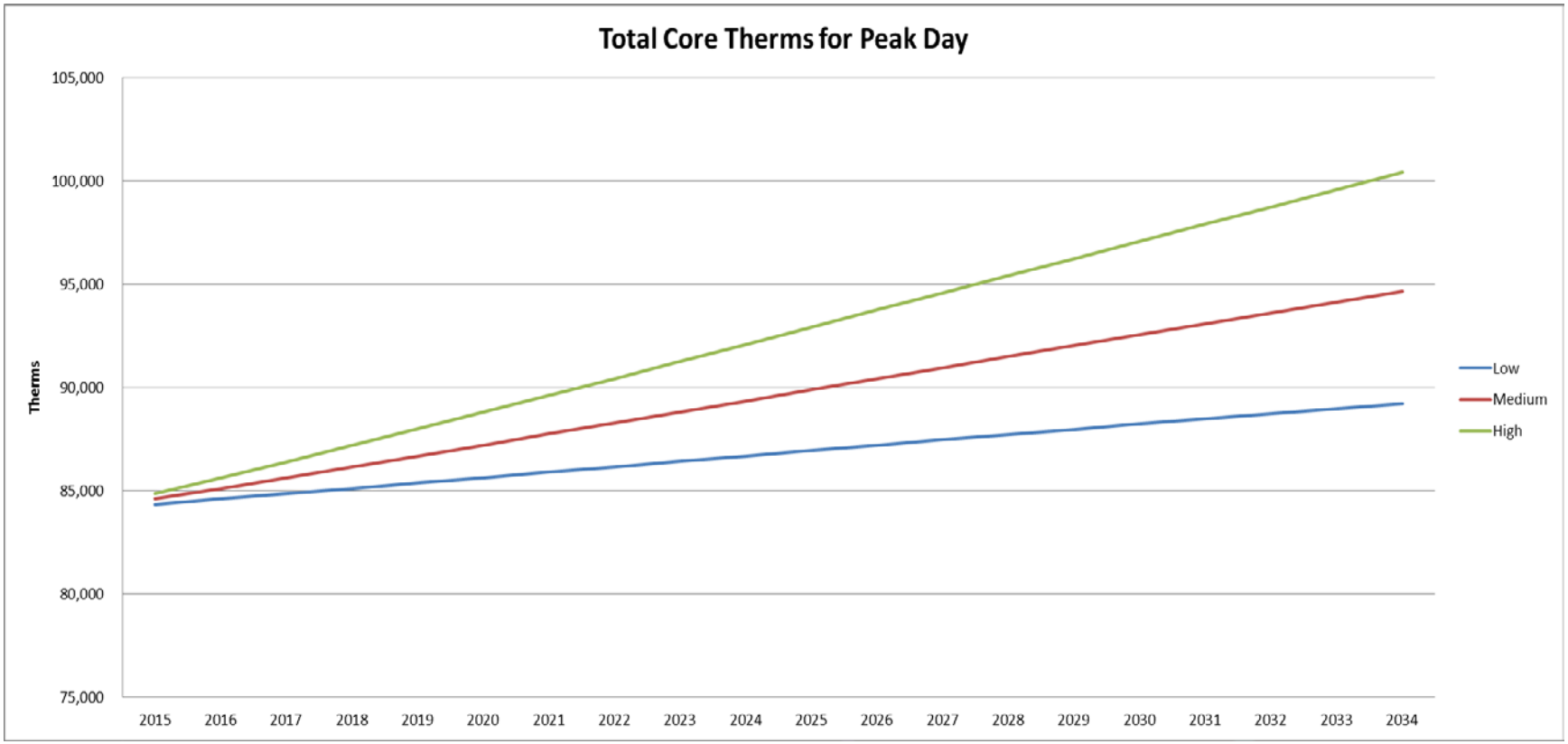
Pendleton Peak Day



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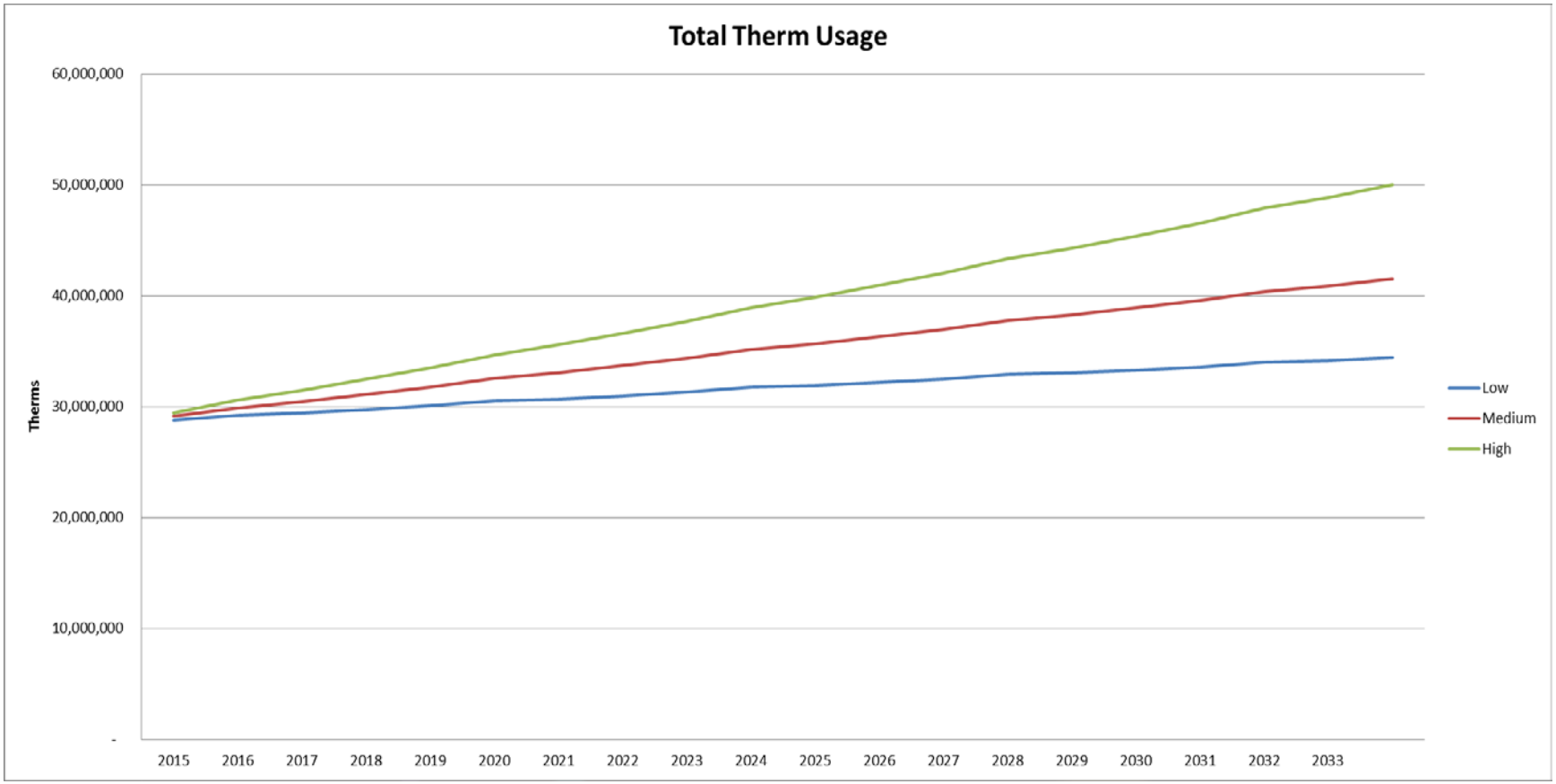
Bend Loop with Average Weather



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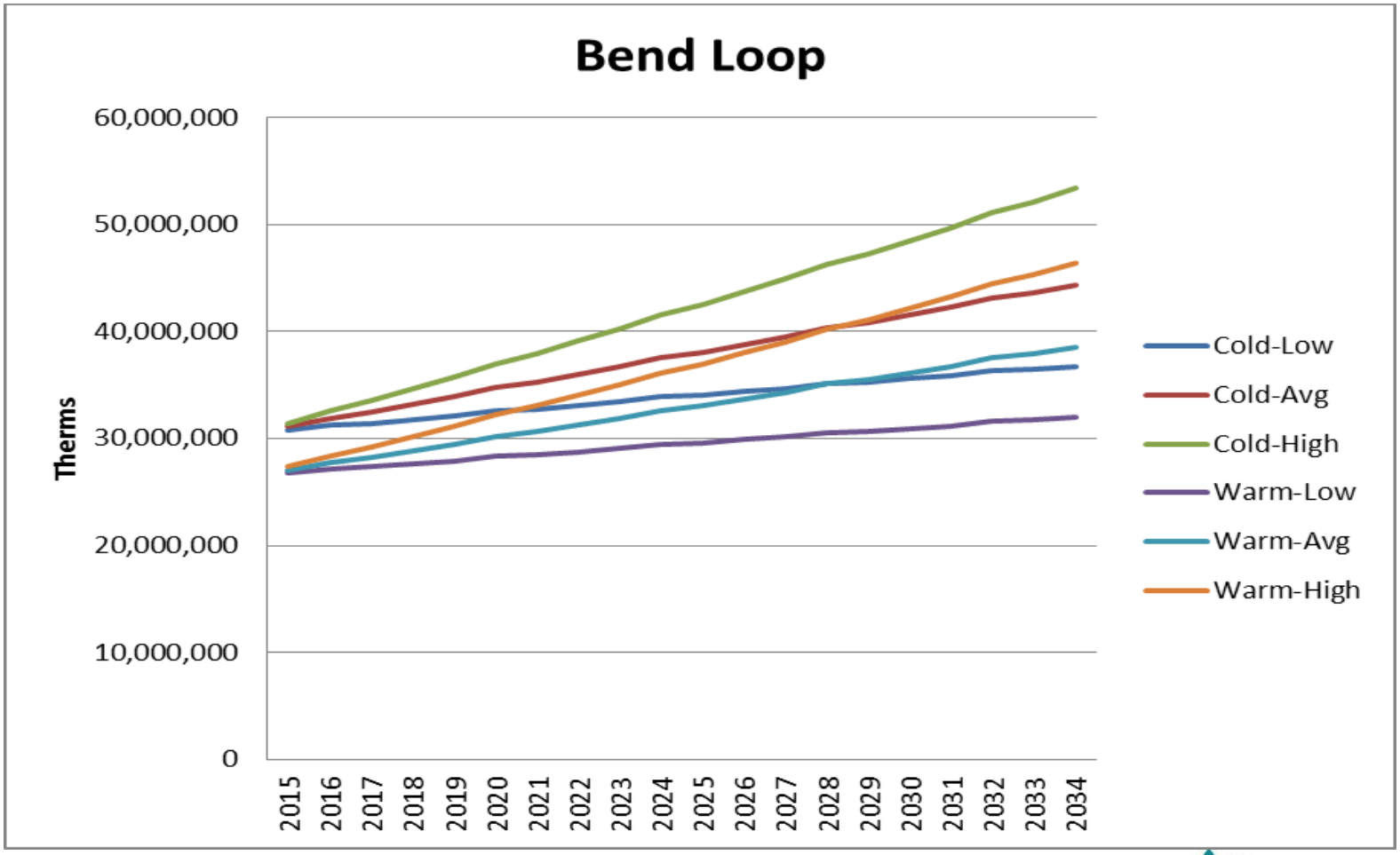
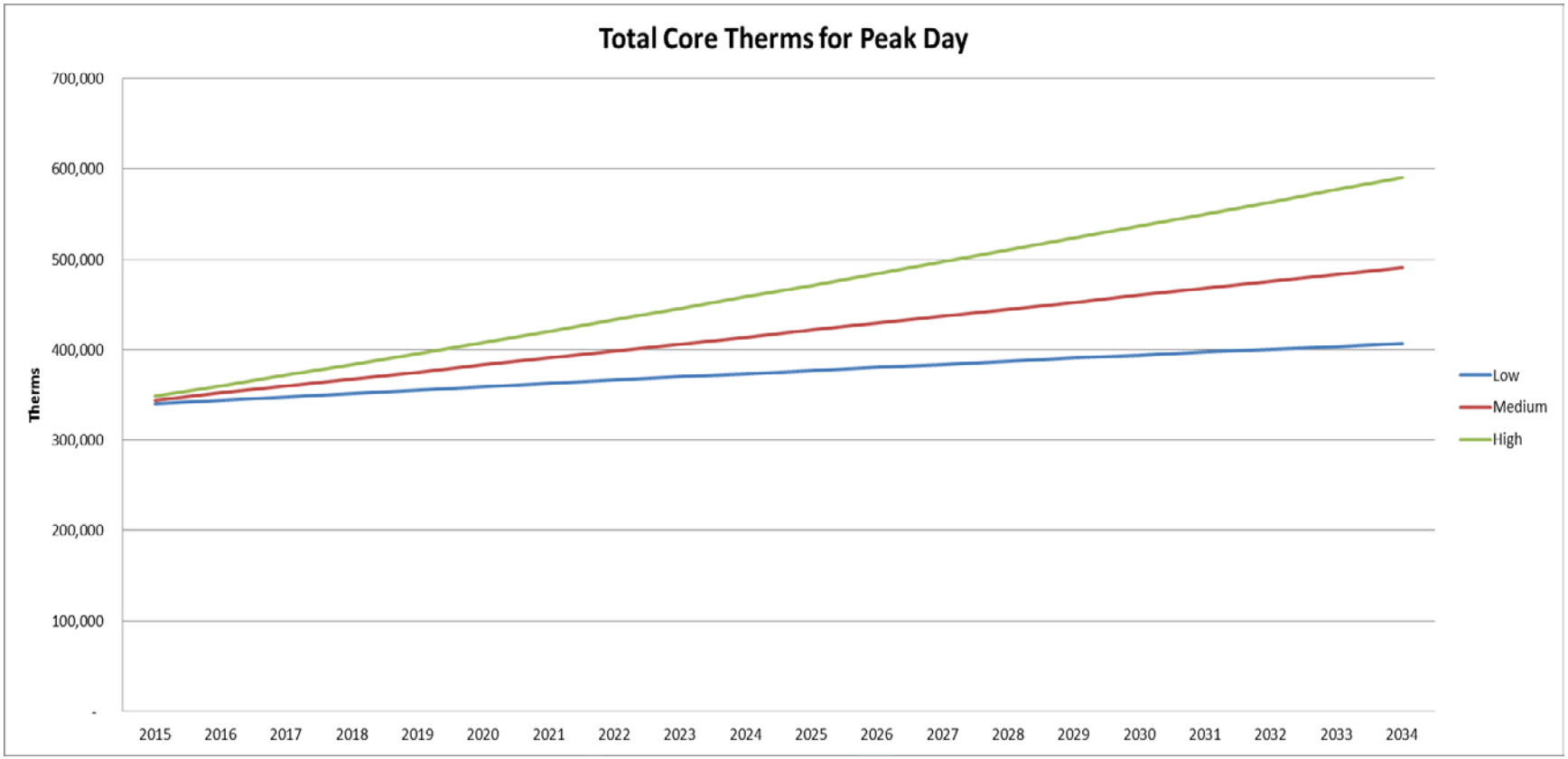
Bend Loop with High and Low Weather Scenarios



Bend Loop Peak Day



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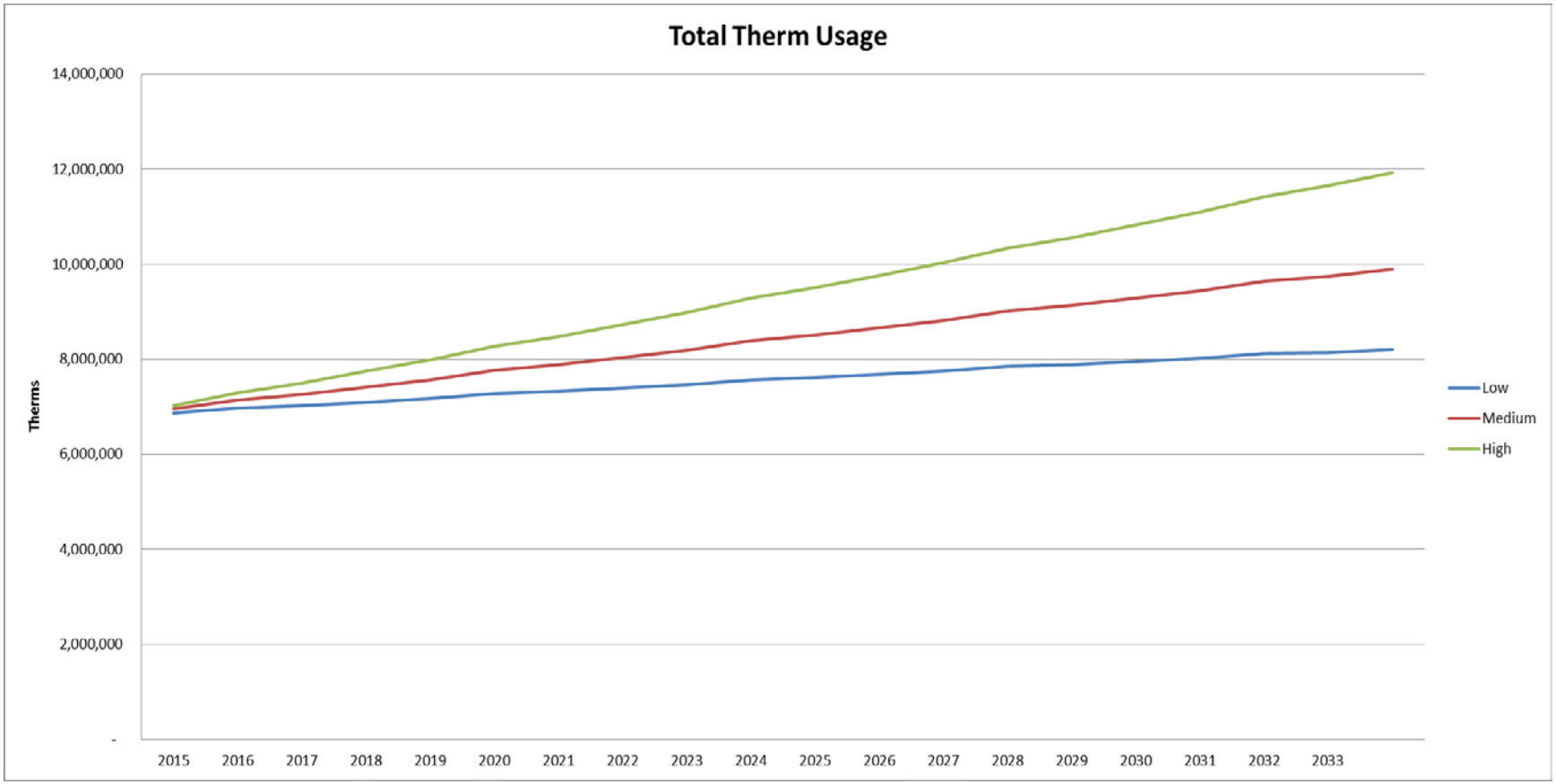
Redmond With Average Weather



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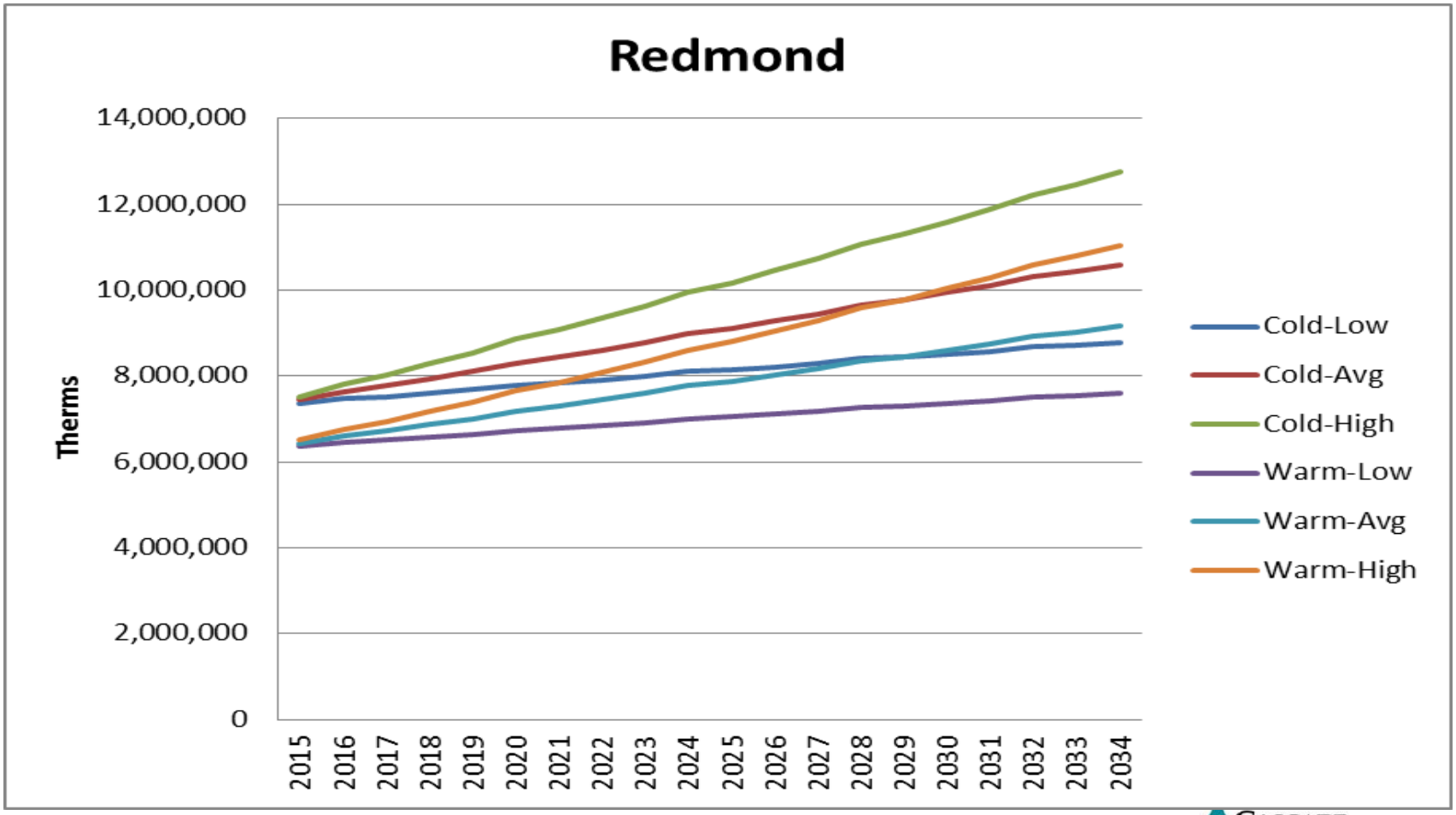
Redmond with High and Low Weather Scenarios



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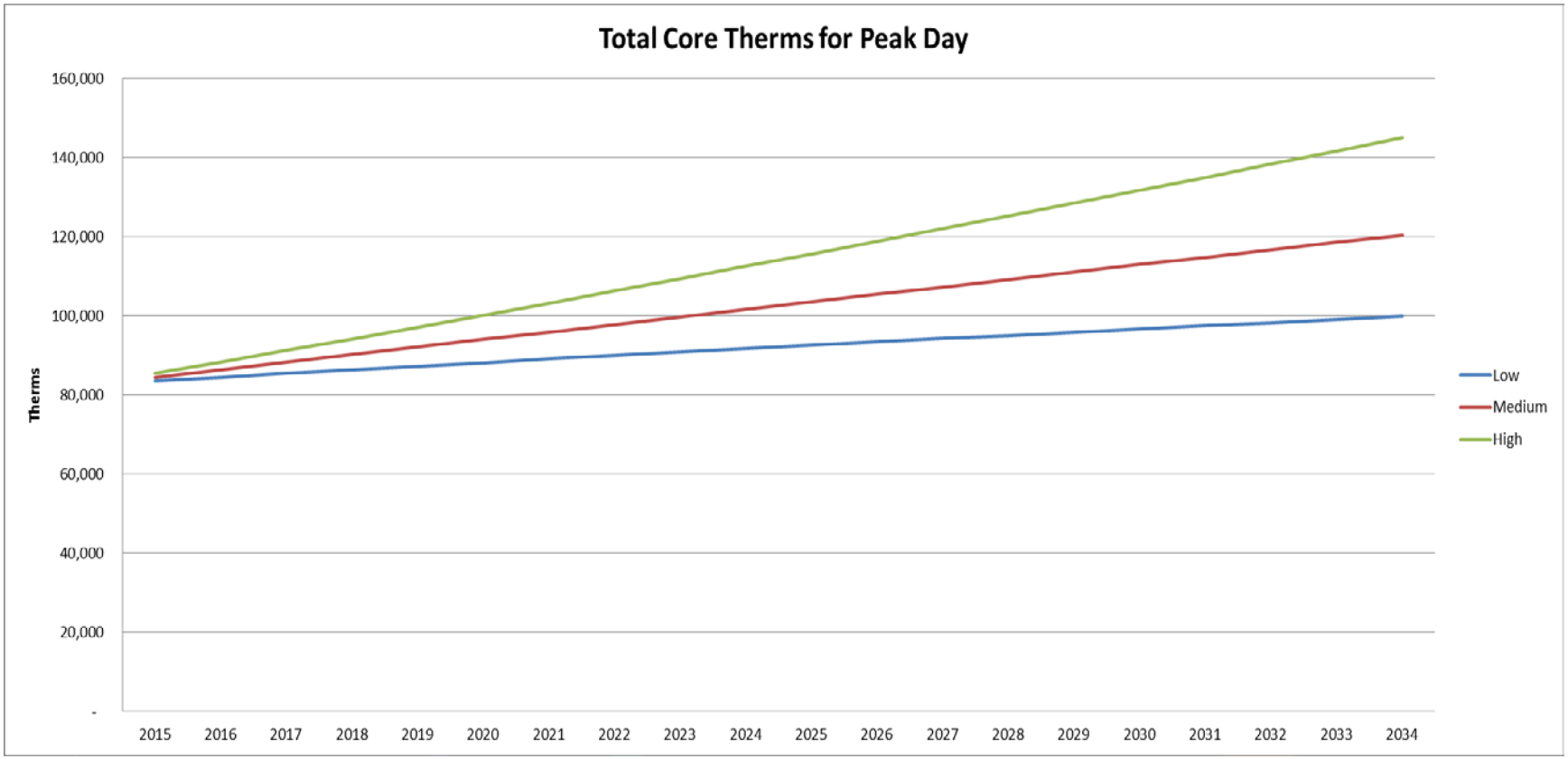
Redmond Peak Day



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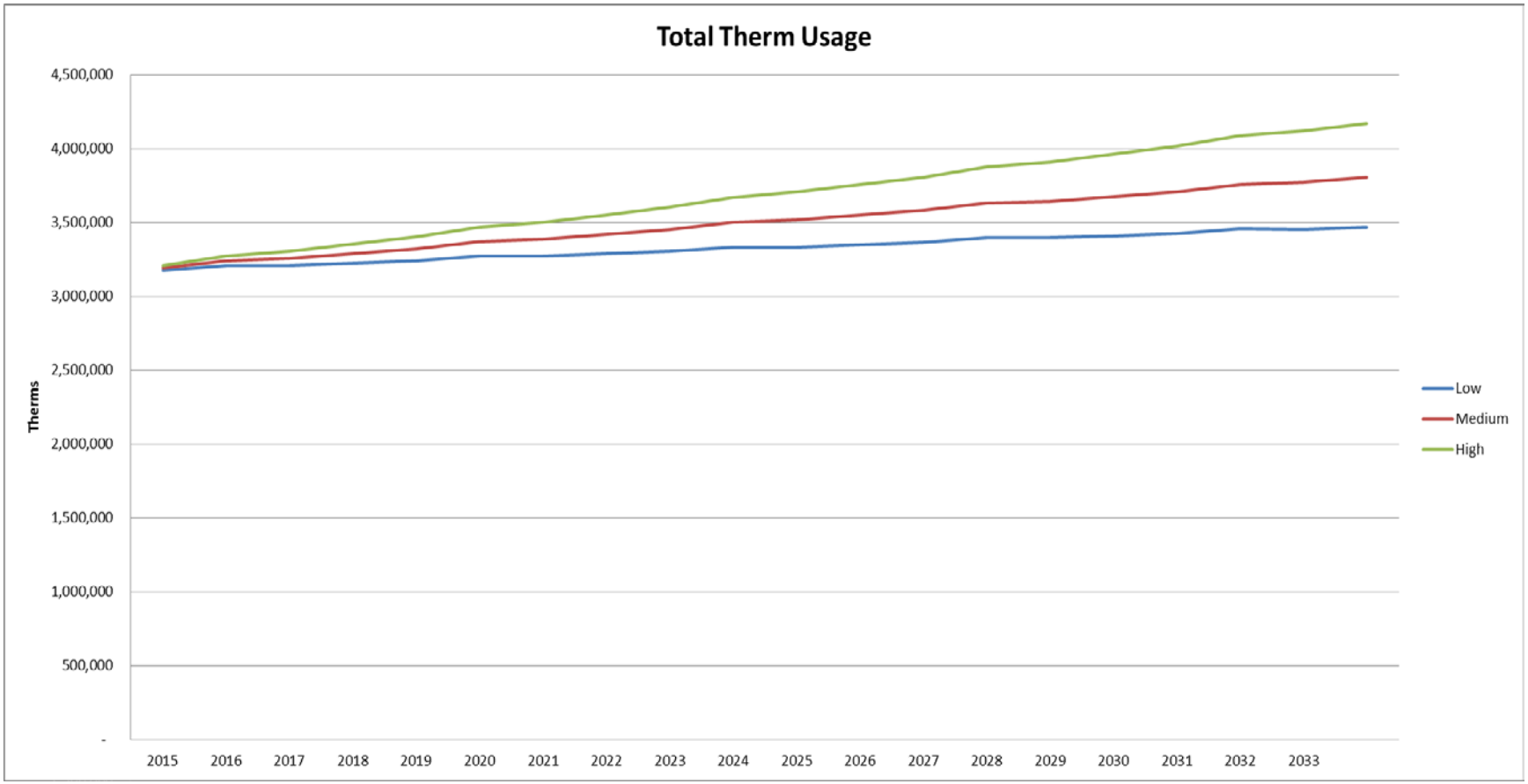
Moses Lake With Average Weather



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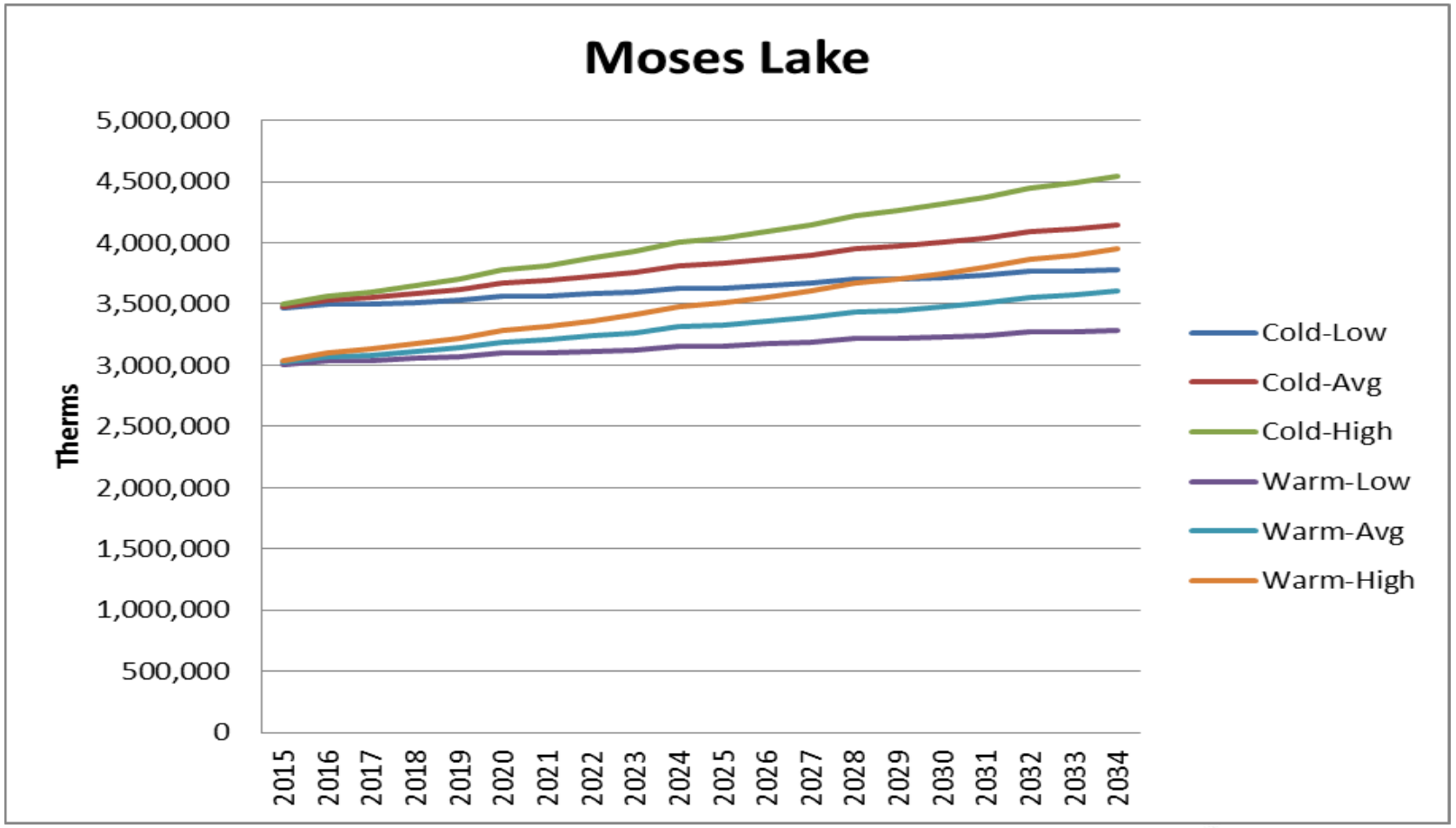
Moses Lake with High and Low Weather Scenarios



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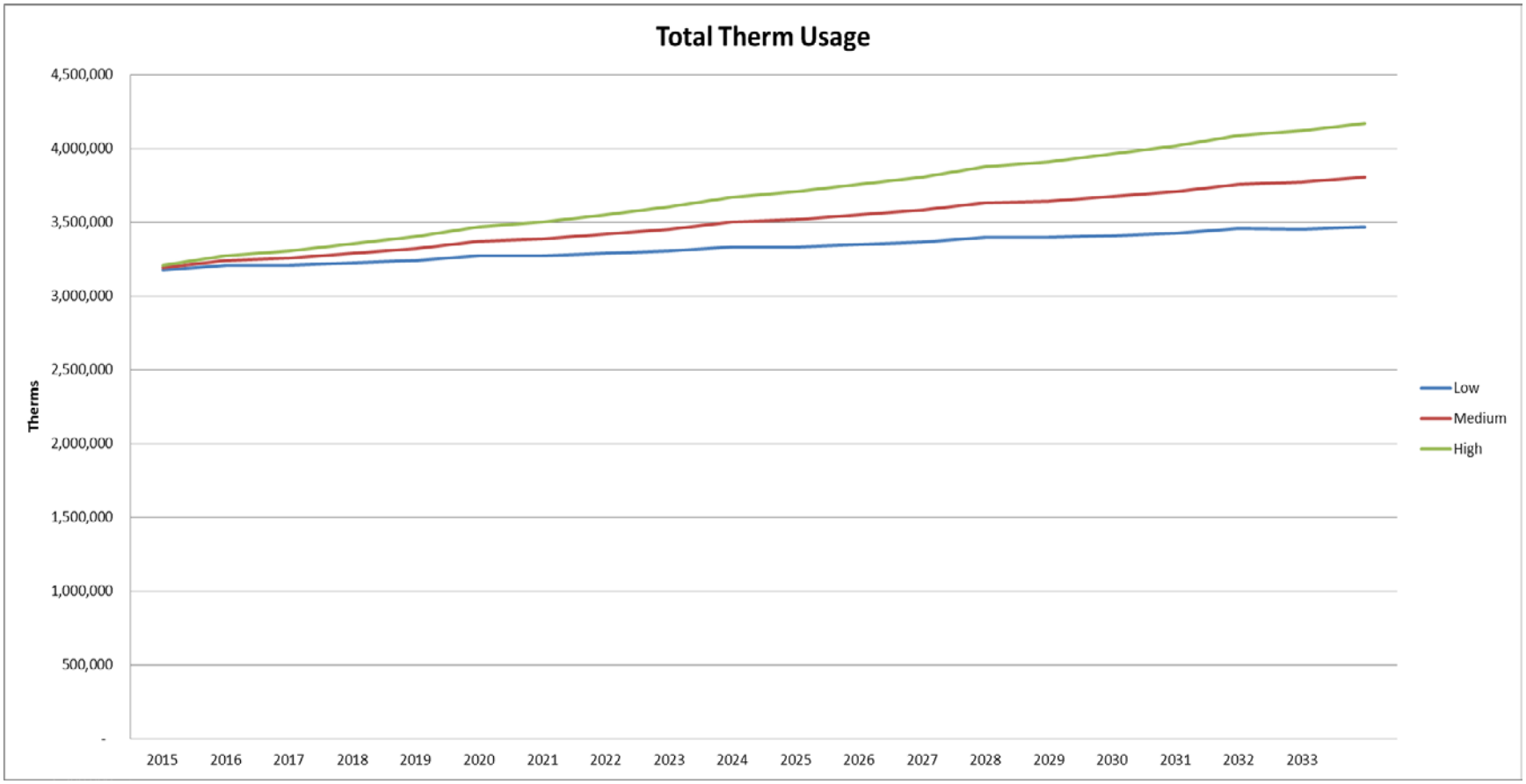
Moses Lake Peak Day



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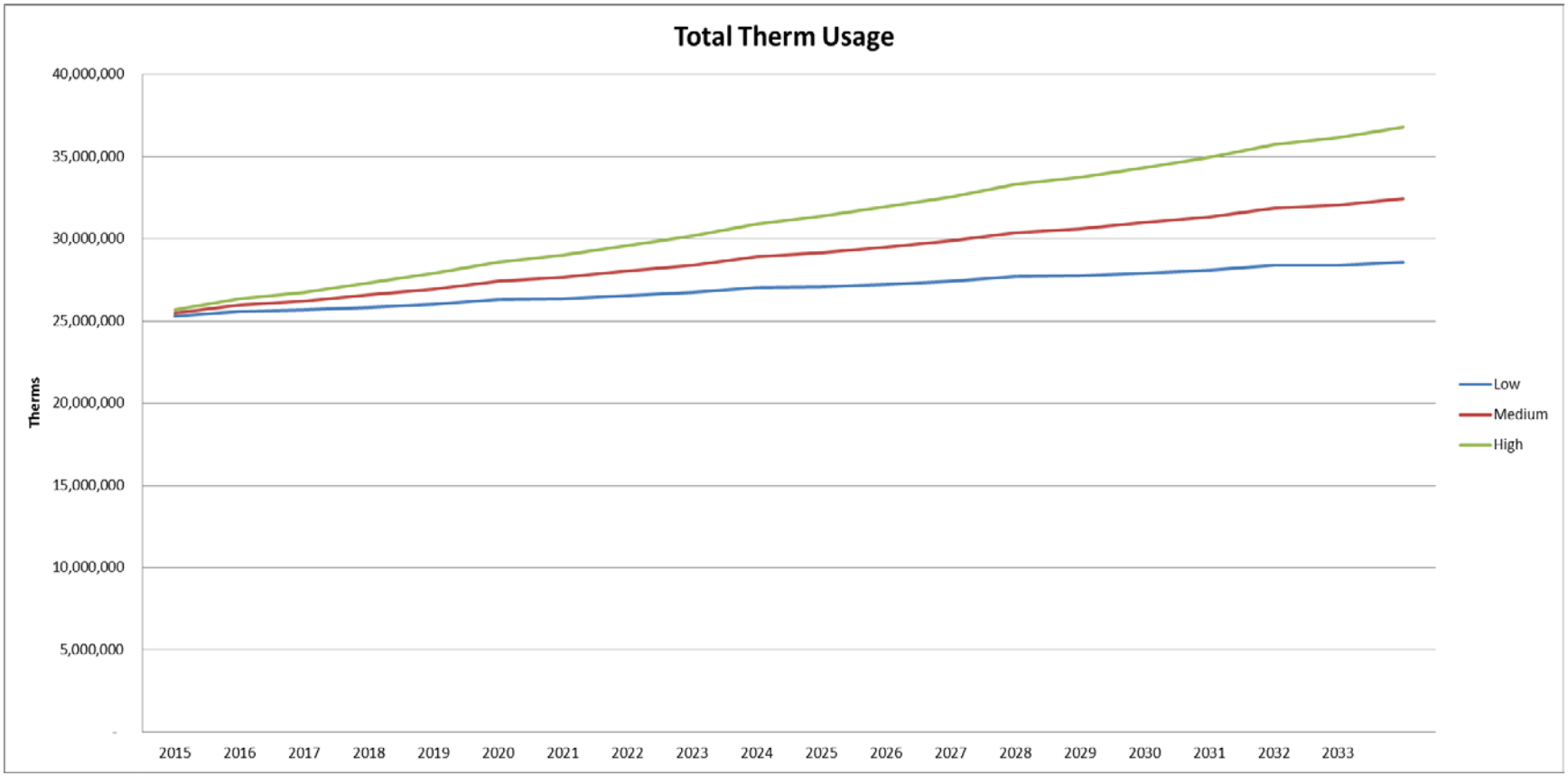
Sedro-Woolley Loop With Average Weather



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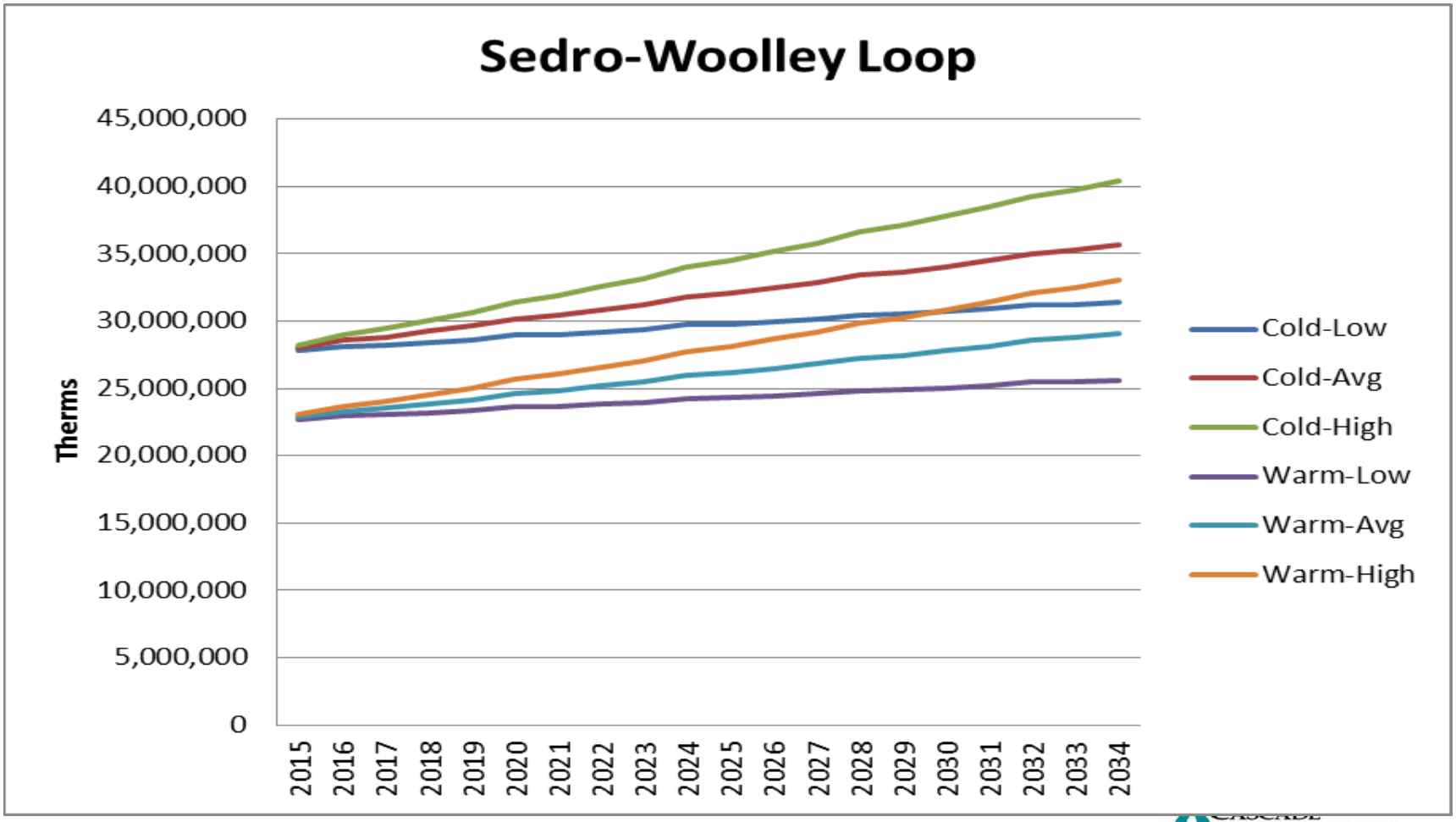
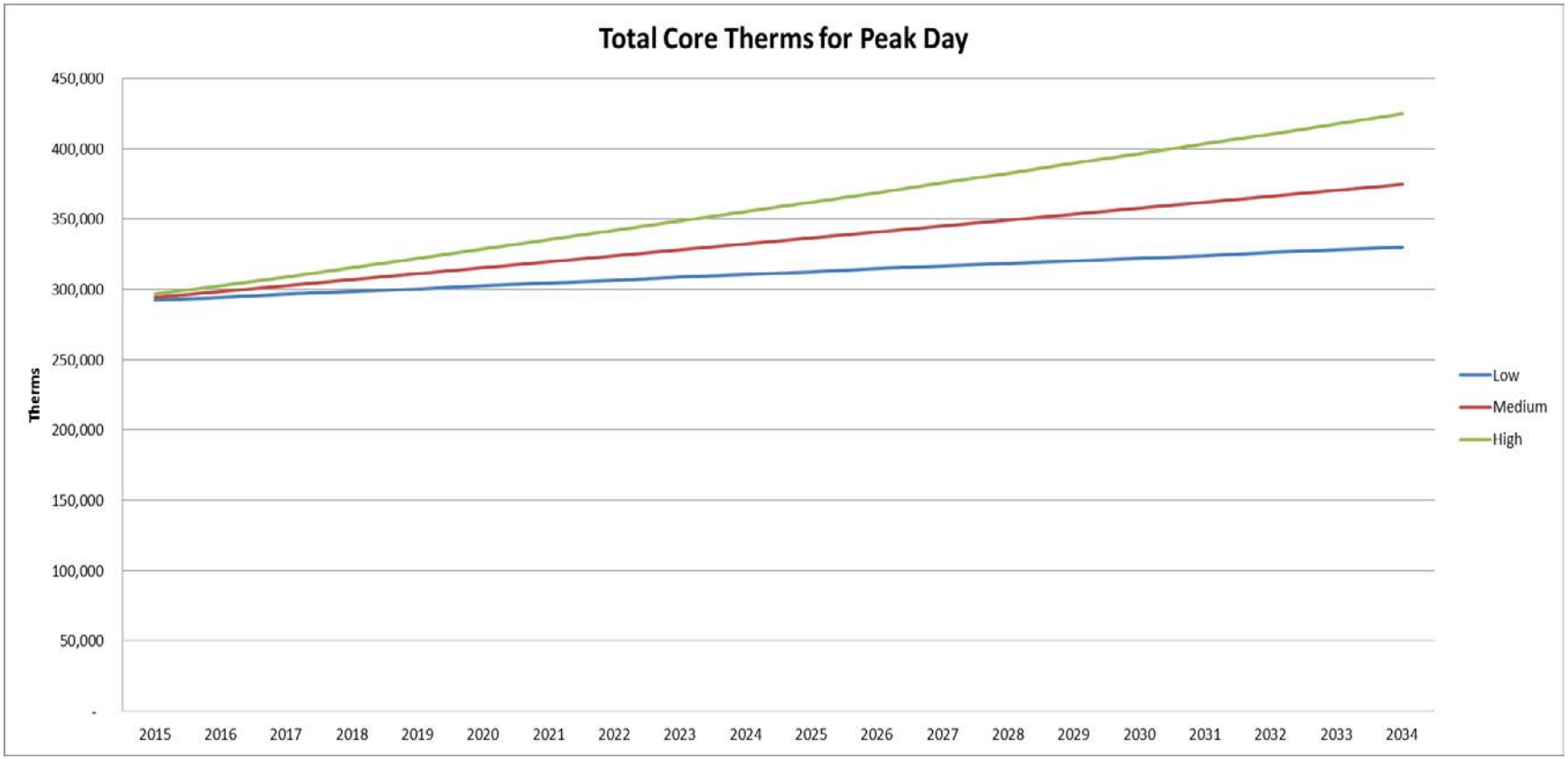
Sedro-Woolley Loop with High and Low Weather Scenarios



Sedro-Woolley Loop Peak Day



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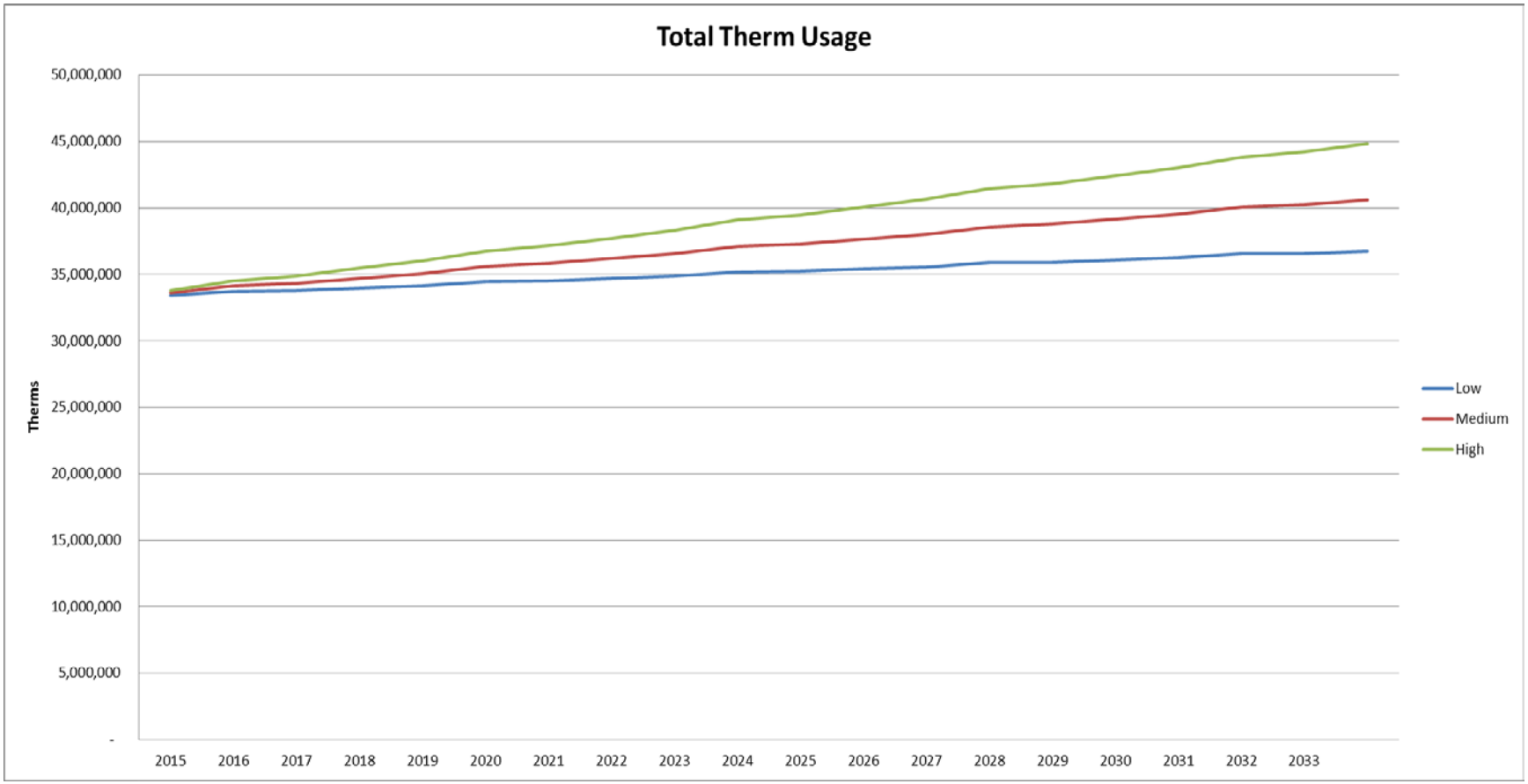
Bremerton (Shelton) With Average Weather



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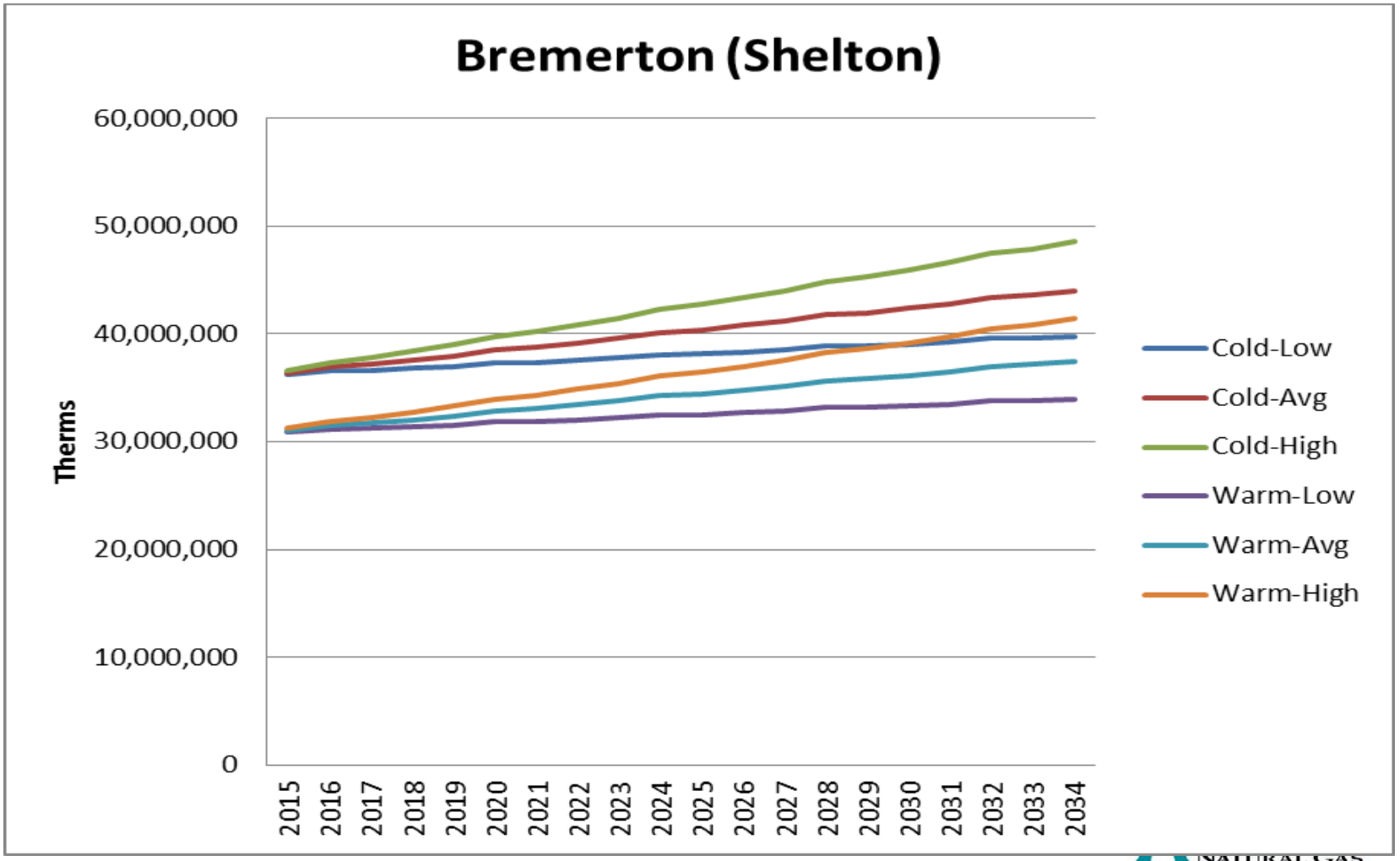
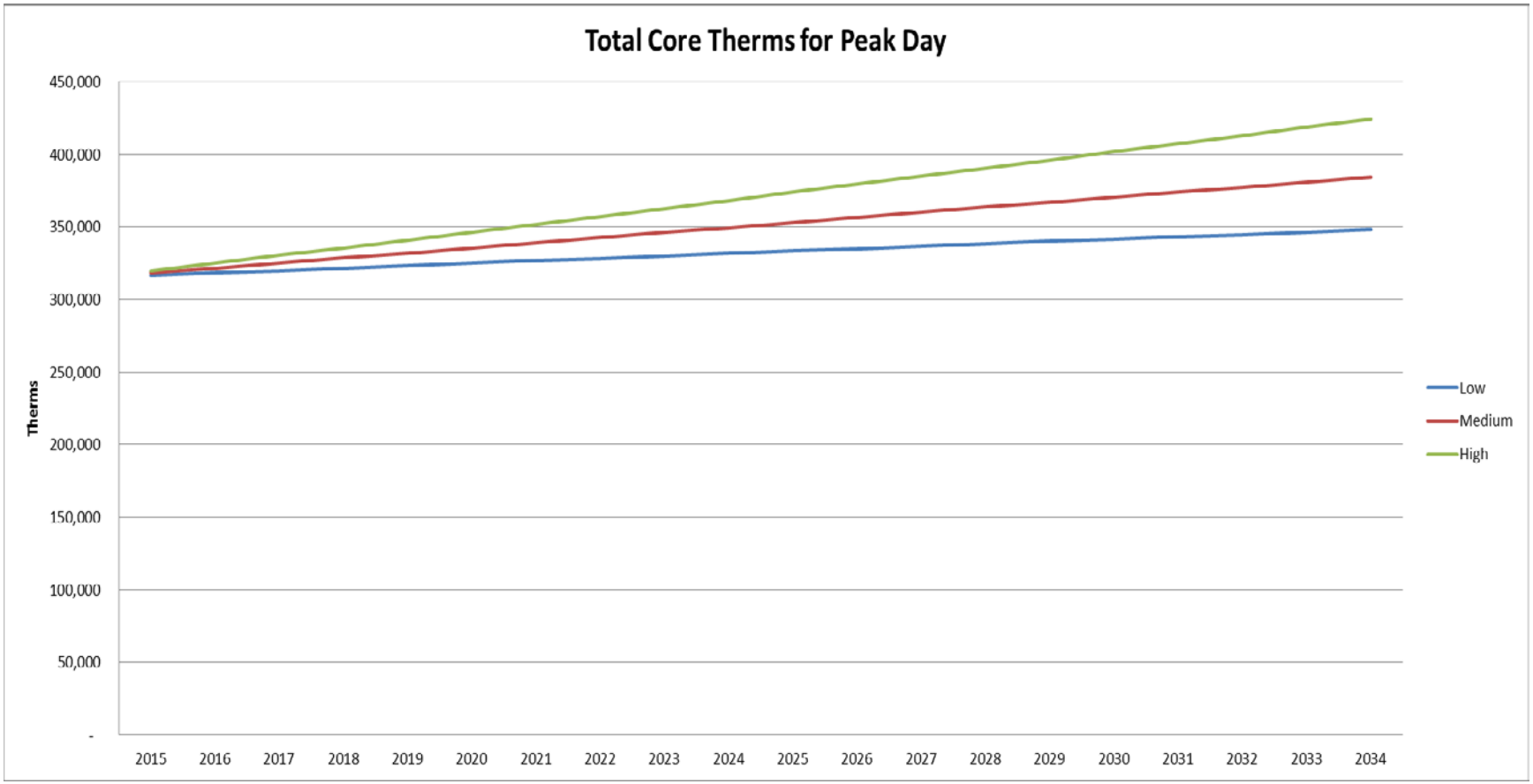
Bremerton (Shelton) with High and Low Weather Scenarios



Bremerton (Shelton) Peak Day



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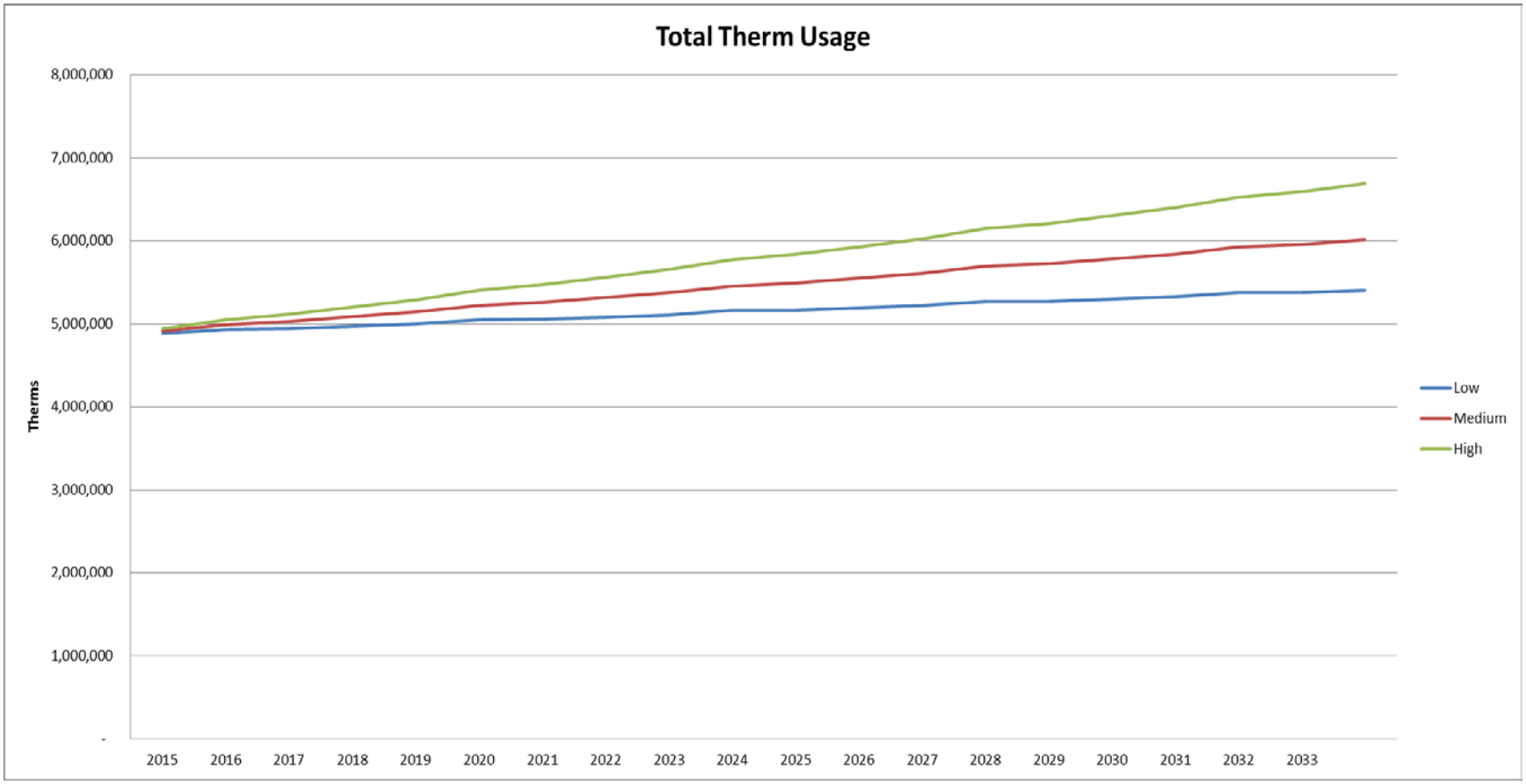
Wenatchee With Average Weather



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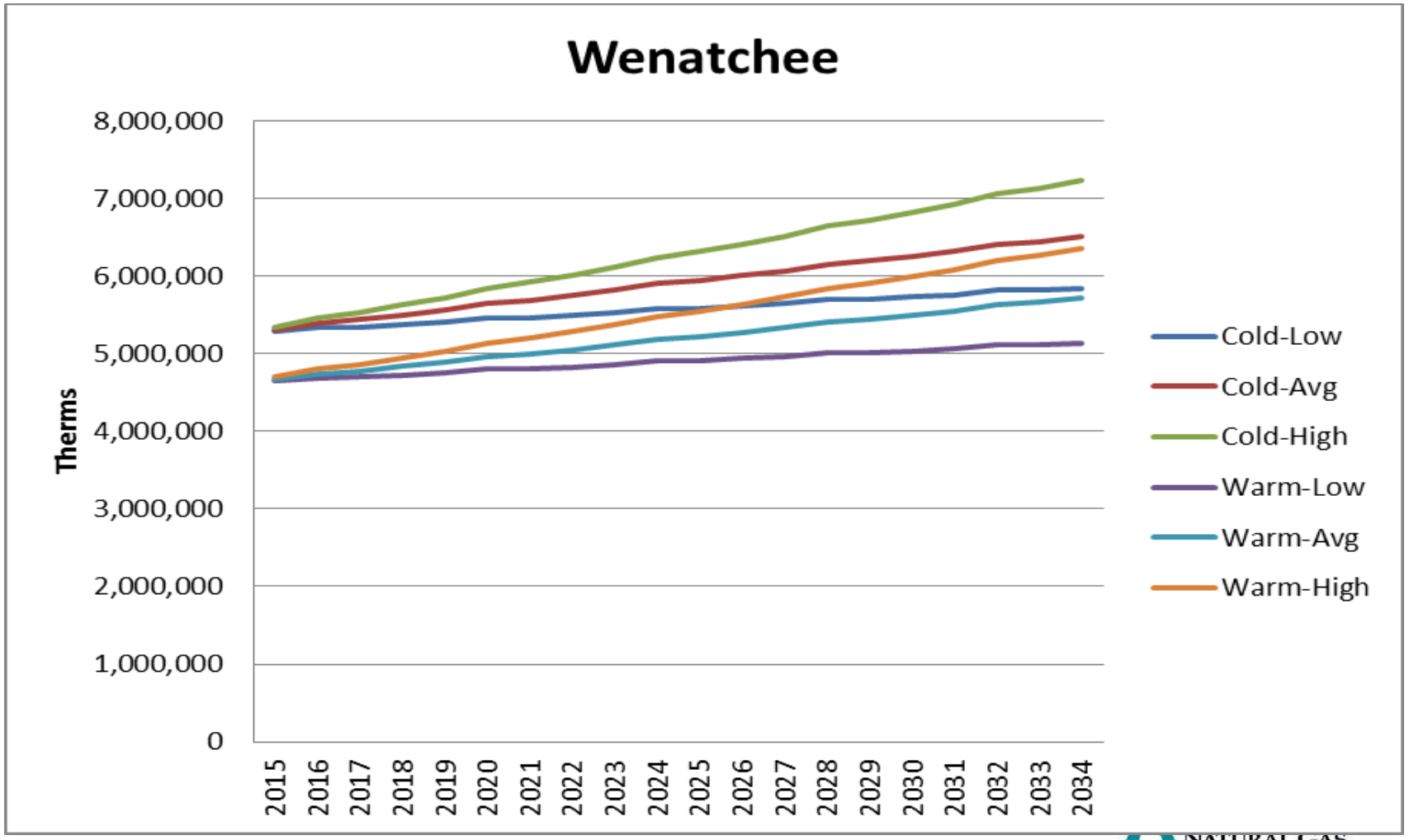
Wenatchee with High and Low Weather Scenarios



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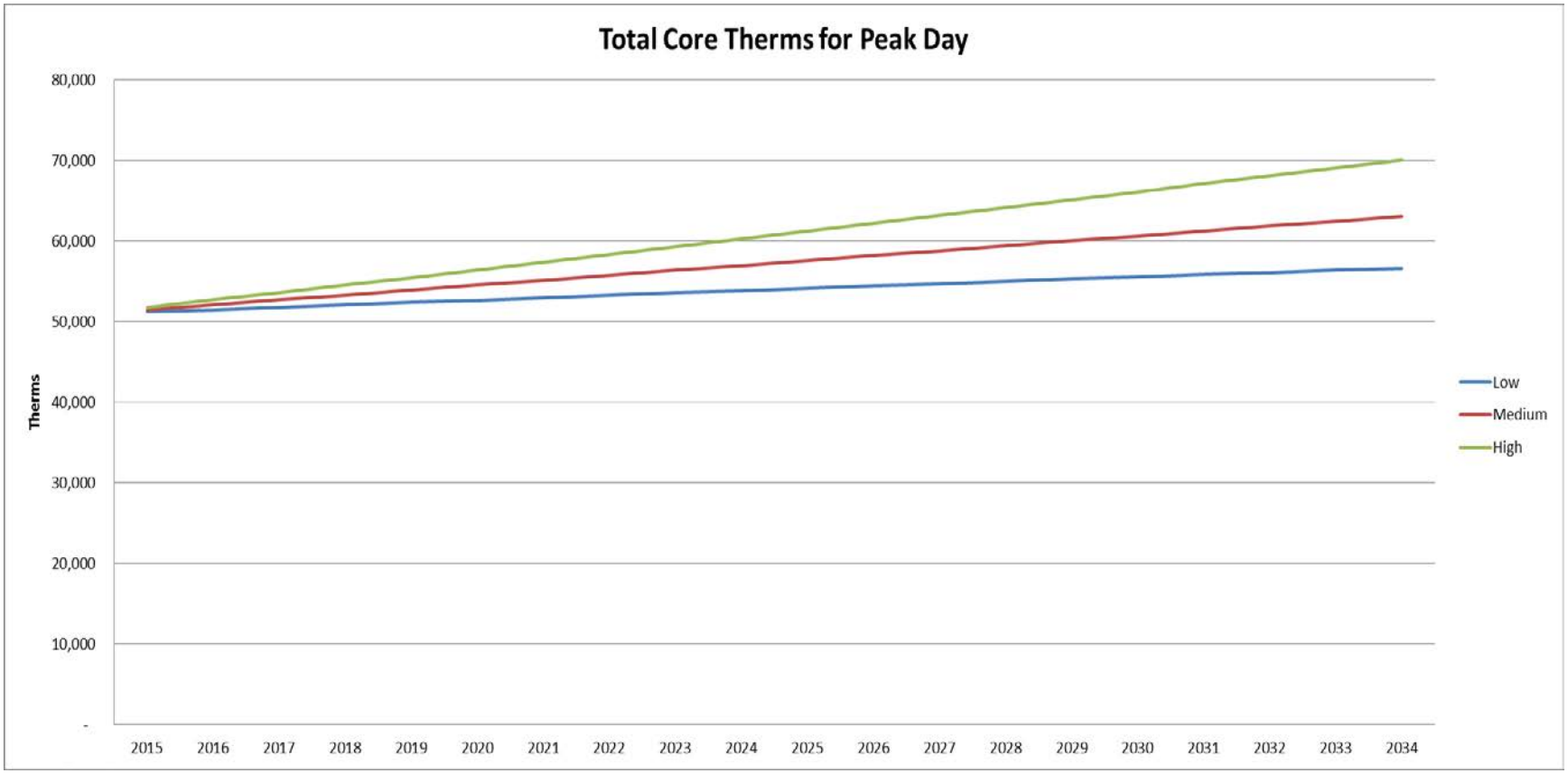
Wenatchee Peak Day



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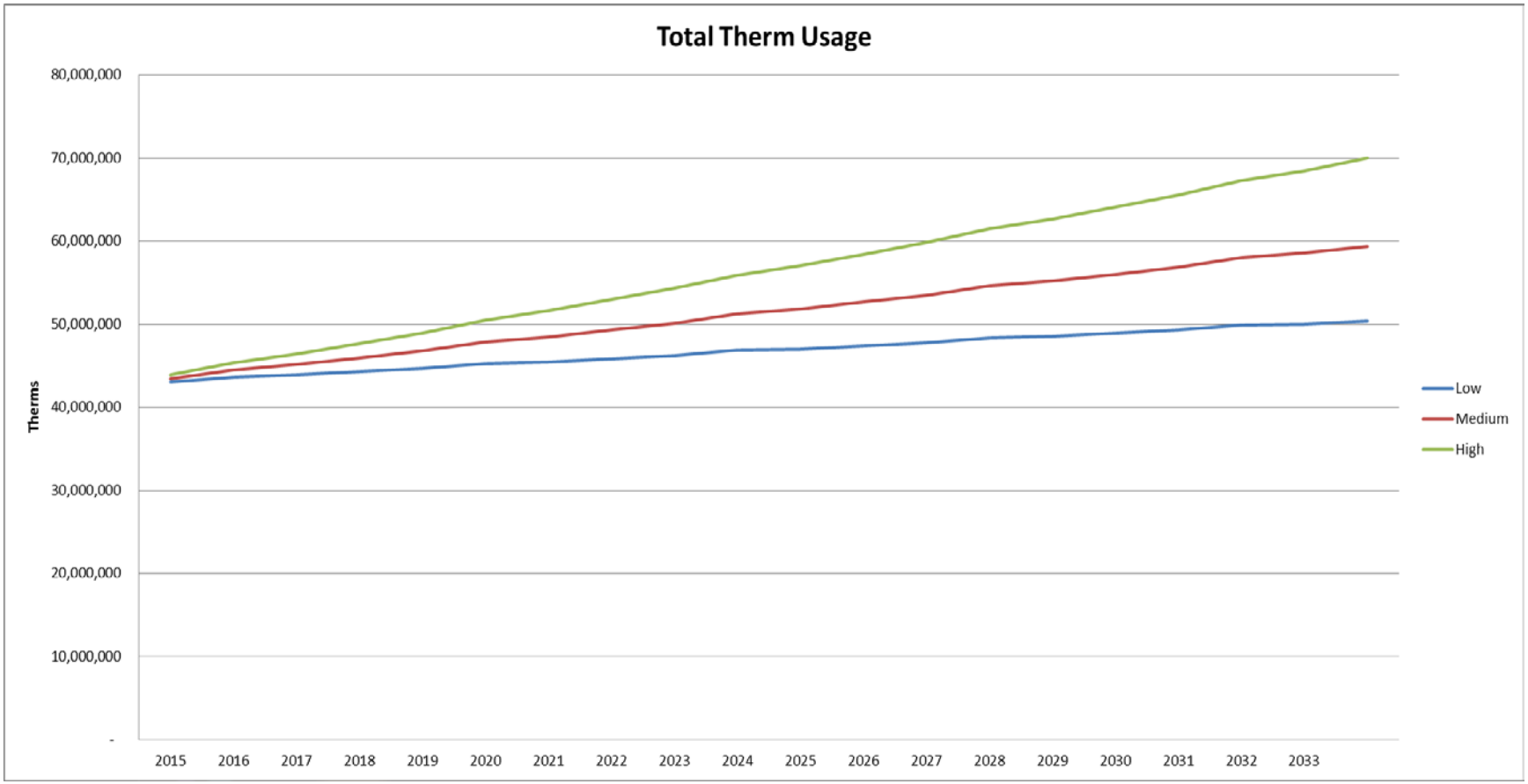
Sumas SPE Loop With Average Weather



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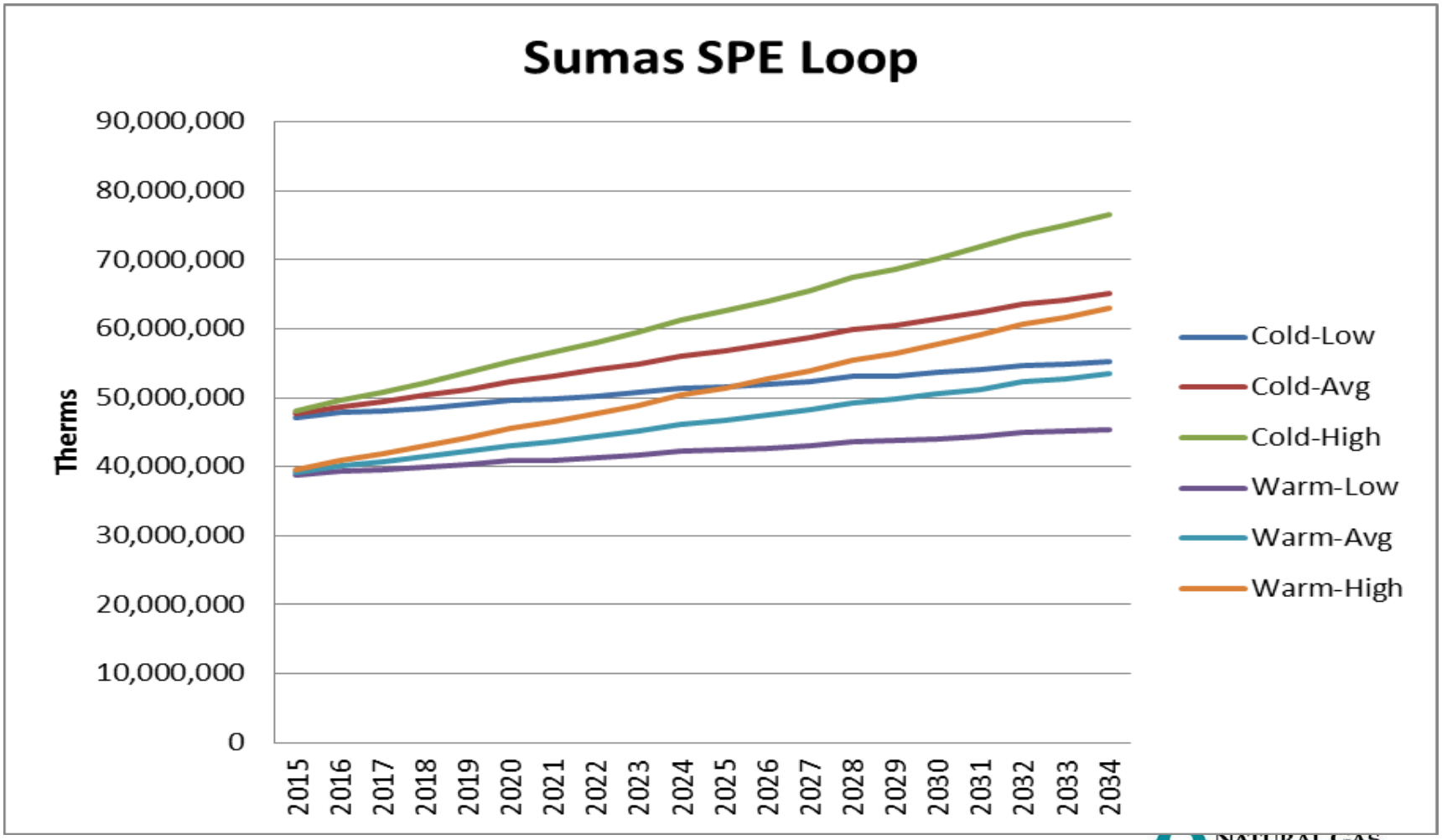
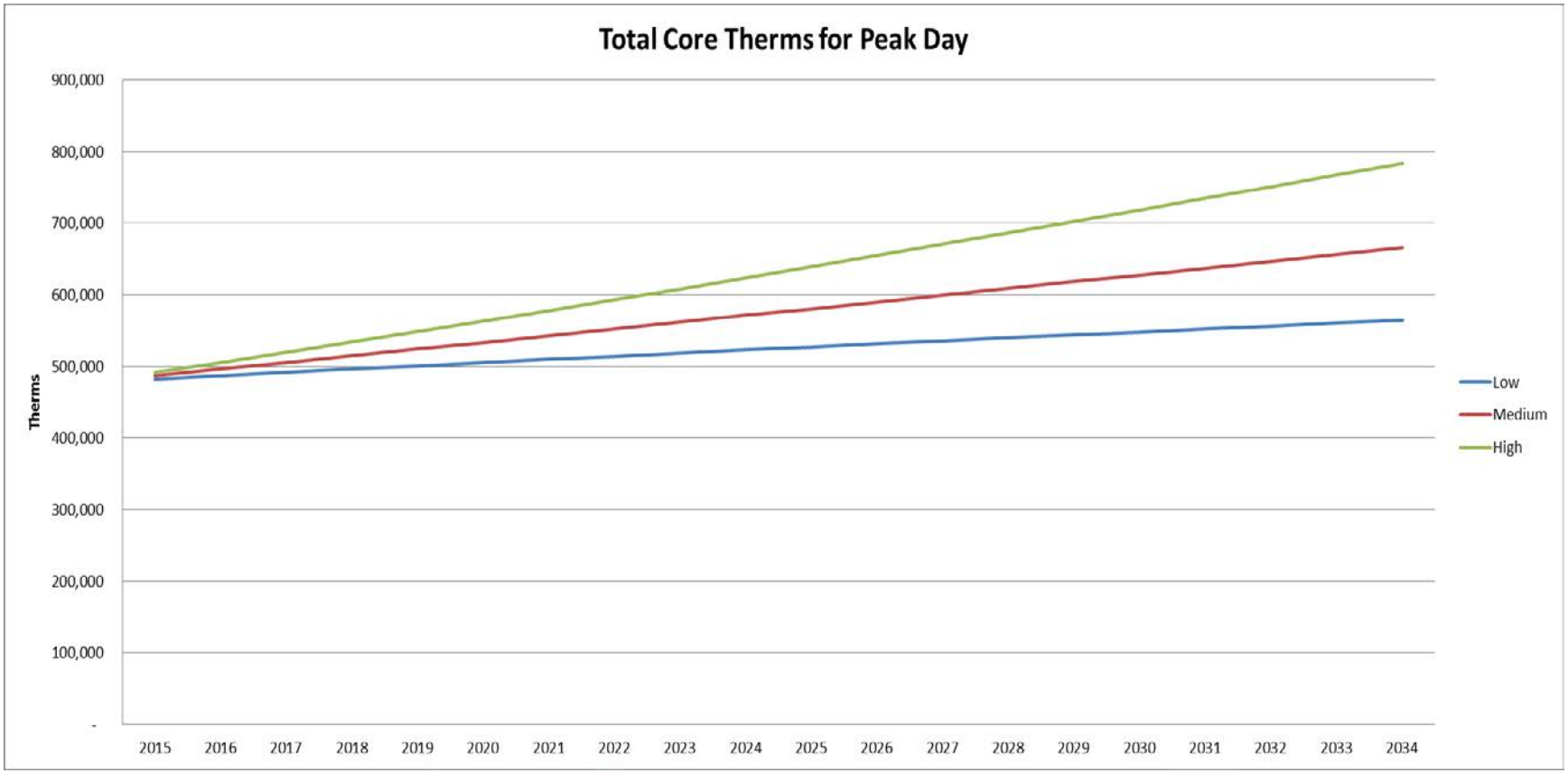
Sumas SPE Loop with High and Low Weather Scenarios



Sumas SPE Loop Peak Day



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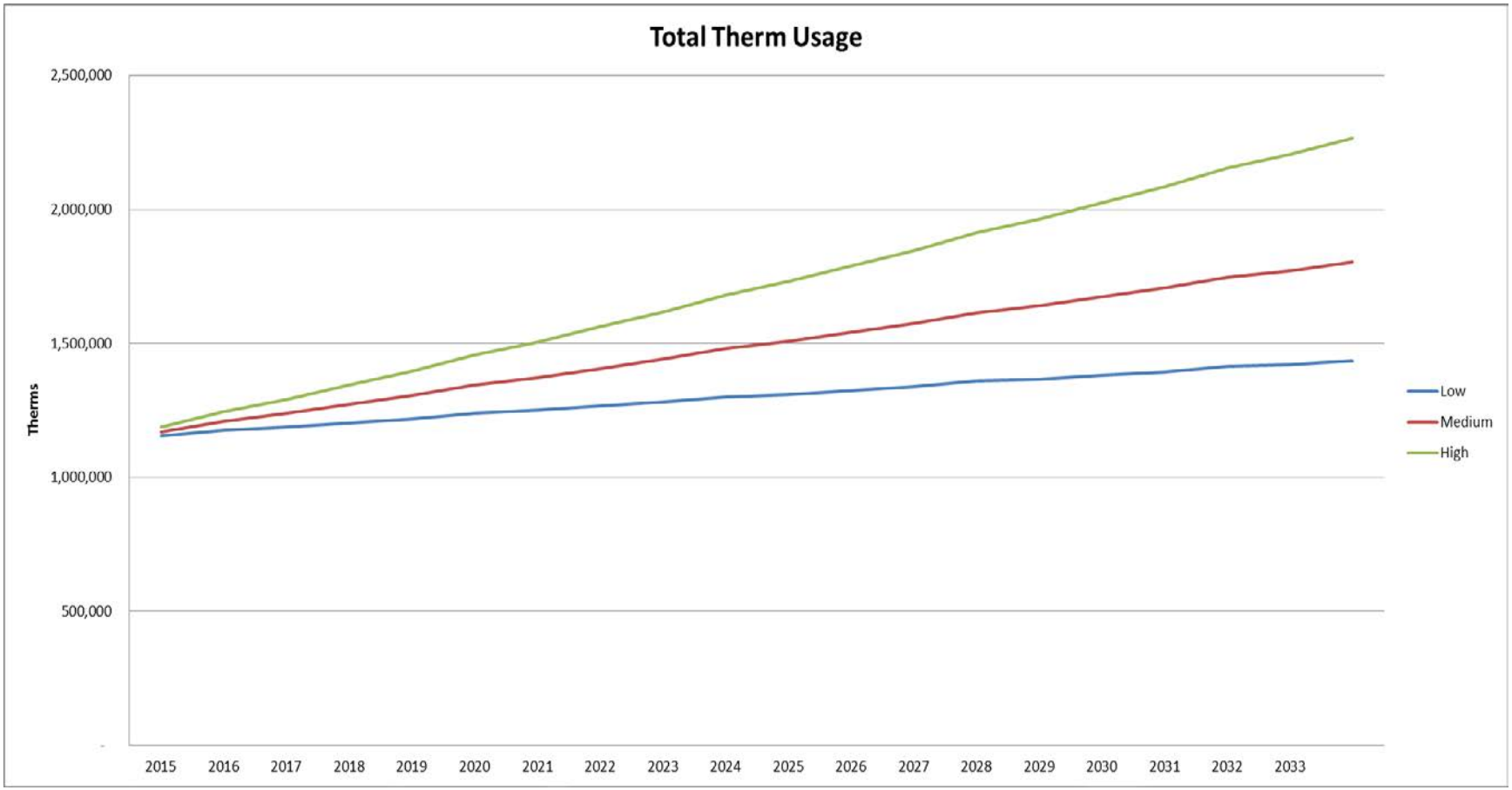
Woodland With Average Weather



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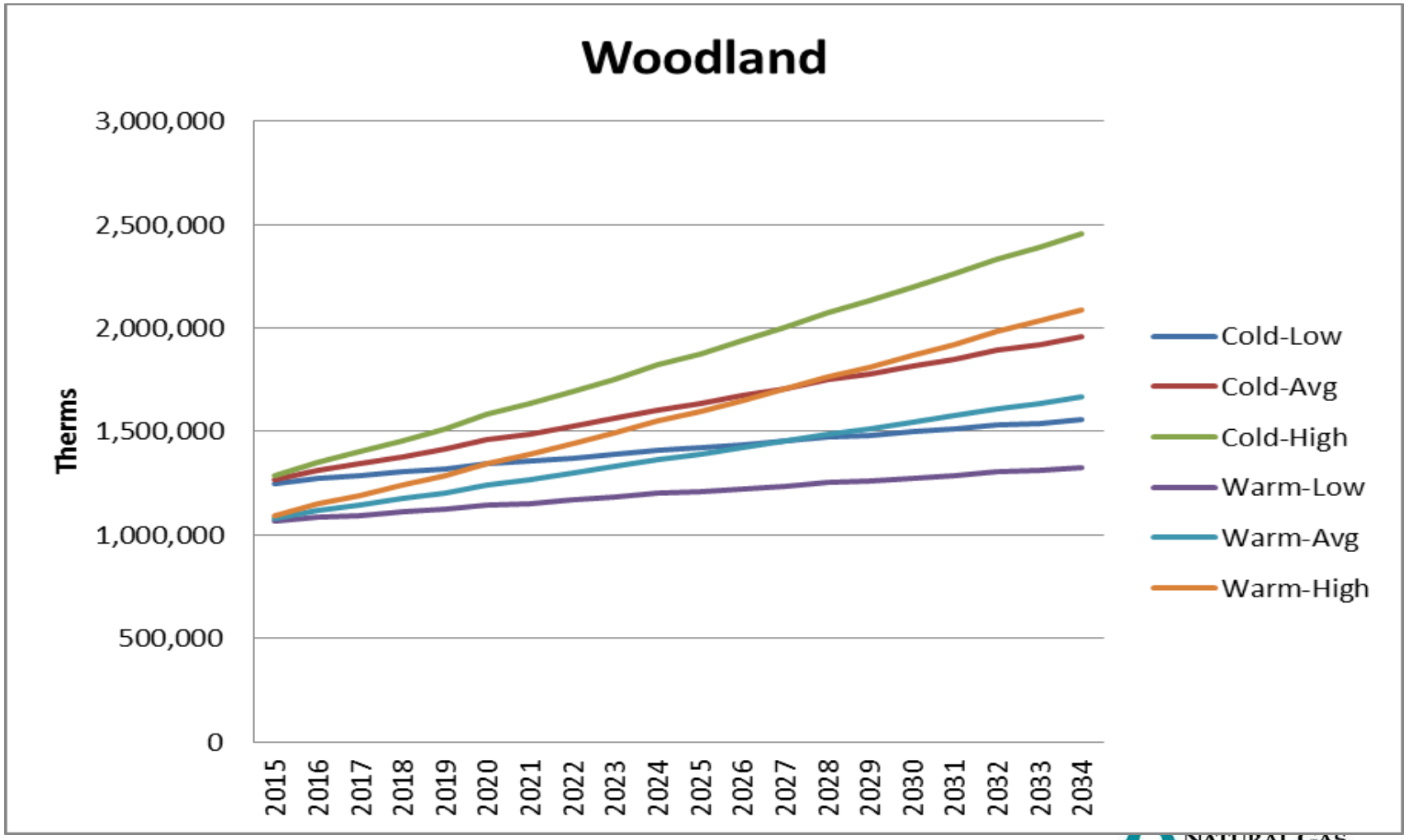
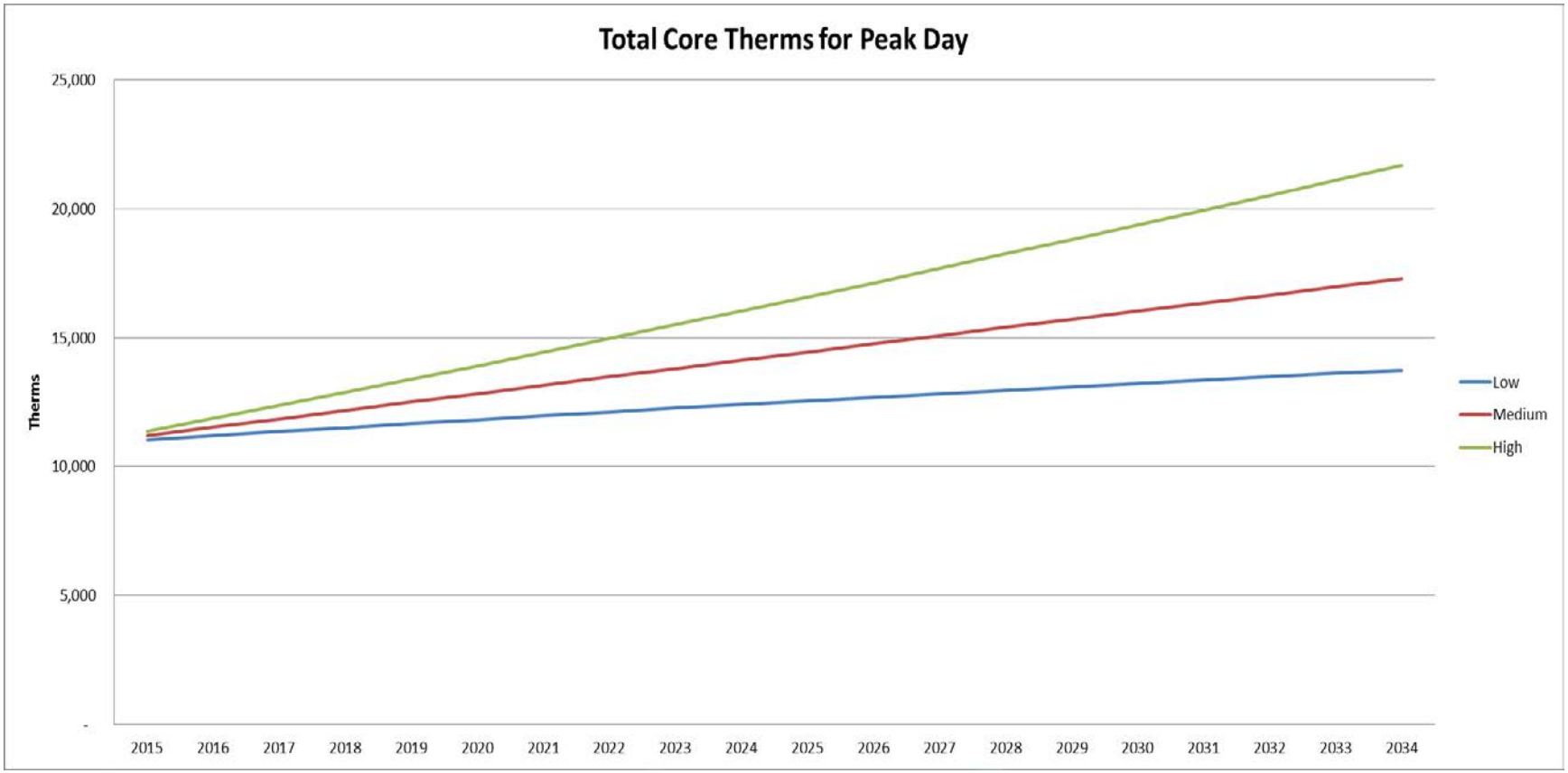
Woodland with High and Low Weather Scenarios



Woodland Peak Day



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Average HDD by month for each Weather Station (30 year history)

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baker City	33.80	29.22	20.94	14.89	8.19	3.11	0.32	0.49	4.19	14.13	25.48	33.84
Bellingham	20.18	18.50	15.18	10.83	5.87	2.09	0.36	0.28	2.67	9.32	16.20	21.07
Bremerton	20.34	19.20	15.67	11.91	6.59	2.74	0.49	0.37	2.39	9.29	16.99	21.51
Pendleton	25.06	21.76	14.98	9.58	4.28	0.87	0.03	0.04	1.20	8.51	18.83	26.61
Redmond	25.92	24.14	19.04	14.69	8.65	3.47	0.52	0.60	3.84	11.89	21.15	27.82
Walla Walla	24.03	20.49	12.98	7.52	2.92	0.45	0.00	0.02	0.63	6.72	17.51	25.76
Yakima	28.61	23.51	16.44	10.27	4.21	0.98	0.08	0.10	1.89	10.52	21.97	30.68

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Cold Scenario HDD by month for each Weather Station (6 years out of 30 year history)

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baker City	36.24	30.24	23.77	16.04	8.92	3.24	0.17	0.38	4.84	14.96	27.82	35.67
Bellingham	22.88	19.93	16.88	12.11	7.09	2.38	0.41	0.46	2.87	9.99	18.63	24.24
Bremerton	22.74	20.18	17.80	13.62	7.57	3.12	0.57	0.57	2.95	10.30	19.04	23.35
Pendleton	27.12	23.17	17.23	10.23	4.63	0.86	0.00	0.03	1.76	9.86	21.85	30.96
Redmond	27.76	25.47	21.59	15.46	9.74	3.41	0.56	0.75	4.56	13.15	23.24	29.93
Walla Walla	25.85	22.41	14.92	7.94	2.97	0.41	0.00	0.01	0.91	7.59	20.30	30.02
Yakima	31.04	25.64	18.38	11.60	4.78	0.73	0.09	0.07	2.64	11.57	25.63	35.24

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Warm Scenario HDD by month for each Weather Station (6 years out of 30 year history)

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baker City	30.77	25.32	19.09	12.10	6.31	2.55	0.24	0.47	2.87	12.27	24.58	33.39
Bellingham	17.95	16.24	12.98	8.97	4.13	1.32	0.23	0.22	2.01	8.01	14.19	20.32
Bremerton	18.81	17.14	13.79	9.68	4.82	2.08	0.31	0.37	1.84	7.92	15.94	21.48
Pendleton	23.83	19.24	13.58	8.09	3.37	0.95	0.06	0.05	0.73	7.12	16.54	25.51
Redmond	23.78	20.92	17.59	12.40	7.52	3.04	0.44	0.65	2.75	9.91	19.92	27.75
Walla Walla	22.33	17.60	11.39	5.75	2.06	0.46	0.02	0.04	0.33	5.60	15.12	24.50
Yakima	27.58	21.29	15.28	8.78	3.07	1.00	0.03	0.10	1.51	9.57	19.95	30.09

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Cascade Natural Gas Technical Advisory Group Meeting #2
Portland International Airport in Portland, OR
January 13, 2015 9:00 AM – 10:30 PM

Attachments:
Attachment A – Technical Advisory Group Meeting 2 PowerPoint slides
Attachment B – Attendance sheet

I.) **Introduction** – Micah Robinson began the meeting by presenting the agenda from the PowerPoint presentation.
- The PowerPoint presentation consisted of a review of the forecast methodology along with some forecast result graphs.
- The key points pointed out in the methodology were:
    - Demand Data
    - Weather Data
    - Regression Analysis
    - Weather Scenarios
    - Growth Scenarios
    - Peak Scenarios
    - Summary

II.) **Demand Forecast Results** – Micah Robinson then discussed the demand forecast results.
- A total system, Washington, and Oregon graph was presented which showed the annual therm usage and peak day comparison to past IRPs.
- The next graphs that were presented were Washington and Oregon and their tariff breakdowns.
- The next graphs were annual therms by zone compared to past IRPs.
- A handful of CityGates were selected to show the 9 permutations of weather and growth scenarios as well as a peak day scenario.
- Finally, the HDDs were given for each weather location for the low, average, and high scenarios.

III.) **Action Items** – The stakeholders asked many questions and left Cascade with very helpful action items.
- Show which gates are using the EIA efficiency factor and give the growth rates for each CityGate.
- Modify Slides to say 80% rather than 70%.
- Show the percentage change in the 20 years for each forecast.
- Provide a list with the graphs that show what is included. Ex. Walla Walla and Umatilla for Zone ME-WA.
- Tariff breakdown by zone and a comparison to previous IRPs.
- HDD percentage change from average for the high and low scenarios.
- Provide growth rates with each CityGate.

IV.) **Adjourn** – Cascade Natural Gas will hold TAG 3 on February 19, 2015 at the Portland International Airport Conference Center.

Attendance:

Presenters:
Micah Robinson
Mark Sellers-Vaughn
Brian Robertson

Attendees:
Monica Cowlisha
Mike Parvinen
Jon Whiting
Juliana Williams
Lisa Gorsuch
Nadine Hanhan
Dave Lenar
Ted Light

Call-in attendees:
John Klingele
Tommy Brookes
Kary Burin
Amanda Sargent

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Washington Demand Side Management

Presented by Monica Cowlishaw
Manager, Energy Efficiency and Community Outreach

Agenda:

- **Intro**
- Model Comparison
- Process
- Results
- Key Updates
- Final Steps

Introduction

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- **Objective:**
  - Acquire cost-effective demand side resources that fit within Cascade's integrated resource plan's projected resource requirements.

- **Conservation Incentive Program Management (CIP):**
  - Residential - Electric and Gas Industry Assoc. (EGIA)
  - Commercial/Industrial – Lockheed Martin (LM)

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Agenda:

- ✓ Intro
- ➢ **Model Comparison**
- ❑ Process
- ❑ Results
- ❑ Key Updates
- ❑ Final Steps

Model Comparison

Past: Stellar/Ecotope

- Program planning basis
- High level
- Oregon based
- Alterations in 2009 to WA
- Internal updates required

Present: Nexant – TEAPOT*

- Washington focused
- Based on Cascade territory
- Provided EM&V
- UCT and TRC** per UG-121207
- Expert review of technologies
- Easier to tie program design and potential assessment

***TEAPOT** = **T**echnical, **E**conomic, **A**chievable, **Pot**ential
**** UCT** = **U**tility **C**ost **T**est; **TRC** = **T**otal **R**esource **C**ost test

Nexant Potential Study

- Provide credible and transparent estimation of the technical and achievable energy efficiency potential by year over the next 21 (2014-2034) years within Cascade's Washington service territory;
- Assess and validate therm savings associated with key measures that qualified for, and received, a conservation incentive in the 2012 program year, and apply findings to determine realistic therm savings potential in Cascade's Washington Service area;
- Provide a user friendly, executable dynamic model that will support the potential assessment and allow for sensitivity testing of all model inputs and assumptions;
- Develop a final report including summary data tables and graphs reporting incremental and cumulative potential by year from 2014 through 2034.

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Agenda:

- ✓ Intro
- ✓ Model Comparison
- ➢ **Process**
- ❑ Results
- ❑ Key Updates
- ❑ Final Steps

Process

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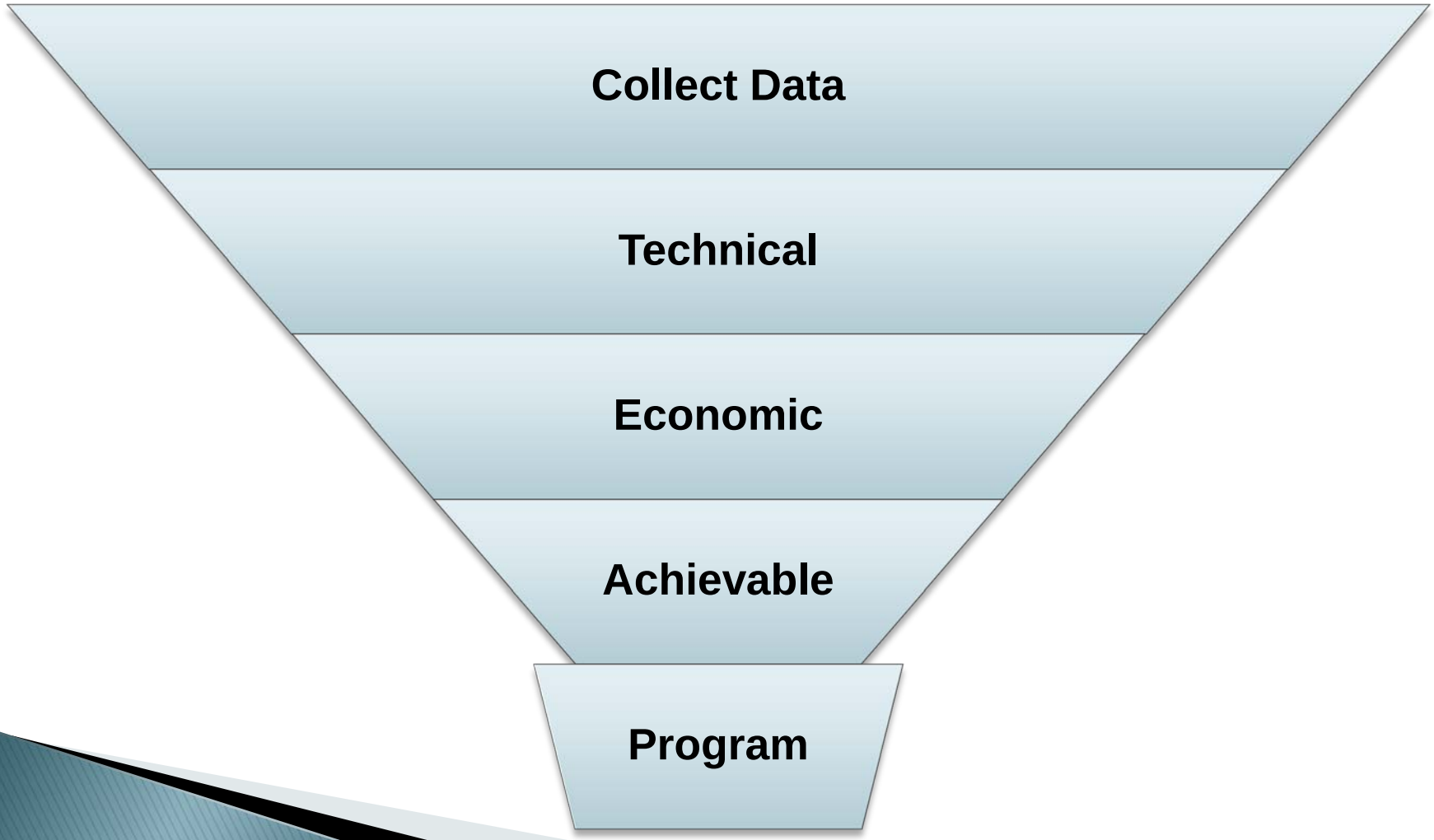

Process

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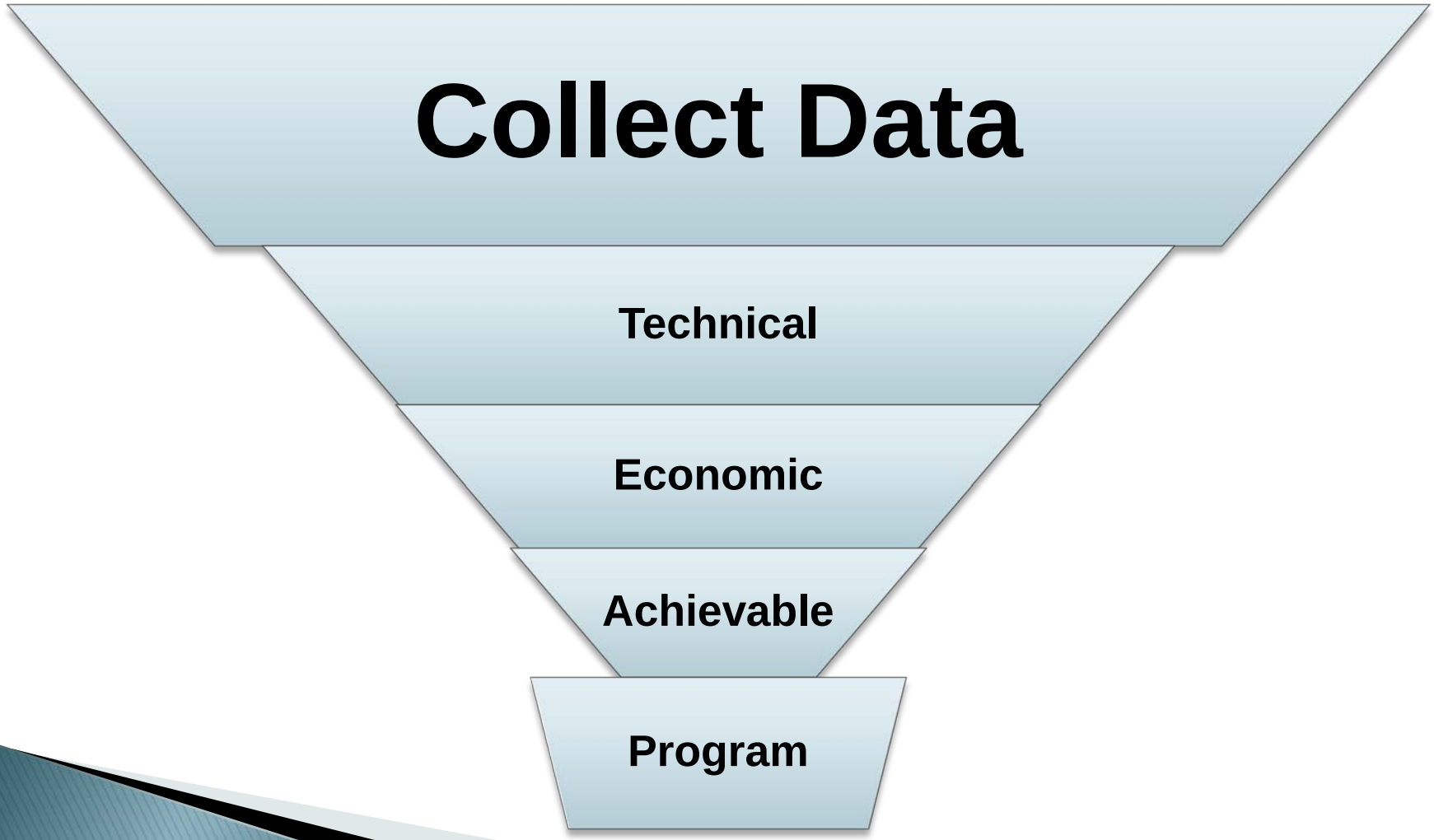

Collect Input Data

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- ✓ Residential, Commercial, and Industrial 20 Year Volume and Customer Forecasts
- ✓ Updated Avoided Costs
- ✓ Long-term Discount Rate and/or Weighted Average Cost of Capital (WACC)
- ✓ Inflation Rate used by all sections of IRP
- ❑ Load Profile – waiting to incorporate

Develop Portfolio of Potential Future Measure Offerings

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- Nexant research/industry best practices
- Lockheed Martin experience/input
- On the ground program experience from CNGC

Process

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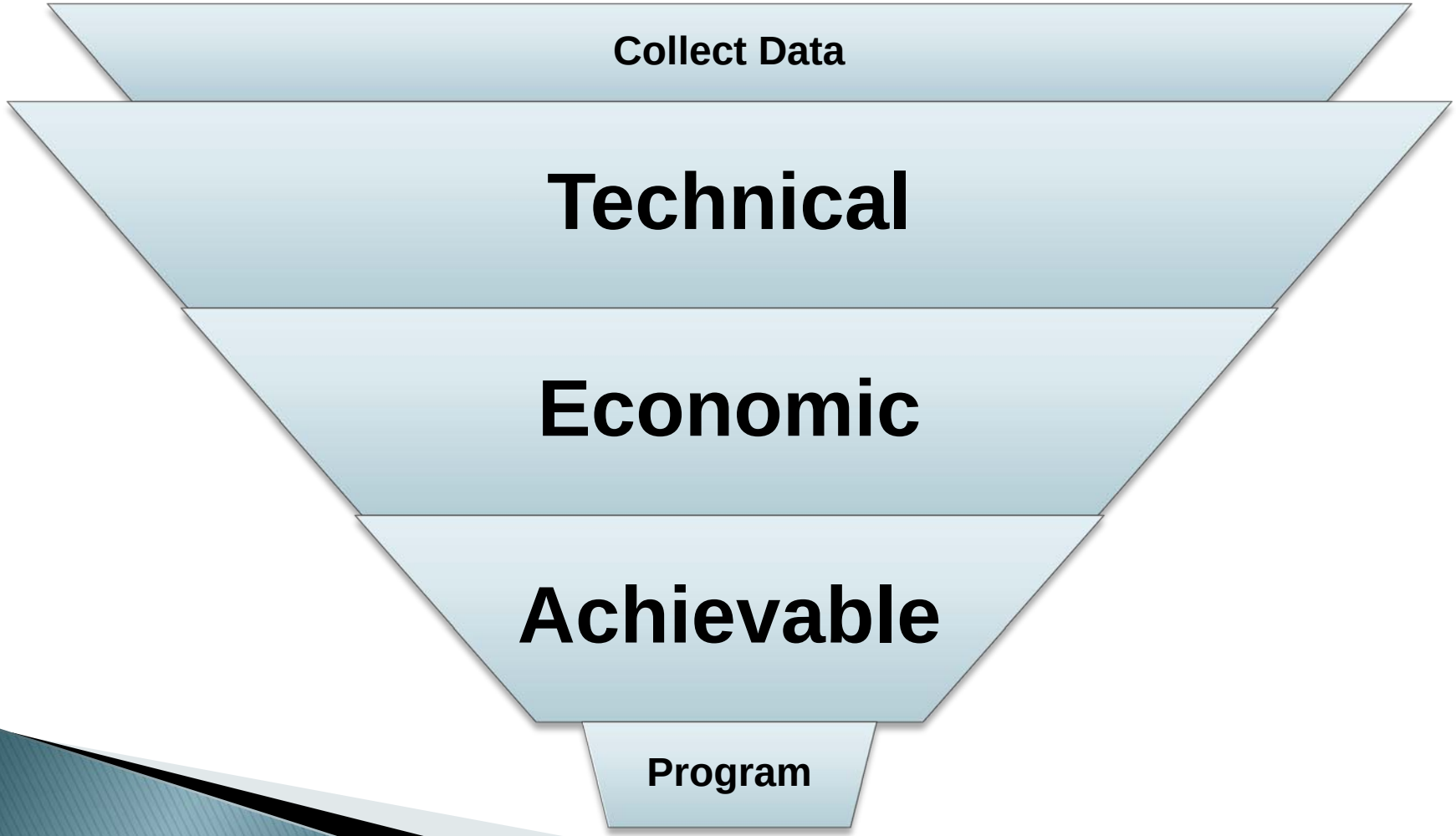

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Technical Potential

- Represents substitution of all *technically* feasible measures at the end use level.

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Economic Potential

- Considers the most efficient measures that pass *economic* screening tests.

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Achievable Potential

- Embodies a set of assumptions about the decisions consumers make regarding the efficiency of the equipment they purchase to simulate a ***realistic estimate*** of real-life conditions.

TEAPOT Model

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- Ran model separately for Residential, Commercial, & Industrial forecasts under the Utility Cost Test (UCT).
- Combined Commercial & Industrial forecasts.
- Combined Commercial & Industrial forecast with the Residential forecast to reach Total CIP TEAPOT.
- Assumed current program incentive offerings for the first two years, followed by all potential measures reviewed by Nexant for years 2017 to 2034.
- Set long-term discount rate to 4.17%.

Residential TEAPOT

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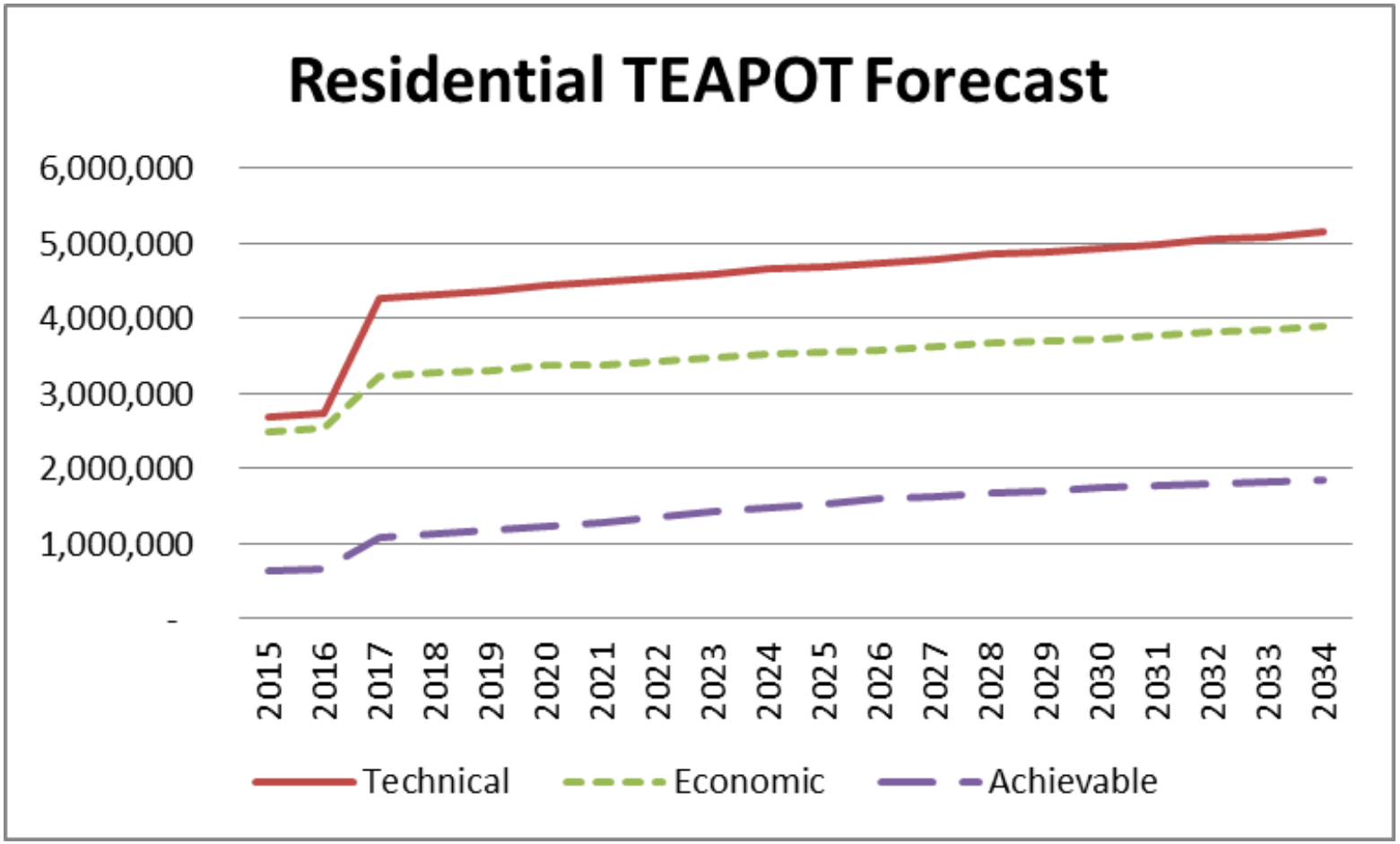

Commercial & Industrial TEAPOT

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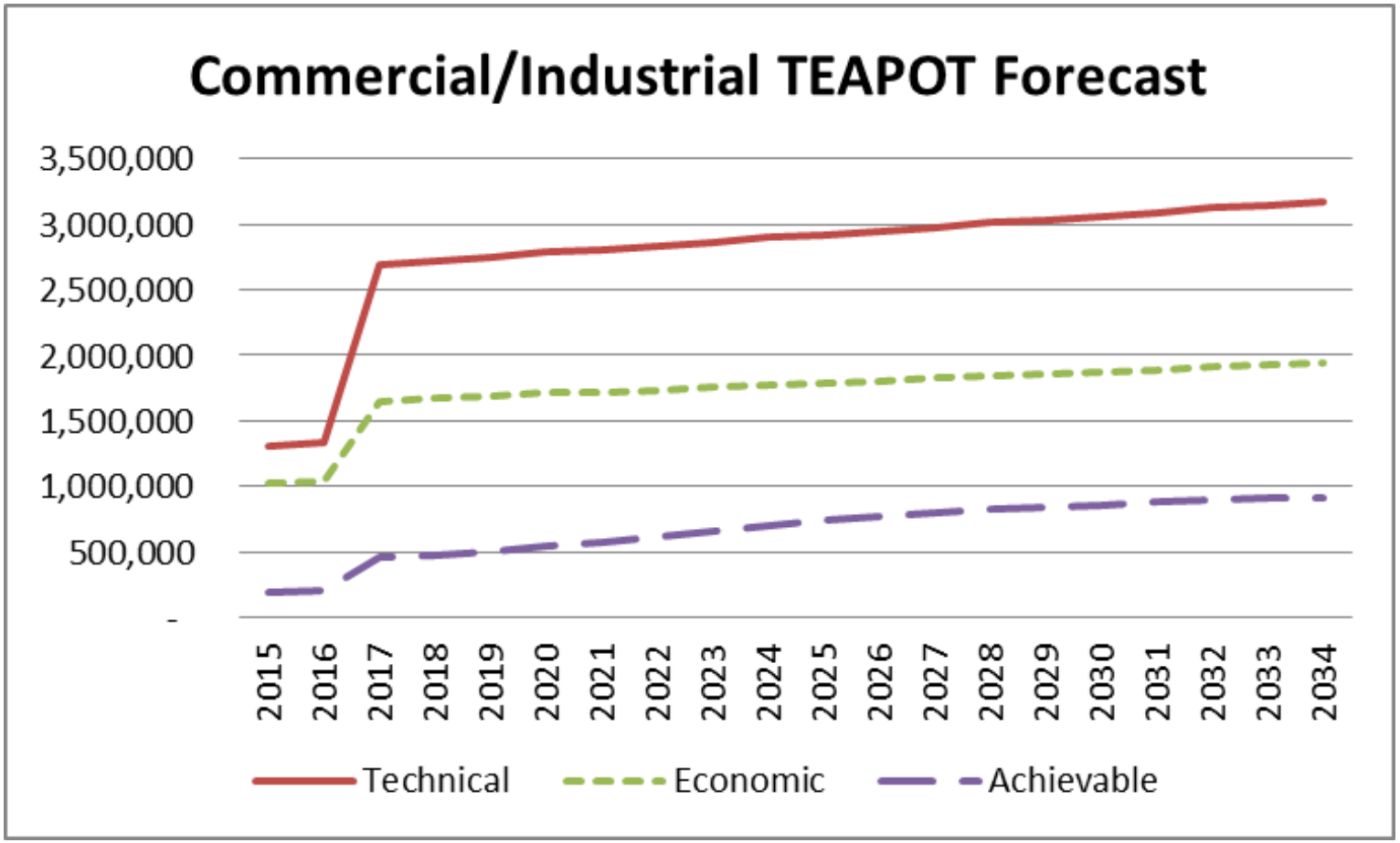
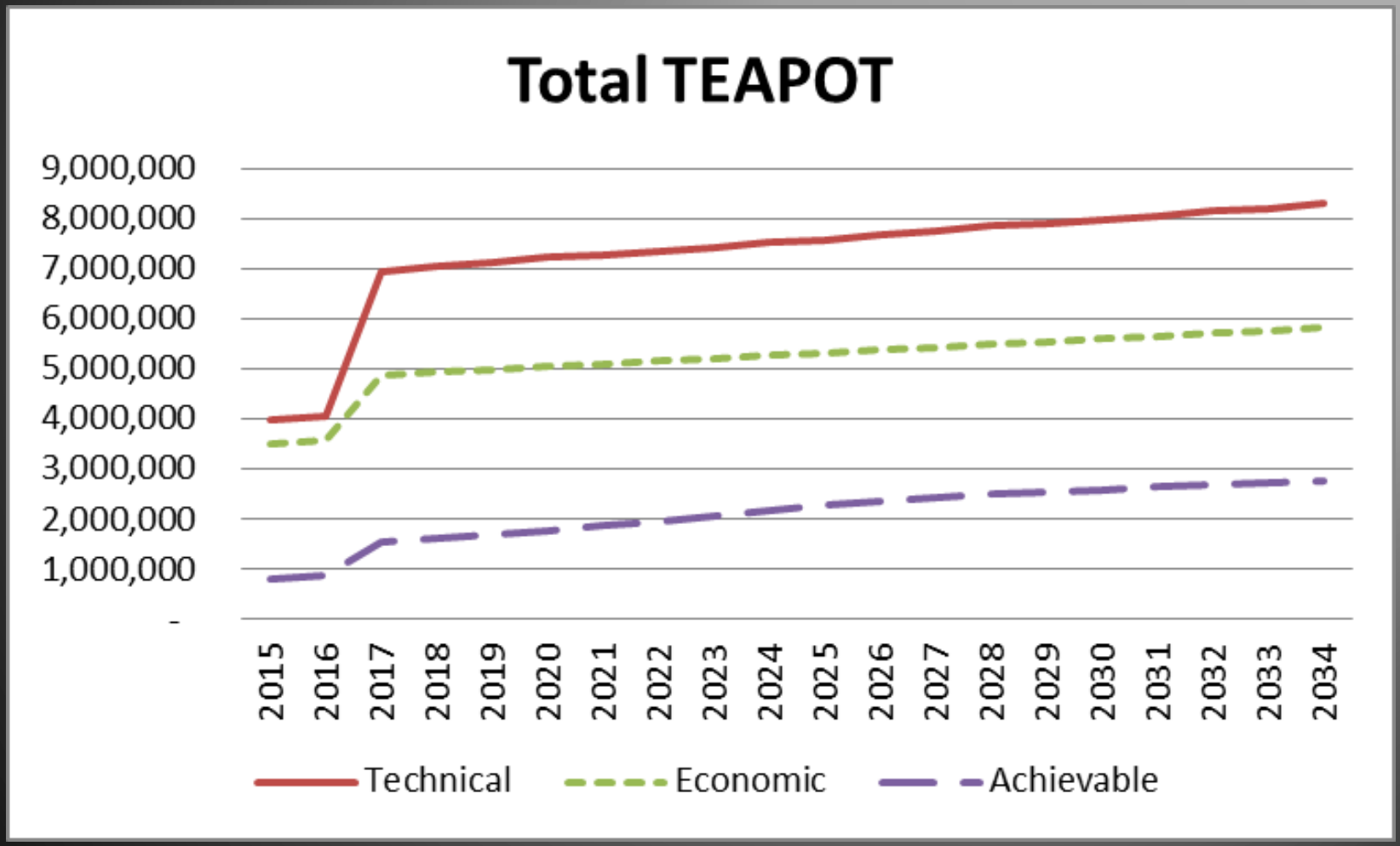


Total CIP TEAPOT Forecast



Process

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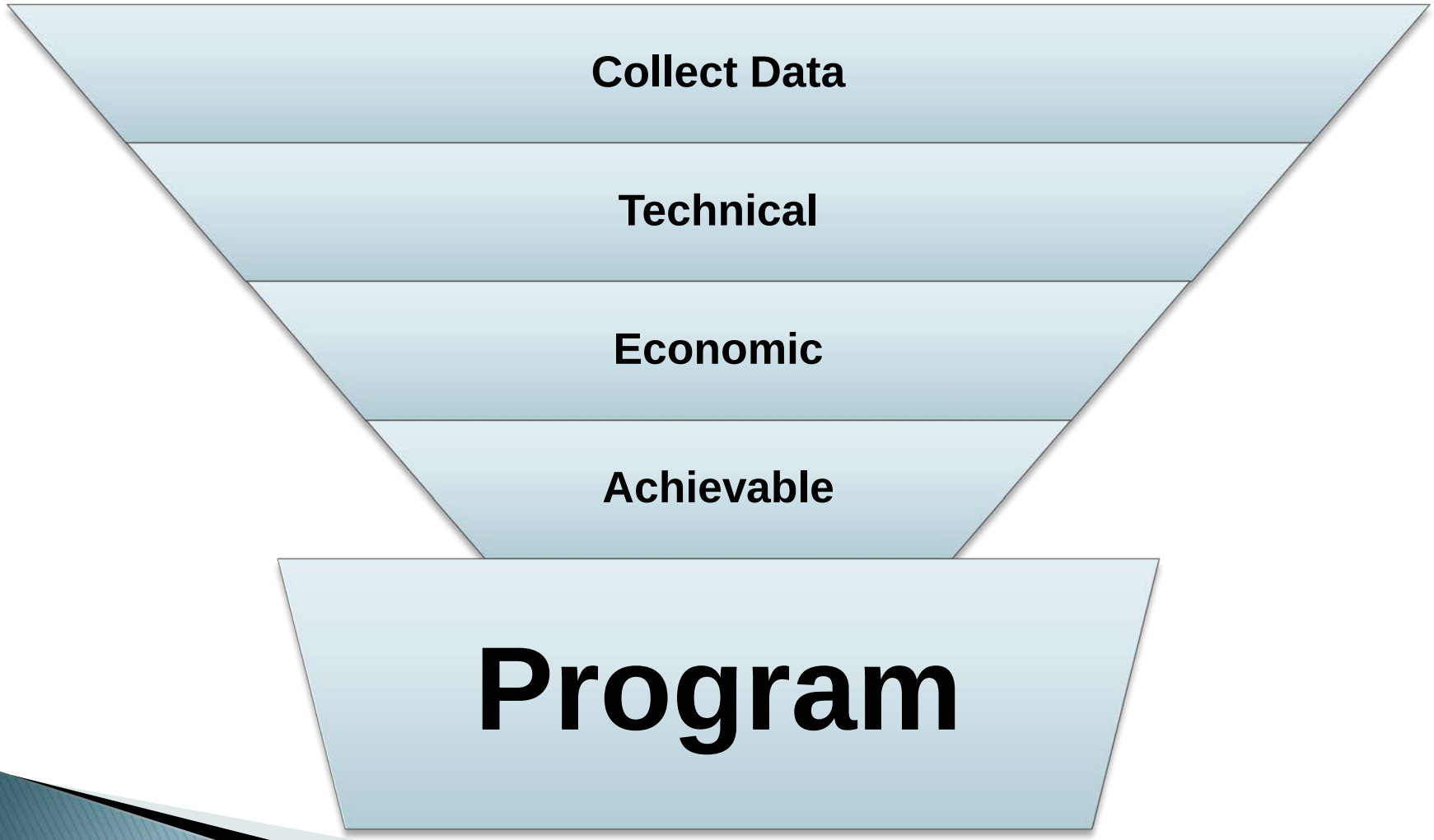

Programmatic Potential

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- Program potential is the subset of achievable potential attainable given constraints on program budget and implemented measures.

Programmatic Potential

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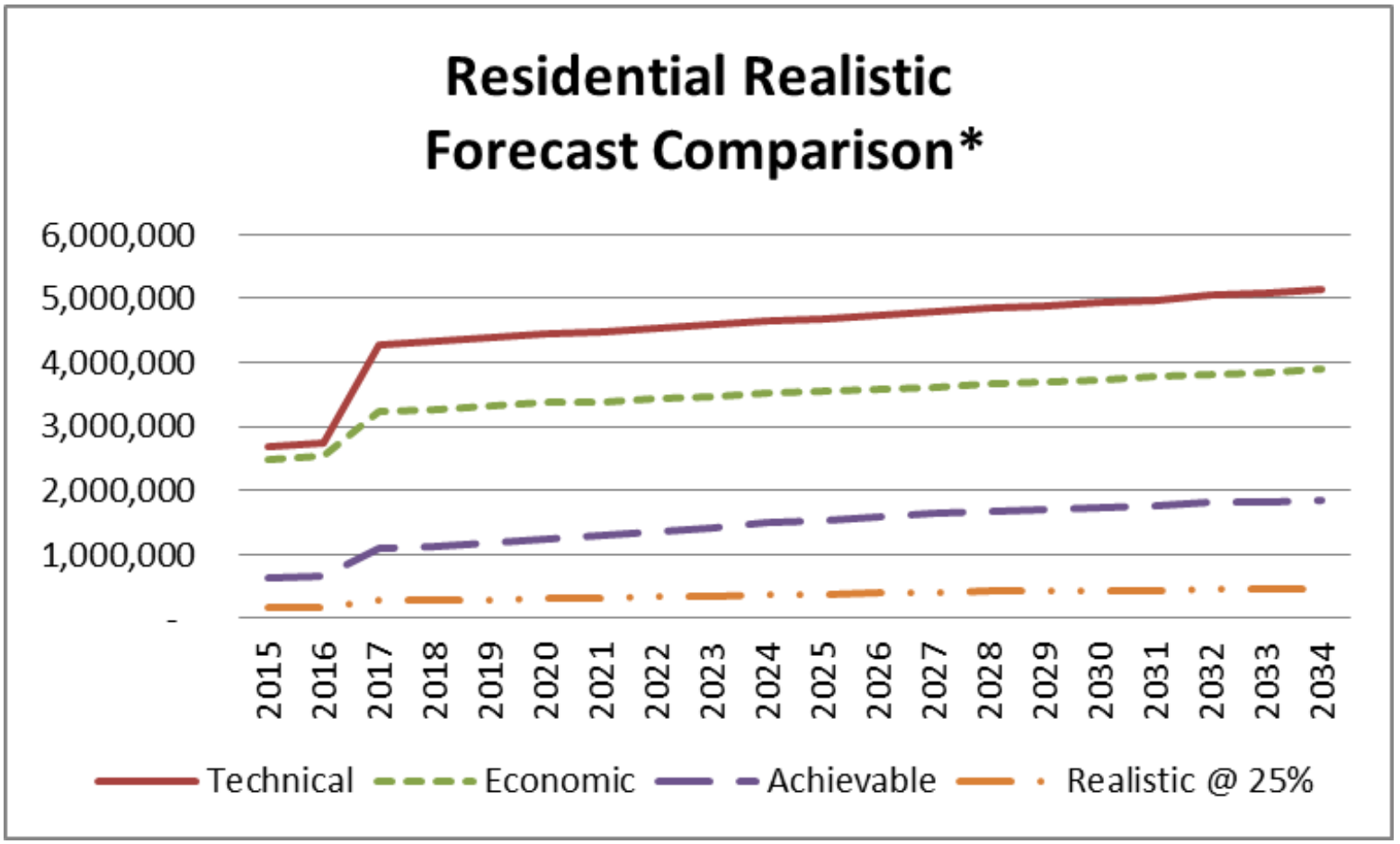
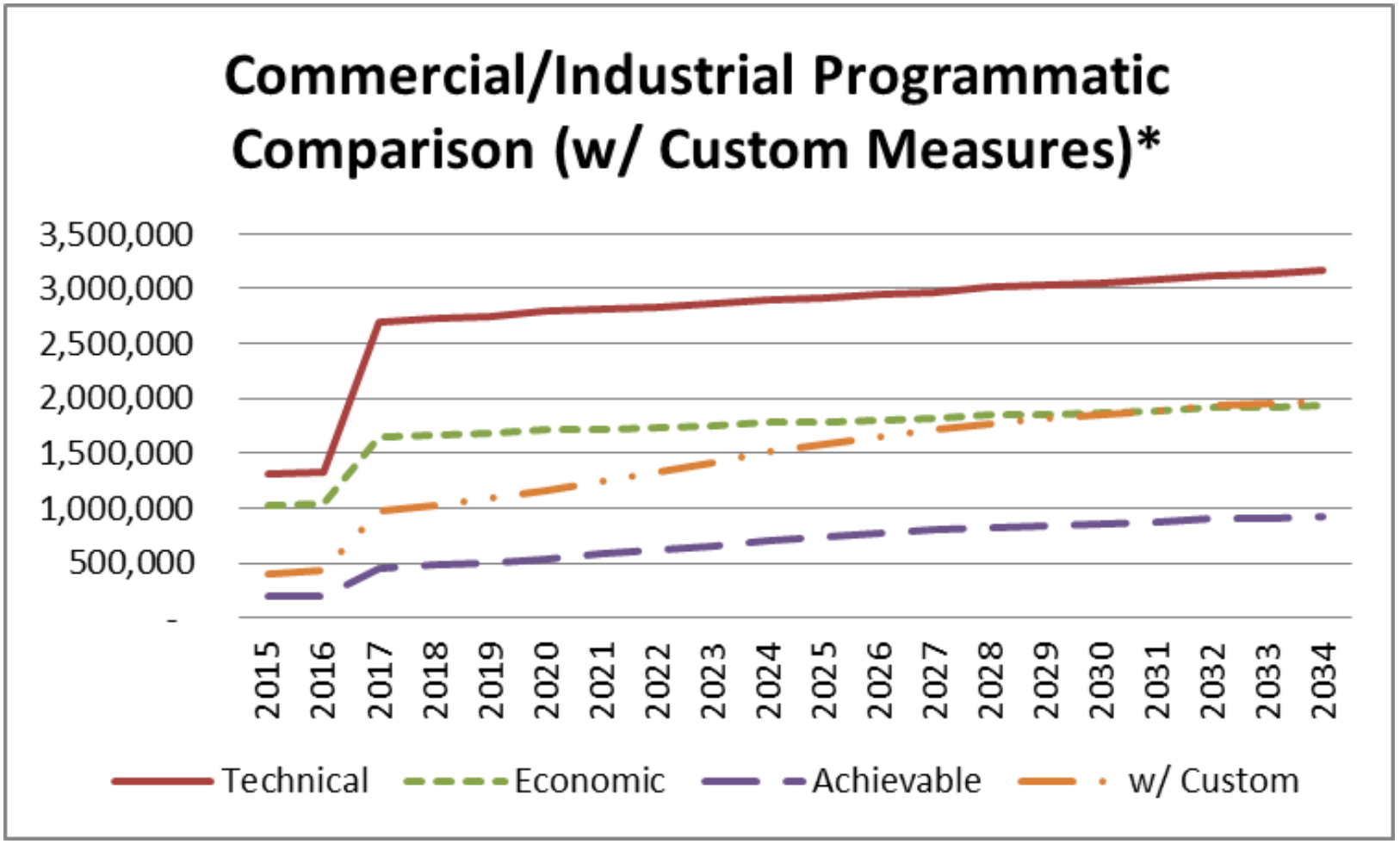
- Used 75% of Achievable for the Programmatic Commercial/Industrial forecast.
- Set Residential Realistic potential to 25% of the Achievable forecast in line with previous years' outcomes.
- **NOTE:** TEAPOT is limited to forecasting prescriptive measures. Therefore, the Commercial/Industrial outcome is set as 35% and custom measures are added to fill the remaining 65%, based on historical average proportions of conserved therms.
- Added Low Income Potential Forecast

Residential Realistic Forecast



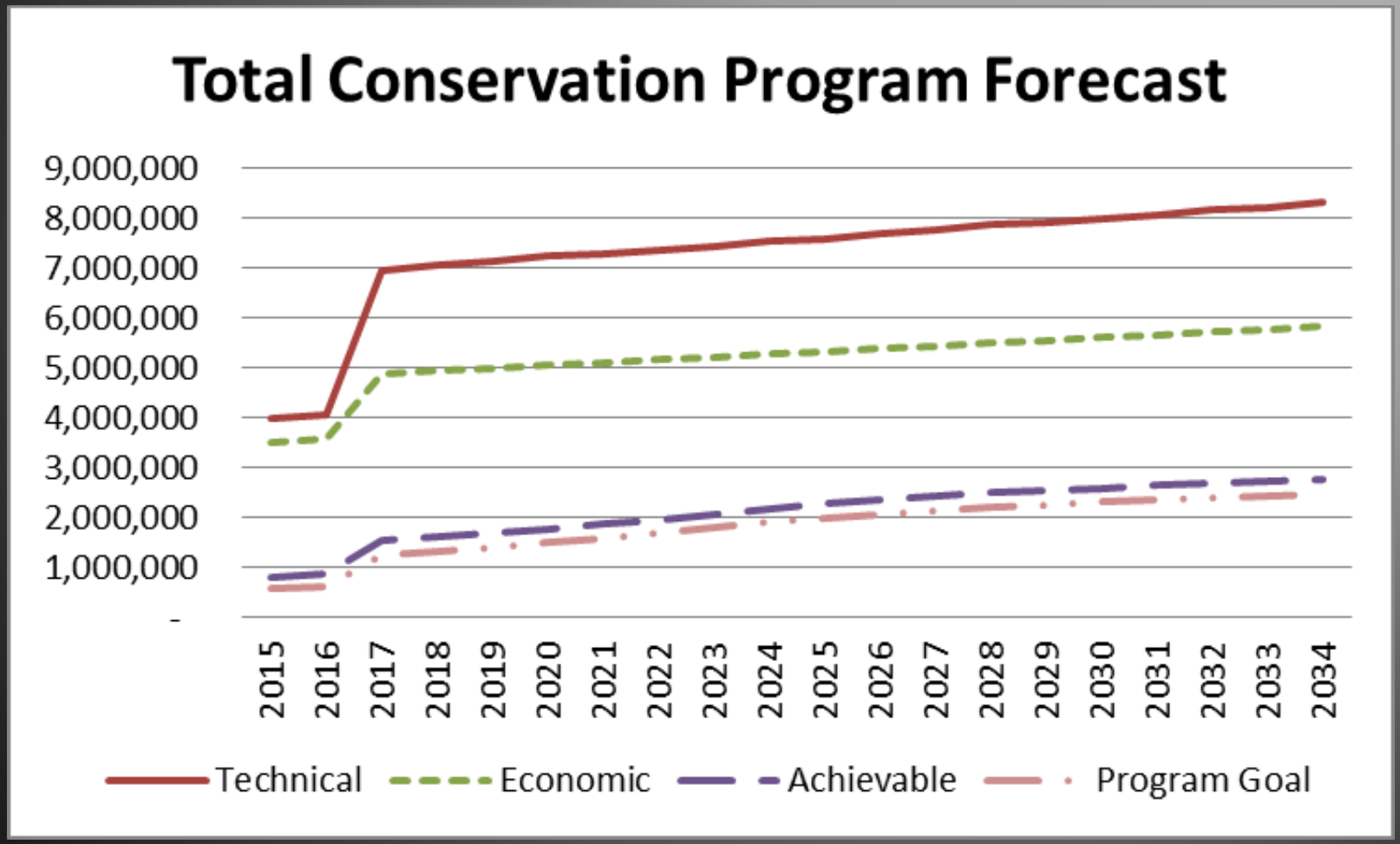
*Set at 25% of Achievable Potential

Com/Ind Programmatic Potential



* Set at 75% of Achievable Potential with Custom Measures' Potential added in (65% of total Com/Ind).

Combined Projected Savings



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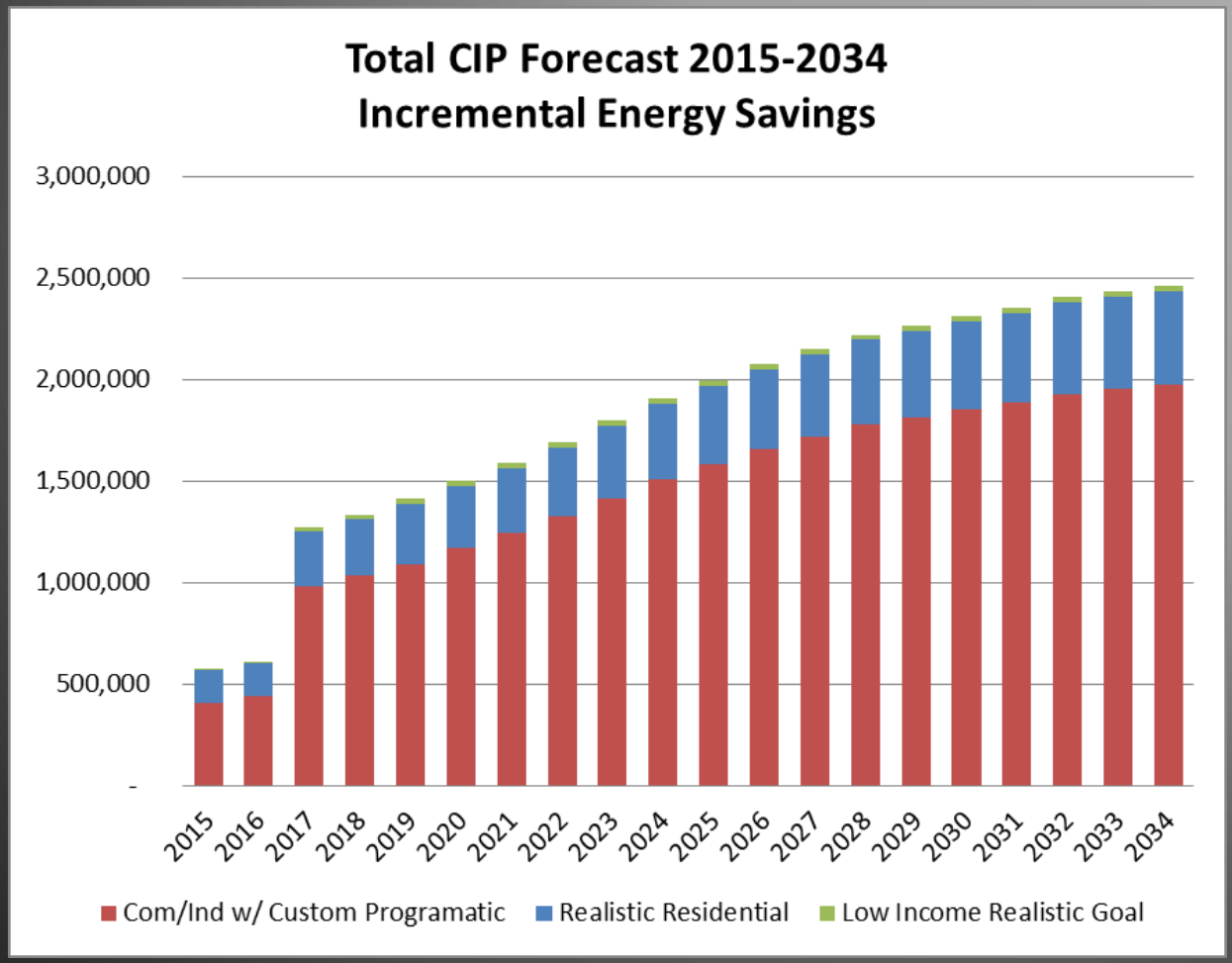
Agenda:

- ✓ Intro
- ✓ Model Comparison
- ✓ Process
- ➢ **Results**
- ❑ Key Updates
- ❑ Final Steps

Total Program Goals



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Agenda:

- ✓ Intro
- ✓ Model Comparison
- ✓ Process
- ✓ Results
- ➢ **Key Updates**
- ❑ Final Steps

Key Updates for 2015 IRP

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- Includes a Demand Side Management specific **Table of Contents** to ease navigation.
- **Residential & Commercial Measure Table** – see handout
- Split Washington and OR sections into separate pieces
- Incorporated Nexant potential study
- Used new TEAPOT model for forecasting

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Agenda:

- ✓ Intro
- ✓ Model Comparison
- ✓ Process
- ✓ Results
- ✓ Key Updates
- ➢ **Final Steps**

Next Steps to Finalize Forecast

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- Rerun models with the new Load Profile.
- Incorporate final revisions to load forecast.
- Integrate solicited feedback from Conservation Advisory Group (CAG).
- Update graphs and charts with final forecasts and text of IRP.

Agenda:

- ✓ Intro
- ✓ Process
- ✓ Results
- ✓ Key Updates
- ✓ Model Comparison
- ✓ Final Steps

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Questions?

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Manager, Energy Efficiency & Community Outreach
Monica.Cowlishaw@cngc.com

Amanda Sargent
Conservation Analyst II
Amanda.Sargent@cngc.com



Energy Trust of Oregon

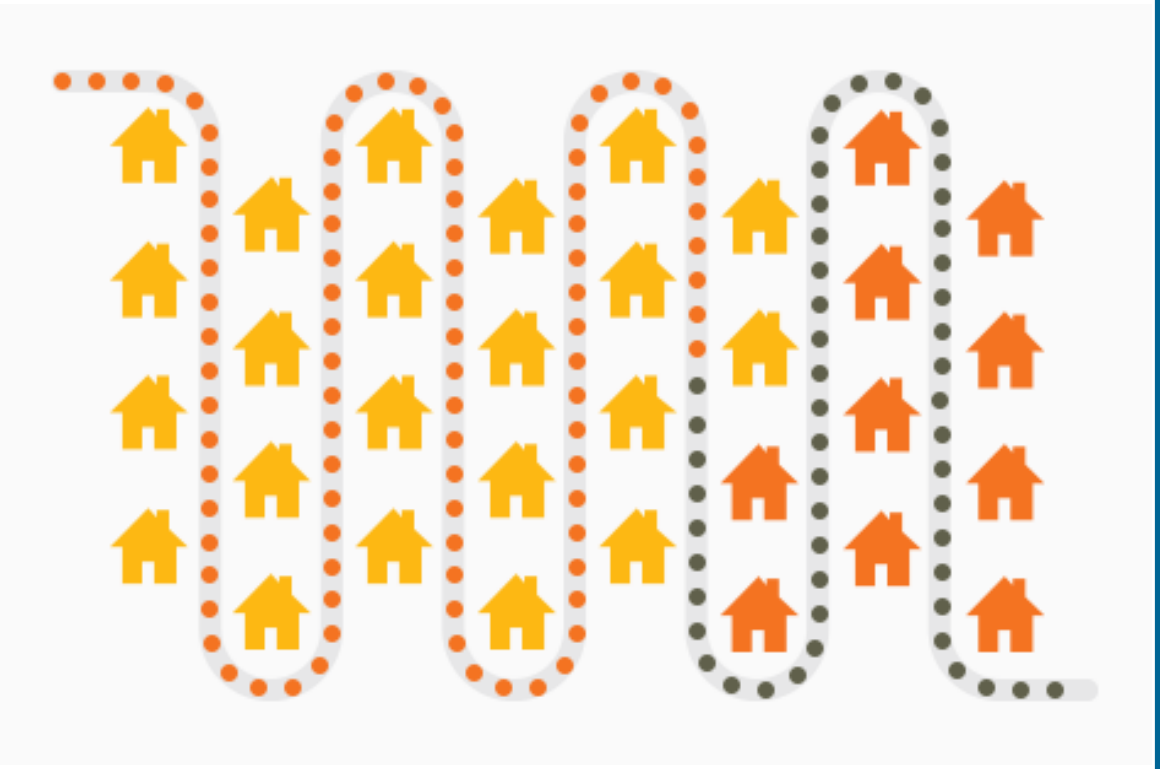
EE Potential Results

February 19, 2015



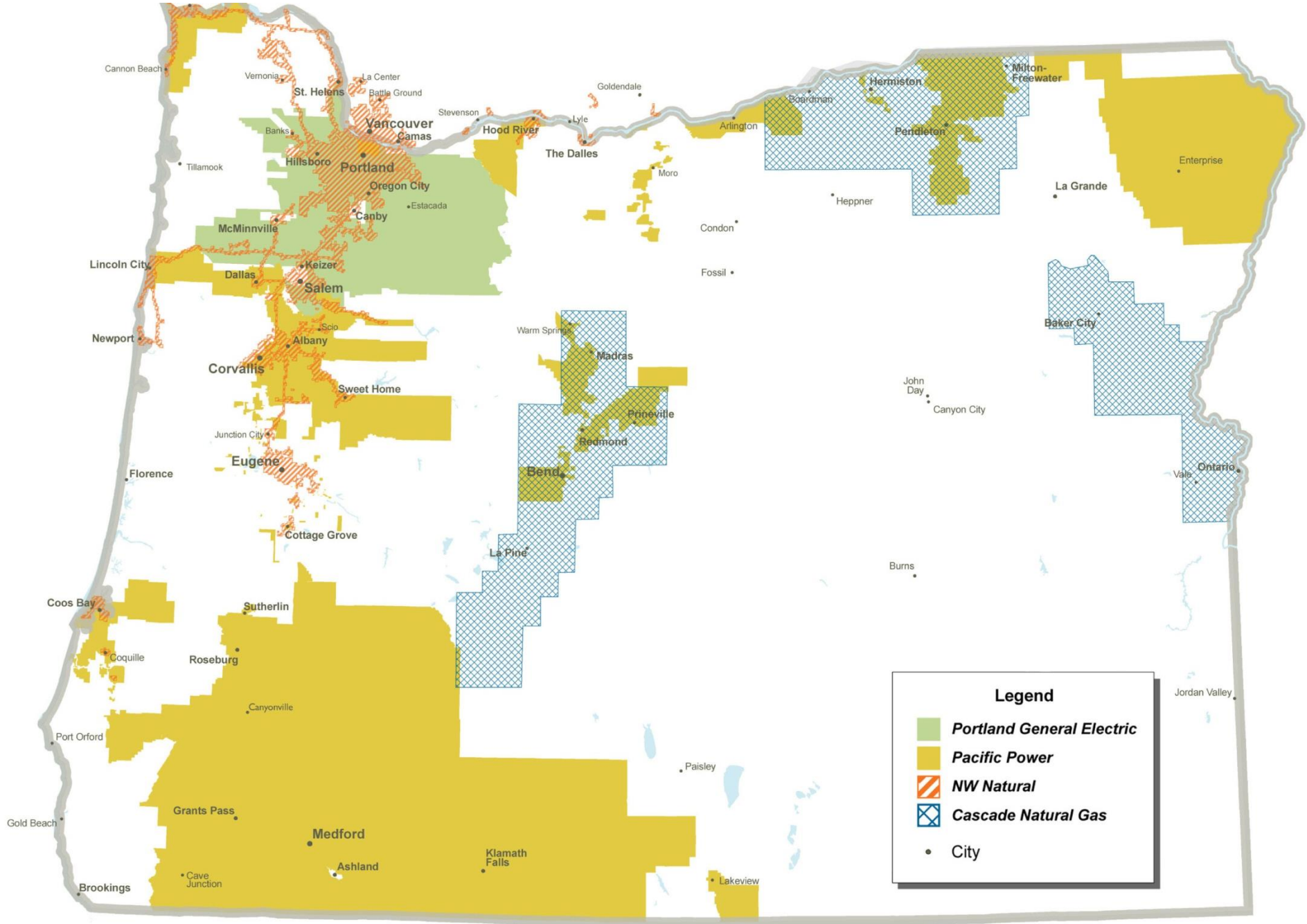
About

- Independent nonprofit
- Serving 1.5 million customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas
- Helping utility customers:
  - Save energy
  - Invest in renewable energy resources
- Building a stronger Oregon and SW Washington



A clean energy power plant

- 436 average megawatts saved
- 112 aMW generated
- 33 million annual therms saved
- Enough energy to power 425,000 homes and heat 65,000 homes for a year
- Avoided 10 million tons of carbon dioxide


Cannon Beach
Vernonia
La Center
St. Helens
Battle Ground
Goldendale
Stevenson
Vancouver
Camas
Hood River
Lyle
Arlington
Boardman
Hermiston
Milton-
Freewater
Banks
The Dalles
Pendleton
Tillamook
Hillsboro
Portland
Moro
Enterprise
Oregon City
La Grande
Estacada
Heppner
Canby
Condon
McMinnville
Lincoln City
Keizer
Dallas
Fossil
Salem
Baker City
Scio
Warm Springs
Newport
Albany
Madras
Corvallis
Sweet Home
John
Day
Canyon City
Prineville
Junction City
Redmond
Eugene
Florence
Bend
Ontario
Vale
Cottage Grove
La Pine
Burns
Coos Bay
Sutherlin
Coquille
Roseburg
Jordan Valley
Canyonville
Port Orford
Paisley
Grants Pass
Gold Beach
Medford
Klamath
Falls
Ashland
Cave
Junction
Lakeview
Brookings
Legend
Portland General Electric
Pacific Power
NW Natural
Cascade Natural Gas
City

Background

What is a resource assessment?

- Estimate of available, cost-effective efficiency left to be acquired
- Uses utility load and customer forecasts, avoided costs, fuel splits, measure data, etc.



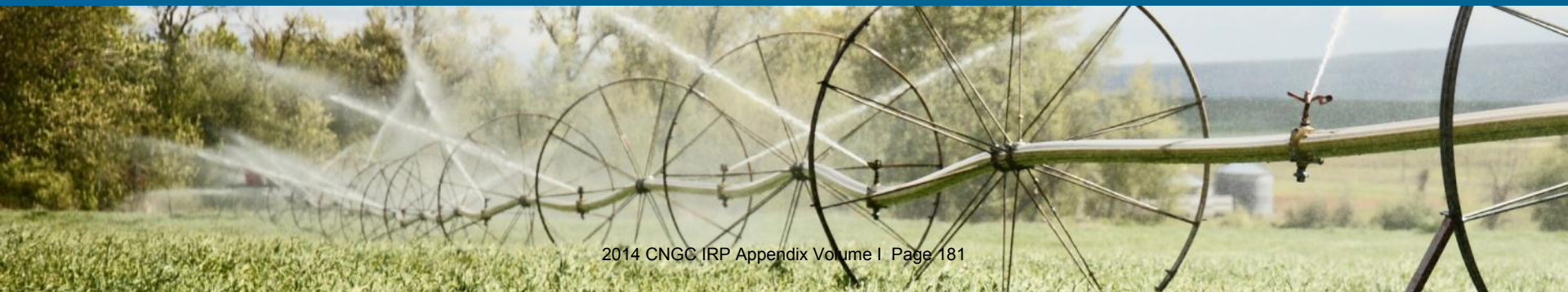
Background

- Energy Trust uses for utility IRP work & strategic plan
- Used same model, with updates, since 2005
- Issued an RFP in 2013
- Navigant Consulting selected



Methodology: Measure Definition

- Characterized 191 measures
- Across 27 customer segments
- Commercial, residential, industrial, and agriculture sectors
- Each measure has roughly 30 defining characteristics



Methodology: Measure Definition

- Incremental measure approach, no market share assumptions
- Factor in some known codes & standards



Methodology: Emerging Technology

- Include some emerging technologies
- Factor in changing performance, cost over time
- Use risk factors to hedge against uncertainty



	ET Risk Factor				
Risk Category	**10%**	**30%**	**50%**	**70%**	**90%**
Market Risk (25% weighting)	**High Risk:** • Requires new/changed business model • Start-up, or small manufacturer • Significant changes to infrastructure • Requires training of contractors. Consumer acceptance barriers exist.			**Low Risk:** • Trained contractors • Established business models • Already in U.S. Market • Manufacturer committed to commercialization	
Technical Risk (25% weighting)	**High Risk: Prototype in first field tests. A single or unknown approach**	**Low volume manufacturer. Limited experience**	**New product with broad commercial appeal**	**Proven technology in different application or different region**	**Low Risk: Proven technology in target application. Multiple potentially viable approaches.**
Data Source Risk (50% weighting)	**High Risk: Based only on manufacturer claims**	**Manufacturer case studies**	**Engineering assessment or lab test**	**Third party case study (real world installation)**	**Low Risk: Evaluation results or multiple third party case studies**

Methodology: Emerging Technology

End result:

- The estimate for any given emerging technology is not accurate
- Taken as a whole, provides a reasonably conservative estimate of what is possible

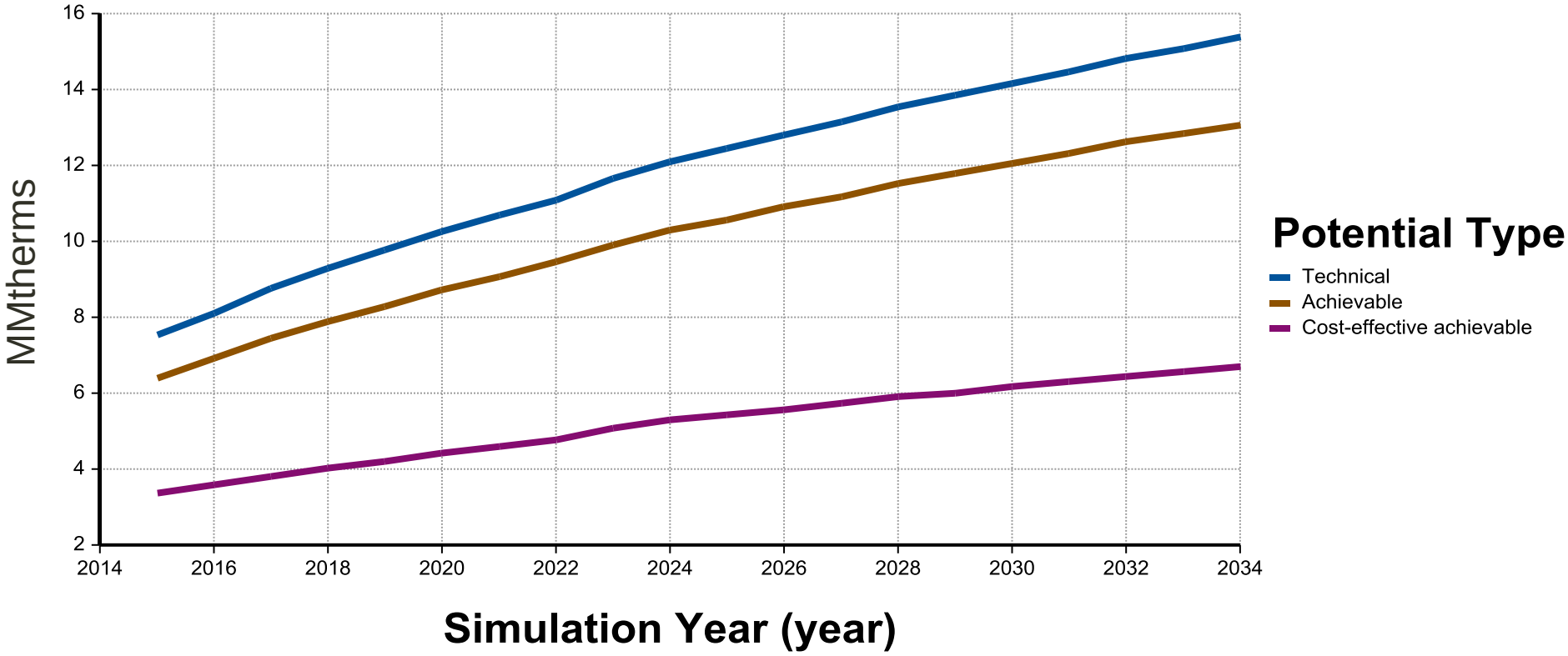


Draft Results

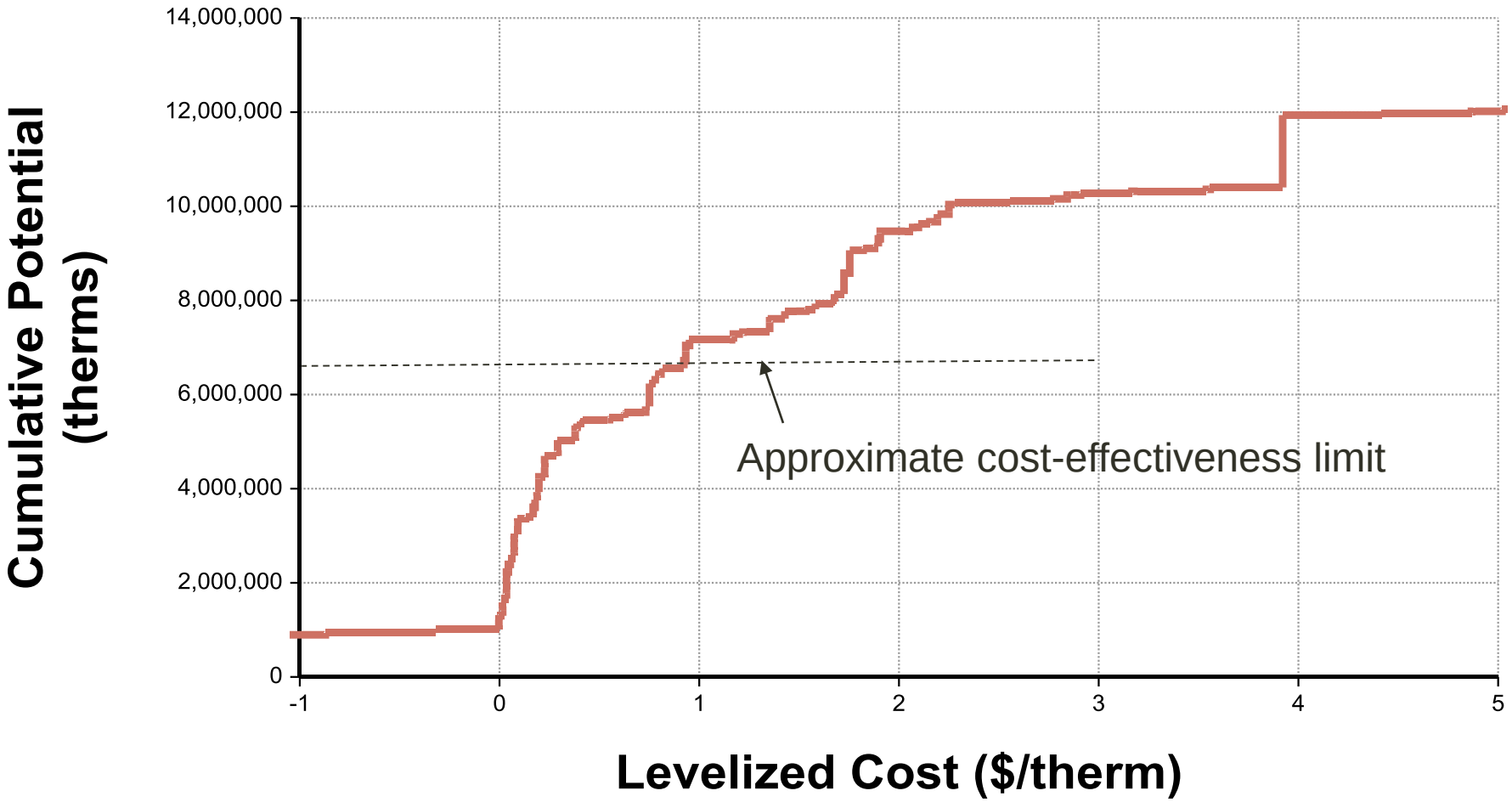
Types of Potential

<table>
<tr><td>Not technically feasible</td><td colspan="4">Technical Potential</td></tr>
<tr><td>Not technically feasible</td><td>Market barriers</td><td colspan="3">Achievable Potential</td></tr>
<tr><td>Not technically feasible</td><td>Market barriers</td><td>Not cost effective</td><td colspan="2">Cost Effective Potential</td></tr>
<tr><td>Not technically feasible</td><td>Market barriers</td><td>Not cost effective</td><td>Program design, budget, etc. constraints</td><td>Program Deployment</td></tr>
</table>

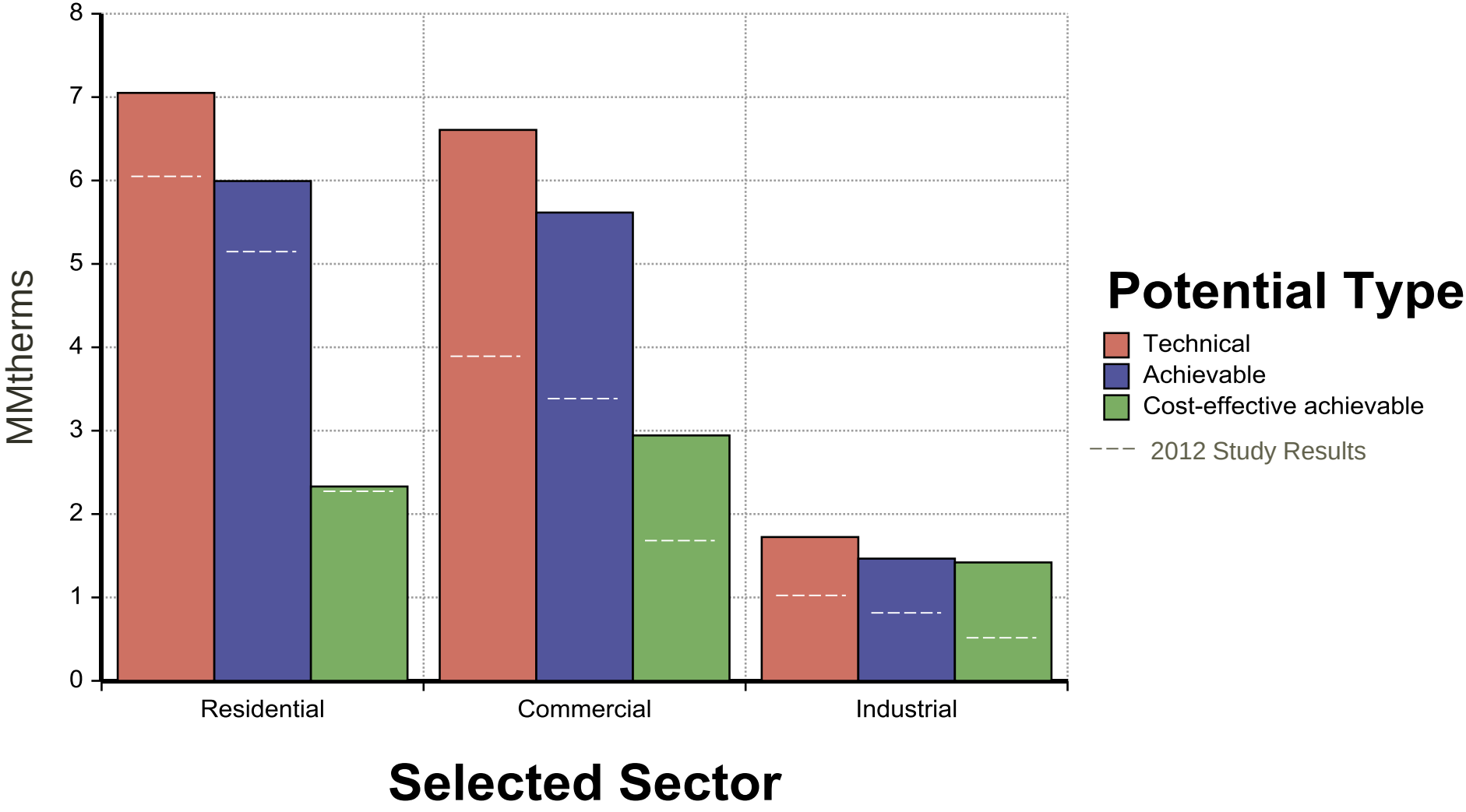
Cumulative Potential by Type and Year



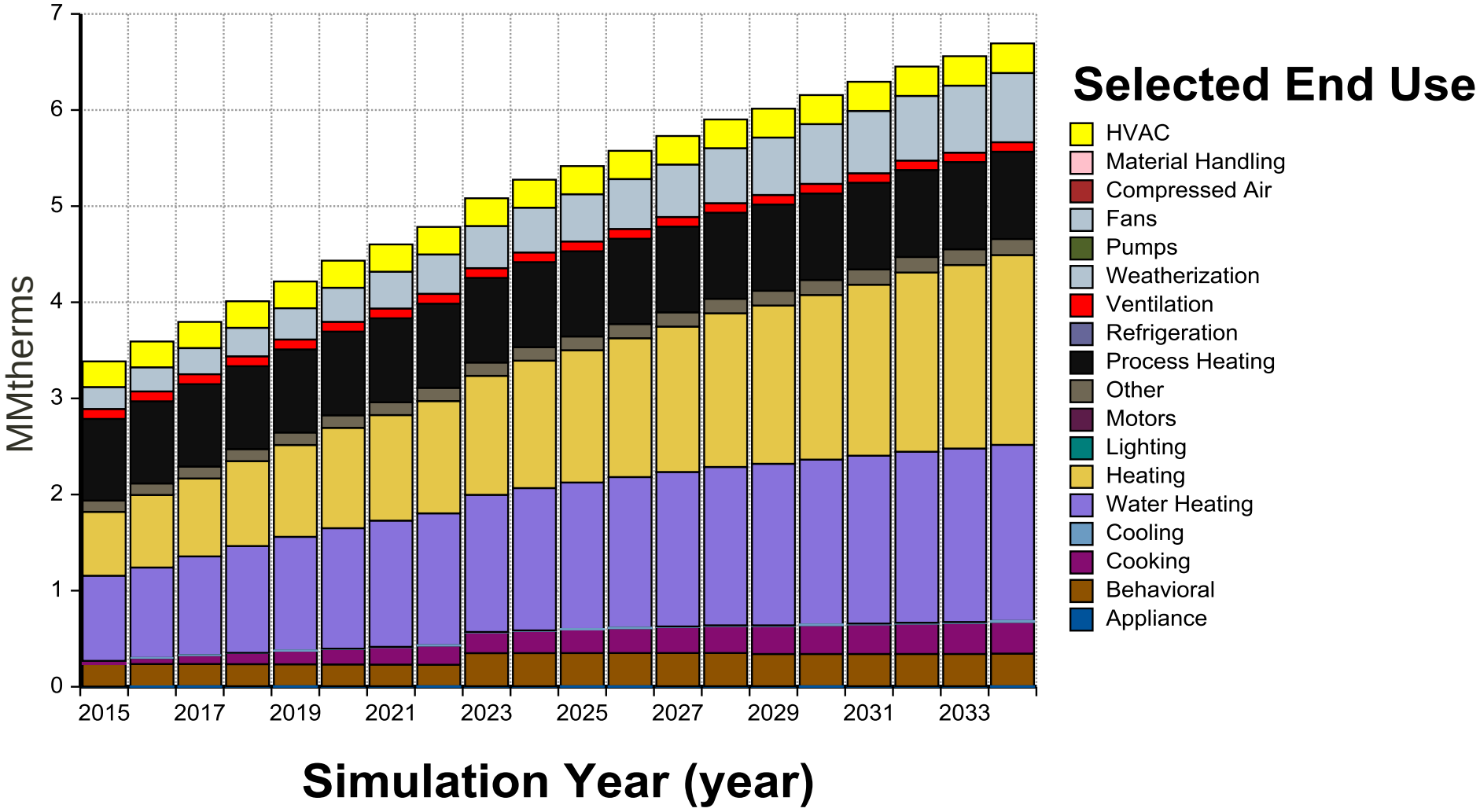
Gas Supply Curve



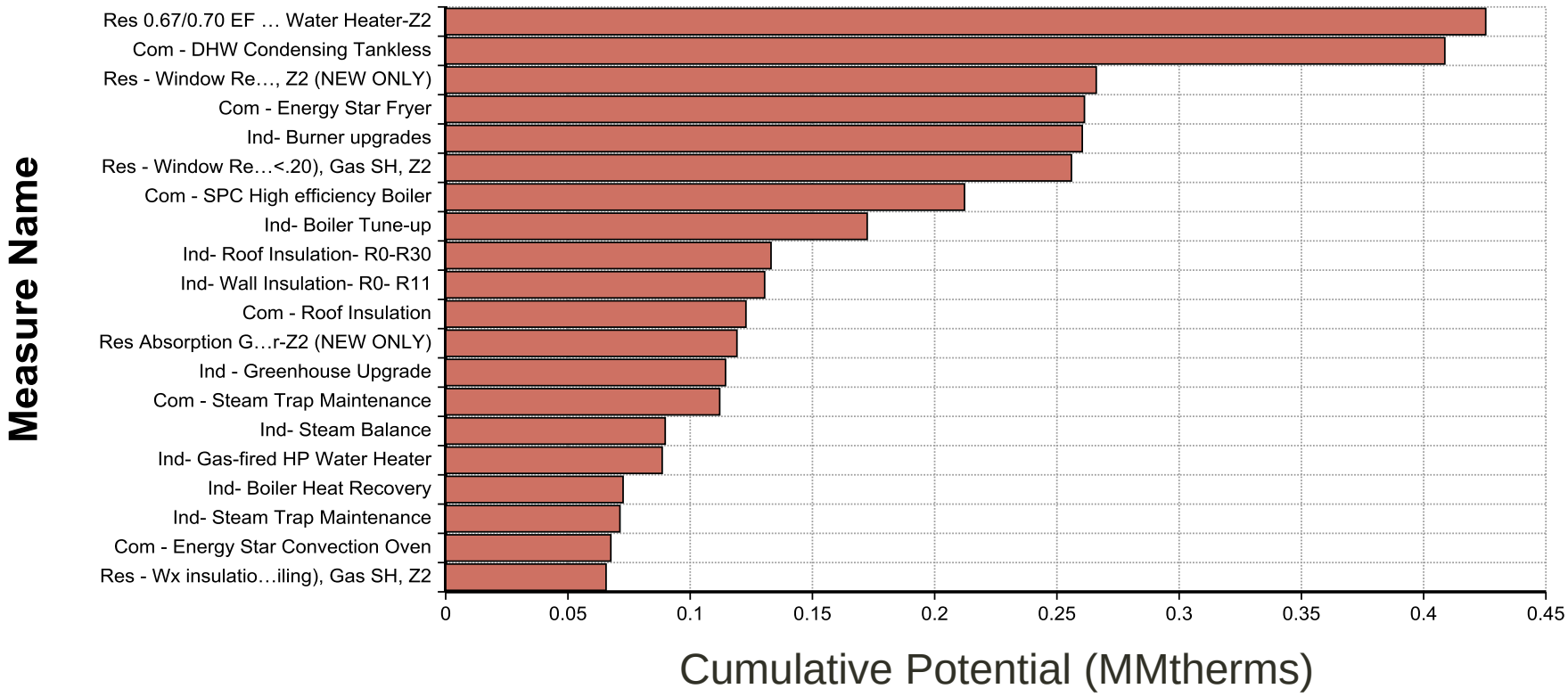
2034 Potential by Sector and Type



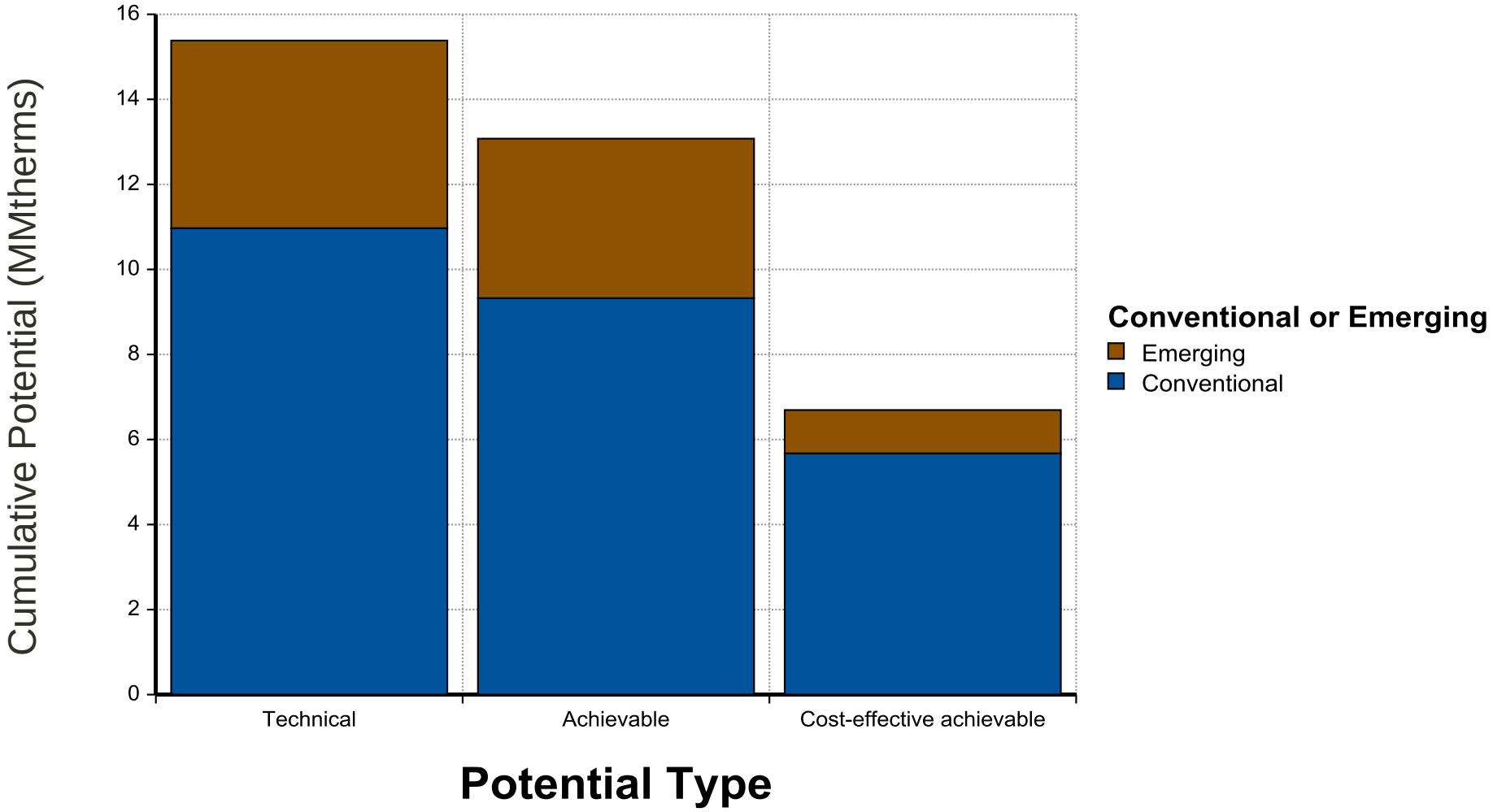
Cost-effective Potential by End Use



Top-Saving Measures



Emerging Technology Contribution



Next Steps

- Update model with final avoided costs, load forecast, updated measure assumptions
- Provide formatted 20-year projection of Energy Trust program accomplishments to Cascade IRP team





Thank You

Ted Light
Sr. Planning Project Manager

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503.445.7643

EnergyTrust of Oregon

Current Residential Program Offerings from Tariff 300

Measure	Incentive	Therm Savings Range per premise values*	Levelized Cost / Therm per premise values ($)
High Efficiency Natural Gas Furnace 95%+ AFUE	$250	100 - 134	0.25 – 0.43
High Efficiency Natural Gas Hearth /Fireplace 70% + FE	$150	74 - 76	0.21
High Efficiency Natural Gas Hearth / Fireplace 80% + AFUE	$250	74 - 76	0.21
High Efficiency Combination Hot Water and Space Heat 90% + AFUE	$825	384 - 539	0.09 – 1.40
Condensing High Efficiency Natural Gas Tankless Water Heater 0.91 + EF	$150	54 - 82	0.58 – 0.79
Conventional High Efficiency Natural Gas Water Heater 0.67 + EF	$45	14 - 43	0.28 – 0.69
High Efficiency Exterior Door ≤ U 0.21	$50	13	0.37
Floor Insulation ≥ R-30 prior NTE R-11	$0.30 / sq. ft.	108 - 132	0.37 to 0.42
Wall Insulation ≥ R-11 prior NTE R-4	$0.35 / sq. ft.	118 - 233	0.02 to 0.08
Ceiling or Attic Insulation ≥ R-38 prior NTE R-18	$0.30 / sq. ft.	24 – 194	0.21 to 0.27
Whole House Residential Air Sealing ≤ 0.0003 SLA	$100	71 - 84	0.30
Northwest ENERGY STAR Certified Home + U.30 Glazing	$600	200 - 206	0.27
Upgrade to ENERGY STAR Premium High Efficiency Natural Gas Furnace	$250	100 - 134	0.25 – 0.43
Built Green Certified Home	$600	203 - 210	0.27
Energy Savings Kit 1 or 2	Free (Value $10 or $16)	17 – 31	0.37

Current Commercial Program Offerings from Tariff 302

Measure	Incentive	Therm Savings Range per premise values	Levelized Cost / Therm per premise values ($)
Warm Air Furnace Condensing Min 91% AFUE	$3.00/kBtu/hr.	126-304	0.18 – 0.70
HVAC Unit Heater Non-Condensing Min 86% AFUE	$1.50/kBtu/hr.	92 – 611	0.52 – 1.50
HVAC Unit Heater Condensing Min 92% AFUE	$3.00/kBtu/hr.	247 – 1361	0.30 – 0.66
Radiant Heating Direct fired radiant heating	$6.95/kBtu/hr.	311 – 1382	0.02 – 0.13
Boiler - Condensing, Min 90% Therm Eff., 300 kBtu input	$4.00/kBtu/hr.	151 – 667	1.34 – 5.07
Boiler Vent Damper Min 1,000 kBtu input	$1,000	24 – 73	0.71 – 2.47
Boiler Steam Trap Min 300 kBtu input Steam pressure @ 7 psig or >	$125	73 – 261	0.08 – 0.32
Domestic Hot Water Tanks Condensing Min 91% Thermal Eff.	$2.50/kBtu/hr.	11 – 1521	0.13 – 1.63
Domestic Hot Water Tankles Water Heater ENERGY STAR 0.82 EF	$60/gpm	6 – 1137	0.15 – 1.68
Attic Insulation Tier 1 Min R-30	$0.50 /sq. ft.	46 – 204	0.151
Attic Insulation Tier 2 Min R-45	$0.65 /sq. ft.	46 – 204	0.192
Roof Insulation Tier 1 Min R-21	$0.60 /sq. ft.	288 – 744	0.14 – 0.63
Roof Insulation Tier 2 Min R-30	$0.80 /sq. ft.	288 – 744	0.14 – 0.63
Wall Insulation Tier 1 Min R-11	$0.50 /sq. ft.	211 – 935	0.17 – 0.38
Wall Insulation Tier 2 Min R-19	$0.56 /sq. ft.	211 – 935	0.16 – 0.39
Ozone Injection Laundry Venturi injection/bubble diffusion Min 125 lb. total washer/extractor capacity	$2,500	294 – 1049	0.82 – 1.78
Motion Control Faucet Max flow rate of 1.8 gpm	$105	72 – 1330	0.16 – 0.57
Clothes Washer 1.8 MEF	$180	379 – 1850	0.01 – 0.20
Gas Convection Oven ENERGY STAR ≥ 42% Cooking Eff / ≤ 13,000 Btu/ hr. Idle Rate	$450	368 – 736	0.23 – 0.41
Gas Griddle - ENERGY STAR ≥ 38% Cooking Eff / ≤ 2,650 Btu/ hr. Idle Rate	$350	155 – 274	0.08 – 0.15

Measure	Incentive	Therm Savings Range per premise values	Levelized Cost / Therm per premise values ($)
Gas Conveyor Oven > 42% tested Baking Eff	$600	137 – 589	0.69 – 2.34
Connectionless 3 Pan Gas Steamer ENERGY STAR or CEE/FSTC qual. ≥ 38% Cooking Eff / ≤ 2,083 Btu/ hr./pan Idle Rate	$850	1174 – 1283	0.05 – 2.23
Connectionless 6 Pan Gas Steamer ENERGY STAR or CEE/FSTC qual. ≥ 38% Cooking Eff / ≤ 2,083 Btu/ hr./pan Idle Rate	$1,200	1174 – 1283	0.05 – 2.23
Double Rack Oven FSTC Qualified ≥ 50% Cooking Eff / ≤ 3,500 Btu/ hr./pan Idle Rate D Rack	$2,000	65 – 587	0.151
ENERGY STAR Gas Fryer	$600	388 – 685	0.08 – 0.14
Door Type Dishwasher Low Temp ENERGY STAR ≤ 0.6 kw Idle Rate/≤1.18 gal/rack	$650	16 – 1290	0.13 – 0.65
Multi-Tank Conveyor Low Temp Dishwasher Gas Main w/Electric Booster ENERGY STAR ≤2.0 kw Idle Rate;≤0.50 gal/rack	$1,000	16 – 1290	0.08 – 1.29
Recirculation Controls Continuous Operation DWH Pump	$100	112 – 399	0.02 – 0.15
Energy Savings Kit A or B	Free - Value $55 or $25	34-45	0.37 – 0.49

2014 Integrated Resource Plan

Technical Advisory Group Meeting

April 1, 2015

Agenda

- Introductions
- Long-range market summary
- Price Forecast
- Avoided Costs
- NWP Plymouth Capacity
- SENDOUT resource inputs
- SENDOUT scenarios
- Other

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Market Outlook and Long Range Price Forecast

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Long range market outlook

- Rockies production slight decline; but with other supplies serving the Midwest, the west coast is ripe for expansion.
- Once LNG flows from BC in early 2020s we should see AECO prices begin to rise relative to Rockies.
- Station 2 should become more liquid
- A number of experts say US production is expected to over 90 bcfd in 2020 and over 110 bcfd in 2030
  - Even more low-cost gas in the Marcellus.
  - Production growth in Western Canada now, but low prices will ultimately reduce any long-term production expectations.
- US demand is expected to exceed 90 bcfd in 2020 and 115 bcfd by 2030, about 7-10% higher than expected in our 2012 IRP
- Low long-term prices will likely encourage new gas-intensive industrial projects
- Power-sector consumption strengthens as coal displacement continues.
- US and Canadian LNG exports likely to ramp up by 2020
- Several projects utilizing Canadian resources continue to emerge in the US Pacific NW and British Columbia
- Mexico's power sector is expected to continue to grow as new gas-fired power plants are built and existing fuel-oil plants are converted to burn gas.

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Long Range Price Forecast

- Cascade's long term planning price forecast is based on a blend of current market pricing along with long term fundamental price forecasts.
- The fundamental forecasts include Wood Mackenzie, the Energy Information Administration (EIA), the Northwest Power Planning Council, Bentek and the Financial Forecast Center's long term price forecasts.
- Market, particularly in near term is heavily influenced by Henry Hub prices
- While not a guarantee of where the market will ultimately finish, Henry Hub NYMEX is the most current information that provides some direction as to future market prices

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Long Range Price Forecast

- Wood Mackenzie's long-term forecast is at a monthly level by basin. We use this to help shape the forecast's monthly basis pricing.
- We also rely on EIA's forecast; however, it has its limitations since it is not always as current as the most recent market activity. Further, the EIA forecast provides monthly breakdowns in the short term, but longer term forecasts are only by year.
- We assign a weight to each source to develop the monthly Henry Hub price forecast for the 20 year planning horizon.
- Although it is impossible to accurately estimate the future, for trading purposes the most recent period has been the best indicator of the direction of the market. However, Cascade also considers other factors (historical constraints) which can lead to minor adjustments to the final long range forecast.

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Long Range Price Forecast

- Considerations in weight assignments
  - Typically, highest weight is given to NYMEX for the near term (approximately 3-5 years) then the others take on increasing weight over the horizon
    - Wood Mackenzie (monthly, covers all basins)
    - EIA (industry barometer, annual long term
    - NPPC (regional perspective, but recognize it is also a blend)
    - Bentek (3-5 years out years)
    - Financial Forecast Center (typically only a few years)

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Base Weights in Draft 2014 Price Forecast

Year	Current NYMEX	Wood Mac	EIA	Bentek	Financial Forecast Center
2015	50%	25%	20%	4%	1%
2016	45%	30%	20%	4%	1%
2017	40%	35%	20%	4%	1%
2018	35%	35%	25%	5%	0%
2019	30%	40%	25%	5%	0%
2020	25%	45%	30%	0%	0%
2021	20%	50%	30%	0%	0%
2022	15%	55%	30%	0%	0%
2023	10%	60%	30%	0%	0%
2024	10%	65%	25%	0%	0%
2025	10%	70%	20%	0%	0%
2026	5%	75%	20%	0%	0%
2027	5%	75%	20%	0%	0%
2028	0%	75%	25%	0%	0%
2029	0%	75%	25%	0%	0%
2030	0%	75%	25%	0%	0%
2031	0%	75%	25%	0%	0%
2032	0%	75%	25%	0%	0%
2033	0%	75%	25%	0%	0%
2034	0%	75%	25%	0%	0%
2035	0%	75%	25%	0%	0%

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Avoided Cost Calculation

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Overview

- As part of the IRP process, Cascade calculates a 20-year forecast and 45 years of avoided costs.
- The avoided cost is an estimated cost to serve the next unit of demand with a supply side resource option at a point in time. This incremental cost to serve represents the cost that could be avoided through energy conservation.
- The avoided cost forecast can be used as a guideline for comparing energy conservation with the cost of acquiring and transporting natural gas to meet demand.
- Cascade evaluates the impact that a range of environmental externalities, including CO2 emission prices, would have on the avoided costs in terms of cost adders and supply costs.
- We produce an expected avoided cost case based on the medium forecast (base case) peak day.

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Costs included in the avoided cost calculation

- The long term gas price forecast compiled from a consultant's gas price forecast (which is the majority of the cost);
- A price for carbon included in the gas price forecast, which has been embedded by price forecast consultant
- Gas storage variable and fixed costs
- Upstream variable and fixed transmission costs;
- Peak related on-system transmission costs; and
- A 10 percent adder for unidentified environmental benefits, as recommended by the Northwest Power and Conservation Council ("NWPCC").

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METHODOLOGY

- The SENDOUT® resource planning model is used to generate the avoided costs.
- SENDOUT® contains a marginal cost report which lists the daily incremental cost to serve the next unit of demand for each demand region.
- The model determines the lowest cost method for serving the next unit of demand and computes a marginal cost.

ALTERNATIVE RESOURCES CONSIDERED

- With regards to alternative resources considered in the optimization of the portfolio, there is a level of uncertainty as to when certain alternative supply side resources will materialize and yet a base case needs to be created to calculate the avoided cost.

- Using the base case demand parameters as inputs, including the design weather pattern, and base case customer and gas price forecasts, in addition to existing supply side resources, the Company's resource portfolio for purposes of the avoided cost calculation include:
  - Ryckman Creek storage
  - Incremental NGTL, Foothills, GTN and NWP transport (all of which are allocated between Oregon and Washington).
  - Also, a small level of satellite LNG and biogas is also included in the base case—however; these two alternative resources are assigned directly to Washington.

NOTE: The optimal portfolio will be available until TAG 5. Some of the assumptions above are subject to change.

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Alternative transport included:

Model Name	Start Date	End Date	Daily MDQ	Description	Cost Dths	Lead Time	Pipeline
Incremental NOVA-Foothills-GTN	2017	OPEN	Approx 16,000 dths/day ea pipeline	AECO NIT, Foothills to Kingsgate	NOVA, Foothills, GTN (approx $0.41)	2017	NOVA, Foothills, GTN
INCR-NWP	2017	OPEN	Appoximately 10,000 dhts/day	Sumas to WA and OR citygates	NWP Rate X 3 (min approx $1.14)	2018	NWP

Storage resources in IRP (items in yellow are incremental alternatives in the base case)

Model Name	Type	Location	Pipeline Transport Required	Start	Contract Expiration	Lead Time	PRINCIPLE DEL AREA			Max Cap	WD MDQ	Fuel Inj < 3%	SVDD	D2 RATE > $0.05 < $0.15
JP-1	Underground	Jackson Prairie	Yes	Existing	2020	NA	MOST OR AND WA NWP POINTS			604,351	16,789	YES	SGS	YES
JP-EXP	Underground	Jackson Prairie	Yes	Full access begins in Nov 2012	2060	NA	ZONE 30-S			350,000	30,000	YES	SGS	YES
LNG	LNG	Plymouth	Yes	Existing	2020	NA	MANY OR AND WA NWP POINTS			562,200	60,000	YES	SGS	YES
JP-3	Underground	Jackson Prairie	Yes	Nov-12	2021		ZONE 30-S, ZONE 30-W			102,782	3,500	YES	SGS	YES
JP-4	Underground	Jackson Prairie	Yes	Nov-12	2021		ZONE 30-S, ZONE 30-W			178,460	6,077	YES	SGS	YES
RYCKMAN	Underground	Near Opal WY	Yes	2013	TBD		ZONE-GTN, OTHER			350000 - 500000	10,000	YES	RYCK	NEGOTIATED
JP-OTHER	Underground	Jackson Prairie	Yes	2017	TBD		NWP			300,000	5,000	YES	SGS	YES

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METHODOLOGY

- Unfortunately, the marginal cost report in SENDOUT does not break out the components
- In order to break out the components several additional detailed supply, transport and storage costs reports are generated from SENDOUT and utilized to glean approximate allocations of resources between the two states.
- Please note that Cascade's Oregon rate case cost of service consultants for the rate case we have produced also included tabs that break out the avoided costs between Oregon and Washington.
- For the purposes of the 2014 IRP, Cascade will continue to use a system level avoided cost as we have historically.
- An Action Item will be to hold discussions regarding allocating the avoided costs at a more granular level for future IRPs

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SYSTEM AVOIDED COSTS LAYERS (dollars in therms)

	Commodity	Transport Fixed	Transport Commodity	Storage Fixed	Storage Commodity	Total Avoided Cost (nominal $/therm)	Total Avoided Cost With 10% Conservation
2015	$ 0.294449	$ 0.147345	$ 0.002834	$ 0.014888	$ 0.001384	$ 0.460900	$ 0.50699
2016	$ 0.316554	$ 0.158406	$ 0.003046	$ 0.016006	$ 0.001488	$ 0.495500	$ 0.54505
2017	$ 0.337061	$ 0.168669	$ 0.003244	$ 0.017043	$ 0.001584	$ 0.527600	$ 0.58036
2018	$ 0.340830	$ 0.170555	$ 0.003280	$ 0.017233	$ 0.001602	$ 0.533500	$ 0.58685
2019	$ 0.357568	$ 0.178931	$ 0.003441	$ 0.018079	$ 0.001681	$ 0.559700	$ 0.61567
2020	$ 0.360443	$ 0.180369	$ 0.003469	$ 0.018225	$ 0.001694	$ 0.564200	$ 0.62062
2021	$ 0.361785	$ 0.181041	$ 0.003482	$ 0.018293	$ 0.001701	$ 0.566300	$ 0.62293
2022	$ 0.390341	$ 0.195331	$ 0.003757	$ 0.019736	$ 0.001835	$ 0.611000	$ 0.67210
2023	$ 0.399988	$ 0.200158	$ 0.003849	$ 0.020224	$ 0.001880	$ 0.626100	$ 0.68871
2024	$ 0.402480	$ 0.201405	$ 0.003873	$ 0.020350	$ 0.001892	$ 0.630000	$ 0.69300
2025	$ 0.392066	$ 0.196194	$ 0.003773	$ 0.019824	$ 0.001843	$ 0.613700	$ 0.67507
2026	$ 0.415768	$ 0.208054	$ 0.004001	$ 0.021022	$ 0.001954	$ 0.650800	$ 0.71588
2027	$ 0.430078	$ 0.215215	$ 0.004139	$ 0.021746	$ 0.002022	$ 0.673200	$ 0.74052
2028	$ 0.430781	$ 0.215567	$ 0.004146	$ 0.021781	$ 0.002025	$ 0.674300	$ 0.74173
2029	$ 0.424265	$ 0.212306	$ 0.004083	$ 0.021452	$ 0.001994	$ 0.664100	$ 0.73051
2030	$ 0.430270	$ 0.215311	$ 0.004141	$ 0.021755	$ 0.002022	$ 0.673500	$ 0.74085
2031	$ 0.410210	$ 0.205273	$ 0.003948	$ 0.020741	$ 0.001928	$ 0.642100	$ 0.70631
2032	$ 0.413021	$ 0.206680	$ 0.003975	$ 0.020883	$ 0.001941	$ 0.646500	$ 0.71115
2033	$ 0.438000	$ 0.219180	$ 0.004215	$ 0.022146	$ 0.002059	$ 0.685600	$ 0.75416
2034	$ 0.441769	$ 0.221066	$ 0.004252	$ 0.022337	$ 0.002076	$ 0.691500	$ 0.76065
2035	$ 0.453255	$ 0.226813	$ 0.004362	$ 0.022918	$ 0.002130	$ 0.709479	$ 0.78043

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UM 1622 Gas Hedge Value of Energy Efficiency

- Risk mitigation adder such as used in electric utilities
- Workshop held
- Northwest Natural is looking at development of a adder through their 2015 IRP process?
- Cascade has some concerns such as exposure to margin calls
- Cascade's 2014 IRP does not take a position

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NWP Plymouth LNG Capacity

Jon Whiting Director Gas Supply &
Gas Control

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What does Cascade Commit to?

1. CNGC acquires 100,000 Dth's of Plymouth LNG storage capacity, 18,125 Dth/d of Storage Demand and 10,675 Dth/d of TF-2 capacity effective Nov. 1, 2015 through Mar. 31, 2025.
2. CNGC extends its existing Plymouth LNG capacity from Oct. 31, 2020 to March 31, 2025.

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Sweetener #1

- CNGC has 30,420 Dth's of seasonal capacity from Jackson Prairie to Bremerton (Shelton), which has an expiration date of Oct. 31, 2029. **CNGC does not currently hold the ROFR right on this capacity.**

- NWP has brought to the table a party who is interested in a portion of this capacity, so CNGC will permanently release the capacity to this party, resulting in a reduction in pipeline costs of approximately $1.1M annually.

- This essentially nets out the costs of the 100,000 Dth's of Plymouth LNG capacity



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Sweetener #2

- NWP is allowing CNGC to transfer the 30,420 Bremerton (Shelton) MDDO's (from sweetener #1) to it's 100002 contract. CNGC would then reduce it's MDDO's where we have excess length (Bellingham II and Sedro-Woolley).

- This is a very valuable sweetener, as it allows CNGC to obtain the ROFR rights at Bremerton/Shelton. We will now control the rights to this critical point.

- Using current rates, this sweetener could be valued around $4.5M annually.



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Sweetener #3

- NWP is filing with FERC to allow Shippers holding TF-2 subordinate capacity as the receipt point to nominate in a manner that could elevate their scheduling priority from subordinate to primary firm.
- This filing will give CNGC the ability to rely on its Plymouth LNG capacity a little bit more when looking at its Peak Day deliverability for the IRP.

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Sweetener #4

- NWP will allow Cascade to lengthen its path on 7,450 Dth/d from Stanfield to Plymouth (with delivery into NE Oregon)
- After lengthening, NWP will allow CNGC to segment the capacity at Stanfield resulting in 2 segments of capacity: 1) Plymouth to Stanfield and 2) Stanfield to NE Oregon.
- This no cost transaction will provide CNGC with the flexibility to bring additional gas onto GTN off of NWP.



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SENDOUT Scenarios and Inputs

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SENDOUT model

- Cascade utilizes SENDOUT™ for resource optimization
- This model permits the Company to develop and analyze a variety of resource portfolios to help determine the type, size, and timing of resources best matched to forecast requirements.
- SENDOUT™ is very powerful and complex. It operates by combining a series of existing and potential demand side and supply side resources and optimizes their utilization at the lowest net present cost over the entire planning period for a given demand forecast.

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SENDOUT model

- SENDOUT™ utilizes a linear programming approach
- The model knows the exact load and price for every day of the planning period based on the analyst's input and can therefore minimize costs in a way that would not be possible in the real world.
- Therefore, it is important to acknowledge that linear programming analysis provides helpful but not perfect information to guide decisions.

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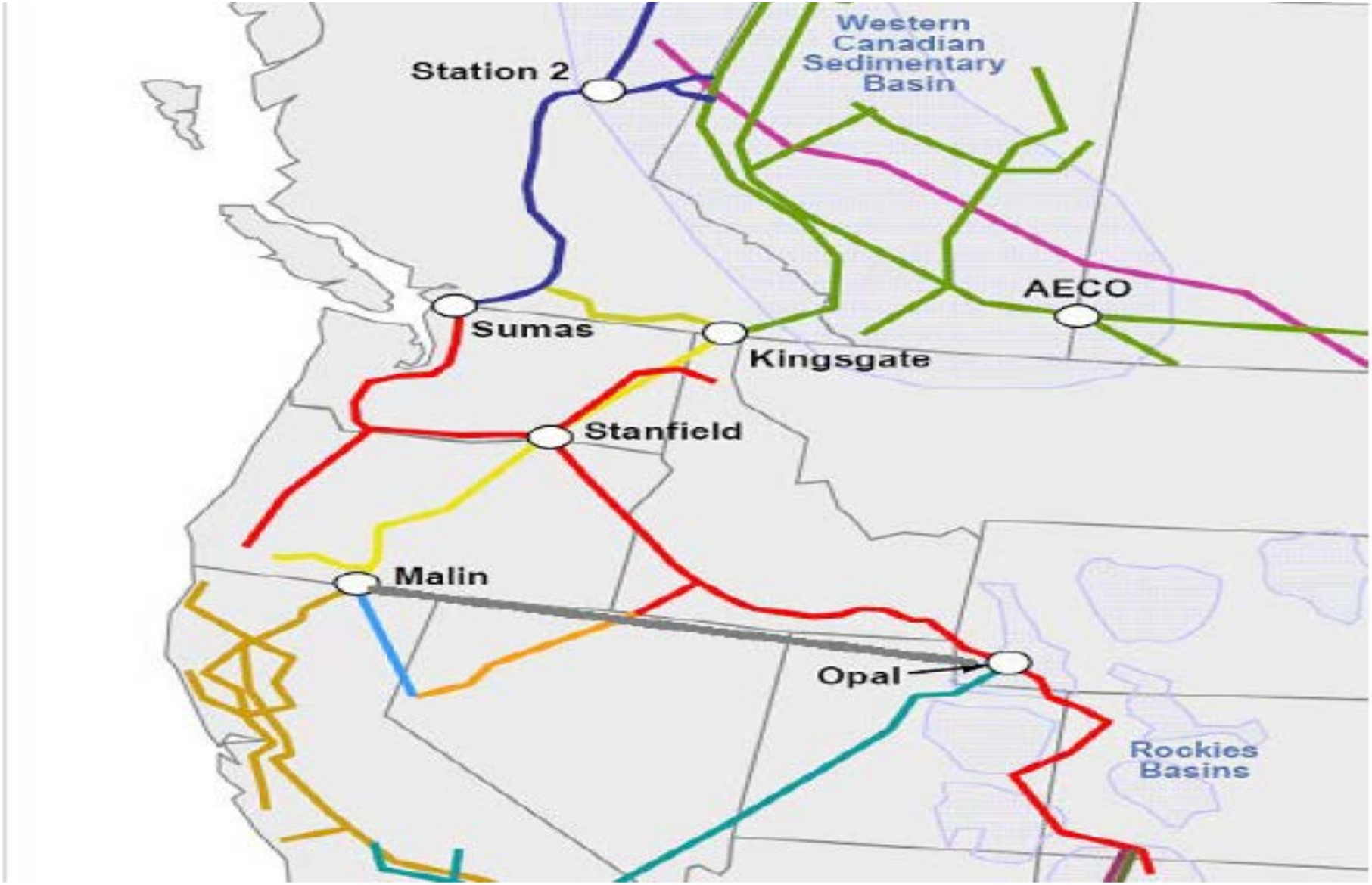

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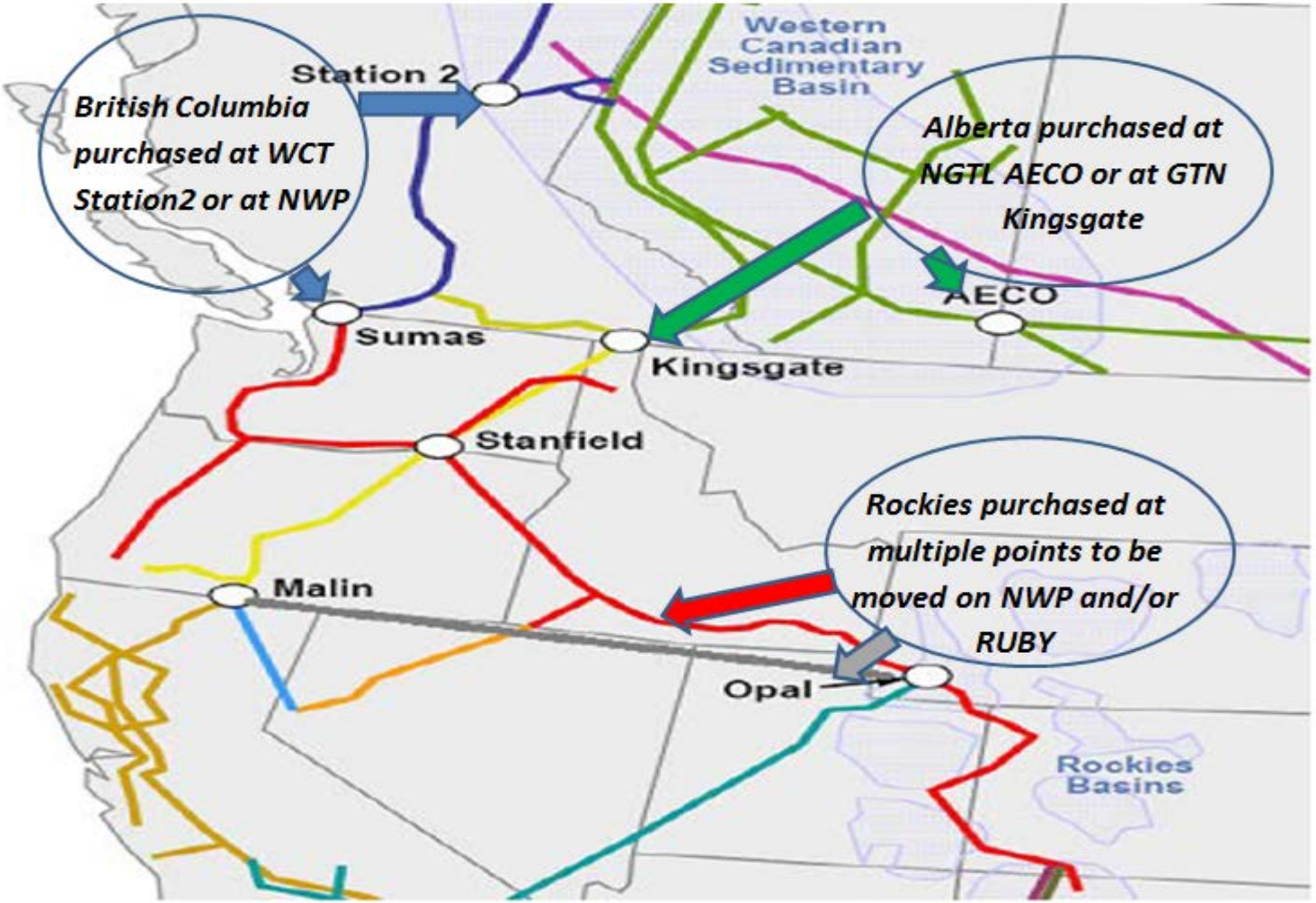
PRINCIPLE SUPPLY BASINS



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Source: Northwest Gas Association - Numbers indicate delivery or takeaway capacities in MDth.

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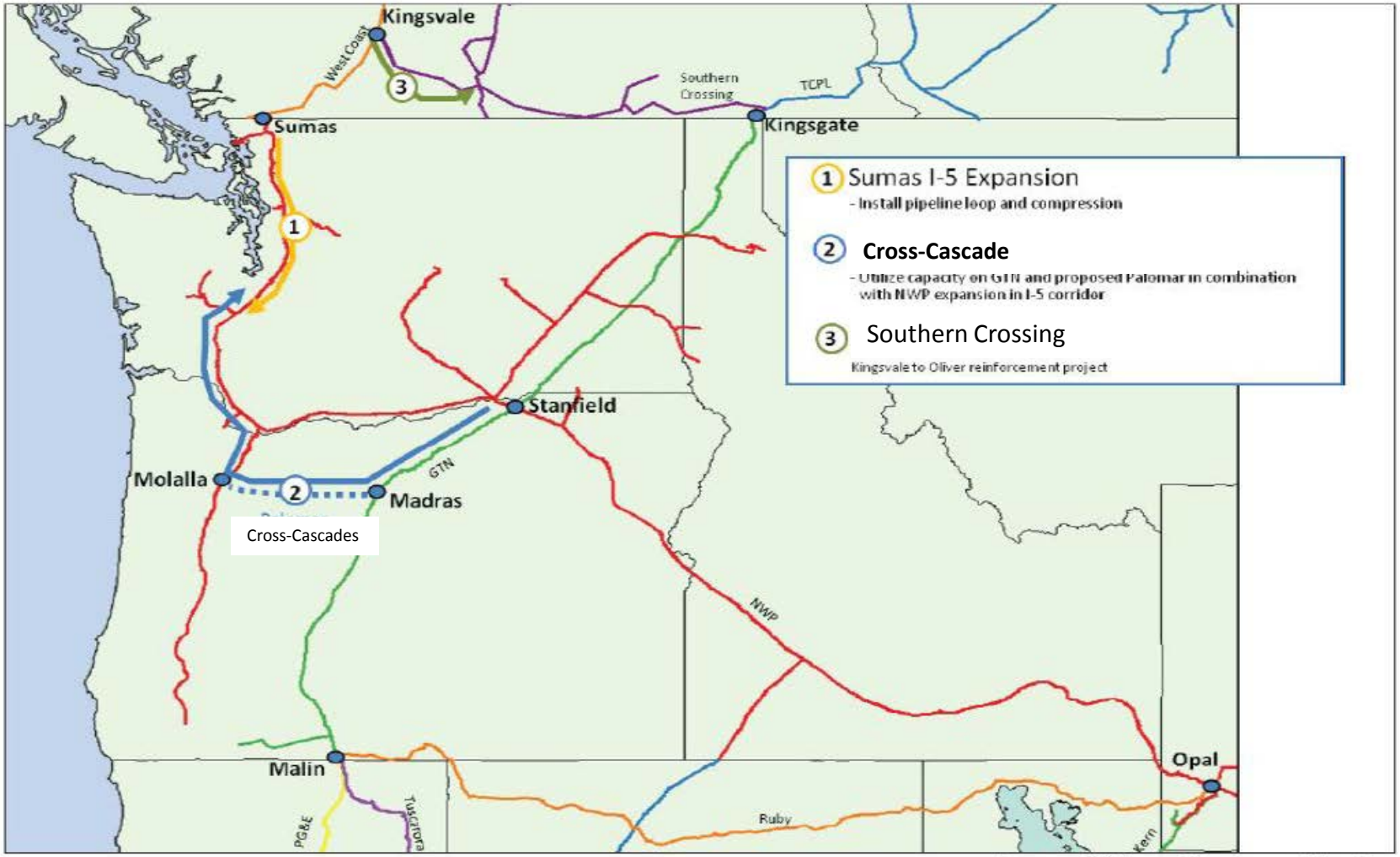

Source: Williams Northwest Pipeline

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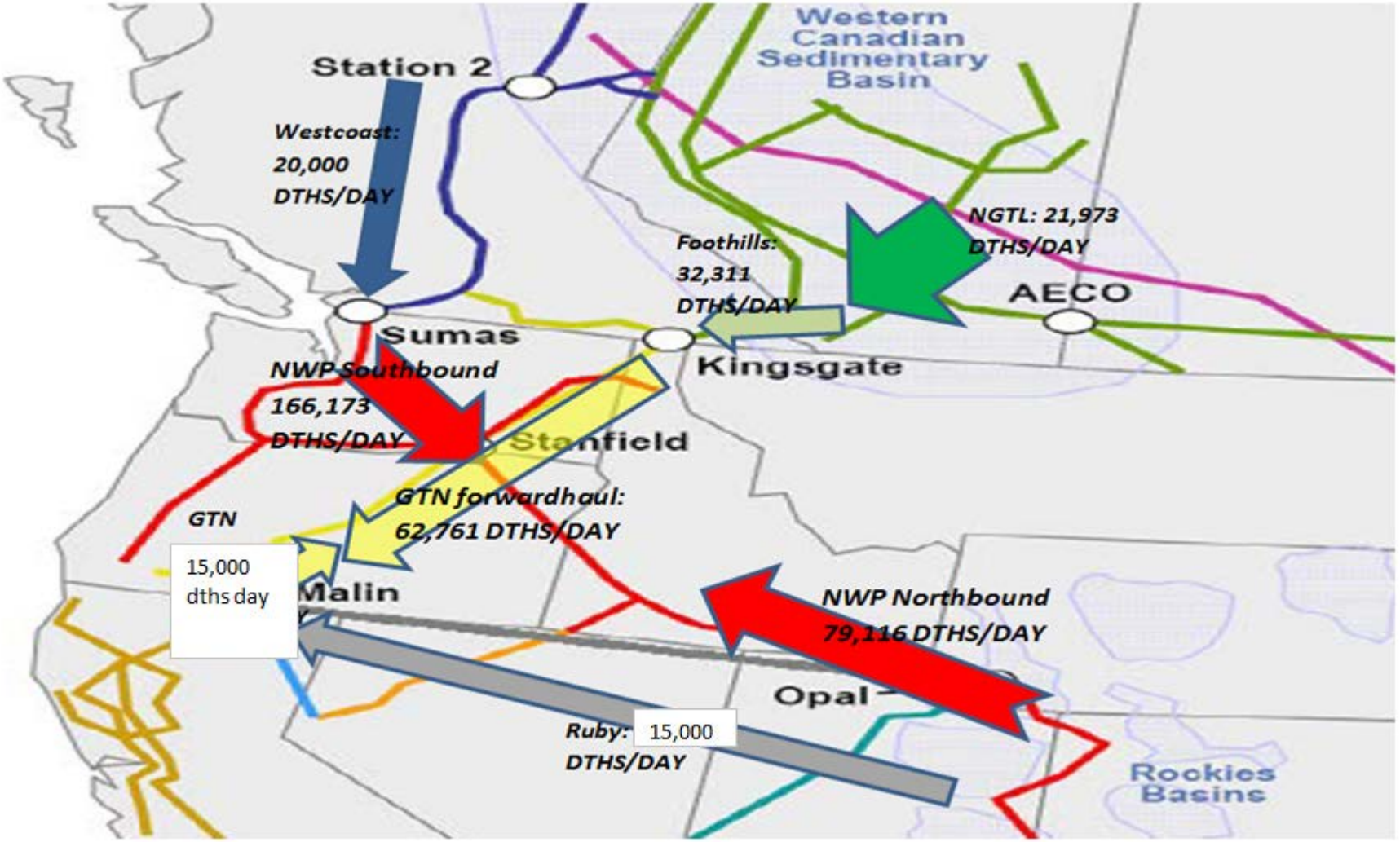
SUMMARY OF CNGC WINTER TRANSPORT CAPACITY FLOW



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STORAGE

1) Goal is to cycle the storage accounts each heating season, dependent on demand and operating conditions
2) Assumes all accounts will be 35% full by June 30, 80% full by August 31, and 100% full by September 30
3) Unless noted, assumes normal weather with peak event
4) SGS01 balances based on historical data with inventory zero by end of April
5) SGS02, SGS622 and SGS626 assumes balance of 80% November, 40% December, 20% January and zero by end of February
6) Jackson Prairie storage and Plymouth LNG are utilized based on weather, market and operational conditions

Jackson Prairie
- SGS01
- SGS02
- SGS622
- SGS626

Plymouth LNG
- LS01

CASCADE STORAGE CONTRACTS		
	Storage Capacity	Withdrawl
Total	(decatherms)	(dths/day)
SGS01	604,351	16,789
SGS02	350,000	30,000
SGS622	102,782	3,500
SGS626	178,460	6,077
LS01	562,200	60,000

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Supply inputs

- Each basin is given a resource option
  - Annual
  - November – March
  - Day gas, first of month, spot
- Commodity adders take the following into consideration:
  - Annual adder higher than seasonal or spot adders
  - Includes some structured products
  - No financial hedges

- Let SENDOUT size the amounts but limit single packages to no more than 20,000 dths/day

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Supply Inputs

MODEL NAME	CATEGORY	RECEIPT PT(S)	DELIVERY PT(S)	PRICE INDEX	INDEX DIFFERENTIAL/EST PRICE	DEMAND CHARGE	DEAL START DATE	DEAL END DATE	MDQ IN DTHS
FIRM SPT SUM	SEASONAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
FIRM SPT NIT	SEASONAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
FIRM SPT RM	SEASONAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR SUM A	ANNUAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR RM A	ANNUAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT A	ANNUAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
INCR SUM S	SEASONAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR RM S	SEASONAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT S	SEASONAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
INCR ST2	SEASONAL	STATION 2	NWP, GTN	GD SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR STRU SU	ANNUAL	SUMAS	NWP, GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR STRU RM	ANNUAL	ROCKIES	NWP, GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR STRU AE	ANNUAL	AECO	GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR SUM FX	ANNUAL	SUMAS	NWP, GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR RM FX	ANNUAL	ROCKIES	NWP, GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT FX	ANNUAL	AECO	GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR MAL	SEASONAL	MALIN	BACKHAULS NWP, GTN	MALIN			11/1/2015	INCREMENTAL	VARIABLE
SAT LNG	SEASONAL	ZONAL	ZONAL	NYMEX HH			11/1/2015	INCREMENTAL	VARIABLE
IMP LNG NOR	SEASONAL	PALOMAR	BACKHAULS NWP, GTN	NYMEX HH			11/1/2018	INCREMENTAL	VARIABLE
IMP LNG SOR	SEASONAL	PACIFIC CONNECTOR	BACKHAULS NWP, GTN	NYMEX HH			11/1/2018	INCREMENTAL	VARIABLE
SAT PROP	SEASONAL	ZONAL	ZONAL	NYMEX HH			11/1/2016	INCREMENTAL	VARIABLE
INCR CG NWP	SEASONAL	CITYGATE	NWP	NYMEX HH		0.05	11/1/2016	INCREMENTAL	VARIABLE
INCR CG GTN	SEASONAL	CITYGATE	GTN	NYMEX HH		0.05	11/1/2016	INCREMENTAL	VARIABLE
SUPPLY MDQS ARE CAPPED AT 20,000 DTHS/DAY									

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Transport Inputs

- Existing pipeline transportation agreements are in the system
- We assume an increase in transport demand rate every three years; increase is tied to Consumer Price Index
- Fuel is held flat throughout the planning horizon

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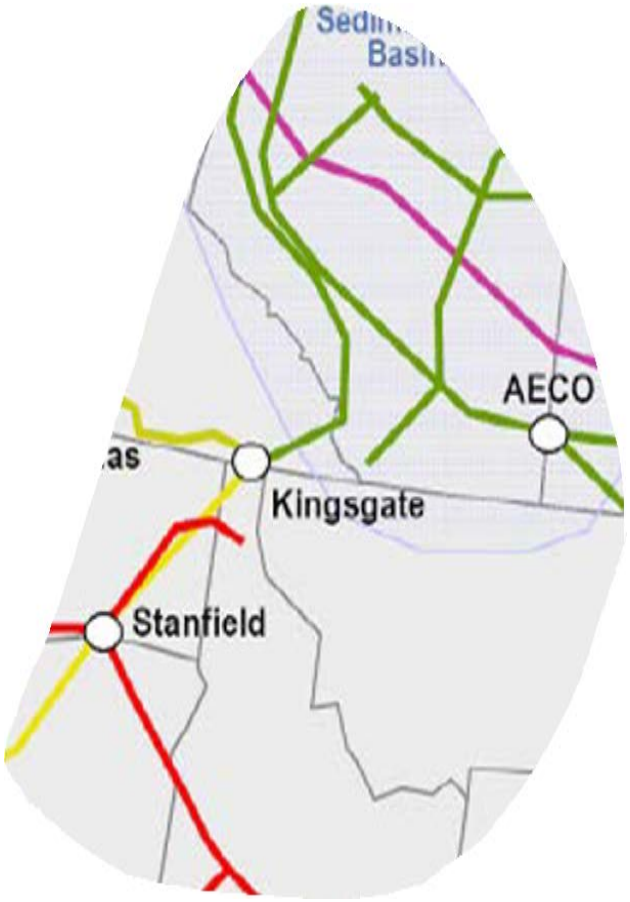
POTENTIAL NOVA EXPANSION

- 2017 NGTL System Expansion Project included in Annual Plan
- Annual Plan posted on TransCanada website December 15, 2014
- Section 52 application to be filed end of 1st QTR 2015
- Anticipate certificate 3rd QTR 2016
- Start construction: 4th QTR 2016
- Target in-service: 2nd QTR 2017



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Pacific Connector Gas Pipeline Project



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Pacific Connector Gas Pipeline (PCGP)

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- 232-mile of 36-inch diameter pipeline with:
  - 1,060,000 Dth/d of firm transportation
  - 41,000 horsepower at Malin
- Receipt interconnects with:
  - Gas Transmission Northwest
  - Ruby Pipeline
- Deliveries interconnect with:
  - Northwest Pipeline's Grants Pass Lateral
  - Jordan Cove Delivery Meter Station
- PCGP will be built primarily to serve the Jordan Cove LNG Terminal (located near Coos Bay, Oregon)
  - Waiting on permission to grant export to Non-Free Trade Agreement Countries
  - Currently first in the queue for DOE approval
    - Will facilitate permitting and marketing efforts
- Target in-service date 2018

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PCGP future growth opportunities

- Will be able to serve:
  - Malin / Coos Bay corridor
    - Potential industrial facilities could be co-located near LNG terminal and make use of upgraded port facilities
  - Grants Pass Lateral
- New supply source on the Grants Pass Lateral will provide diversity and additional firm flow to serve new industrial/commercial markets:
  - Additional 76,196 Dth/d flowing south
  - Additional 42,525 Dth/d flowing north
    - Volumes can increase with compressor station piping modifications
  - Open Season will determine whether short-haul capacity is incorporated into design
- PCGP easily expandable to 1.5 Bcf
  - Future Open Season will be held to serve regional market growth

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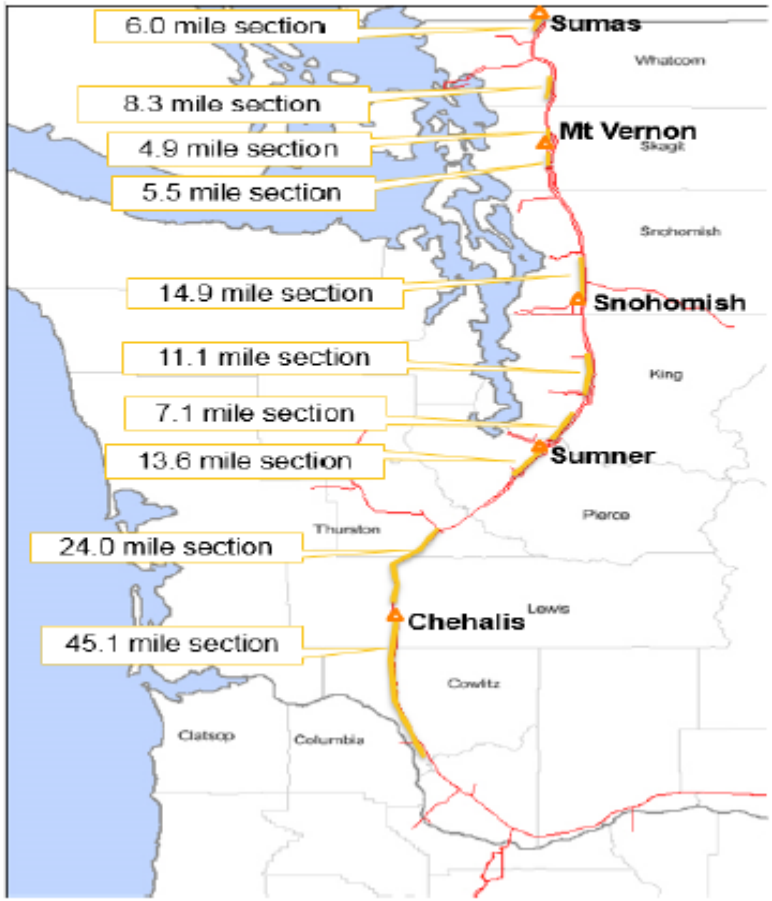
Washington Expansion Project



- FERC application filed 2013
- 140 miles of 36-inch diameter loop line with:
  - 750,000 Dth/d of firm transportation
  - 89,620 incremental horsepower required along I-5
- Rates (per Dth/d):
  - $0.74 traditional
  - $0.56 levelized
- Estimated cost $1.1 billion
- Targeted in-service date November 2018
  - Potential regional loads with in-service dates phased in

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Washington Expansion is market oriented

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- Provides competitively priced natural gas to committed users:
  - Supplies Oregon LNG terminal customers
  - Increases reliability:
    - Fills in un-looped sections in I-5 corridor
    - Continuous 30-inch pipe along side 36-inch loop
  - Provides opportunity to other potential customers in the region
    - Serving customers in the I-5 corridor is not contingent on Oregon LNG moving forward

- Potential users participated in an "open season" process
  - Transportation capacity was offered to <u>all customers</u> in a non-binding open season held in October 2012
    - Not limited to Oregon LNG terminal customers
    - Ongoing expressions of interest from parties for new capacity welcome
      - Capacity available as early as 2016
        - Depending on location and transportation capacity needs

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Cross Cascades Pipeline

Northwest Natural's latest IRP indicates that this proposed pipeline is possible future resource beginning in 2018

Madras is connects to GTN where gas could move to serve Central Oregon

This could perhaps be tied to North Mist expansion?



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Transport Inputs

CONTRACT DESCRIPTION	RECEIPT	DELIVERY	PIPELINE	TERMINATION DATE	RATE PER DAY	Contract Demand
TF-1 Contract #100002 April 31, 1991	all rec	all del	NWP	10/31/2032	0.41	205123
Contract #135384 (JP/Bremerton), March 26, 2007	jackson prairie	bremerton/mt vernon	NWP	10/31/2029	0.246	30420
Contract #135558 (Sumas/PrtId), 4/1/2007)	sumas	stanfield/portland west	NWP	4/30/2020	0.41	25400
Contract 139382 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	6191
Contract 139383 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	1050
Contract 139384 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	3259
Contract #100134 January 15,1993	sumas/ignacio	burbank/yakima/aberdeen	NWP	11/30/2019	0.41	330
Contract #100149 February 15,1996	sumas/ignacio	walla walla	NWP	11/30/2019	0.41	75
Contract #100150 May 15, 1996	sumas/ignacio	menan starch	NWP	11/30/2019	0.41	160
Contract #100064 May 8, 1995	sumas	hermiston/pasco	NWP	3/31/2020	0.41	1078
Weyer Release Contract #132329 July 1, 2004	sumas	kern river	NWP	1/31/2021	0.41	5000
Contract #139090 June 2, 2011	sumas	plymouth/umatilla/bellingha	NWP	3/31/2052	0.41	27063
Contract #139637 Jan 1, 2013	sumas	hermiston/oak harbor/selal	NWP	10/31/2050	0.41	7241
Contract #139630 Sep 1, 2012	stanfield	durkee/pendelton/mission	NWP	10/31/2050	0.41	7450
Contract #140047	sumas	bellingham/ferndale	NWP	10/31/2034	0.41	15000
TF-2						
Contract #100302 TF-2 January 12, 1994	jackson prairie	Stanfield, Wenatchee, Lon	NWP	10/31/2019	0.41	16789
Contract #100304 TF-2 January 12, 1994	plymouth		NWP	10/31/2019	0.41	60000
Jackson Prairie Expansion Precident Agreement # 135365 SGS-2F	jackson prairie	jackson prairie	NWP	10/31/2060	0.04056	30000
Contract # 100401 SGS-2F	jackson prairie	jackson prairie	NWP	10/31/2019	0.03562	16789
Contract #100601 LS-2F	plymouth	plymouth	NWP	10/31/2019	0.02587	60000
Contract #139627 TF-2	jackson prairie	bellingham	NWP	3/31/2020	0.41	489
Contract #139624 TF-2	jackson prairie	bellingham	NWP	3/31/2020	0.41	282
Contract #139622 SGS-2F	jackson prairie	jackson prairie	NWP	3/31/2026	0.03562	3500
Contract #139626 SGS-2F	jackson prairie	jackson prairie	NWP	3/31/2020	0.03562	6077
					0.16381	
2003 Expansion, #08488	kingsgate	malin	GTN	10/31/2028	0.34422	20380
Firm Transportation #02812 (November 4, 1994)	kingsgate	malin	GTN	4/30/2016	0.34422	3600
Firm Transportation #00179 (October 7, 1993)	kingsgate	system	GTN	10/31/2023	0.19811	31335
Firm Transportation #00152 (December 1, 1997)	kingsgate	system	GTN	10/31/2023	0.26432	7446
Firm South-to-North Transportation #12094 11/1/12 - 3/31/18	turqouise flats	stanfield	GTN	3/31/2018	0.16381	10000
Firm South-to-North Transportation #13687 4/1/18 - 10/31/39	turqouise flats	stanfield	GTN	10/31/2039	0.20477	10000
Firm South-to-North Transportation #13688 11/1/14 - 10/31/39	turqouise flats	stanfield	GTN	10/31/2039	0.20477	5000
Service Agreement (NOVA) September 4, 2001 (#2003039348-1)	AECO	AB/C border	NOVA	10/31/2028	0.1591	21973
2002 Service Agreement (CNG FS-2)	AB/C border	kingsgate	Foothills	11/1/2017	0.076	3126
Service Agreement (ANG) September 11, 2001 (#CNG FS-3)	AB/C border	kingsgate	Foothills	10/31/2028	0.076	21583
FS-1 Transportation (ANG) June 12, 1991 (CNG FS-1)	AB/C border	kingsgate	Foothills	10/31/2023	0.076	7602
Westcoast Service Agreement January 3, 2002 (#FI-2583-B-00)	station 2	huntingdon	Westcoast	10/31/2019	0.4833	20000
Firm Service Agreement #61036000B January 9, 2012	pearl creek	turqouise flats	Ruby	10/31/2039	0.75	15000

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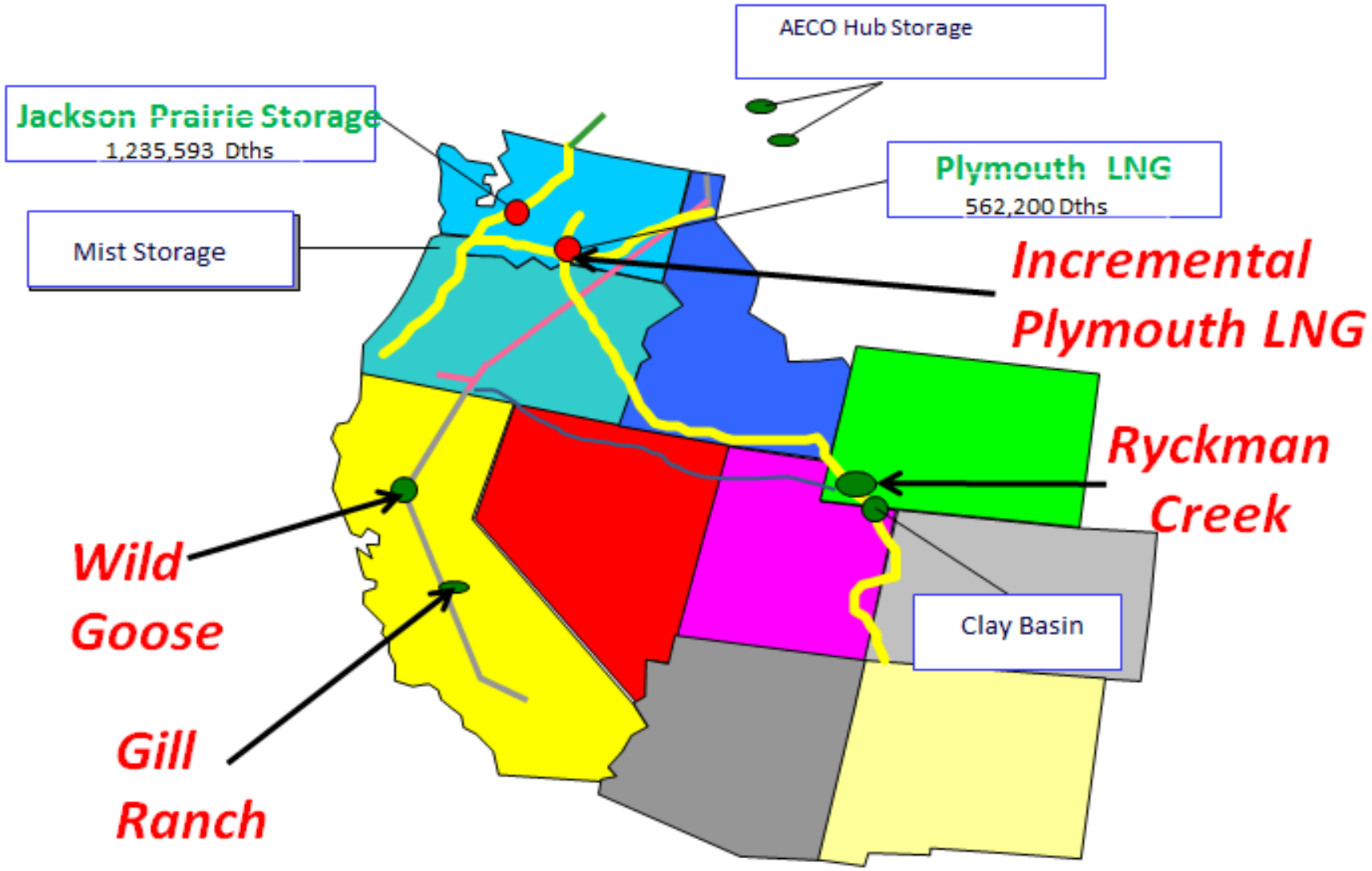
REGIONAL STORAGE



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Plymouth LNG

- Northwest Pipeline owns and operates an LNG storage facility located near Plymouth, Washington, which provides standby service for its customers during extreme peaks in demand.
- The facility has a total LNG storage capacity equivalent to 2.3 Bcf of working natural gas, liquefaction capability of 12 MMcf per day and regasification capability of 300 MMcf per day.
- Certain of Northwest's major customers own the working natural gas stored at the LNG plant.
- Centrally located to Cascade's service territory. Can utilize multiple pipelines (NWP, Ruby, GTN)



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Gill Ranch Storage

- Gill Ranch Storage is an underground intra-state natural gas storage facility near Fresno, Calif. It includes a pipeline that links the facility to Pacific Gas & Electric Company's (PG&E) mainline transmission system, allowing it to serve customers throughout California.

- GRS has the capacity to ultimately provide approximately 20 billion cubic feet (Bcf) of underground natural gas storage.
- The facility is located about 25 miles west of Fresno and includes an approximately 27-mile, 30-inch pipeline, which is connected to the PG&E Line 401 north of Panoche, Calif.
- The premium storage location offers a unique opportunity to access five interconnects.
- The site was developed in a joint agreement by Gill Ranch Storage, LLC, a subsidiary of NW Natural, and PG&E.
- The site has potential for future expansion.
- Would require California Gas Transmission capacity to Malin



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Wild Goose Storage

- Wild Goose is located north of Sacramento in northern California and was the first independent storage facility built in the state. The facility commenced full commercial operations in April 1999 and in April 2004 completed its first expansion. Customers have direct access to Pacific Gas and Electric's (PG&E) backbone system.

- Total gas storage and deliverability capacity at Wild Goose currently is as follows:

- Working Gas Capacity: 75.0 Bcf
- Peak Withdrawal Rate 950 mmcf/d
- Peak Injection Rate525 mmcf/d
- Key Features

- Citygate pricing, liquidity, arbitrage opportunities;
- the ability to manage OFO/EFO's on the PG&E system; and
- supply reliability
- Would require California Gas Transmission capacity to Malin



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Mist Underground Storage Facility

- The facility consists of seven underground natural gas storage reservoirs, a compressor station and gathering pipelines.
- Located in Columbia County, beginning approximately one-half mile southwest of the unincorporated community of Mist and continuing north for approximately 3.5 miles.
- Maximum daily firm withdrawals ratchet downward from the MDWQ when inventory drops below 50% of the MSC
- Now through March 2017 - Mist Interstate Storage Service is sold out, nothing is available.
- April 1, 2017 start of injections, with withdrawals available for the following winter.
- Beyond 2026 would need to subscribe to North Mist expansion project
- Would require NWP capacity to flow to Washington, could possibly flow of Cross-Cascade

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Ryckman Creek Storage

- Ryckman Creek Resources, LLC, a wholly-owned subsidiary of Peregrine Midstream Partners, LLC
- Ryckman Creek is located in Uinta County, Wyoming, near the Opal Hub.
- Ryckman Creek has converted a partially depleted oil and gas reservoir into a gas storage facility with 35 BCF of working gas and a maximum daily withdrawal rate of 480,000 Dths/d.
- Ryckman Creek Gas Storage Facility is located near the town of Evanston, Wyoming and approximately twenty-five miles southwest of the Opal Hub.
- Ryckman Creek currently has interconnects with Questar Gas Pipeline, Kern River Transmission, Questar Overthrust Pipeline, Ruby Pipeline and Northwest Pipeline.
- Events have impacted the timeline

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Other considerations for alternative storage resources

- We do not plan foresee a Jackson Prairie expansion in during the planning horizon
- The desirable working inventory is set between 300,000 and 500,000, consistent with recent SENDOUT runs at various levels
- Some assumptions must be made for the negotiated rates (to be shared under confidentiality blanket)
- We assume at least one cycle of all storage
- Earliest expectation for any storage is November 2017
- Prefer 10+ year solutions

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Biogas

- Cascade has been approached regarding agricultural based methane (biogas) for possible delivery into specific sites in our service territory.
- Issues surrounding pipe size, gas conditioning and gas quality need to be addressed in any potential project as well as
    - Flow measurement
    - Pressure control
    - Over pressure protection
    - Electrical and controls
- We believe at some point in the future some measure of biogas will be available to the system

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MODEL NAME	CONTRACT LOCATION TYPE	PIPELINE	PRICE TYPE	XPIRY DATE	OTHER COMMENTS	PRICE OR INDEX BASIS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SAT LNG 30-S	Satellite LNG Zone 30-S	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
SAT LNG OR	Satellite LNG Zone Oregon	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG 10	Bio-natural gas Zone 10	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG 20	Bio-natural gas Zone 20	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG ME-OR	Bio-natural gas Zone Meacham-Oregon	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000

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SENSITIVITIES ANALYSES

Scenario Name	Key Assumptions
High Growth	Strong Economic Growth result in High Load growth, Average Weather, Medium Gas Prices
Low Growth	Economic Conditions result in Low Load growth, Average Weather, Medium Gas Prices
Environmental Externalities Carbon 1	Medium Load Growth, Average Weather, Assumes Carbon Adder Implemented in 2017 for CO2 emissions at $15/ton with adder increasing annually by 3% plus CPI (Consumer Price Index)
Environmental Externalities Carbon 2	Medium Load Growth, Average Weather, Assumes Carbon Adder Implemented in 2017 for CO2 emissions at $20/ton with adder increasing annually by 3% plus CPI (Consumer Price Index)
Environmental Externalities Carbon 3	Medium Load Growth, Average Weather, Assumes Carbon Adder Implemented in 2017 for CO2 emissions at $30/ton with adder increasing annually by 3% plus CPI (Consumer Price Index)

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SCENARIO NAME	KEY ELEMENTS IN SENDOUT SCENARIO Medium Load Growth, Medium Gas Price Forecast, Average weather with Peak Event. All elements considered. **All items in RED mean those elements were excluded from the scenario**		
All in Case	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage Incremental JP Mist Storage	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS T-South-So Crossing Pacific Connector N-MAX-Stan-Madr N-MAX Madr I-5	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2Year, Seas, Spot Citygate GTN, NWP BioNatualGas Satellite LNG WA Expansion
As Is Scenario	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2Year, Seas, Spot Citygate GTN, NWP
Limited Canadian Imports	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage *Incremental JP* *Mist Storage*	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS *T-South-So Crossing* *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO *Year, Seas*, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2 *Year, Seas*, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*
Ryckman Creek	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage *Incremental JP* *Mist Storage*	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS *T-South-So Crossing* *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2Year, Seas, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*

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SCENARIO NAME	KEY ELEMENTS IN SENDOUT SCENARIO Medium Load Growth, Medium Gas Price Forecast, Average weather with Peak Event. All elements considered. **All items in RED mean those elements were excluded from the scenario**		
Mist	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby *Ryckman Crk Storage* *Incremental JP* Mist Storage	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS *T-South-So Crossing* *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2Year, Seas, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*
Mist and Ryckman Creek	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage *Incremental JP* Mist Storage	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS *T-South-So Crossing* *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2Year, Seas, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*
T-South Enhancement/Southern Crossing with Limited Canadian	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage *Incremental JP* *Mist Storage*	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS T-South-So Crossing *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO *Year, Seas*, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2 *Year, Seas*, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*
T-South Enhancement/Southern Crossing	Current Station2 Current NOVA-Foothills Current GTN Current NWP Current Ruby Ryckman Crk Storage *Incremental JP* *Mist Storage*	Incremental NOVA Incremental GTN Incremental NWP Incremental Ruby JP1, JPExp, JP3-4, LS T-South-So Crossing *Pacific Connector* *N-MAX-Stan-Madr* *N-MAX Madr I-5*	AECO Year, Seas, Spot Sumas Year, Seas, Spot Rockies Year, Seas, Spot Station2 Year, Seas, Spot Citygate GTN, NWP BioNatualGas Satellite LNG *WA Expansion*

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SCENARIO NAME	KEY ELEMENTS IN SENDOUT SCENARIO Medium Load Growth, Medium Gas Price Forecast, Average weather with Peak Event. All elements considered. All items in **RED** mean those elements were excluded from the scenario		
Pacific Northwest Regional (NMAX, WA Expansion, Palomar)	Current Station2	Incremental NOVA	AECO Year, Seas, Spot
	Current NOVA-Foothills	Incremental GTN	Sumas Year, Seas, Spot
	Current GTN	Incremental NWP	Rockies Year, Seas, Spot
	Current NWP	Incremental Ruby	Station2Year, Seas, Spot
	Current Ruby	JP1, JPExp, JP3-4, LS	Citygate GTN, NWP
	Ryckman Crk Storage	*T-South-So Crossing*	BioNatualGas
	Incremental JP	*Pacific Connector*	Satellite LNG
	Mist Storage	N-MAX-Stan-Madr	WA Expansion
		N-MAX Madr I-5	
Pacific Connector	Current Station2	Incremental NOVA	AECO Year, Seas, Spot
	Current NOVA-Foothills	Incremental GTN	Sumas Year, Seas, Spot
	Current GTN	Incremental NWP	Rockies Year, Seas, Spot
	Current NWP	Incremental Ruby	Station2Year, Seas, Spot
	Current Ruby	JP1, JPExp, JP3-4, LS	Citygate GTN, NWP
	Ryckman Crk Storage	*T-South-So Crossing*	BioNatualGas
	Incremental JP	Pacific Connector	Satellite LNG
	Mist Storage	*N-MAX-Stan-Madr*	*WA Expansion*
		N-MAX Madr I-5	

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Other thoughts, questions, concerns…

- **Are there other ideas or concerns that you feel need to be addressed?**
- **Are there other alternatives we should consider?**

- Next Steps?
- Questions?

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2014 Integrated Resource Plan

Technical Advisory Group Meeting

April 1, 2015

In the Community to Serve®

Cascade Natural Gas Technical Advisory Group Meeting #4
Portland International Airport in Portland, OR
April 1, 2015 9:00 AM – 12:30 PM

Attachments:
Attachment A – Technical Advisory Group Meeting 4 slides
Attachment B – Attendance sheet

I.) **Introduction** – Mark Sellers-Vaughn began the meeting by presenting the agenda for the 4th Technical Advisory Meeting.
- The presentation consisted of:
  - Long-range market summary
  - Price Forecast
  - Avoided Costs
  - NWP Plymouth Capacity
  - SENDOUT resource inputs
  - SENDOUT scenarios

II.) **Long-range Market Summary and Long-range Price Forecast** – Mark continued the meeting with the outlook of the market and price forecast.
- For the long-range price forecast, Mark discussed the current market prices that blend together to help create Cascades pricing forecast.
- Mark also discussed the weighting of each source.
- There was a request for Cascade to include reasoning behind the weighting of each source in the IRP.

III.) **Avoided Cost Calculation** – Mark then discussed the current Avoided Cost calculation as well as addressed UM 1622.
- The avoided cost is an estimated cost to serve the next unit of demand with a supply side resource option at a point in time.
- Mark discussed the methodology in calculating the avoided cost along with the 10% adder for unidentified environmental benefits.
- Mark discussed how SENDOUT helps calculate the avoided cost:
  - The marginal cost report from SENDOUT is used for the avoided cost but it does not break out the components. Additional detailed supply, transport and storage costs reports are generated from SENDOUT to help calculate the avoided cost.
- UM 1622 was addressed to clarify any confusion:
  - UM 1622 is not a financial derivative.
  - Cascade does not need to include UM 1622 in the 2014 IRP.

IV.) **NWP Plymouth LNG Capacity** – Jon Whiting presented the acquisition of 100,000 Dth's of Plymouth LNG and the incentives (Sweeteners) that made this acquisition beneficial for Cascade and, therefore, beneficial for rate payers.
- Cascade acquires 18,125 Dth/d of Storage Demand and 10,675 Dth/d of TF-2 capacity effective Nov. 1, 2015 through March 31. 2015.

- CNGC also extends its existing Plymouth LNG from Oct. 31. 2020 to March 31. 2015.
- Incentives:
    - Cascade releases 30,420 Dth's of seasonal capacity to an interested party.
    - Cascade is allowed to transfer the 30,420 Bremerton (Shelton) MDDO's to its 100002 contract.
    - NWP is filing with FERC to allow shippers holding TF-2 to elevate their scheduling priority from subordinate to primary firm.
    - NWP will allow CNGC to lengthen its path on 7,450 Dth/d from Stanfield to Plymouth. This allows CNGC to segment the capacity.

V.) **SENDOUT Scenarios and Inputs** – Mark Sellers-Vaughn finished the slides by discussing SENDOUT.

- He discussed the Supply inputs used in SENDOUT.
- He mentions the potential supply resources that are modeled in SENDOUT.
- The transport inputs and storage resources facilities are discussed.
- Mark and Jon Whiting shortly mention that Biogas may be available to the system sometime in the future.

VI.) **Action Items** – Cascade Natural Gas took away a few Action Items from the TAG meeting.

- Washington and Oregon staff would like to receive the IRP draft prior to the 5th TAG meeting.
- Delete Confidential on all slides that are included in the 4th IRP TAG meeting slides.
- Add 35% fixed and 65% index to the IRP Document.
- Lisa Gorsuch wants to make sure Cascade includes are resource possibilities in the IRP. This includes all resources that were discussed at prior TAG meetings even if they were not modeled in SENDOUT.

VII.) **Adjourn** – Cascade Natural Gas will hold TAG 5 on April 29, 2015 at the Portland International Airport Conference Center.

Attendance:

Presenters:
Mark Sellers-Vaughn
Jon Whiting

Attendees:
Lisa Gorsuch
Jorge Ordonez
John Klingele
Brian Robertson
Ted Light
Mike Rasmuson

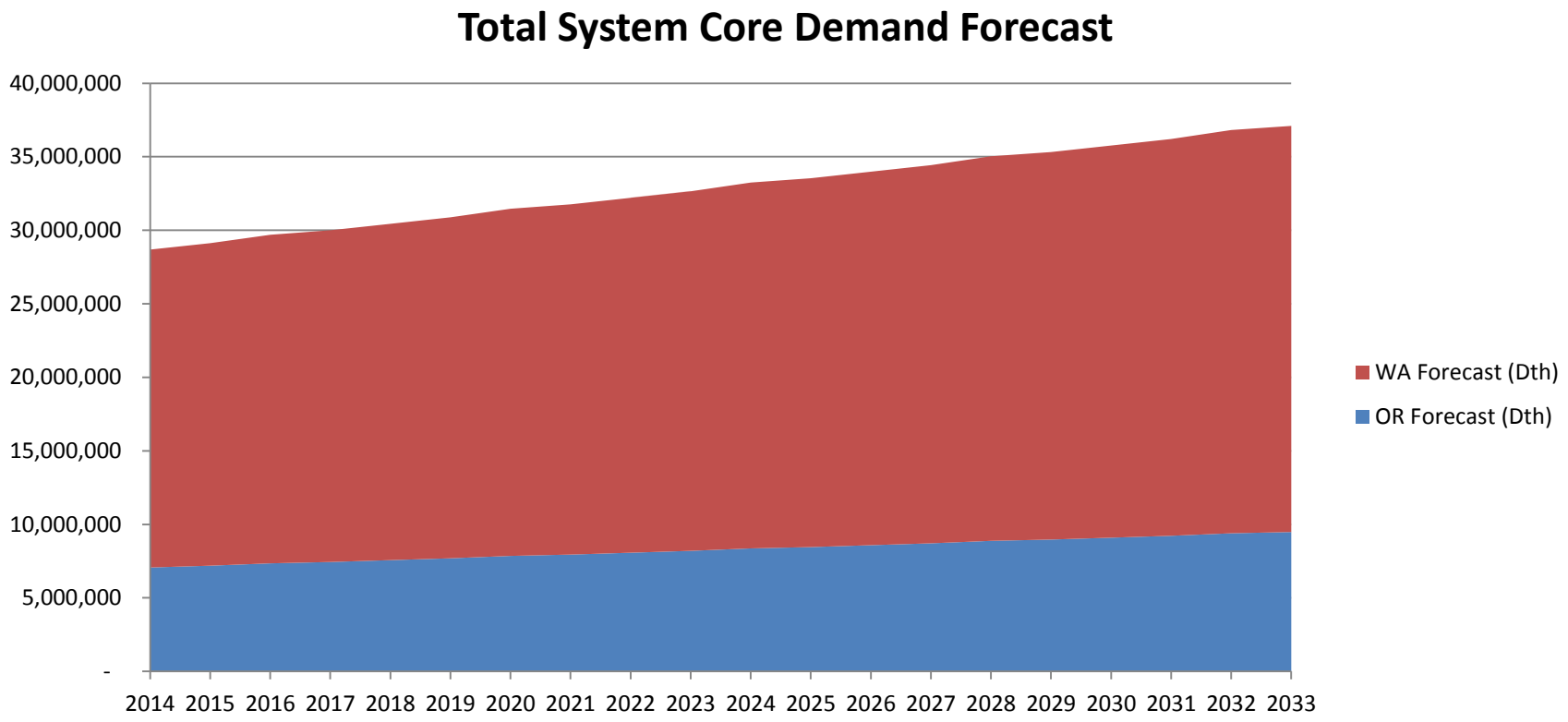
Call-in attendees:
Tommy Brookes
Nadine Hanhan
Micah Robinson
Carolyn Stone
Eric Wood
Erik Colville
Monica Cowlisha
Amanda Sargent
Jim Abrahamson
Juliana Williams
Kary Burin

First Forecast Technical Workshop

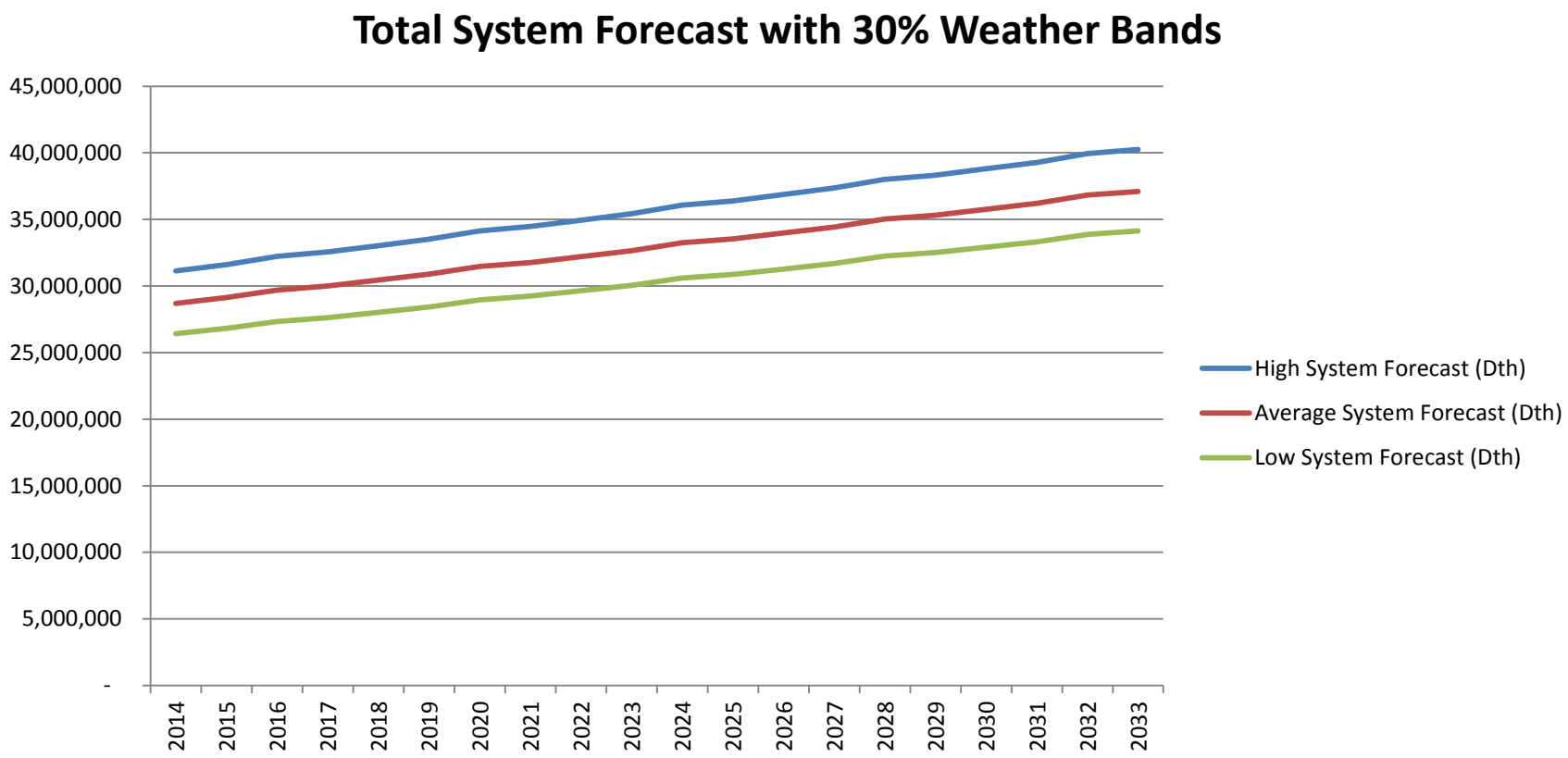
Cascade Natural Gas

Twenty Year

Demand Study

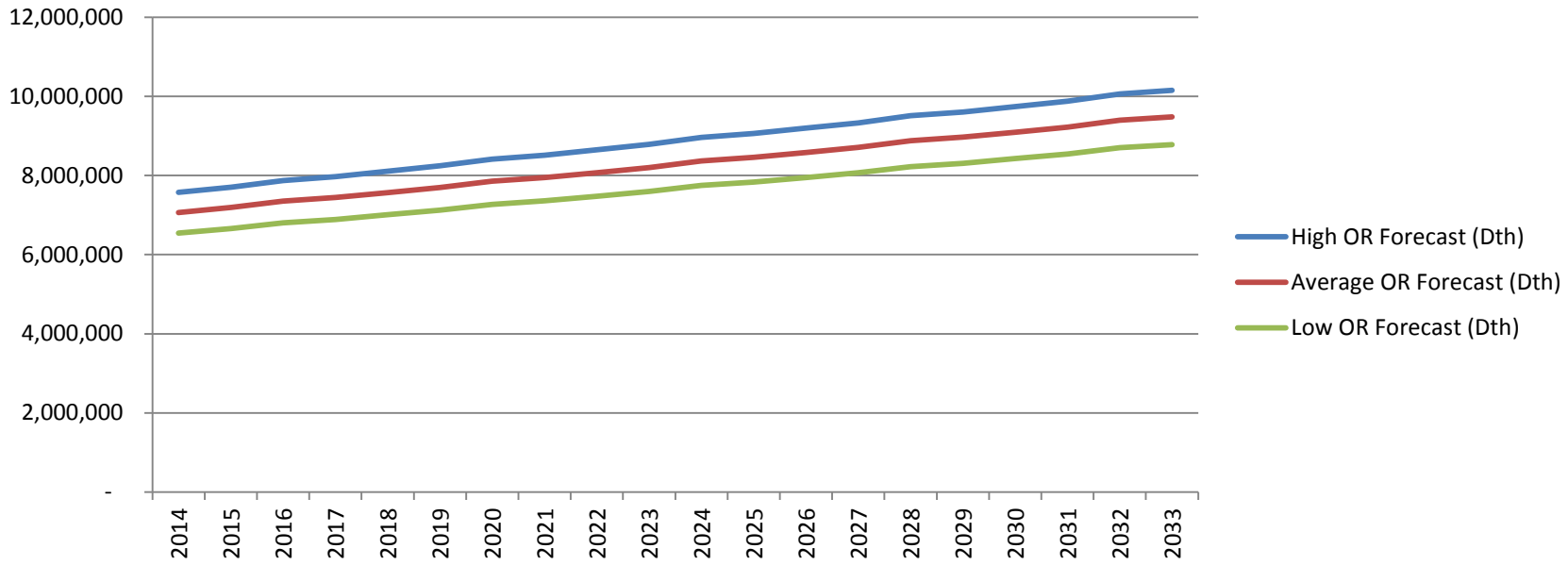


- 20-year Core Forecast for Oregon and Washington.

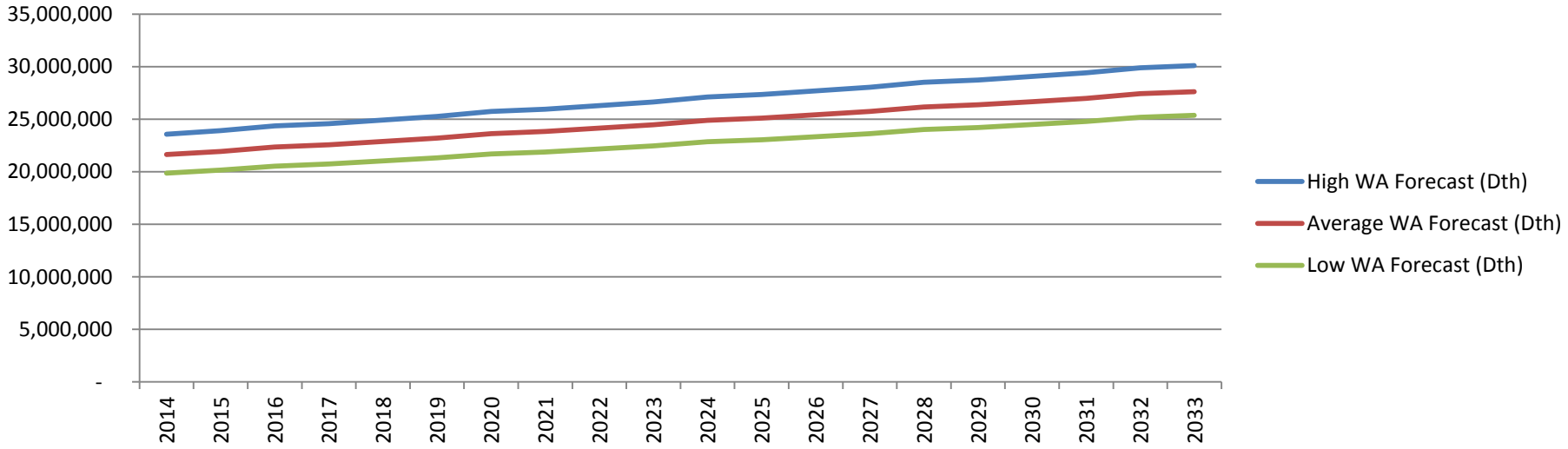


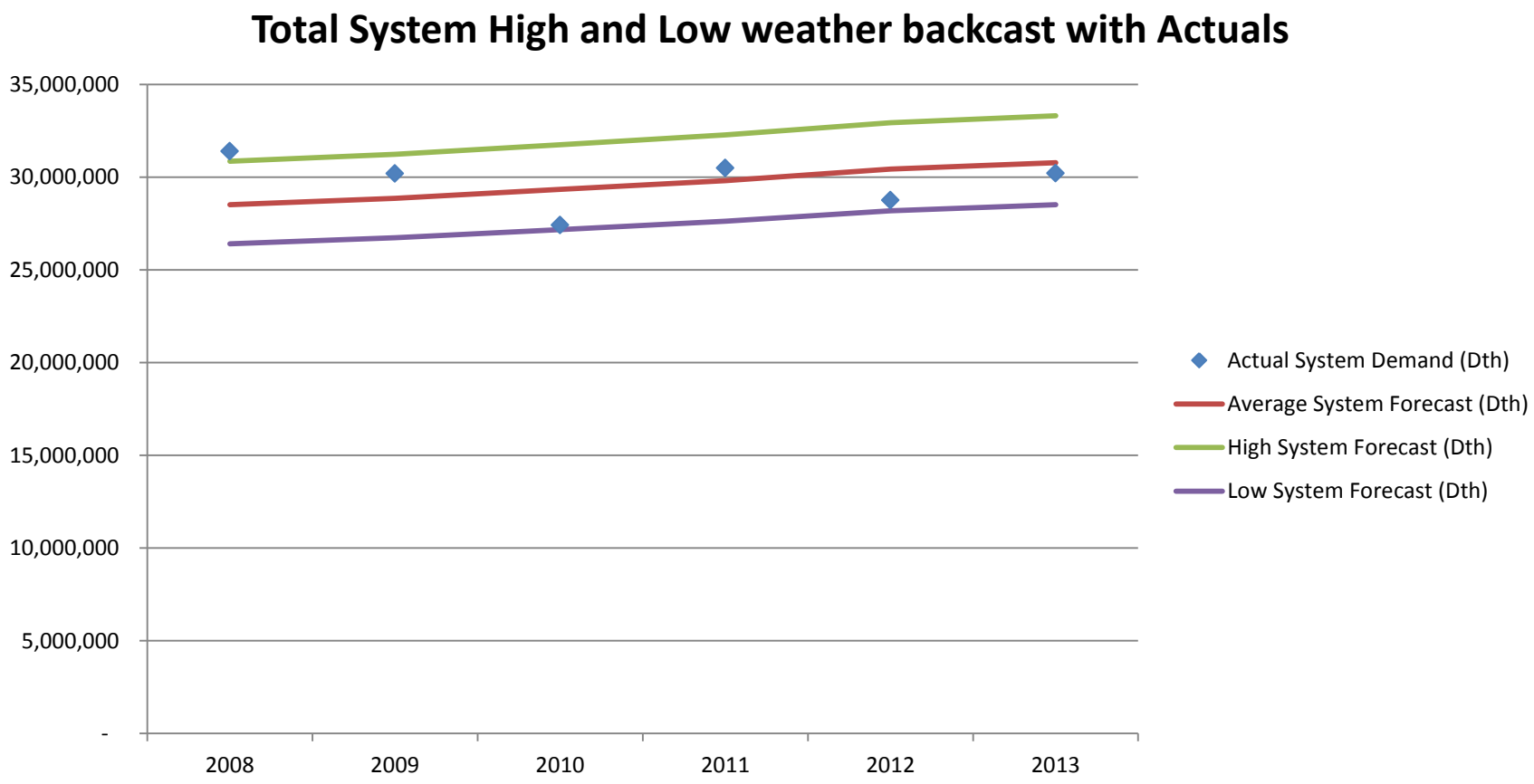
- 20-year Total System Forecast
- Based on a 30% weather range.

Oregon Forecast with 30% Weather Bands



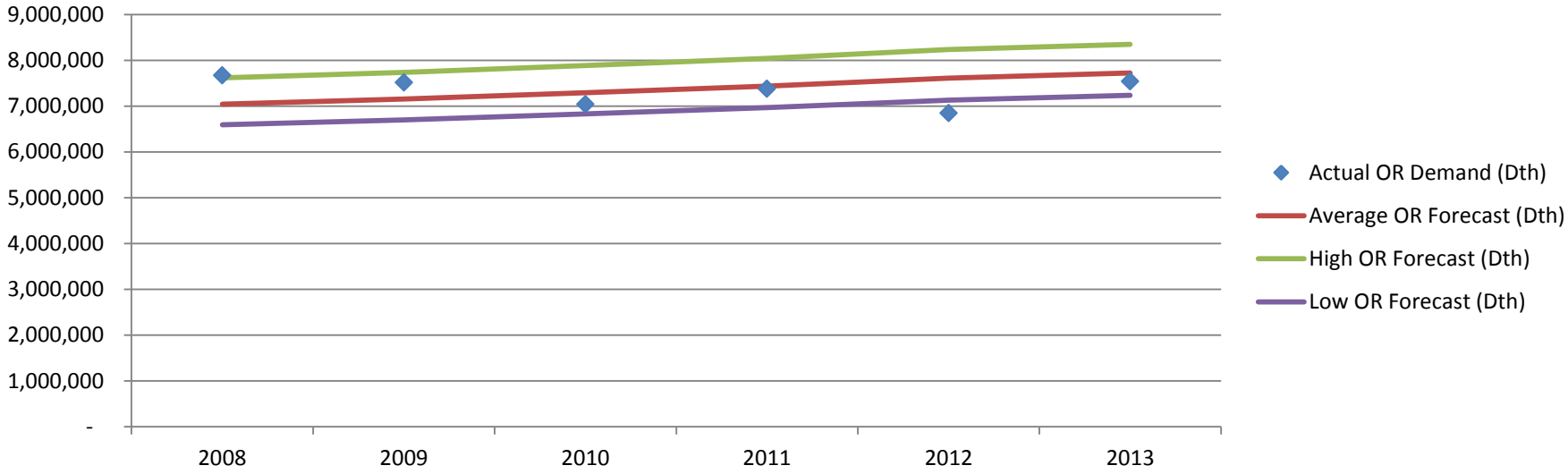
Washington Forecast with 30% Weather Bands



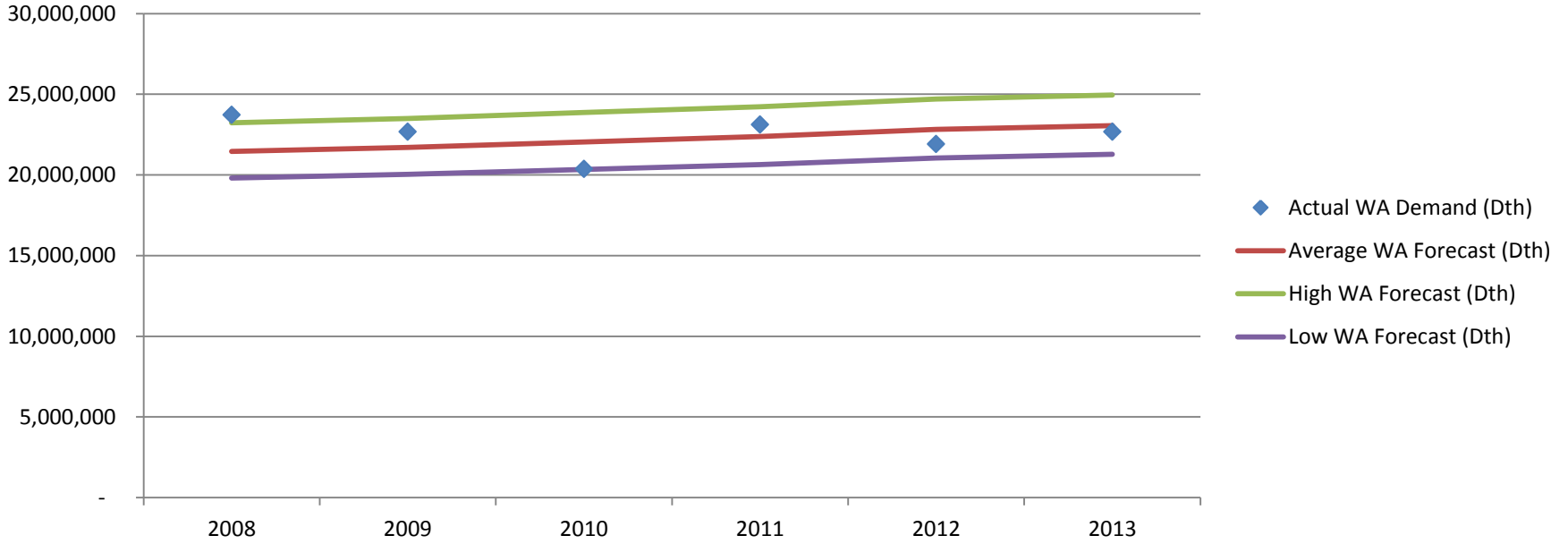


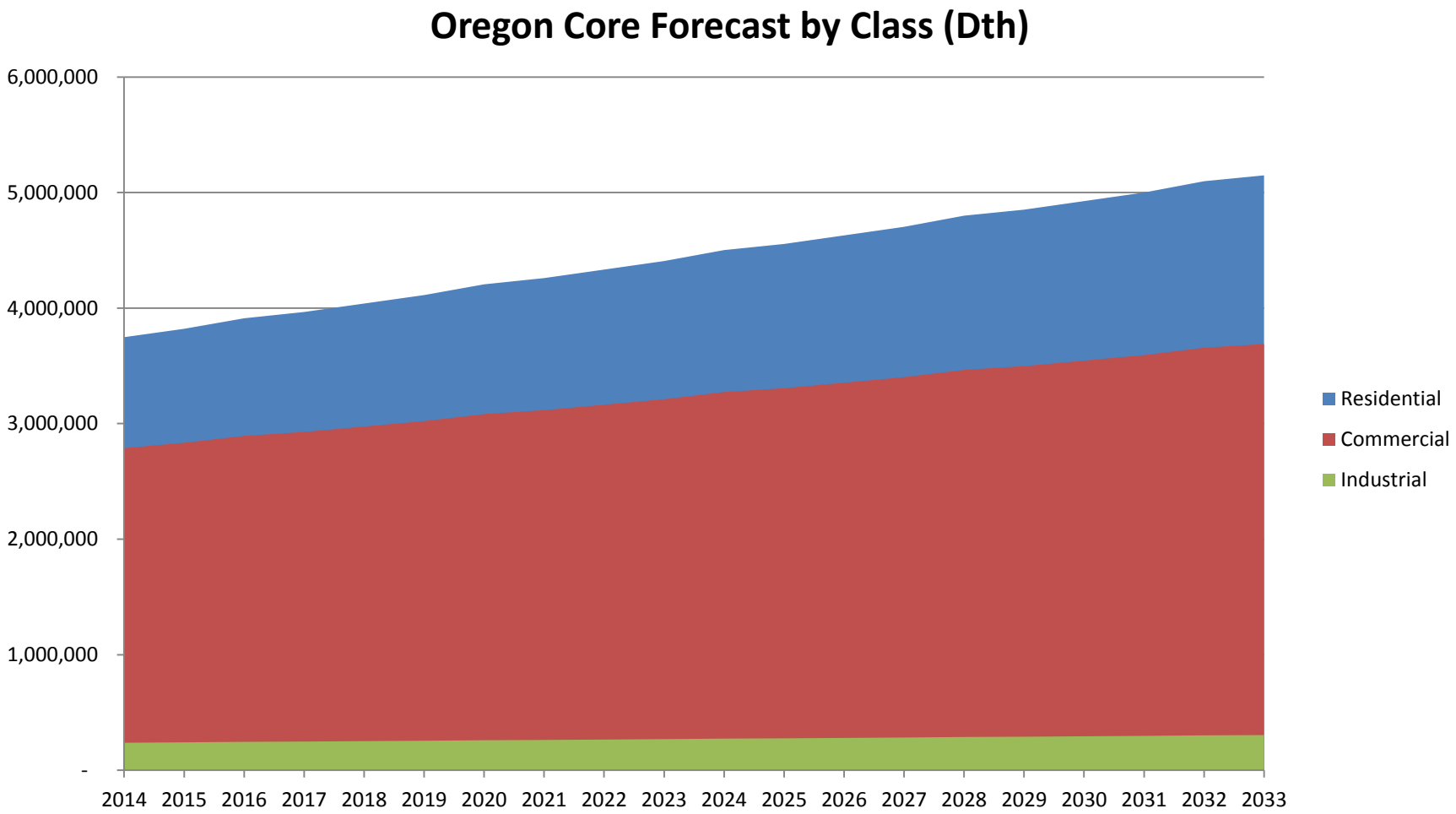
- High, Average, and Low backcast with Actuals for 2008-2013.
- Based on a 30% weather range.

Oregon High and Low weather backcast with Actuals

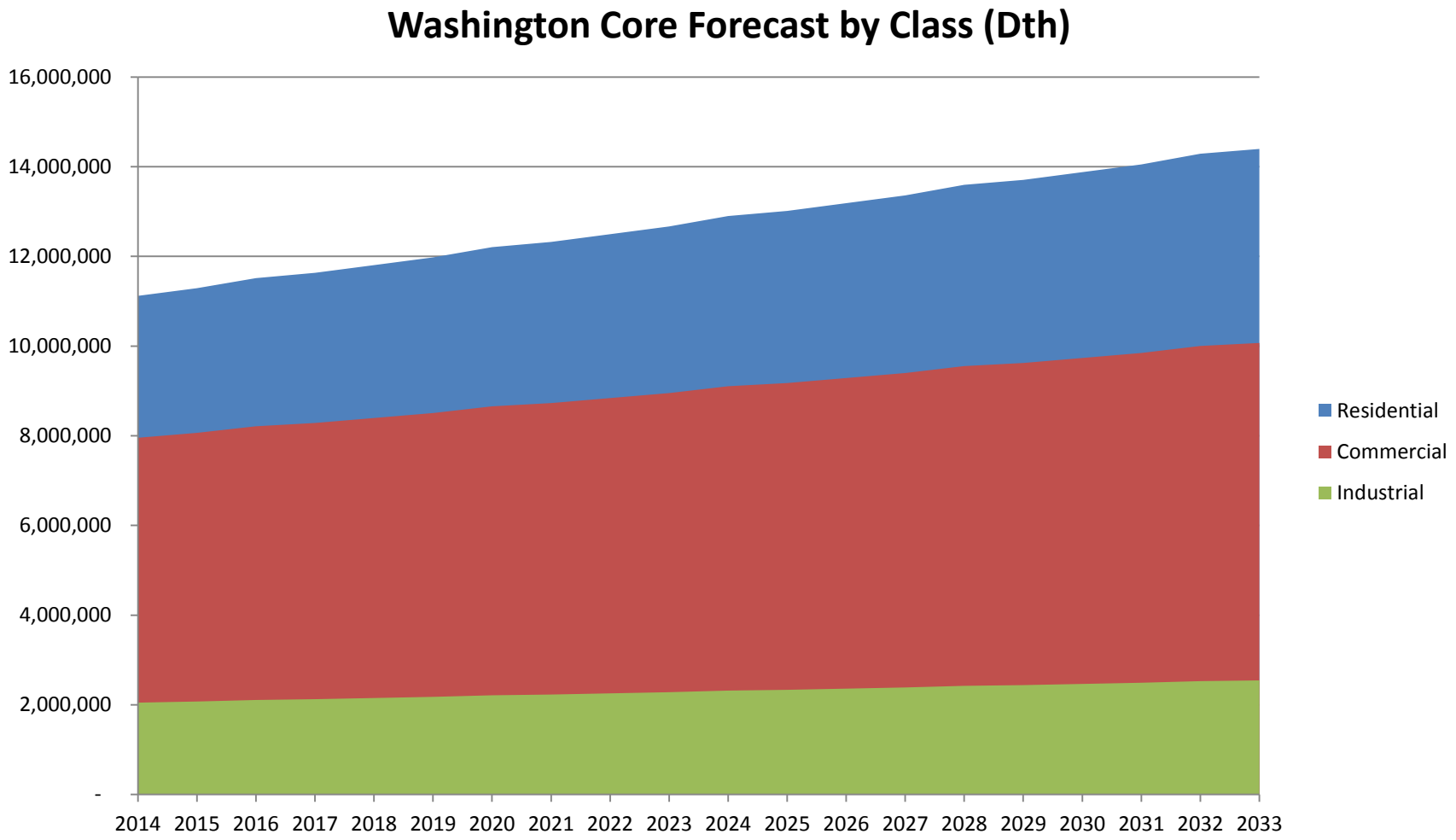


Washington High and Low weather backcast with Actuals



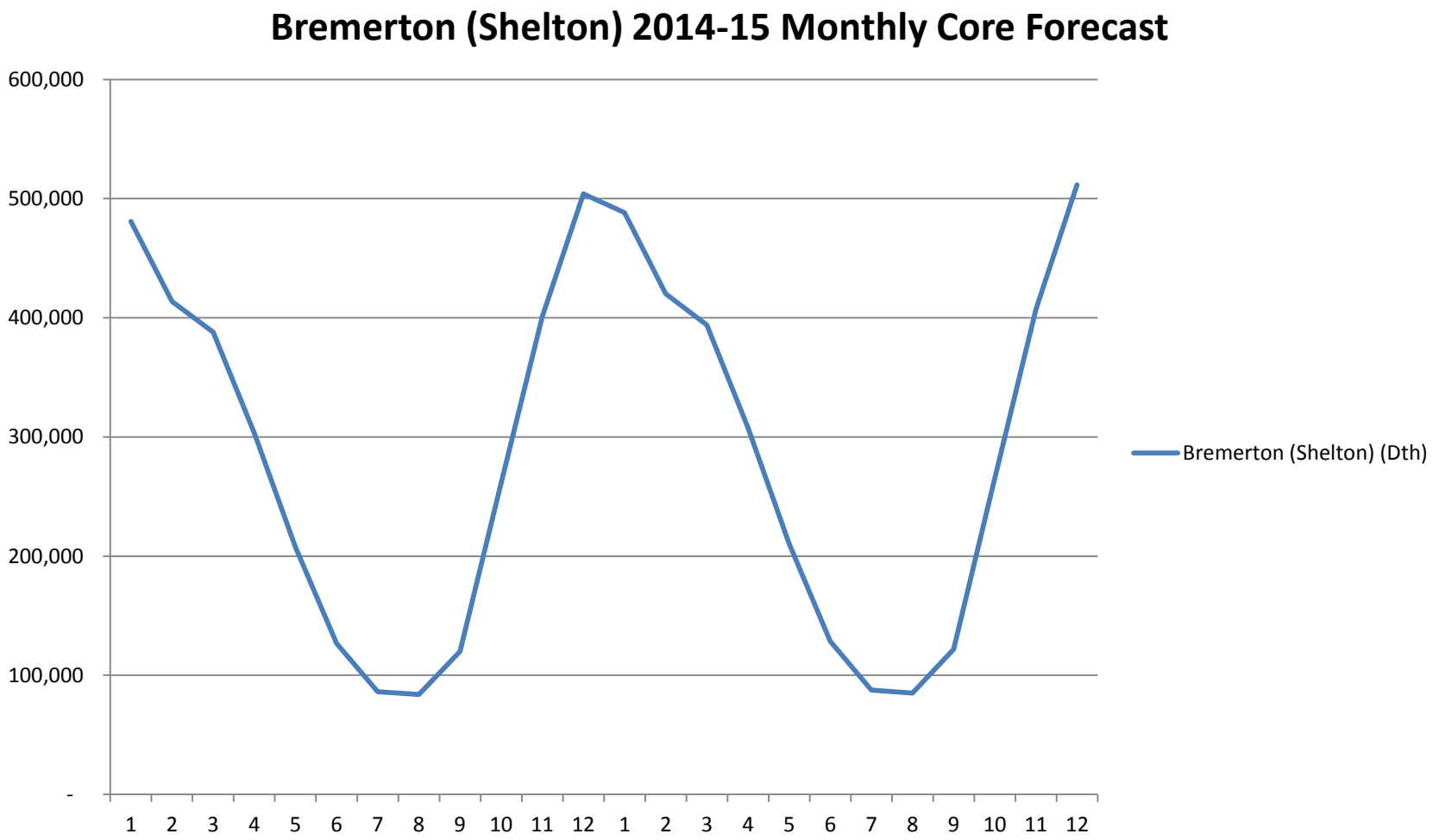


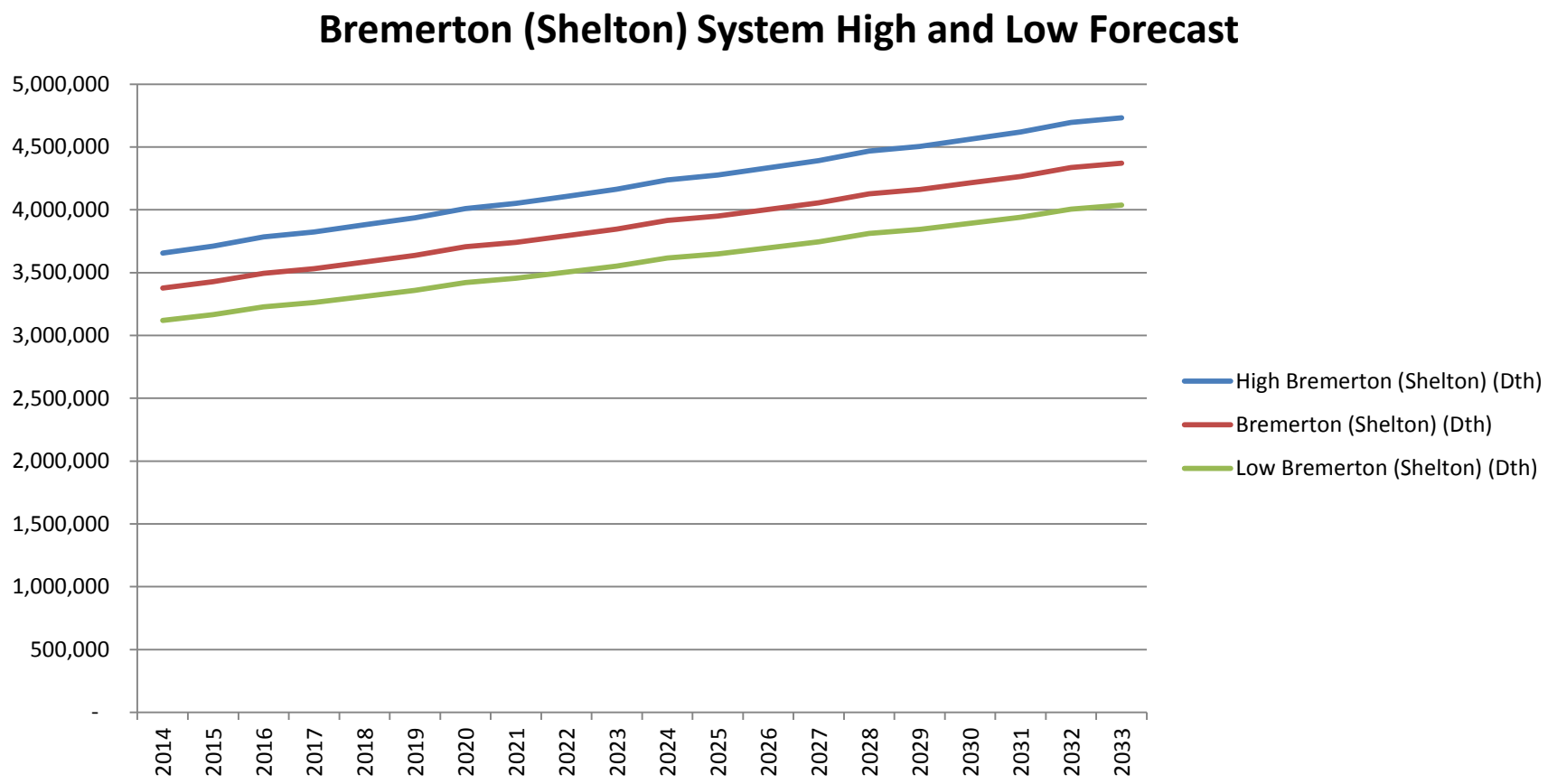
- Residential, Commercial, and Industrial Core forecast for Oregon.



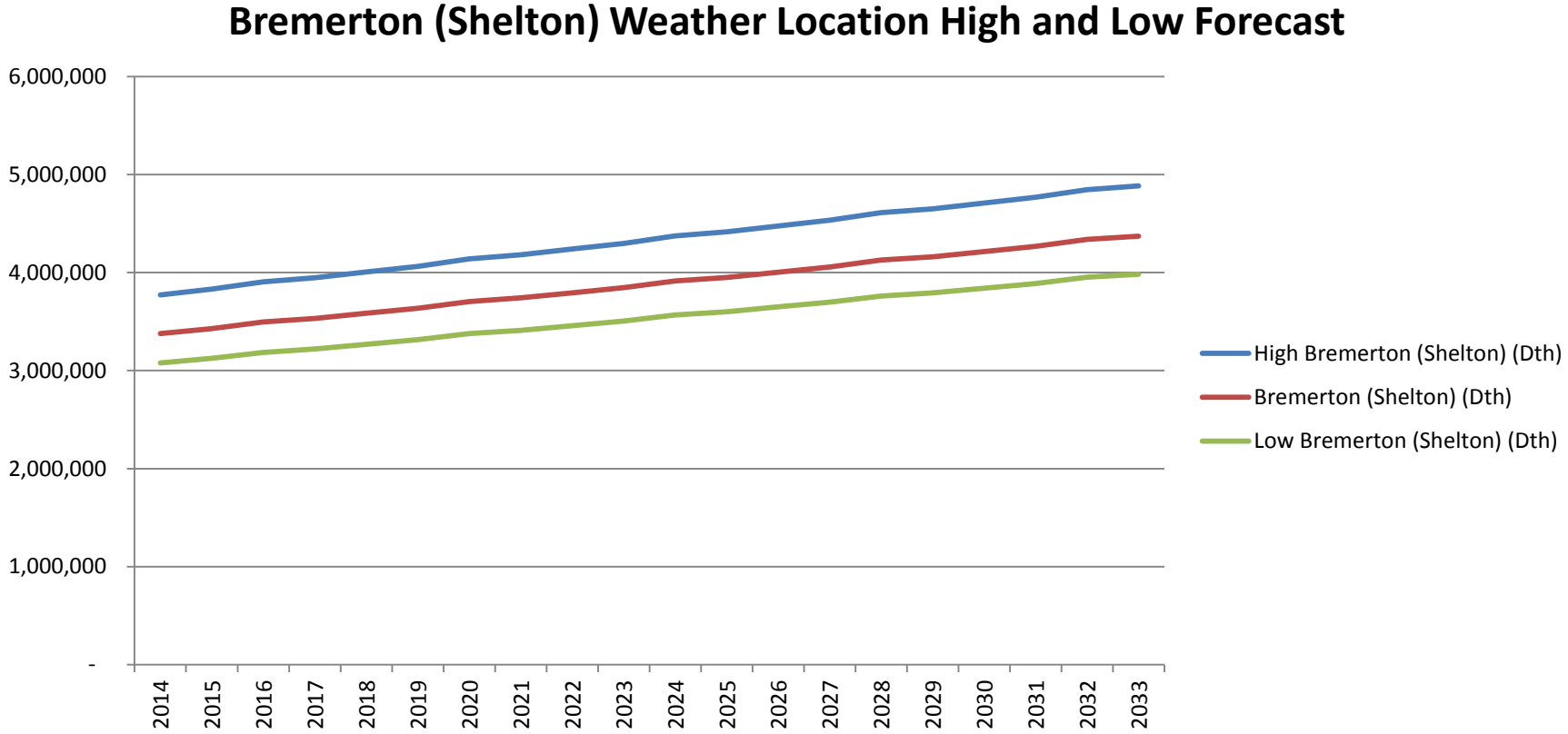
- Residential, Commercial, and Industrial Core forecast for Washington.

Bremerton (Shelton) CityGate



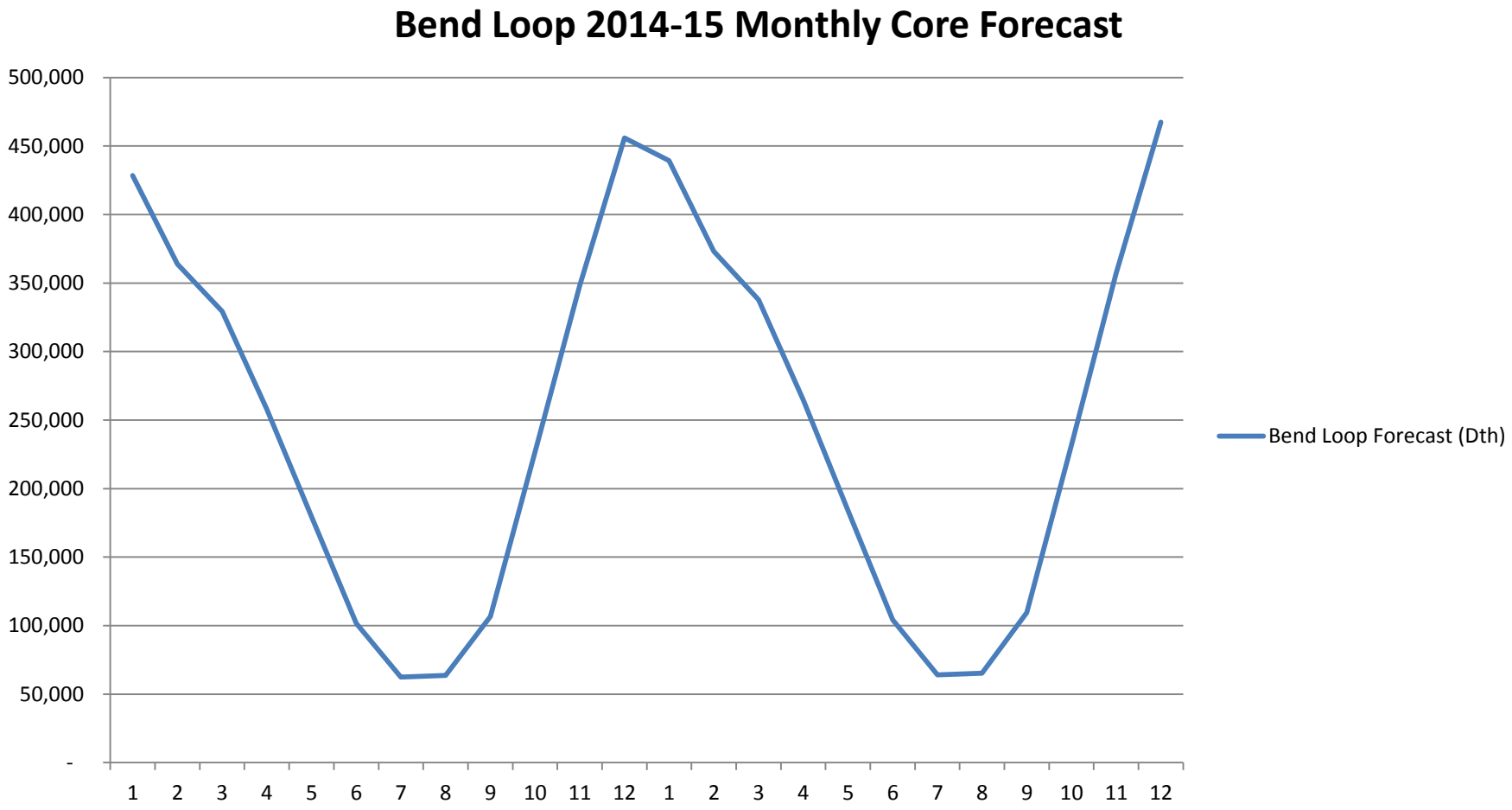


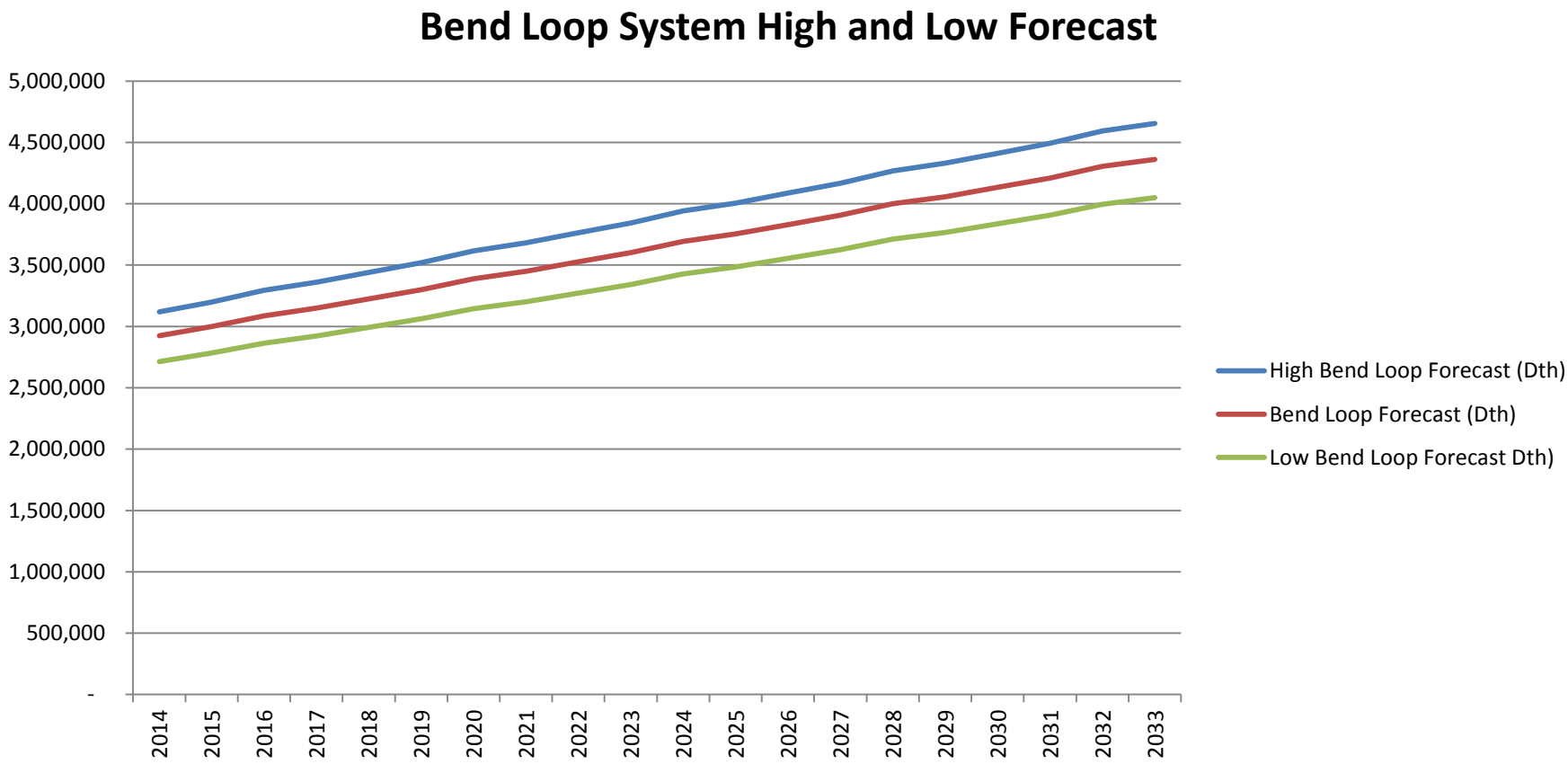
- This graph is based on highs and lows at the system level.



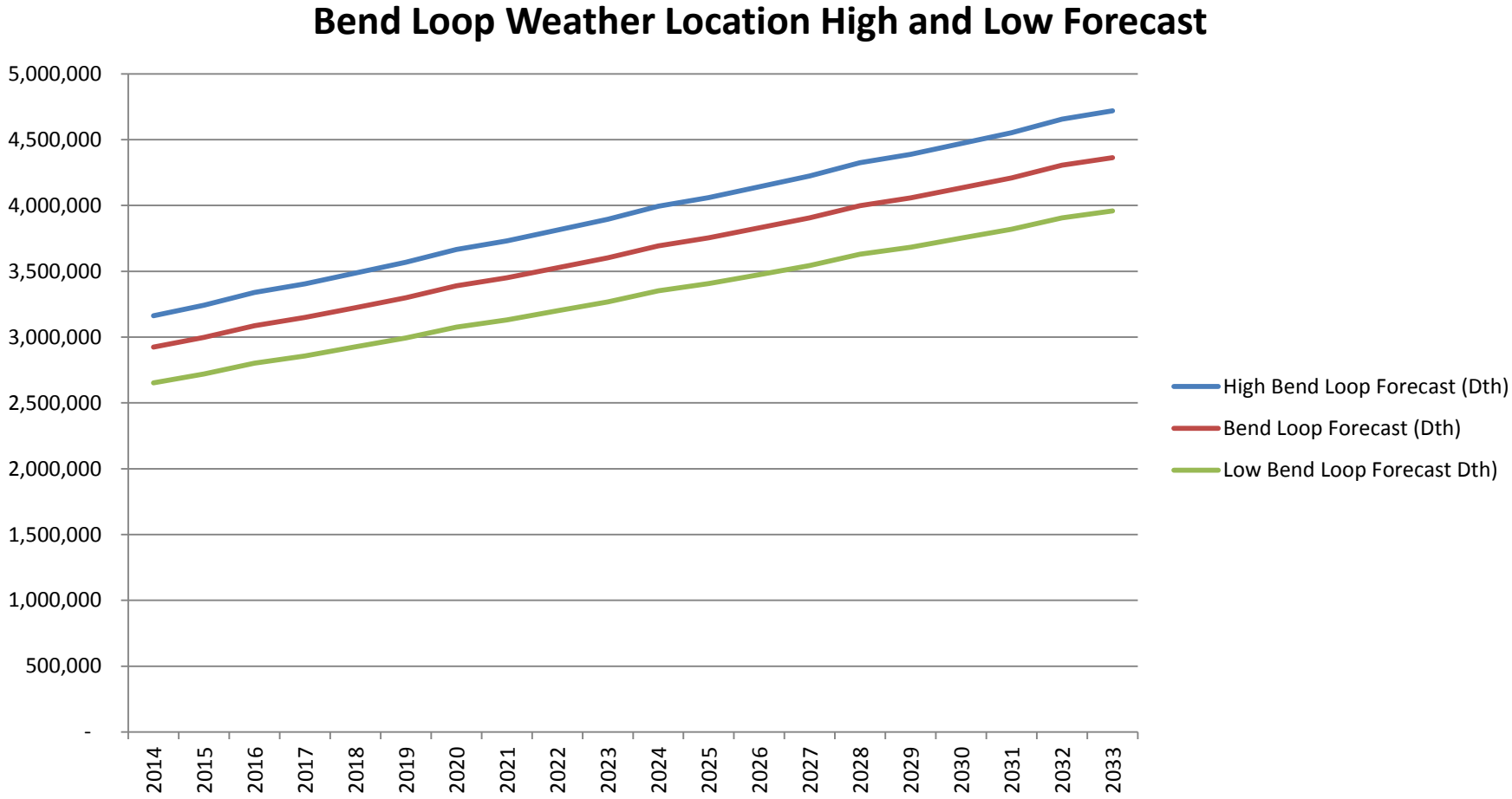
- This graph is based on highs and lows for its weather location.

Bend Loop


Bend Loop 2014-15 Monthly Core Forecast
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12
Bend Loop Forecast (Dth)



- This graph is based on highs and lows at the system level.



- This graph is based on highs and lows for its weather location.

Cascade Natural Gas Forecast Model Workshop #1
Portland International Airport in Portland, OR
Tuesday, September 16, 2014 9:00 AM – 12:00 PM

Attachments:
Attachment A – First Forecast Model Workshop updated slides
Attachment B – Cascade Demand Study Documentation
Attachment C – Attendance sheet

I.) **Introduction** – Mark Sellers-Vaughn opened the meeting with the introductions and reasoning for the meeting. Micah Robison led off with the agenda and then went on to the Demand Study Documentation.

II.) **Demand Study Documentation** – Micah went through the documentation to show the supporting methodology of the forecast model.

- The first discussion was on the EIA Efficiency effects and how it is built into the model.
- Three growth scenarios were explained:
  - Population growth.
  - Economic growth.
  - Combination of Population and Economic Growth.
- Micah explained the reasoning behind using Pipeline Flow Data and GMS to come up with a demand input. He also explained some issues with using CC&B.
- Many different aspects of weather were discussed:
  - The source of our weather data.
  - High and Low Weather bands.
  - Weather Locations.
  - 65 vs 60 degree reference temperature.
  - Peak Scenarios.
- Reasoning on why we chose a linear regression was explained.

III.) **The Model** – Micah Robinson went through the forecast model briefly showing the different tabs and levers the model has. The items he showed were:

- High and low scenarios for both growth and weather.
- The EIA efficiency factor
- Where demand is input and how the non-weather dependent demand is removed and then reapplied.

IV.) **Action Items** – Many stakeholders asked important questions and left CNGC with many items to research and discuss.

- Mapping and metrics of why Cascade chose a national EIA efficiency over the Pacific Region.
- Metrics to back up whether EIA has been representative of what Cascade has seen in prior years.
- Show that Woods & Poole has been indicative of what has happened in the past. Staff wants to see the metrics behind why we chose Woods & Poole.

- Information on CityGate allocation and county growth.
- Re-graph the Acme 60 vs 65 HDD table in the documentation.
- Find out if new construction is able to connect to gas services in major population areas.
- List of gates within a loop.
- Data on how we came up with the Default Peak Adder number.

V.) **Wrap-Up –** Cascade noted the second Forecast Model Workshop was tentatively scheduled for Thursday, October 23, 2014.

Attendance:

Presenters:
Mark Sellers-Vaughn
Micah Robinson

Attendees:
Brian Robertson
Mike Parvinen
Jim Abrahamson
Juliana Williams
Irion Sanger
Sommer Templet
Robby Fonner
Nadine Hanhan

Call-in attendees:
Jon Whiting
Joan Wilmotte
Pam Archer
Jon Klingele
Betty Erdahl
Joanna Huang

Action Item 3 from first forecast workshop: Support 1% Population to 1% demand assumption.

The 1% Population to 1% demand assumption was created based upon the EIA expectation in 2011-2014 energy outlooks that presented a flat growth projection through 2035. The most recent forecast presents essentially the same assumption:

Based on EIA Annual Energy Outlook 2014

"From 2012 to 2040, residential electricity use grows by 21% as the fuel mix in the residential sector moves increasingly towards electricity. Petroleum and other liquids lose fuel share for every end-use service, and particularly for space heating, where both electricity and natural gas gain share. Natural gas loses fuel share in every end-us service except space heating, and it continues to account for more than half of the fuel consumed for space heating, water heating, and cooking through the projection. In 2040 overall natural gas use in the residential sector is 1% lower, and petroleum and other liquids use is 35% lower than in 2012." – MT-7



CASCADE NATURAL GAS TWENTY YEAR DEMAND STUDY - DRAFT

2014 IRP Supporting Document

Abstract

This document contains the forecast methodology and supporting documentation for the 20 year demand forecast results generated as part of the combined demand study Cascade engaged MRE Consulting and Gelber & Associates to generate to support the 2014 IRP filing.

MRE Consulting, Ltd
Gelber & Associates Corp

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I. Overview

In this section upon finalization of the forecast model and methodology, Cascade will discuss a comparison of the 2014 IRP Base Demand Forecast for gas load compared to the demand forecasts used in the 2011 and 2012 IRPs.

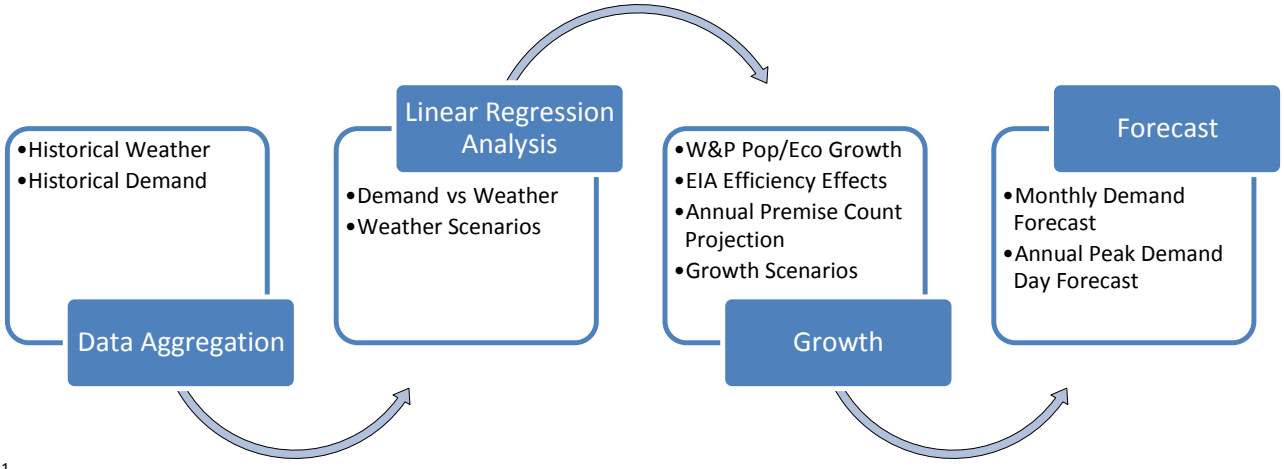
II. Methodology

a. Introduction

The Cascade demand forecast developed for the IRP is an estimate of gas demand sales and peak demand over a 20-year period for core customers at each CityGate[1] or Demand Loop[2]. Cascade core load consist mostly of residential and commercial customers along with some industrial customers. The provided forecasts are designed for use in long-term planning for resources and delivery systems. The 20-year horizon helps Cascade anticipate needs and in order to develop timely responses.

This document defines the assumptions and methods employed in generating the forecast as well as providing the definition of terms where appropriate. The past 30 years of weather data and ten years of demand data were analyzed to generate the forecast projection for the next 20 years.

Cascade has employed a methodology designed to identify and minimize uncertainties, and increase transparency and accuracy of the forecast. This forecast along with the rest of the IRP assists Cascade in providing the best service possible for the benefit of its customers.



[1] Citygate marks the point where the gas utility, Cascade, deliveries gas from the gas pipeline company to a large group of customers. This report forecasts gas demand from Cascade's 76 citygates.
[2] Demand loop is a grouping of citygates that service a similar area.

b. EIA Efficiency Effects

Future gas demand is projected to be impacted by efficiency gains due to technology advances that allow customers to reduce natural gas consumption. A 20 year forecast of efficiency gains can be derived from the demand forecast provided by the U.S. Energy Information Administration's (EIA's) *Annual Energy Outlook 2014* that has projections to 2040.

The EIA Energy Outlook report gives data based on region (census division). Cascade uses the 2014 EIA Outlook data for the entire U.S. While Cascade considered using forecast data for the Pacific Region, a region that contains both Washington and Oregon, this region is too heavily influenced by California and its high population which Cascade does not serve. Cascade uses figures from EIA's reference or base case forecast which projects annual natural gas consumption for both residential and commercial customers along with expected HDD's[3] and population. Residential and commercial numbers are combined to create a single natural gas demand number for each year. A demand per population per HDD figure is calculated by dividing demand by the population and HDDs given for each year of the EIA forecast. The demand per population per HDD figure is normalized by dividing each year's calculation by the year one (in this case 2014) results and is then converted to a percentage. This produces an efficiency growth[4] rate for each of the next 20 years. For this forecast the efficiency growth rate is the same for all of Cascade's CityGates.

EIA Efficiency was calculated utilizing the equations defined below:

$TD_{[Yr]} = RD_{[Yr]} + CD_{[Yr]}$

$EIA\_E_{[Yr]} = TD_{[Yr]} / US\_POP_{[Yr]} / US\_HDD_{[Yr]}$

Definitions:

- $RD_{[Yr]}$: Residential demand from EIA's *Annual Energy Outlook 2014* by [Yr] year
- $CD_{[Yr]}$: Commercial demand from EIA's *Annual Energy Outlook 2014* by [Yr] year
- $TD_{[Yr]}$: Total natural gas demand is the summation of the residential and commercial natural gas demand for a given year
- $US\_POP_{[Yr]}$: United States population forecasted by the EIA
- $US\_HDD_{[Yr]}$: Total Heating Degree Days for the United States as forecasted by the EIA

[3] HDD or Heating Degree Day is measure of coldness derived from the daily high and low temperature in degrees Fahrenheit. More information is provided in the weather segment of section II d. of this report.
[4] In this case efficiency gains makes for negative growth

- $EIA\_E_{[Yr]}$: Efficiency rate created using data from the EIA's *Annual Energy Outlook 2014.* This figure is normalized and converted to a percent rate.

c. Regional Economic Demographics (W&P)

Cascade uses regional economic demographics data formulated by Woods and Poole to derive a projected customer growth by town and year. Woods and Poole Employment, Income, Population, and Housing demographics were reviewed. Cascade derived Population and Economic growth factors formulated from Woods and Poole's forecasted population growth and Farm, Manufacturing, and Construction earnings.

Population Growth

Cascade uses population growth data formulated by Woods and Poole to derive a projected customer growth by CityGate and year. The Woods and Poole population growth forecast is provided by county and year and directly assigned to a CityGate. Cascade assumes a 1% growth in population translates to a 1% increase in customer growth.

W&P Growth by CityGate was calculated utilizing the equations defined below:

$$WP\_P_{[CityGate,Yr]} = \sum WP\_P_{[County,Yr]}$$

$$WP\_G_{[CityGate,Yr]} = (WP\_P_{[CityGate,Yr-1]} - WP\_P_{[CityGate,Yr]}) / WP\_P_{[CityGate,Yr]}$$

Definitions:

- $WP\_P_{[Yr,\ County]}$: Woods and Poole annual population forecast based on numerous demographic factors by county and by year
- $WP\_P_{[CityGate,Yr]}$: Sum of all Woods and Poole annual population figures for all counties assigned to a CityGate
- $WP\_G_{[CityGate,Yr]}$: Woods and Poole growth factor percentage calculated from Woods and Poole population forecast by CityGate and Yr

Economic Growth

To create an economic growth figure, Woods and Poole's construction, manufacturing, and farming earnings where combined for each county and year (2013-2040) to produce a total earnings number. These three industries where chosen because they describe the majority of industrial gas users in Cascade's service areas. The total economic earnings figure is divided by Woods & Poole's inflation forecast to calculate raw earnings growth. The sum of all raw earning growth figures assigned to a CityGate was used to calculate the Economic Growth by year for each CityGate.

W&P Economic Growth by citygate was calculated utilizing the equations defined below:

$$WP\_TE_{[County,\ Yr]} = (WP\_CE_{[County,\ Yr]} + WP\_ME_{[County,\ Yr]} + WP\_FE_{[County,\ Yr]})$$

$$WP\_TE_{[CityGate,\ Yr]} = \sum WP\_TE_{[County,\ Yr]}$$

$$WP\_EG_{[CG,\ Yr]} = (WP\_TE_{[CityGate,\ Yr-1]} - WP\_TE_{[CityGate,\ Yr]})/\ WP\_TE_{[County,\ Yr]}$$

Definitions:

- $WP\_TE_{[County,\ Yr]}$: Woods and Poole total earnings from farming, manufacturing, and construction forecast by county and by year
- $WP\_TE_{[CityGate,\ Yr]}$: Sum of all total earning from farming, manufacturing, and construction forecast by county and by year allocated to a CityGate
- $WP\_EG_{[CG,\ Yr]}$: Woods and Poole economic growth percentage by CityGate and year

d. Demand Study (In House Models)

Historical Demand

Historical core monthly demand by CityGate was derived from the amalgamation and analysis of demand pulled from three sources:

- Customer Care and Billing (CC&B) Demand by Billing Town, Tariff, Year, and Month
- Gas Management System (GMS) Non-core Demand by CityGate, Year, and Month
- Pipeline Flow Data (EBB[5]) Demand by CityGate, Year, and Month

Cascade core demand is comprised of residential, commercial, and industrial customers assigned to core bundled gas services as defined by tariff[6]. Cascade calculates core demand by using pipeline flow data for each CityGate, which represents total gas flow for both core and non-core customers, and subtracting Cascade's non-core data$_2$ by CityGate. Non-core data comes from Cascade own gas management system (GMS) which tracks non-core data demand by individual customers behind each CityGate.

Core demand is improved further by the Cascade analyst who removes data that is clearly non-weather related and is atypical of Cascade's core deliveries. A review of CC&B premise counts and demand by tariff assists in identifying this data (NOTE: In the final document we will include example of how this CC&B data actually helps to identify non-weather data). The removed data is later reinserted into the forecast but only after the weather regressions are performed. Removing the data prior to performing the regressions improves the quality of the weather modeling[7]. Core demand by year, month, and CityGate is the primary unit of information upon which this forecast is constructed.

Core Demand by CityGate was calculated utilizing the equation defined below:

$$CD_{[CG,Yr,Mth]} = A\_P\_D_{[CG,Yr,Mth]} - NC\_GMS\_D_{[CG,Yr,Mth]} - NWD\_CD_{[CG,Yr,Mth]}$$

Definitions:

- A_P_D: Actual Pipeline Demand by CityGate, year, and month.
- NC_GMS_D: Non-Core GMS Demand by CityGate, year, and month
- $CD_{[CG,Yr,Mth]}$: Core demand by CityGate, year, month
- NWD_CD: Non Weather dependent core demand, as determined by Cascade review of C_CCB_D_A and NC_CCB_D_A (see next calculation on CC&B data)

[5] EBB or Energy Bulletin Board is system in which pipeline companies post pipeline volumes for the benefit of buyers and sellers of natural gas.
[6] Tariff is a customer classification code
[7] See regression section of the report for more information

- WD_CD: Calculated weather dependent core demand by CityGate, month, and year

Core demand data can also be generated by using CC&B demand figures. However, CC&B derived demand figures were found to not be consistent enough for use in the forecast model (NOTE: In the final document we will include samples of the supporting analysis). . Instead, the data is used only as analytical support such as helping to identifying atypical, non-weather related data. CC&B demand was allocated by town to each city gate to determine total allocated city gate demand by billing year and month. Analysis of the CC&B data determined that billed non-core load minus one month was equivalent to non-core physical flow, due to billing operations scheduled for the last day of the month. CC&B core demand was determined to not be equivalent to physical gas flow because of differences between the billing cycle and physical gas flow.

CC&B Demand data by CityGate was calculated utilizing the equations defined below:

$D\_A\_CCB_{[CG, Tariff,Yr,Mth]} = D\_CCB_{[Tariff,Town,Yr,Mth]} \times TGA_{[Town, CG]}$

$C\_CCB\_D\_A_{[CG,Yr,Mth]} = \sum D\_A\_CCB_{[CG,Tariff,Yr,Mth]}$

$NC\_CCB\_D\_A_{[CG,Yr,Mth]} = \sum D\_A\_CCB_{[CG,Tarrif,Yr,Mth]}$

Definitions:

- D_CCB: Raw CC&B Demand data by billing Year, Month -1, Town, and Tariff
- D_A_CCB: calculated demand where CC&B demand is allocated to each $CityGate_{CG}$ based upon the TGA
- TGA: Town to Gate Allocation (TGA) where 100 % or a towns billed volume is allocated to one or more CityGates
- C_CCB_D_A: Sum of Core CC&B Demand Allocated to the CityGate by year and month
- NC_CCB_D_A: Sum of Non-Core CC&B Demand Allocated to the CityGate by year and month and year

Weather

Weather Information Gathering

Historical weather is pulled from the Schneider Electric weather service for all weather related analysis. Weather used represents the minimum (Min) and maximum (Max) Temperatures per weather station and day, where National Oceanic and Atmospheric Administration (NOAA) provides an actual weather value for a weather station and day. If NOAA weather was not available for a weather station and day, a Schneider weather estimate is used.

Average Weather by Weather Station was calculated utilizing the equations defined below:

$AVG\_WS_{[WS, WD]}$ = *Average*($MinOfTemperature_{[WS, WD]}$, $MaxOfTemperature_{[WS, WD]}$)

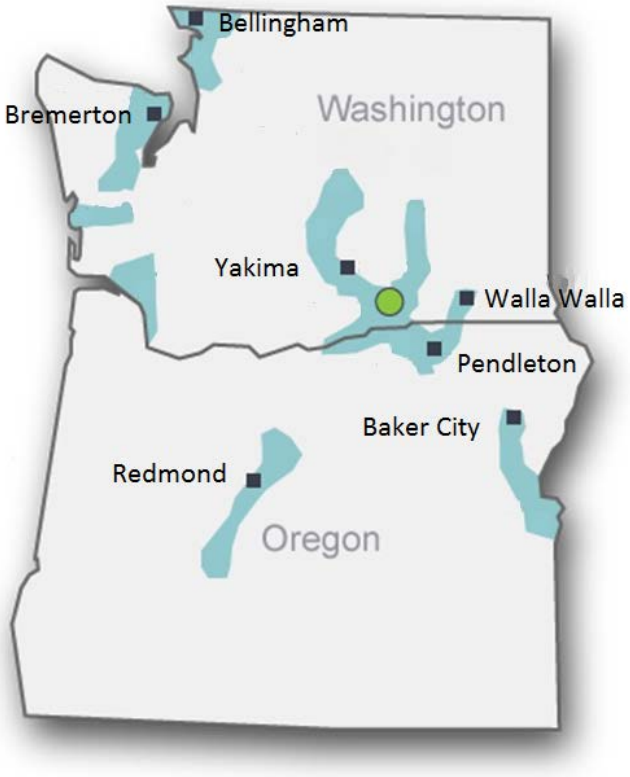
Definitions:

- $AVG\_WS_{[WS, WD]}$: calculated average temperature by $WeatherStation_{WS}$ and $WeatherDay_{WD}$
- $MinOfTemperature_{[WS, WD]}$: minimum temperature from Schneider Electric weather service by [WS] weather station and [WD] weather day
- $MaxOfTemperature_{[WS, WD]}$: maximum temperature from Schneider Electric weather service by [WS] weather station and [WD] weather day

Cascade assigns a particular weather station to represent each CityGate or demand loop it defines as a forecasting location. Seven weather stations were determined to best fit the Cascade geographic network and are located in the cities of Bellingham, Yakima, Walla Walla, Pendleton, Redmond, Baker City, and Bremerton. Considerations for selecting the weather stations are:

- Proximity of the CityGate to the weather station
- Quality of the data available at the weather station
- Geographical impediments between the weather station and the CityGate

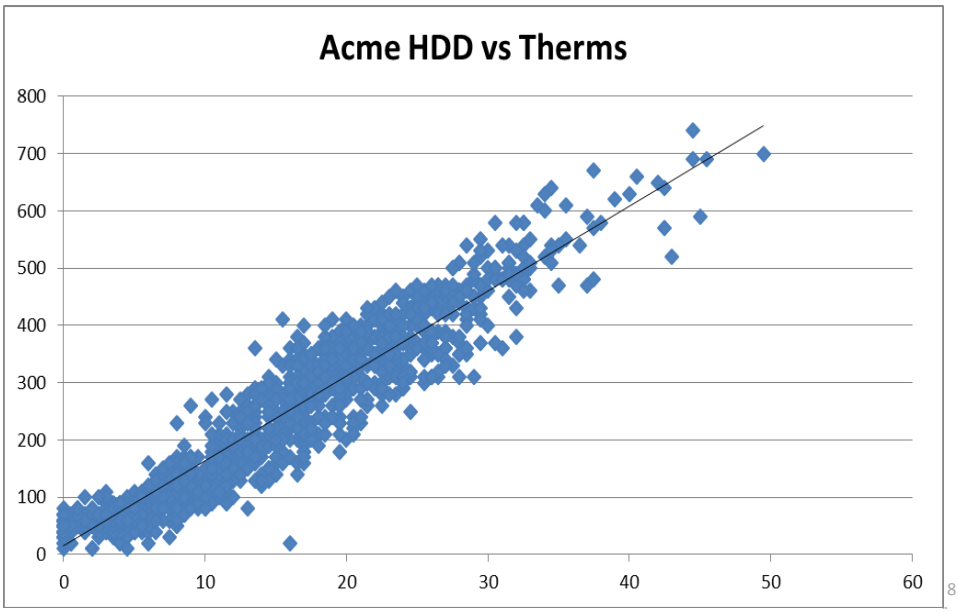
The map below shows the weather locations as well as Cascade's related customer locations (shaded in aqua).



Average weather by weather station is converted into Heating Degree Days (HDD) which becomes the unit of measure for the weather which this report is based. With weather quantified in terms of HDD's, Cascade can forecast demand scenarios based on an average year, a cold year, or a mild year. In addition, Cascade can forecast demand on peak demand days when gas loads are at their highest. These concepts enable Cascade to service its clientele during varying demand levels.

Heating Degree Days

Heating Degree Day (HDD) values are calculated by beginning with the daily average temperature, which is the simple average of the high and low temperatures for a given day. The daily average is then subtracted from an HDD degree threshold (for example 65°F) to create the HDD for a given day. Should this calculation produce a negative number, a value of zero is assigned as the HDD. Therefore, HDD's can never be negative. The HDD threshold number is designed to reflect a temperature below which heating demand begins to notably rise. The historical threshold for calculating HDD has been 65 °F. However, when modeling gas demand based on weather, Cascade has determined that lowering the threshold to 60 °F produces better results. The graph below shows why the lower threshold is preferable. It shows that heating demand does not begin to increase significantly until an HDD of five (65 °F minus 60 °F) if the traditional HDD threshold of 65 °F is utilized. Lowering the HDD threshold thus gives a better measure of the relation between HDD and dekatherms (measurement of heat usage).



Cascade's analysis has optimized the HDD threshold for each city gate by lowering the HDD threshold. A single lower HDD threshold of 60 is used for modeling all CityGates.

Historical Premise Count

The historical premise count by year and CityGate was derived from the analysis of monthly premise counts by town and tariff pulled from Customer Care and Billing (CC&B). Monthly premise counts by town, tariff, and year were allocated by town to each CityGate to determine total allocated CityGate premise count by tariff, year, and month.

Historical Premise Count by CityGate where calculated utilizing the equations defined below:

$P\_A\_CCB_{[CG, Yr, Mth, Tariff]} = P\_CCB_{[Town,Tariff,Yr,Mth-1]} \times TGA_{[Town, CG]}$

$CCB\_AAP_{[CG, Yr, Tariff]} = Average(P\_A\_CCB_{[CG, Yr, Mth, Tariff]})$

Definitions:

- P_CCB: Raw CCB premise count data by billing Year, Month -1_{Mth}, Town, and Tariff
- P_A_CCB: calculated premise count where monthly CC&B premise count by tariff is allocated to each CityGate based upon the TGA
- TGA: Town to gate allocation (TGA) where 100 % or a towns billed volume is allocated to one or more CityGates
- CCB_AAP: CC&B Average annual premise count by CityGate, tariff, and year

Growth

Growth is a calculated value which is determined based upon Woods and Poole Growth, Economic, Mixed, or a manually assigned Cascade growth adjustment plus an EIA efficiency factor. Cascade utilizes a manual growth adjustment when it determines the Woods and Poole growth figure does not best project the growth of a CityGate for a period of time. Manually assigned growth factors are based on supporting analytics related to premise growth, engineering estimates, and internal customer projections.

Growth effects are cumulative, which means that growth effects from one year carry over into the next year. However, there can occasionally be predictable events that impact demand for a specific time period but in a manner such that normal demand resumes when the event is over. For example, a factory may shut down for several months but return to full gas usage after the shutdown. This in turn would reduce CityGate demand for those months but would not affect demand thereafter. Cascade incorporates these non-cumulative events in its forecast as a manual assumption.

Forecast Adjustment Factor by CityGate and year was calculated utilizing the equations defined below:

$WP\_M_{[GC,Yr]} = [WP\_E_{[CG,Yr]} * (1- WC_{[CG]})] + [WP\_P_{[CG,Yr]} * WC_{[CG]}]$

$A\_GR_{[CG,Yr]} = \text{Select } (WP\_M_{[CG,Yr]}, WP\_E_{[CG,Yr]}, WP\_P_{[CG,Yr]}, MAG_{[GC,Yr]})$

$SA\_GR_{[CG,Yr]} = A\_GR_{[CG,Yr]} \text{ x } (GS_{[Avg,High,Low]} +1)$[9]

$SEC\_GF_{[CG,Yr]} = SEC\_GF_{[CG,Yr-1]} *(1 + S\_GF_{[Yr,CG]} + EIA\_E_{[GC,YR]})$

$SEC\_GR_{[CG,Yr]} = (SEC\_GF_{[CG,Yr]} – 1) /1$

$FAF_{[CG,YR,Mth]} = (SEC\_GR_{[CG,Yr]} + MA_{[Yr]} + MA_{[Yr,Mth]} + MA_{[Mth]})$

Definitions:

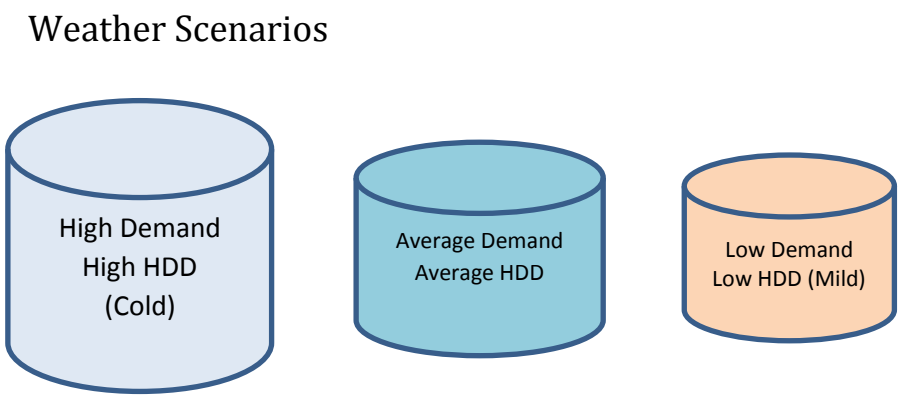
- $WC_{[CG]}$: Weather correlation R^2 coefficient for a citygate
- $A\_GR_{[CG,Yr]}$: The Assigned Annual Growth Rate, represents growth by CityGate and year (This defaults to the Woods and Poole Growth rate for the CityGate and year unless a Manually Assigned Growth rate is provided)
- $WP\_P_{[GC,Yr]}$: Woods and Poole Population Growth by CityGate and year
- $WP\_E_{[GC,Yr]}$: Woods and Poole Economic Growth by CityGate and year
- $WP\_M_{[GC,Yr]}$: Mixed Woods and Poole Population and Economic Growth factors by CityGate and year
- $MAG_{[GC,Yr]}$: Manually Assigned Growth by CityGate and year
- $SA\_GR_{[CG,Yr]}$: The Assigned Scenario Growth Rate, represents A_GR impacted by the selected growth scenario
- $GS_{[Avg,High,Low]}$: Growth Scenario Impact for average, high, and low growth given in percent terms
- $EIA\_E_{[GC,Yr]}$: EIA Efficiency factor by year
- $SEC\_GF_{[CG,Yr]}$: Applied Annual Growth Factor (With EIA Efficiency), by CityGate and year that is compounded
- $SEC\_GR_{[CG,Yr]}$: Applied Annual Growth modified from a factor to percent rate
- $FAF_{[CG,Yr,Mth]}$: Final Forecast Adjustment Factor by CityGate, year, and month
- $MA_{[Yr]}$: A Manual Forecast Adjustment Factor that affects a given year
- $MA_{[Yr,Mth]}$: A Manual Forecast Adjustment Factor that affects a given month in a given year
- $MA_{[Mth]}$: A Manual Forecast Adjustment Factor that affects a given month for all years

[9] This formula changes depending on whether the assign growth rate is positive or negative and the growth scenario (high or low). See growth scenario section for more details.

Weather Scenarios

To determine the average (medium) weather case scenario, the average HDD of each month is taken from a specified range of years for each of the seven weather locations. This forecast uses a 30 year range of weather history from the years 1984 through 2013 for each of the three scenarios. To determine the high case HDD weather scenario, Cascade selects the years representing the six coldest years (20% of the coldest years out of 30). These are the particular years with the highest system HDD. Finding the system HDD involves considering HDD's from all seven weather stations and giving appropriate weight to the weather stations that have greater impact on system wide demand. The weighting factor is determined by adding the coefficients or factors (derived from the regression[10]) for each weather station, and by then dividing the sum of the coefficients by the total value of the coefficients from all of the weather stations. Thus the system weighted HDD is the summation of HDD's from each weather station multiplied by its weighting factor. These system calculated HDD's are used to rank the years from warmest to coldest.

To determine the high case HDD weather scenario, Cascade selects the years representing the six coldest years (20% of the coldest years out of 30). These are the particular years with the highest system wide HDD. To determine the low case HDD weather scenario, Cascade selects the years representing the six warmest years (20% of the warmest years out of 30). These are the particular years with the lowest system wide HDD. For both the high and low case HDD weather scenarios, for each particular month of a given projected future year, the HDD from these six years average to provide the appropriate scenario.



[10] Refer to regression section of this report for more information.

Cascade Weather Scenario Impact

Weather Scenario Impact by Weather Station was calculated utilizing the equations defined below:

$AWS_{[Avg,Mth]}$ = Average($HDD_{[All\ Weather\ YRS,\ Mth]}$)

$HWS_{[High,Mth]}$ = Average($HDD_{[Top\ X\ YRS,Mth]}$)

$LWS_{[Low,Mth]}$ = Average($HDD_{[Bottom\ Y\ YRS,Mth]}$)

Definitions:

- $AWS_{[Avg,\ Mth]}$: Average HDD by month for all weather years
- $HWS_{[High,Mth]}$: Average HDD by month for the X years with the highest HDD values (coldest), where X is the number of weather years multiplied by the weather range, e.g. 30 years * 20% = 6 years
- $LWS_{[Low,Mth]}$: Average HDD by month for the Y years with the lowest HDD values (warmest), where Y is the number of weather years multiplied by the weather range, e.g. 30 years * 20% = 6 years

Growth Scenarios

Cascade has defined three growth scenarios to adjust expected demand.

- Expected growth: is the calculated Annual Cascade Assigned Scenario Impact growth projection
- High Growth: is the High Cascade Assigned Scenario Impact
- Low Growth: is the Low Cascade Assigned Scenario Impact

Each scenario calculates a single growth factor to increase or decrease demand at a given CityGate in a given year over the projected 20 year period.

Cascade Growth Scenario Impact

High and low growth scenarios are defined by a banded +/- ranged based upon the average assigned scenario growth defined.

Growth Scenario Impact by CityGate and Year was calculated utilizing the equations defined below:

$SA\_GR_{[AVG,CG,Yr]} = SA\_GR_{[YR,CG]}$

$SA\_GR_{[High]} = \text{If } A\_GR_{[YR,CG]} > 0, \text{ THEN} = A\_GR_{[YR,CG]} * (1+GS_{[High]}), \text{ ELSE} = A\_GR_{[YR,CG]} * (1-GS_{[High]})$

$SA\_GR_{[Low]} = \text{If } A\_GR_{[YR,CG]} > 0, \text{ THEN} = A\_GR_{[YR,CG]} * (1-GS_{[High]}), \text{ ELSE} = A\_GR_{[YR,CG]} * (1+GS_{[Low]})$

Definitions:

- $GS_{[Avg,High,Low]}$: Growth based upon scenario Avg, High, or Low
- $A\_GR_{[CG,Yr]}$: The Assigned Annual Growth Rate, represents growth by CityGate and Year (This is the Population/Economic/Mixed Woods and Poole Growth factor for the CityGate and Year unless a Manually Assigned Growth factor is provided)
- $GS_{[High]}$: High Growth Range Adjustment is a model variable represented as %
- $GS_{[Low]}$: Low Growth Range Adjustment is a model variable represented as %

Regression Analysis

The majority of Cascade's core natural gas demand is used for heating purposes and is highly dependent on the weather. The colder the weather, the greater the demand. To forecast weather dependent load which accounts for weather differences, Cascade conducted a linear regression[11] analysis to develop a regression coefficient and constant for each CityGate. Cascade preformed a regression analysis of weather dependent monthly gas demand in comparison with monthly heating degree days at each CityGate for Historical Demand. The regression analysis calculated the coefficient ***b*** and constant ***C*** that best minimizes the error. This forecast uses a linear regression., no exponents where used[12].

Regression analysis calculates the best coefficient *b* and constant *C* values for each CityGate *utilizing the equations defined below*:

$$\boldsymbol{Demand = b \times HDD + C}$$

Definitions:

- Demand = Core Weather Dependent Gas Demand (Daily Average for a given month in dekatherms)
- HDD = Average Heating Degree Day Per month
- b = coefficient that gives gas demand (dekatherms) per HDD
- C = constant, base level of gas demand (dekatherms) that remains the same regardless of weather

The coefficient $\boldsymbol{b}$ is the central figure in the model when calculating weather dependent demand. It best describes the impact that weather has on gas demand. The larger the $\boldsymbol{b}$ coefficient, the greater the gas demand per unit of weather. The constant ***C*** is the base level of gas demand (dekatherms) that remains the same regardless of weather.

In addition to finding the coefficient ***b*** and the constant ***C***, another product of the regression analysis is the production of the correlation coefficient, *R*. This figure is typically squared to form R^2. R^2 measures the strength of the relationship between two variables. R^2 values can range from zero to one. A regression with an R^2 of 1 means it has been a perfect predictor of demand, therefore, would be an ideal regression to use. An R^2 of 1 does not guarantee a future HDD will predict the exact demand. A low R^2 value shows that it has not been a good predictor, therefore, would not be an ideal regression to use.

[11] Regression analysis is a statistical process used to study the relationship between variables – in this case weather and demand.

[12] Cascade considered using exponential and more complex statistical techniques to find the model the relationship between weather and demand. However, Cascade saw only negligible gains in regression quality that did not merit the additional complexity.

For the purposes of this forecast, Cascade did not require the use of a Monte Carlo[13] model to calculate weather. There was sufficient historical weather data to produce high, low, and medium cases without utilizing a Monte Carlo simulation.

e. Demand Study (Calculation)

Monthly Demand Forecast

The Monthly Demand Forecast by CityGate, year, and month is based upon the calculated forecast for weather dependent core load plus the most recent year's (2013) non weather dependent core load where a single forecast adjustment was applied which included growth and Cascade assumptions.

Weather dependent core load was forecasted by CityGate utilizing the Weather Dependent Model equation, unless the R^2 of a CityGate's linear regression was below a certain 80% threshold, meaning HDD is not a good predictor of demand.

Forecast Demand by CityGate, Year, and Month was calculated utilizing the equations defined below:

$WDD_{[CG,YR,Mth]} = (b_{[CG]} \times HDD_{[High, Ave, Low, CG,Mth]} + C_{[CG]}) * DAYS_{[Yr,Mth]} + NWDDV_{[CG,YR,Mth]}$

$MDF_{[CG,YR,Mth]} = Or(WDD_{[CG,YR,Mth]}, DDV_{[CG,YR,Mth]}) * (1+FAF_{[YR,Mth,CG]})$

Definitions:

- WDD: Weather based demand for a given weather scenario for a given CityGate and month
- b: coefficient that gives gas demand (dekatherms) per HDD for a given CityGate
- C: constant, base level of gas demand (dekatherms) that remains the same regardless of weather
- DAYS: Number of days in forecast year and month
- NWDDV: Non Weather Dependent Default Demand Value based upon forecast month
- DDV: Default demand value per CityGate based upon forecast month
- MDF: Monthly demand forecast per CityGate
- FAF: Forecast Adjustment Factor by CityGate, year, and month (Includes growth, assumptions, and scenario impact)

[13] Monte Carlo model is a statistical method used to estimate solutions for complex equations that cannot be solve for implicitly. The technique typically involves averaging the results of multiple trials using random input figures. For this forecast the primary inputs, including weather, were defined well enough that the use of Monte Carlo is not necessary.

System Peak Forecast

The purpose of finding the peak degree day is to ensure that Cascade can continue to provide adequate heating to its customers even under extreme conditions which are far colder than the norm. Cascade determines the peak demand day for the entire system by first selecting the coldest day recorded in the past 30 years. To determine the system wide peak demand day, HDD's from all seven weather stations are considered, giving appropriate weight to the weather stations having the greater impact on system wide demand. This same method weighting the weather stations is used in the weather scenario section of this report in order to find the coldest and warmest years. The calculation of the system weighted HDD is applied to the previous 30 years of weather data to determine the highest HDD of all. Cascade has found December 21, 1990 to be the highest system weighted HDD for this period.

The peak demand day is then derived from the highest HDD by applying the actual HDD from the peak day for the 30 year period to the monthly linear regression equation for each CityGate[14], and adjusting the output by a calculated Daily Peak Adder based upon the difference between peak day and Average day load from 2008 to 2013. Thus all CityGates associated with the Bellingham weather station, for example, use the HDD calculated for Bellingham for December 21, 1990, and similarly for all the other weather stations and CityGates. This provides a highest demand scenario for peak demand load based on 30 years of weather history for each CityGate. To determine the peak demand day for a given projected year, growth factors (see below) are applied to the peak demand day for the thirty year period. Peak day demand is in turn calculated for each CityGate for each year of the twenty year forecast.

Expected peak day demand in a given year, in contrast with the highest case scenario peak day demand, is calculated by Cascade based on the average of the peak demand days for each of the last 30 years. Initially, the system-weighted peak day is found for each of the last thirty years. The actual HDD from each of those 30 peak days is averaged for each weather station resulting in an average peak HDD. Applying the associated average peak HDD to the forecast model for each CityGate yields an expected peak demand for each CityGate. Cascade calculates the expected peak demand for each CityGate for each future year of the forecast by then applying appropriate growth factors.

For CityGates where demand is not weather dependent, the peak demand day cannot be calculated by applying an associated HDD. Instead, peak demand for these CityGates becomes the average daily demand for the month in which the system peak day falls. Cascade applies the calculated Daily Peak Adder (DPA) to

[14] See regression section of this report

the average daily demand number to convert the average day figure to daily peak demand. As with the weather dependent peak days, growth factors are applied to this figure.

PeakDemand by CityGate and year was calculated utilizing the equations defined below:

$DDmax_{[CG,Yr]} = (b_{[CG]} \times HDDpmax_{[day]} + C_{[CG]})$

$DDavg_{[CG,Yr]} = (b \times HDDpavg_{[day]} + C)$

$MPDF_{[CG,Yr]} = (DDmax_{[CG,Yr]})*(1+FAF_{[CG,Yr]})$ OR

$(DDV_{[CG,Yr,Mth]})/ DAYS_{[Yr,Mth]})* (1+FAF_{[CG,Yr]})*(1+DPA)$

$EPDF_{[CG,Yr]} =(DDavg_{[CG,Yr]})*(1+FAF_{[CG,Yr]})$ OR

$(DDV_{[CG,Yr,Mth]})/ DAYS_{[Yr,Mth]})* (1+FAF_{[CG,Yr]})*(1+DPA)$

Definitions:

- HDDpmax: HDD of an associated weather station on the historical peak day
- HDDpavg: Average of the weather station's HDDs from the historical peak days of each of the last 30 years
- DDmax: Daily demand based on a max peak HDD
- DDavg: Daily demand based on an average peak HDD
- b: coefficient that gives gas demand (dekatherms) per HDD
- C: constant, base level of gas demand (dekatherms) that remains the same regardless of weather
- DAYS: Number of days in forecast Year and Month
- DDV: Default monthly demand value per CityGate based upon month of peak demand day
- MPDF: Max peak demand day forecast per CityGate
- EPDF: Expected peak demand day forecast per CityGate
- FAF: Forecast Adjustment Factor by CityGate, Year (Includes Growth, Assumptions, and Scenario Impact)
- DPA: Default peak adder based on user input

Annual Premise Count Trend Forecast

The Annual Premise Count Projection by CityGate and year was based upon a linear trend analysis of the Historical Premise Count data pulled from CC&B for a CityGate, tariff, and year. Historical Premise Count by CityGate, tariff, and year was used to forward project premise count based upon the trend between premise count and time. This information is used as guide to assist Cascade when forecasting customer growth.

Premise Trends by CityGate where calculated utilizing the equations defined below:

$FPC_{[CG,Tariff,Yr]} = Trend(CCB\_AAP_{[CG,Tariff,Yr]}, Time_{[Yr]})$

Definitions:

- CCB_AAP: CCB Average Annual Premise count by CityGate, tariff, and year.
- Time: Years Raw CCB premise count data was provided
- FPC: Forward projection of annual premise count by CityGate, tariff, and year.

f. Assumptions (NOTE: All model assumptions will be included in final document)

Weather

- Forecast is based off of core data
- Core data is sourced from the pipeline company and from Cascade GMS (gas management system)
- Weather at each CityGate is represented by weather at one of the seven weather locations.
- HDD's, on a 60 F threshold, are used to measure unit of coldness
- The time period for finding historical weather is the past 30 years (1984-2013).
- The average weather case scenario is based on normal weather- the average monthly HDD of a historical time period of 30 years.
- The high case weather scenario uses the monthly average from the six coldest system wide years out of 30.
- The low case weather scenario uses the monthly average from the six warmest system wide years out of 30.

Linear Regression Model

- A linear regression model is used to model demand based on weather.
- Cascade refers to the most recent year's (2013) for CityGates that have regressions (R^2) less than a certain value assigned by Cascade (20%).

Growth

- The forecast uses outside consulting firm Woods & Poole's forecast for population growth.
- The forecast model assumes that 1% increase in population translates to a 1% increase in gas demand, before accounting for any efficiency gains.
- The EIA efficiency factor is derived from the 2014 EIA Annual Energy Outlook.

III. Forecast Results

a. Cascade System Demand Forecast

See Appendix A

20 Year Annual Core Demand Forecast by CityGate and Tariff

See Appendix A

20 Year Annual Core Demand Forecast by CityGate

See Appendix A

20 Year Monthly Core Demand Forecast by CityGate

See Appendix A

2012 to 2014 IRP Forecast Comparison

See Appendix A

b. Cascade System Peak Day Forecast

See Appendix A

20 Year Annual Peak Day Forecast by CityGate

See Appendix A

IV. Glossary of Terms and Assumptions

Core Customers – These are full service customers of Cascade that pay a delivered price of gas. These are typically residual and commercial customers users.

Non-Core Customers – These customers pay Cascade the cost of transporting the gas to Cascade and purchase the gas from another source.

Premise Count – Customer count.

NOAA – National Oceanic Administration Association, the federal agency that is the primary weather data holder for the United States.

Regression – A method of comparing two different data sets in which factors are calculated to predict one data set to the other. The closer the predicted set to the actual set the better the regression.

Correlation – A measure of the regression of between two data sets. The higher the regression or relation between two data sets the higher the correlation. Correlation figures range from zero to one.

HDD – Heating Degree Day – A unit to describe unit of coldness.

CityGate – This marks the point where the gas utility, Cascade, deliveries gas from the gas pipeline company to a large group of customers.

July 2, 2014

Michael Parvinen
Manager, Regulatory Matters
Cascade Natural Gas
8113 W Grandridge Blvd
Kennewick, WA 9933

RE:	Docket No.	Staff Request No.	Response Due By
	Load Forecast	DR 1- 4	July 16, 2014

Please provide responses to the following request for information. Contact the undersigned before the response due date noted above, if the request is unclear or if you need more time.

1. On June 24 Technical Advisory Group Meeting, Cascade presented a brief overview of the demand forecast for the next 20 years. Four-year monthly demand from the core customers at the city-gate level is considered for the demand analysis.

   a) Please provide the complete excel demand forecast model including all historic data, forecast drivers and forecasts for the 20 year demand forecast.
   b) Explain the basis for considering demand data at the city-gate level. Provide any tests/robustness checks done to clarify the choice of using city-gate over zonal or other levels of aggregation.
   c) Presentation shows that demand data has been drawn primarily from Gas Management System (GSM) and Pipeline actuals. Please provide the reasons/tests performed for considering GSM and Pipeline actuals rather than Customer Care and billing (CC&B).
   d) Please provide the historical hourly gas demand from GSM and Pipeline actuals by city gate and zones separately for both core and non-core sales. Please provide such data from January 1994 to May 2014.
   e) Please provide the historical CC&B demand by city gate and zones separately for core and non-core sales. Please use daily data if it is available. Please provide such data separately by service schedule and customer class. Please provide such data from January 1994 to May 2014.
   f) How do you aggregate city-gates to define a demand loop in your analysis? Please provide the worksheets that show demand analysis at the loop level.

g) Please provide the worksheet showing the historical weather data from NOAA and Schneider Electric for each weather station used in the model. Explain your procedure to assign a specific weather station to each city-gate/loop.
h) Please explain the method used to define normal weather in the study. Explain in detail all the weather scenarios considered and the basis for selecting six coldest and warmest years for the high and low case weather scenarios. Include the spreadsheet demonstrating the calculations for the average, high and low HDD scenarios.
i) Does the Company have weather data for any other weather stations other than the seven stations used? If yes, please provide the data.
j) Does the company have Cooling Degree Days (CDD) data from NOAA or Schneider Electric? If yes, please provide the data.
k) Please explain the method used to gather premise count information from CC&B and provide the worksheet that shows the annual premise count projection by city-gate.

2. Presentation shows that Cascade developed a linear regression model considering monthly Heating Degree Days (HDD) as an input variable and monthly gas demand as a response variable. Please explain the assumptions about the error term. Does the demand study considers alternative models with explanatory variables such as natural gas price, seasonal dummies or trend variables or any time-series ARIMA models?

3. Please provide all relevant statistical tests performed that confirm linear-model as a best-fit model. Provide statistical tests that indicate a linear (and not a non-linear) relationship between the input and the response variable.

4. Please explain the growth scenarios assumed for the demand analysis. Provide the worksheet showing all the demographic variables – Employment, Income, Population, and housing and explain the steps that determine population growth as the only relevant variable for projecting future gas demand.

Please provide an original and one complete copy of your response to the attention of Kay Barnes, PO Box 1088, Salem, OR 97308-1088, or 3930 Fairview Industrial Dr. SE Salem, OR 97302, **and** send via electronic mail to (puc.datarequests@state.or.us).

Confidential responses should not be sent via electronic mail. Confidential responses must be filed on yellow paper. Please file an original and one copy to the above addresses or on a CD clearly marked "Confidential" if it is a voluminous response.

Marc Hellman
Manager
Rates, Finance & Audit
(503) 378-6355

Staff Initiator: Suparna Bhattacharya
cc: Johanna Riemenschneider

July 9, 2014

Michael Parvinen
Manager, Regulatory Matters
Cascade Natural Gas
8113 W Grandridge Blvd
Kennewick, WA 9933

RE:	Docket No.	Staff Request No.	Response Due By
	Load Forecast	DR 1 – 7	July 23, 2014

Please provide responses to the following request for information. Contact the undersigned before the response due date noted above, if the request is unclear or if you need more time.

1. On June 24 Technical Advisory Group Meeting, Cascade presented a brief overview of the demand forecast for the next 20 years. Four-year monthly demand from the core customers at the city-gate level is considered for the demand analysis. Please provide such data as an electronic spreadsheet.

   a) Please provide the historical Customer Care and Billing (CC&B) demand by location (city-gate/zone), and by service schedule and customer class. Please provide such data from January 1994 to May 2014, if available.
   b) Please provide the historical hourly gas demand from Gas Management System (GSM) and Pipeline actuals by city gate/zones for both core and non-core sales. Please provide such data from January 1994 to May 2014, if available.

2. Please provide an electronic spreadsheet showing the historical weather data from NOAA and Schneider Electric for each weather station used in the model. How do you assign a specific weather station to each city-gate and loop?

3. Please explain the method used to define normal weather in the study. Explain in detail all the weather scenarios considered and the basis for selecting six coldest and warmest years for the high and low case weather scenarios. Include the electronic spreadsheet showing the calculations for the average, high and low HDD scenarios.

4. Does the Company have weather data for any other weather stations other than the seven stations used? If yes, please provide the data in an electronic spreadsheet.

5. Does the company have Cooling Degree Days (CDD) data from NOAA or Schneider Electric? If yes, please provide the data.

6. Please explain the method used to gather premise count information from CC&B and provide the electronic worksheet that shows the annual premise count projection by city-gate.

7. Provide an electronic spreadsheet showing the monthly or annual data for all the demographic variables – Employment, Income, Housing and Population from the period January 1994 to May 2014. Also, provide the worksheet showing monthly or annual projection data for all the demographic variables till 2040.

Please provide an original and one complete copy of your response to the attention of Kay Barnes, PO Box 1088, Salem, OR 97308-1088, or 3930 Fairview Industrial Dr. SE Salem, OR 97302, **and** send via electronic mail to (puc.datarequests@state.or.us).

Confidential responses should not be sent via electronic mail. Confidential responses must be filed on yellow paper. Please file an original and one copy to the above addresses or on a CD clearly marked “Confidential” if it is a voluminous response.

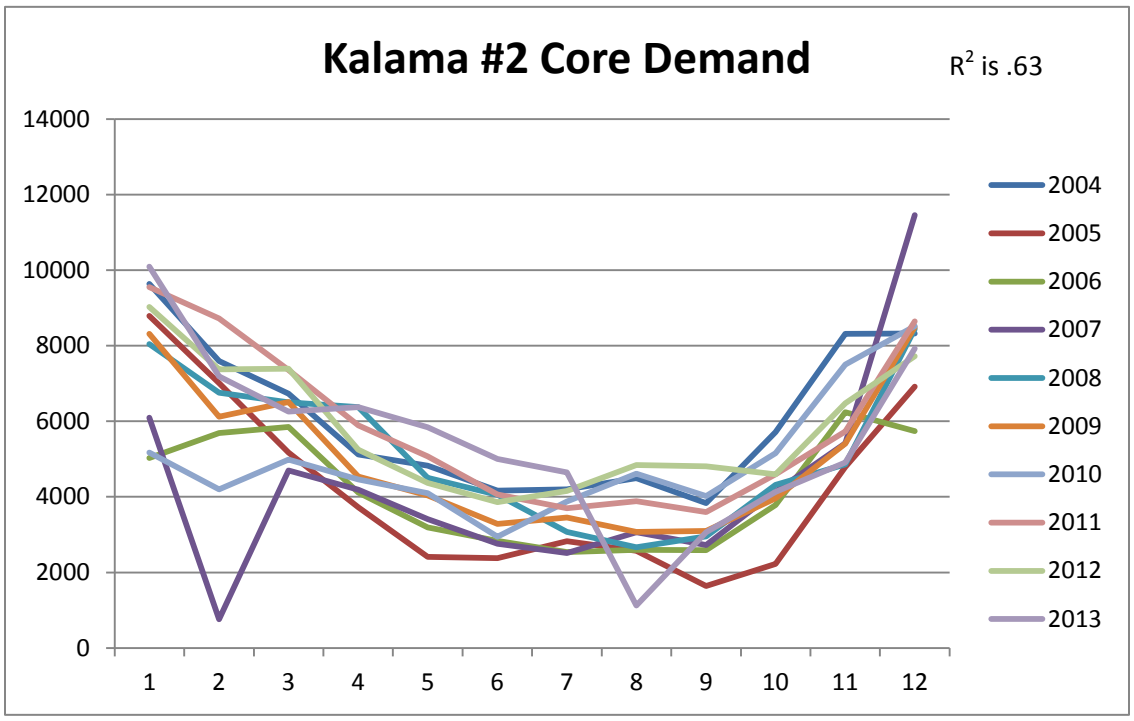
Marc Hellman
Manager
Rates, Finance & Audit
(503) 378-6355

Staff Initiator: Suparna Bhattacharya
cc: Johanna Riemenschneider

September 24, 2014

1. Please explain the EIA Efficiency term on page 3. The formula seems to reflect average number of HDD per capita, so does "efficiency" indicate energy efficiency as demand-side management? Is this an EIA specific term?
2. The Company states that the demand per population per HDD figure is normalized by dividing each year's calculation by the year one (p. 3). Does this "year one" refer specifically to the number 2014 or does it refer to the EIA_$E_{[Yr]}$ calculation in 2014?
3. Please provide electronic links to the EIA data used.
4. On page 5 the Company talks about an economic earnings figure divided by some inflation forecast by Woods & Poole. Is this inflation forecast similar to the consumer price index?
5. Please re-review how the Company eliminates outliers discussed on page 6.
6. Has the Company looked to using Oregon's Office of Economic Analysis figures to forecast demand?
7. See page 18. Please give an example of a CityGate's linear regression falling below the R^2 threshold of 80%.

1. See page 18. Please give an example of a CityGate's linear regression falling below the R^2 threshold of 80%. Kalama #2 is a CityGate that has an R^2 below .80 because of unexplainable dips in demand. The company will continue to look into the reason behind these dips.



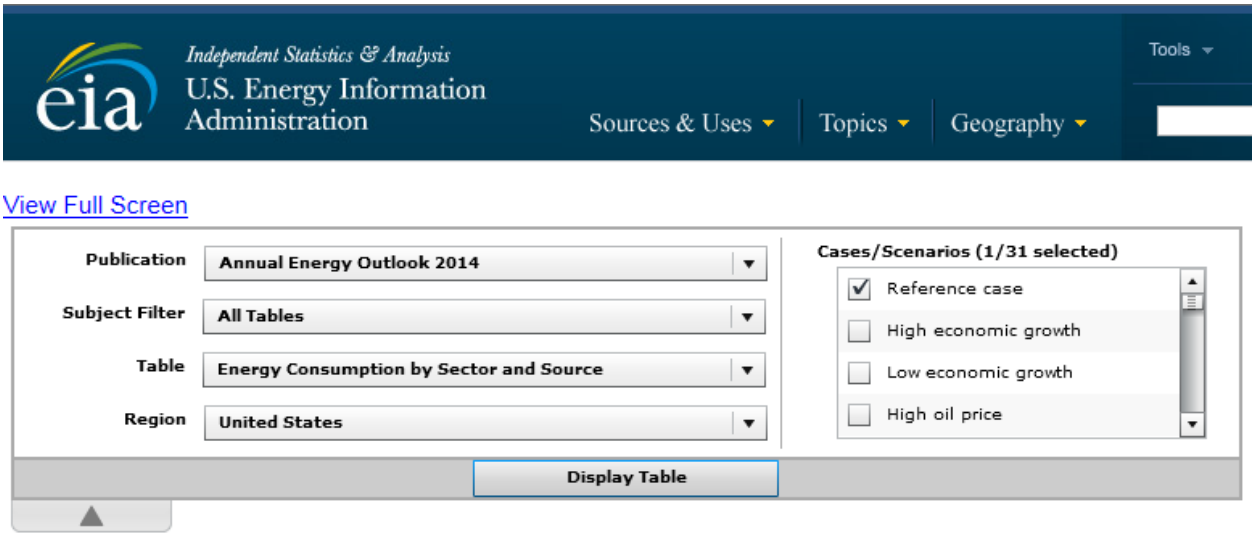
How to create EIA efficiency factor:

Follow the link: http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=0-AEO2014&table=2-AEO2014&region=1-9&cases=lowmacro-d112913a,highmacro-d112913a,ref2014-d102413a

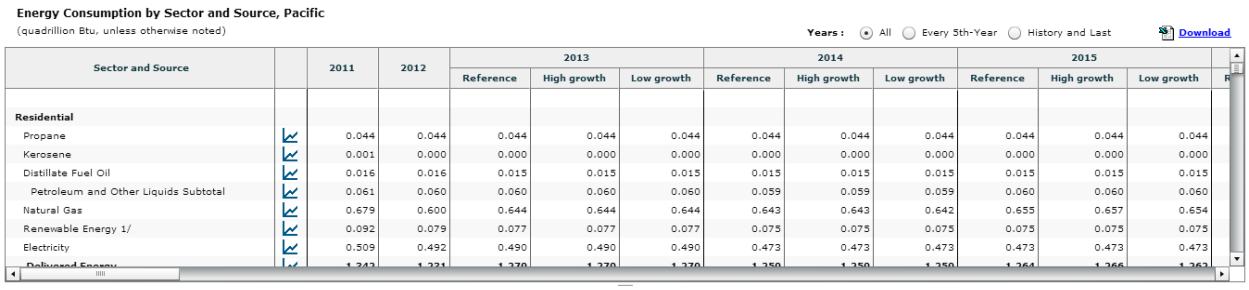
In the drop-down choices presented, select the following options shown in the screen shot below. Make sure to choose the 'United States' region and the most recent Annual Energy Outlook in the 'Publication' field.

Check the box for 'Reference Case' under the Cases/Scenarios choices.

Click 'Display Table'



The table information will appear:



Energy Consumption by Sector and Source, Pacific
(quadrillion Btu, unless otherwise noted)

Years: All | Every 5th-Year | History and Last — Download

Sector and Source		2011	2012	2013			2014			2015		
				Reference	High growth	Low growth	Reference	High growth	Low growth	Reference	High growth	Low growth
Residential												
Propane		0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
Kerosene		0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Distillate Fuel Oil		0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Petroleum and Other Liquids Subtotal		0.061	0.060	0.060	0.060	0.060	0.059	0.059	0.059	0.060	0.060	0.060
Natural Gas		0.679	0.600	0.644	0.644	0.644	0.643	0.643	0.642	0.655	0.657	0.654
Renewable Energy 1/		0.092	0.079	0.077	0.077	0.077	0.075	0.075	0.075	0.075	0.075	0.075
Electricity		0.509	0.492	0.490	0.490	0.490	0.473	0.473	0.473	0.473	0.473	0.473
Delivered Energy		1.342	1.231	1.270	1.270	1.270	1.250	1.250	1.250	1.264	1.266	1.263

On the far right, click the 'Download' link, which exports the entire table to Excel.

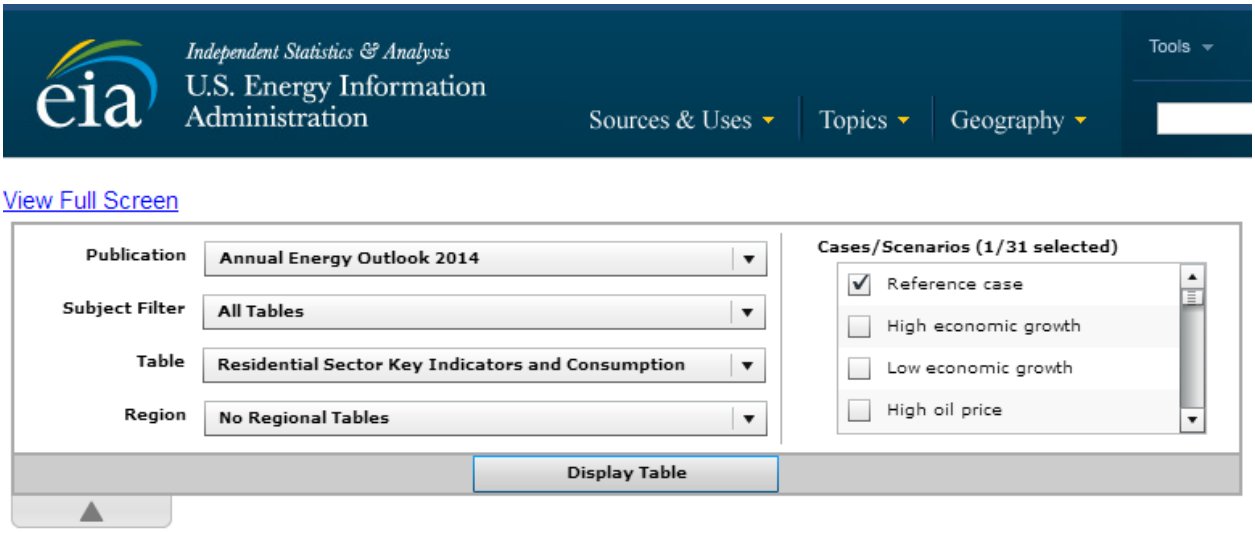
There are three rows from this table needed to calculate the efficiency factor:

- Residential Natural Gas Consumption
- Commercial Natural Gas Consumption

- Population

The Heating Degree Days for the Pacific region are presented in a different table. Select the following option in the table choices. Click 'Display Table'.

Note: The HDDs forecasted in the 'Residential Sector Key Indicators and Consumption' table are the same as the HDDs forecasted in the 'Commercial Sector Key Indicators and Consumption' table, so either of these tables may be chosen.



Click the 'Download' link in the top right corner of the table to export this table's data to Excel.

There is one row needed from this table for the calculation:

- Heating Degree Days – United States

Now that all four items are in Excel format, it is possible to calculate the efficiency factor:

1. Create a total natural gas consumption row
    a. Add up residential and consumer natural gas consumption for each year
2. Create an efficiency number row
    a. Divide the total natural gas consumption for each year by Pacific population and by Pacific heating degree days for that year
3. Create efficiency factor for each year (Normalize efficiency number)
    a. Divide each year's efficiency number by the efficiency number of year 1
        i. Year 1 will have a factor of 1

July 2nd DR1-a. Please provide the complete excel demand forecast model including all historic data, forecast drivers and forecasts for the 20 year demand forecast.

The forecast model is a large application and its development and configuration are still a work in progress. Additionally, the application is too large and in too many components to reasonably make available by conventional means such as on a collection of CDs. Once the 20 year demand forecast is finalized as part of the IRP process Cascade can make available in excel format, extracts of historic data, elements of forecast drivers and other data elements requested by Staff. Cascade is also prepared to provide full access to the model on-site. Please note contractually Cascade can only provide full access to representatives of regulatory bodies. Due to concerns regarding protecting intellectual property we cannot provide the full application to all stakeholders.

July 2nd DR1-b. Explain the basis for considering demand data at the city-gate level. Provide any tests/robustness checks done to clarify the choice of using city-gate over zonal or other levels of aggregation.

At various times over the last decade, both commission staffs have expressed concerns about Cascade's forecast methodology and its development at the district/zonal level as opposed to citygate, particularly as it relates to acquiring capacity to meet projected transport capacity shortfalls on a peak day. Both Staffs have noted this in previous comments regarding past IRPs. It seems difficult from our perspective for us to justify to ratepayers or stakeholders to continue to use a method and configuration that has been subject to some on-going concern. We believe it is best to address the situation now with a new configuration. To do otherwise would continue to perpetuate a perceived flawed result; this provides no benefit to stakeholders.

The Company's most recently acknowledged Integrated Resource Plan's demand forecast and pipeline capacity needs were developed at the pipeline zonal level. Consequently, the analysis to determine potential peak day shortfalls was performed at the zonal level. The Company has used this analysis as part of its ongoing efforts to identify areas where pipeline capacity could be re-aligned or to pursue other means to meet the peak day demand such as acquiring incremental pipeline capacity. The Company believes that a more accurate picture of the capacity needs can be obtained if resource and demand forecast modeling and analysis are performed at a more detailed level than the zonal level. The Company feels developing the plan at the city gate level will significantly improve our planning and provide more transparency to stakeholders.

In order to accomplish this more robust demand forecast and capacity analysis the Company hired MRE and Gelber Associates to develop a new forecast methodology and model application. Additionally, Cascade has undertaken a near total reconfiguration of the SENDOUT resource optimization model. Both the application development and reconfiguring efforts are highly complex and time consuming processes. However, at the city gate level, the Company can perform more detailed analysis, allowing Cascade to better identify specific locales where shortfalls may exist. This more detailed analysis will better inform all stakeholders, allowing for a more robust discussion during the public process (technical advisory group meetings) on how best to address specific capacity needs or determine what alternative resources may be needed to meet long term demand.

Tests and comparisons of citygate vs zonal aggregation levels will be incorporated into the upcoming IRP in both the narrative section and with appendices.

List of Gates within each Loop:

Bend Loop – Bend Gate, North Bend Gate, and South Bend Gate

Burbank Heights Loop – Burbank Heights Gate and Pasco Gate

East Stanwood Loop – Oak Harbor/Stanwood Gate and East Stanwood Gate

Kennewick Loop – Kennewick Gate and Richland Gate

Longview South Loop – Longview-Kelso Gate and South Longview Gate

Sedro-Woolley Loop – Sedro/Woolley Gate and Mount Vernon Gate

Sumas SPE Loop – Bellingham 1 (Ferndale) Gate, WCT-CNG Interconnect Gate, and Lynden Gate

Yakima Loop – Selah Gate and Yakima/Union Gap Gate

Response to stakeholders request of the raw population and economic growth figures from the 2014 Woods & Poole:

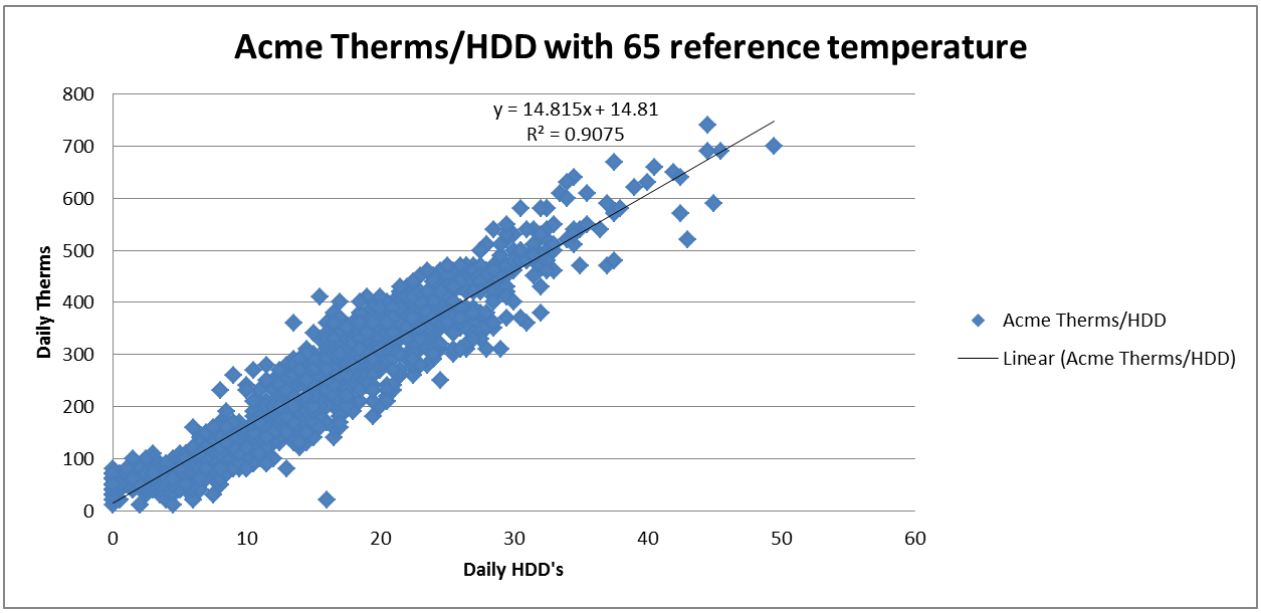
Unfortunately, Cascade's currently effective User License makes it impossible to provide stakeholders with this level of detail from Woods and Poole.

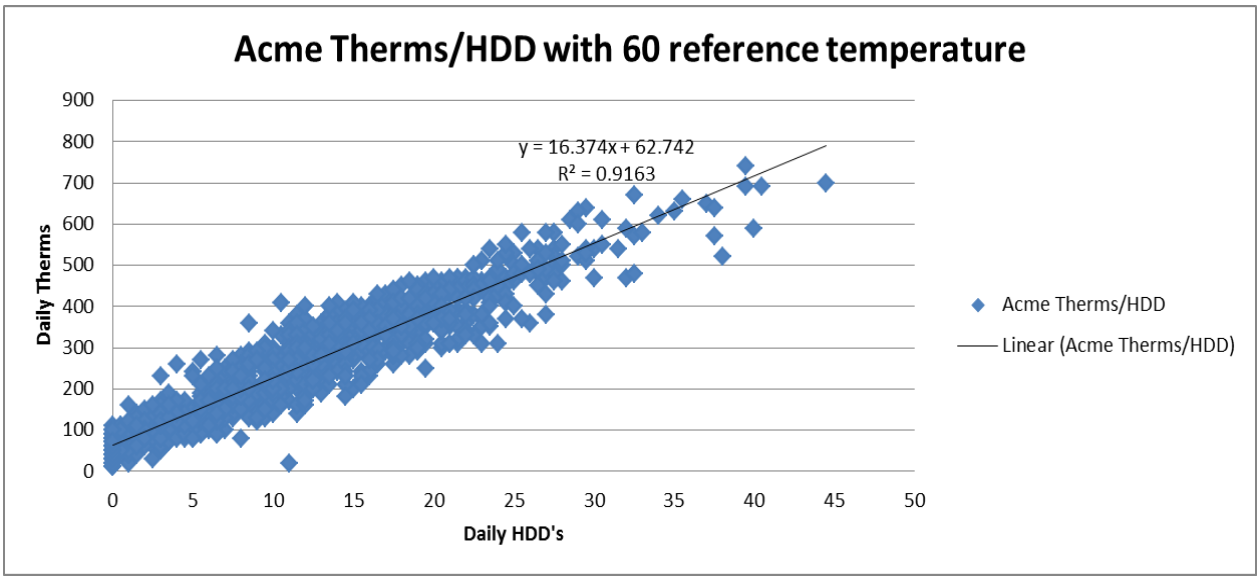
> Paragraph 1 of the Cascade-Woods & Poole License and Restrictions section states in part: "…Licensee may permit its employees at the Site to use the Product solely on its behalf and, if provided in electronic form, may make a reasonable number of copies as necessary for such use, **provided all users and all copies shall be located at the Site**, **Licensee shall not make the Product available or accessible outside of the Site or on or through the Internet or other externally accessible network."**
>
> The agreement does allow Cascade to "…incorporate small excerpts of Information from the Product into Licensee's report and similar documents (other than formal legal and financial documents}…"; however, the agreement states that "…(iii) the amount of Information in each Licensee Document must be an insubstantial portion of the overall Information in the Product, and be insubstantial and incidental to the overall Licensee Document; and (iv) Licensee may not otherwise reproduce, distribute, sublicense, transfer or disclose any of the Product, or use any of the Product to develop or commercialize any data product or service or provide any of the Product for download over a network.
>
> All bold emphasis are Cascade's.

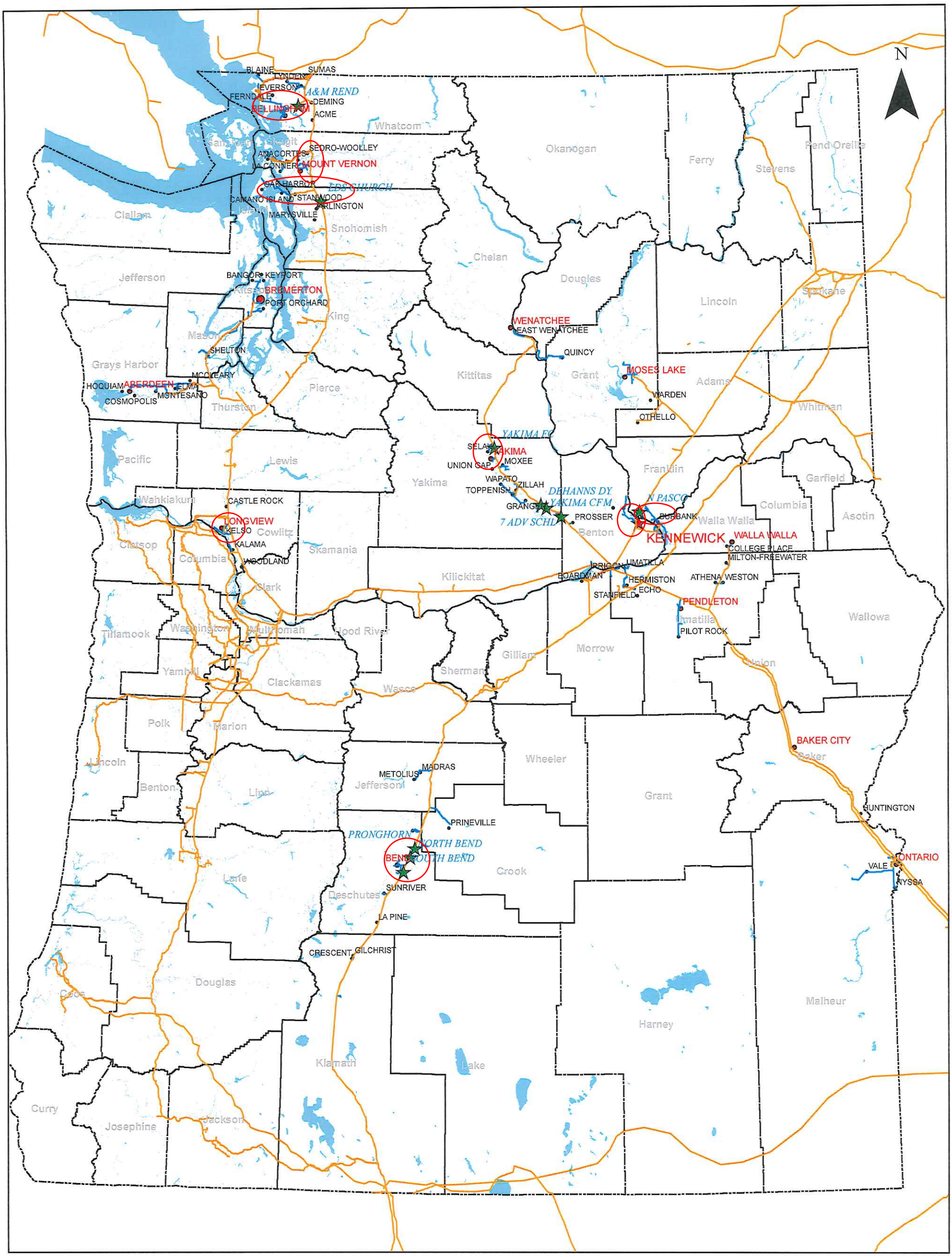
Cascade will provide Woods & Poole data, subject to the limitations on small excerpt as outlined above, or in the limited ability the user license allows us to display/use Woods & Poole information in documents such as our IRP. Unfortunately, we will not be able to provide sizeable levels of Woods & Poole data at the workshops or via other media due to the requirement that access to the data is limited to the licensed Site (i.e., Cascade's Kennewick office). However, as we indicated during the second load forecast workshop, Cascade can provide access on-site in Kennewick to the raw Woods & Poole data source and show in detail how this data is utilized by the load forecast model. As noted above we are not allowed to provide sizeable amounts Woods & Poole information via a download or across a network, which also means we cannot use WebEx as a means to show the detailed Woods & Poole data. Again, we will be happy to host stakeholders at our Kennewick headquarters to review the Woods & Poole data on-site.

The table directly below shows daily HDD's to daily therms based on a 65 degree reference temperature.

The table below shows daily HDD's to daily therms based on a 60 degree reference temperature.







System Map

Legend

- Town Border Station selection
- Interstate Pipelines
- Transmission Main
- High Pressure

Communities

- Communities Served

MDU Office Type

- General Office
- Region Office
- District Office

CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

Schneider:

Cascade has 30-year daily average for Bellingham, Bremerton, Yakima, and Wall Walla for Washington, Redmond, Pendleton, and Baker for Oregon. These are the weather locations that are currently built into our forecast model.

Weather, other than those listed above, that is available:

Hourly data from 1981 to 2006 and 2012-2013 and daily data from 1995-2013 for:

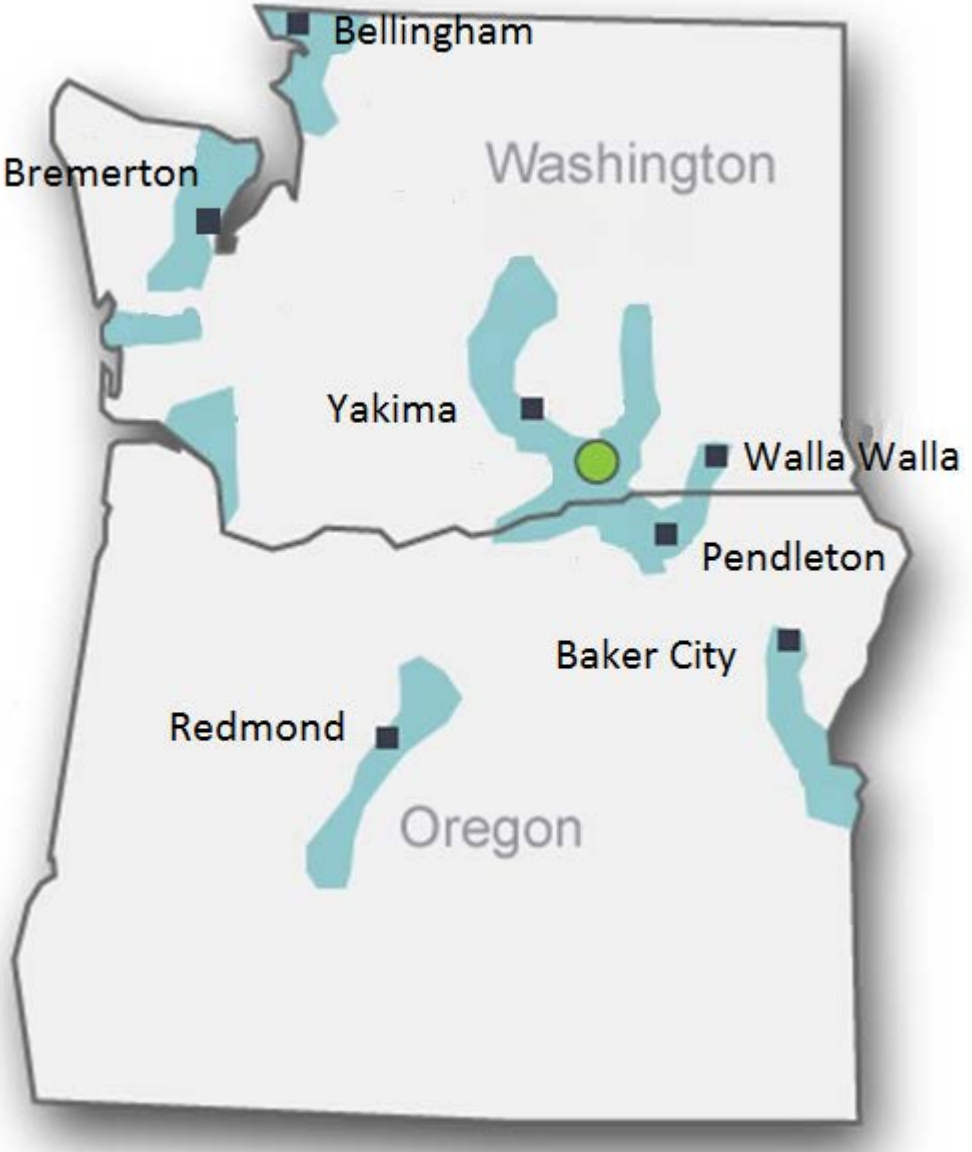
Burlington/Mount Vernon, WA

Wenatchee, WA

Kelso-Longview, WA

Pasco, WA

Ontario, OR


Bellingham
Bremerton
Washington
Yakima
Walla Walla
Pendleton
Baker City
Redmond
Oregon

Cascade Natural Gas Forecast Model Workshop #3
Portland International Airport in Portland, OR
Tuesday, December 2, 2014 9:00 AM – 9:45 PM

Attachments:
Attachment A – Attendance sheet

I.) **Introduction** – Mark Sellers-Vaughn opened the meeting with the introductions and reasoning for the meeting.

II.) **Action Items** – Brian Robertson went through action items from previous meetings and made sure there were not any more questions on the items:
- Provided a System map with the Looped CityGates circled.
- Provided the CPI table from 2014 Woods & Poole.
- Provided an Acme Graph that showed the 65 HDD vs 60 HDD.
- Provided a map with Bremerton weather station in the correct place.
- Provided the reasoning for choosing 7 weather locations. Explained that the Longview-Kelso area is only 2% of core demand. The group decided it is fine to proceed with 7 locations at this time.
- Provide an explanation on how we can host stakeholders to review raw population and economic growth values from 2014 Woods & Poole.
- Resent the CC&B data that was broken down by year.
- Explained Cascade's current weather availability.

III.) **Action Items** – Many stakeholders asked important questions and left CNGC with many items to research and discuss.
- Provide a side by side of the 60 vs 65 HDD graphs.
- Provide a better system map.

IV.) **Wrap-Up –** Cascade noted the 2nd TAG meeting was cancelled at the December 16, 2014 data and will now be scheduled for January 13, 2015.

Attendance:

Presenters:
Mark Sellers-Vaughn
Brian Robertson

Attendees:
Lisa Gorsuch
Suparna Bhattacharya
Sommer Templet
Nadine Hanhan

Call-in attendees:
Jon Klingele
Tommy Brooks
Micah Robinson
Bob Morman
Jeremy Ogden
Julianna Williams

Cascade Natural Gas Corporation

Capacity Workshop #1

Portland International Airport Conference Center

Tuesday, April 8, 2014

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Agenda

- Introductions (10 min)
- Agenda (5 min)
- Workshop background and CNGC overview (15 min)
- NWP Presentation: events impacting flow on NWP (20 min)
- Break (10 min)
- NWP Presentation: pipeline capacity discussion (60 min)
- Lunch Break (45 min)
- GTN Presentation (15 min)
- Ruby Presentation (30 min)
- Next Steps (30 min)
- Adjournment

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Background

- CNGC requested IRP extensions from both OPUC and WUTC
- Extension needed for load model and methodology change to city gate level
- Extensions granted with modified timeline
- OPUC agreed to extension subject to having 2 workshops addressing capacity and potential to acquire additional Ruby capacity prior to Oct14
- Major stakeholders agreed a concurrent filing for OR and WA makes the most sense
- February 11, 2015 Final IRP Filing (dockets Oregon LC-59 and Washington UG-140181)

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Background

- Capacity workshops scheduled for April 8th and May 1st
- First workshop covers capacity system-wide
- Second workshop is specific to Ruby and GTN
- CNGC required to file an update to 2011 IRP (LC-54) by June 20th, containing CNGC analysis regarding any acquisition of incremental Ruby capacity which might occur before October

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Current

- CNGC is working with MRE and Gelber & Associates on our load forecast modeling
- First internal draft of forecast in early May
- For the capacity workshops data from most recent IRPs will be used
- The focus of these workshops is directed at CNGC’ s core customers; other customer groups will be discussed during the regular TAG meetings
- IRP TAG #1 in June will include a detailed presentation on the new 20 year core demand forecast model and methodology

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Current

- Projected peak day capacity shortfalls exist in several areas across the entire system, impacting GTN, NWP and Westcoast Pipeline
  - Bellingham WA Area
  - Central Oregon
  - Kennewick WA Area
  - Others

More detailed discussion of peak day capacity shortfalls at the city gates will take place during the regular TAG meetings beginning in June.

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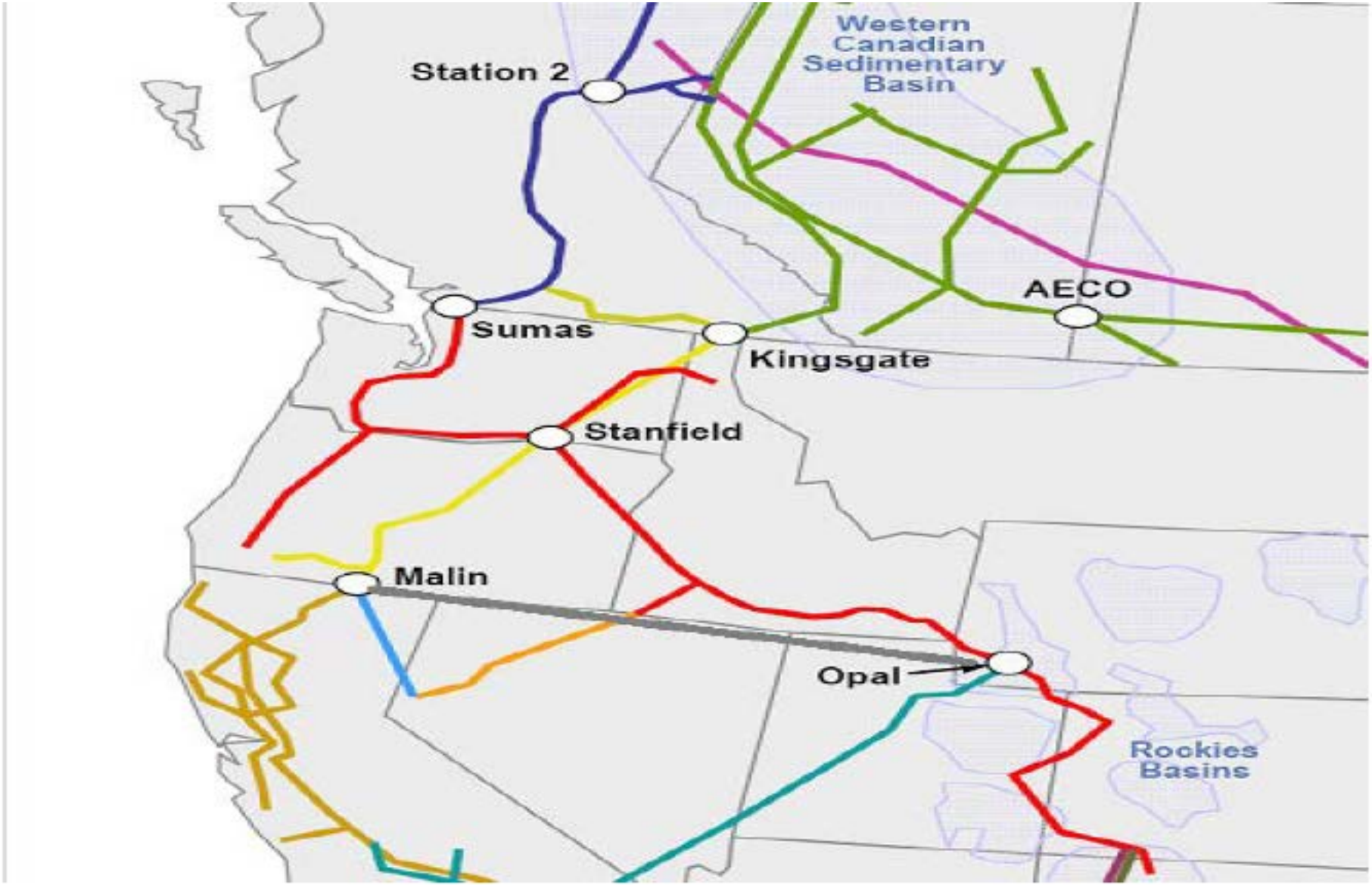

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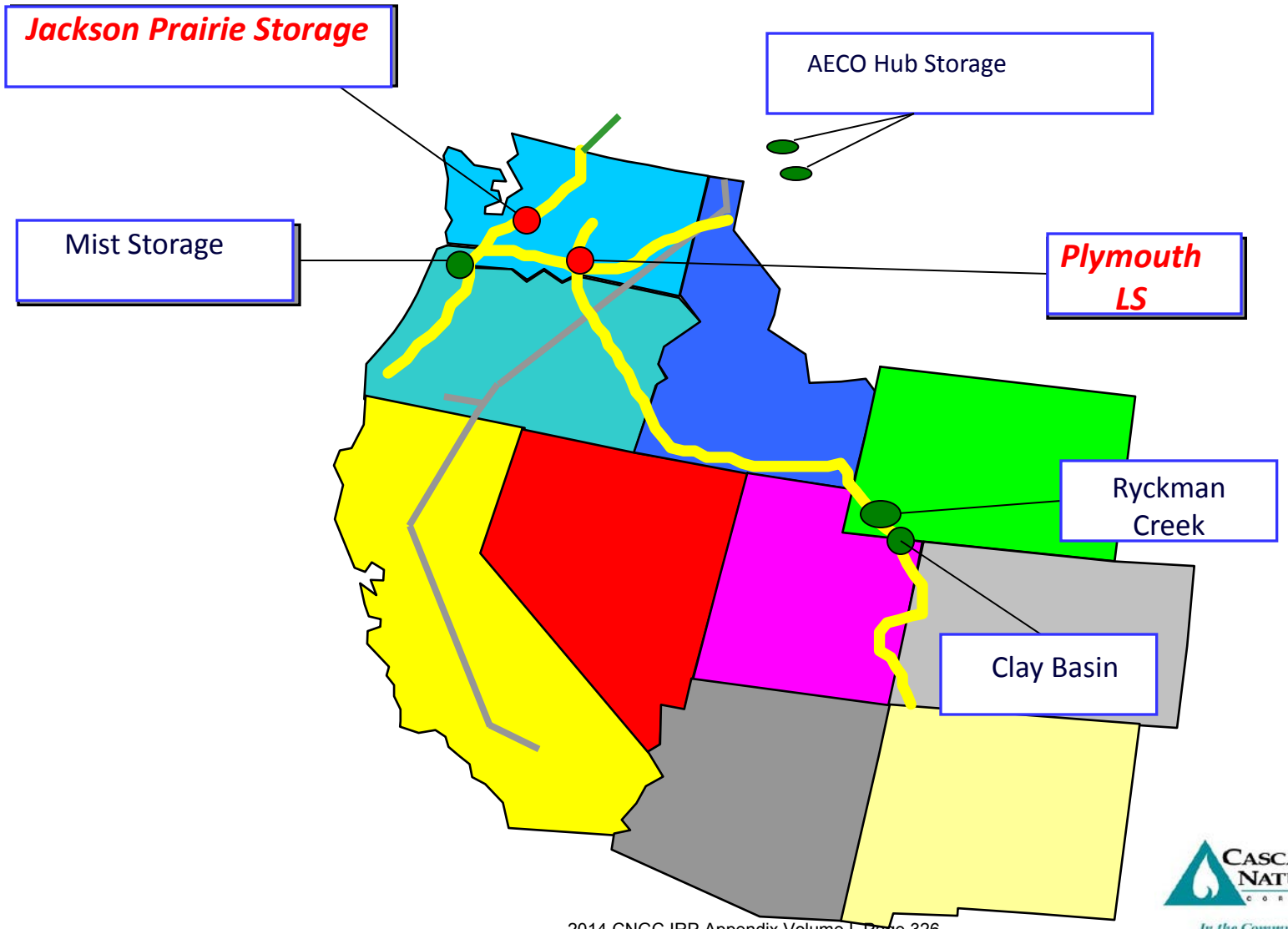
STORAGE FACILITIES
(Cascade leased storage locations in red)



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STORAGE

1) Goal is to cycle the storage accounts each heating season, dependent on demand and operating conditions
2) Assumes all accounts will be 35% full by June 30, 80% full by August 31, and 100% full by September 30
3) Unless noted, assumes normal weather with peak event
4) SGS01 balances based on historical data with inventory zero by end of April
5) SGS02, SGS622 and SGS626 assumes balance of 80% November, 40% December, 20% January and zero by end of February
6) Jackson Prairie storage and Plymouth LNG are utilized based on weather, market and operational conditions

Jackson Prairie
- SGS01
- SGS02
- SGS622
- SGS626

Plymouth LNG
- LS01

CASCADE STORAGE CONTRACTS		
	Storage Capacity	Withdrawl
Total	(decatherms)	(dths/day)
SGS01	604,351	16,789
SGS02	350,000	30,000
SGS622	102,782	3,500
SGS626	178,460	6,077
LS01	562,200	60,000

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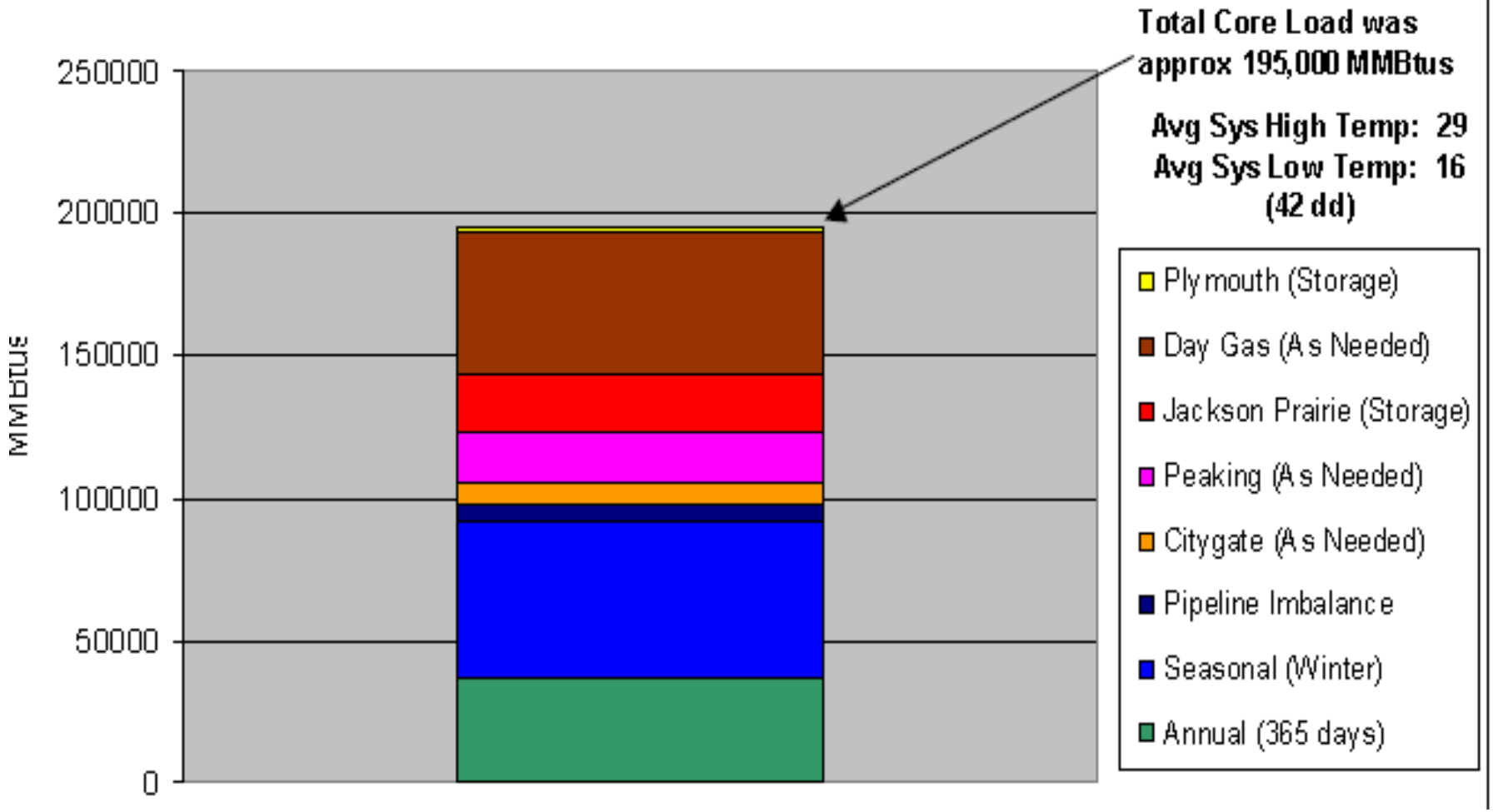
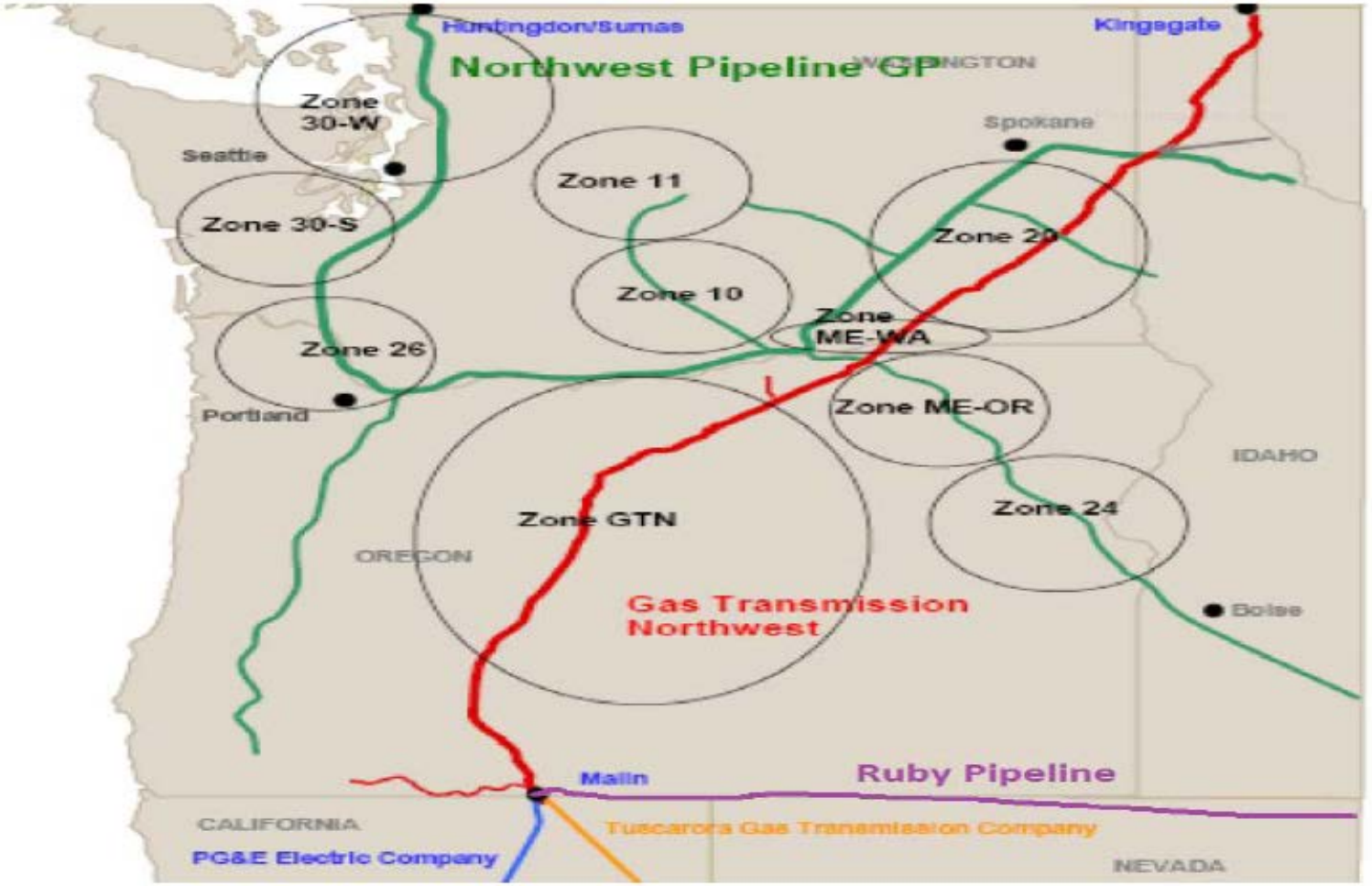
EXAMPLE OF CORE SUPPLY PORTFOLIO ALLOCATION



Cascade crosses multiple potential pipeline constraints due to the geographical complexity of our distribution system.



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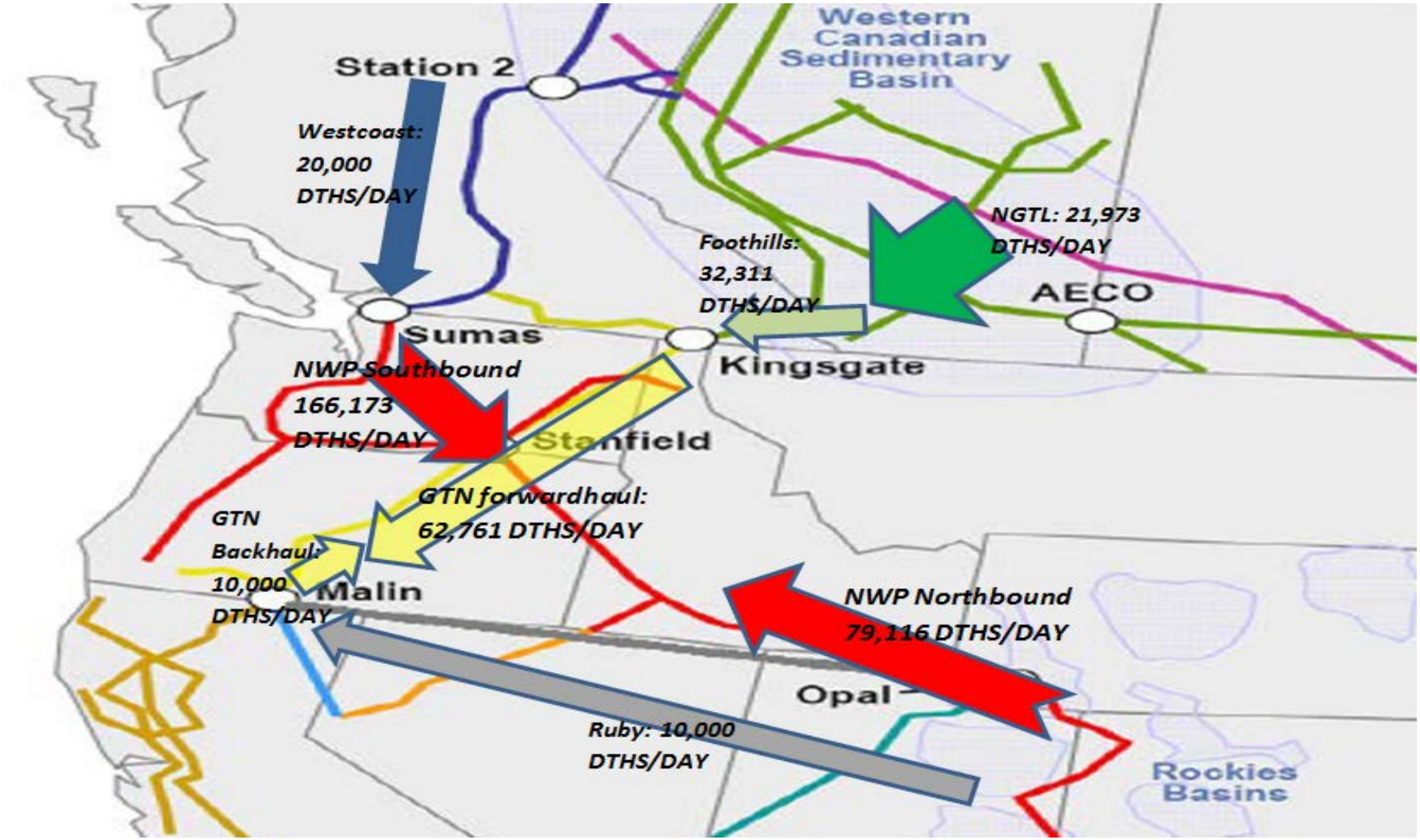
EXAMPLE OF POSSIBLE CNGC WINTER TRANSPORT CAPACITY FLOW



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Cascade's Capacity Workshop

Mike Rasmuson
Director, Marketing Services
Northwest Pipeline
April 9, 2014



Northwest Pipeline

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- Northwest Pipeline Overview
- Winter Heating Season/Cold Weather Events
- System Utilization
- Northwest's Capacity remains in High Demand
- Business Development

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Northwest Pipeline Overview

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> Bi-direction system with access to abundant domestic and Canadian gas supplies

- British Columbia, Alberta, Rockies, San Juan
- Proximity and abundance of Canadian gas will benefit market area expansions

> Long-term firm transportation capacity of 3.9 MMDth/d

- Northwest is fully subscribed with an average contract life of approximately 10 years

> Prepared to serve future growth

- Pacific Northwest markets growing at ~1.5 percent / year
- Gas fired generation will grow ~3.3 percent / year
- Gas will support new renewable generation and replace retiring Pacific Northwest coal generation



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OFO – Nominations exceed Design Capacity

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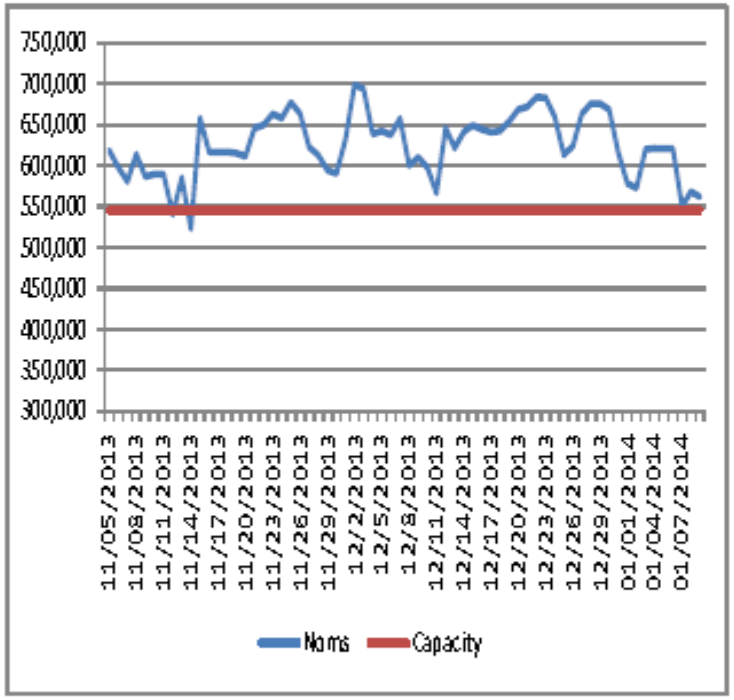
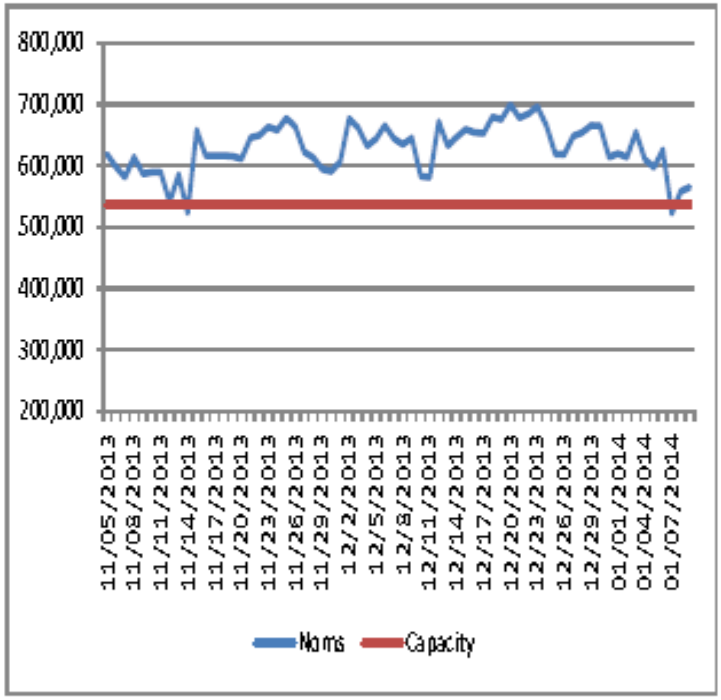
Roosevelt



Plymouth South



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December 2013 Weather Forecast

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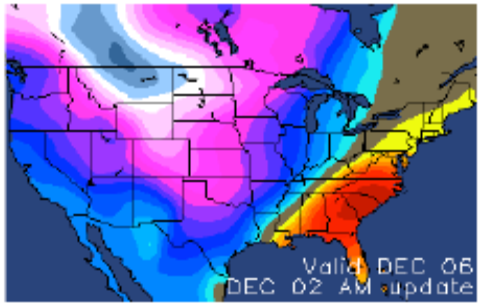
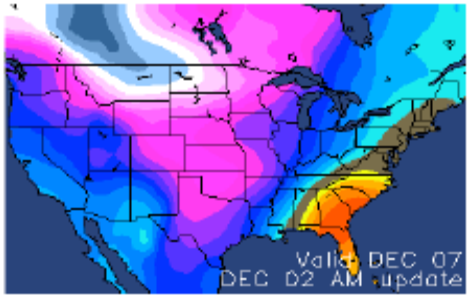
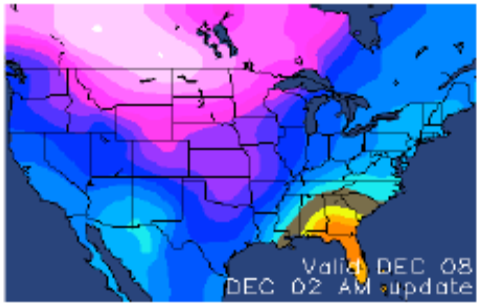
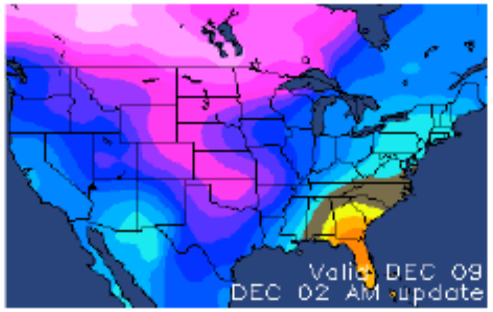
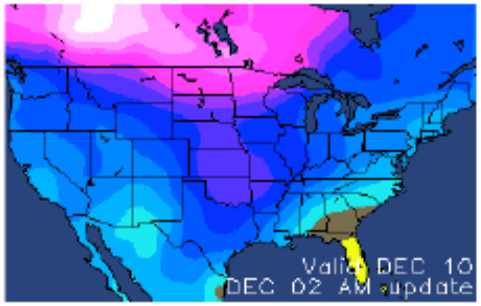
December 2nd forecast for Dec 6-10











Daily and Period Temperature Anomaly Key (F)



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February 2014 Weather Forecast

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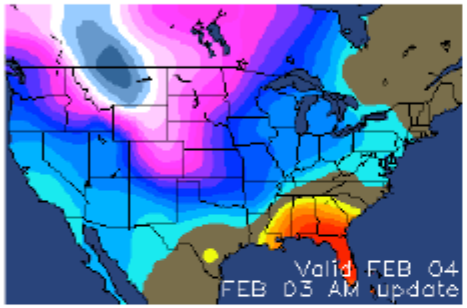
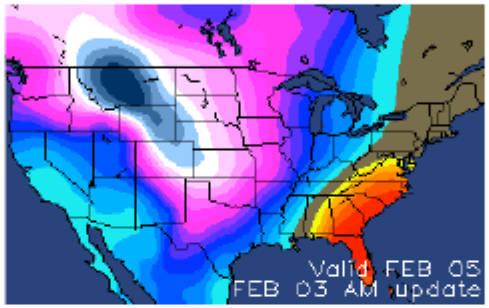
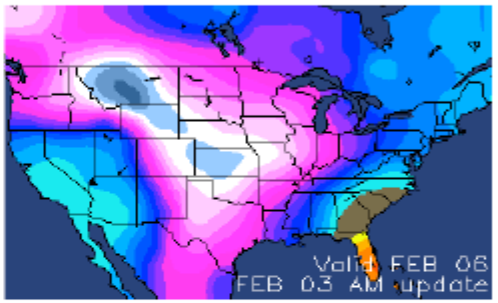
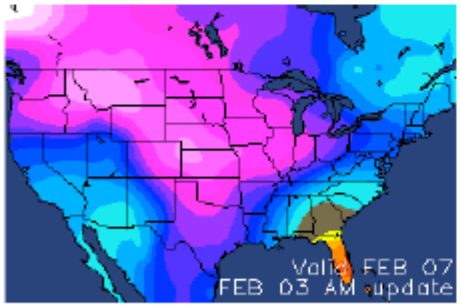
February 3rd forecast for Feb 6-8









Daily and Period Temperature Anomaly Key (F)



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March 2014 Weather Forecast

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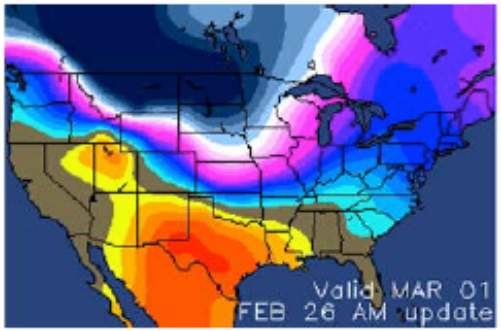
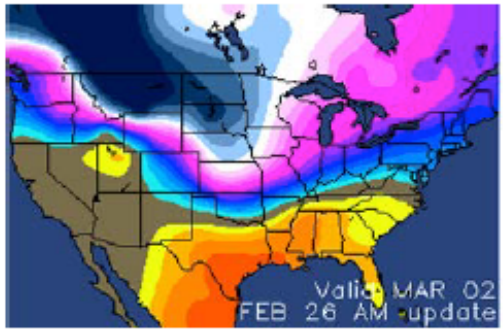
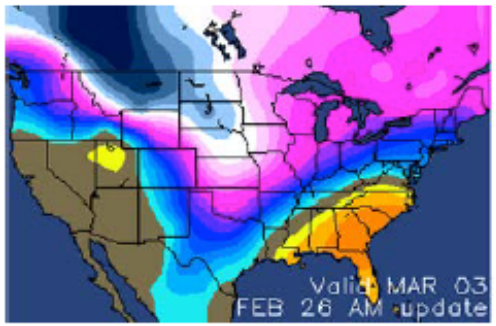
February 26 forecast for Mar 1-3







Daily and Period Temperature Anomaly Key (F)



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2013-2014 Cold Weather Events

- December and February weather was predicted to be a ten-year cold weather event.
- In response, Northwest declared a Stage II (8%) Underrun Entitlement for the system north of Kemmerer during the December and February weather events.
- For the March weather event, Northwest declared a Stage II (8%) Underrun Entitlement for the system north of Plymouth.
- Under an Entitlement, Shippers are subject to the penalty provisions in the Tariff if physical deliveries exceed nominations above the stated tolerances.

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Actual Temperature and HDD

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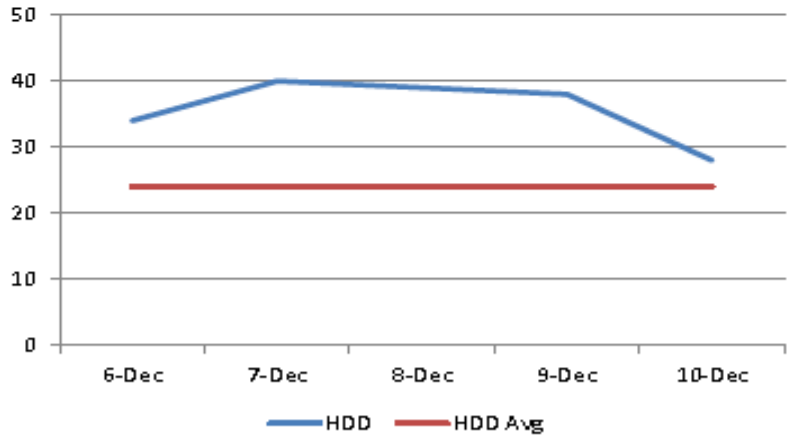
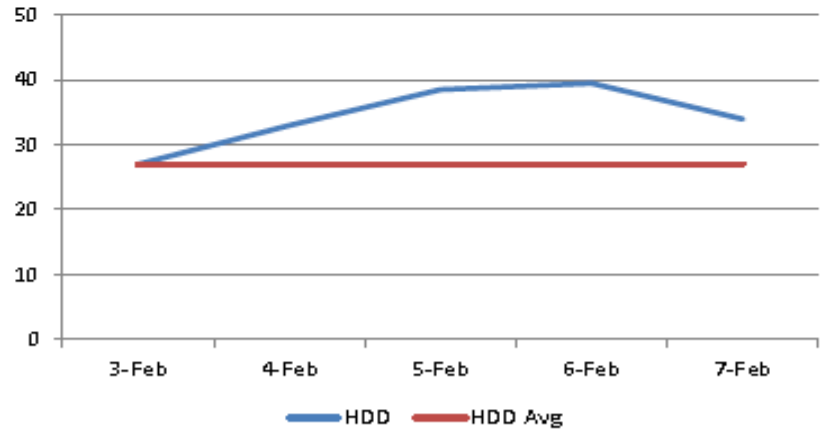
Seattle

December	Hi	Lo	HDD	HDD Avg
6	35	27	34	24
7	32	18	40	24
8	34	18	39	24
9	34	21	38	24
10	41	32	28	24



Seattle

February	Hi	Lo	HDD	HDD Avg
3	41	35	27	27
4	37	27	33	27
5	32	21	39	27
6	30	21	40	27
7	37	25	34	27



Note: Puget Sound Energy reported an all time peak day on December 7 and a new peak day on February 5.

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Actual Temperature and HDD

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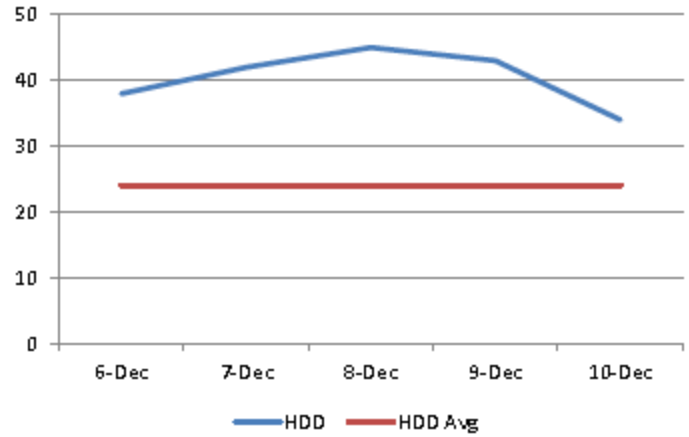
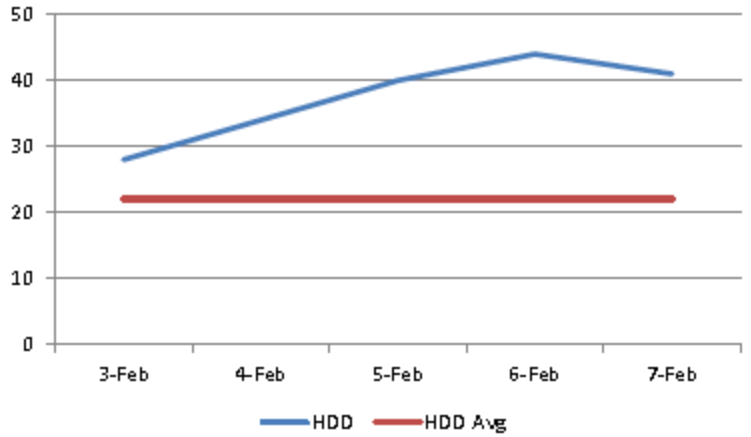
Portland

December	Hi	Lo	HDD	HDD Avg
6	30	24	38	24
7	30	15	42	24
8	28	12	45	24
9	29	14	43	24
10	34	27	34	24

Portland

February	Hi	Lo	HDD	HDD Avg
3	43	31	28	22
4	37	25	34	22
5	29	21	40	22
6	23	19	44	22
7	28	20	41	22





Note: Northwest Natural reported a high send-out day on February 6.

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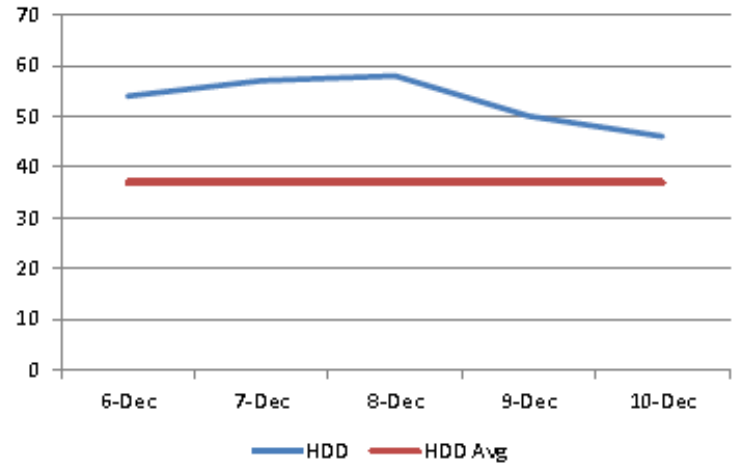
Actual Temperature and HDD

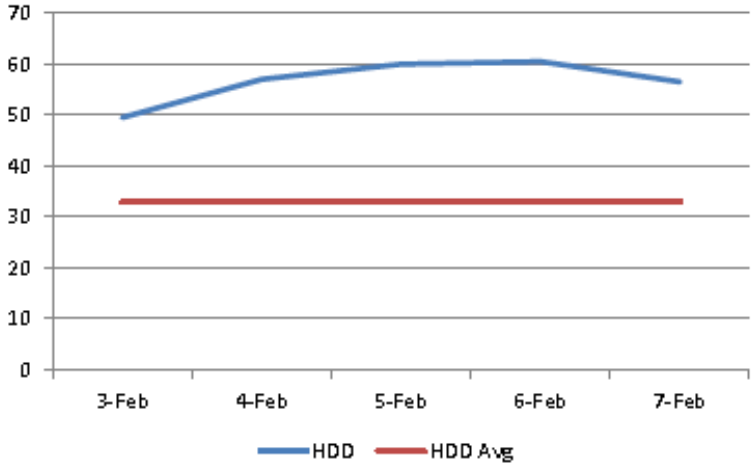
Spokane

December	Hi	Lo	HDD	HDD Avg
6	17	5	54	37
7	15	0	57	37
8	15	-2	58	37
9	20	9	50	37
10	27	11	46	37



Spokane

February	Hi	Lo	HDD	HDD Avg
3	24	7	50	33
4	15	1	57	33
5	11	-1	60	33
6	14	-5	61	33
7	13	4	57	33



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Actual Temperature and HDD

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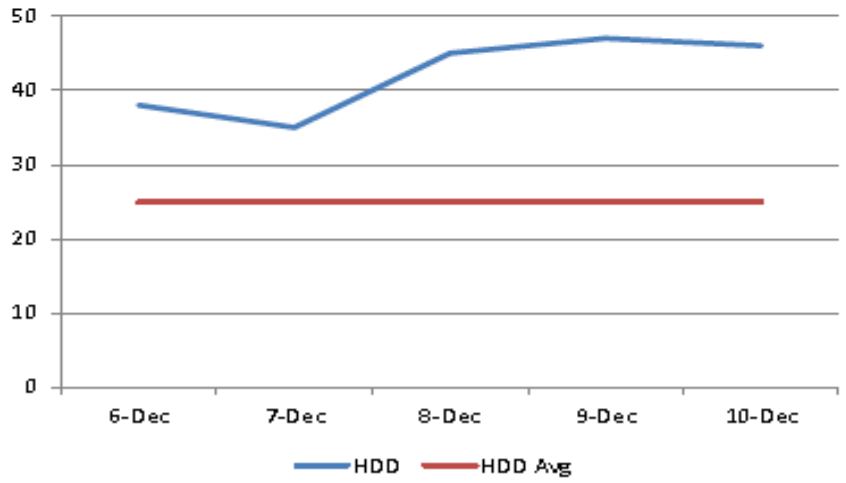
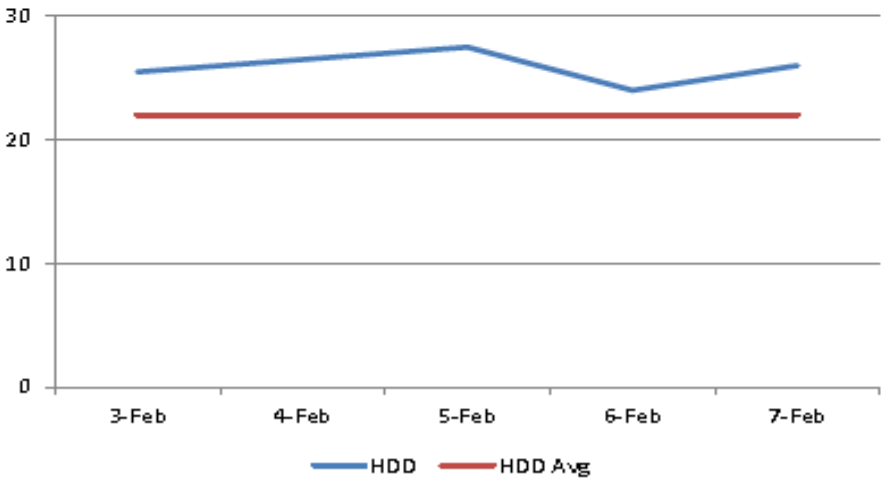
Grants Pass

December	Hi	Lo	HDD	HDD Avg
6	37	16	38	25
7	33	27	35	25
8	25	14	45	25
9	28	8	47	25
10	30	8	46	25



Grants Pass

February	Hi	Lo	HDD	HDD Avg
3	47	32	26	22
4	47	30	27	22
5	46	29	28	22
6	47	35	24	22
7	42	36	26	22



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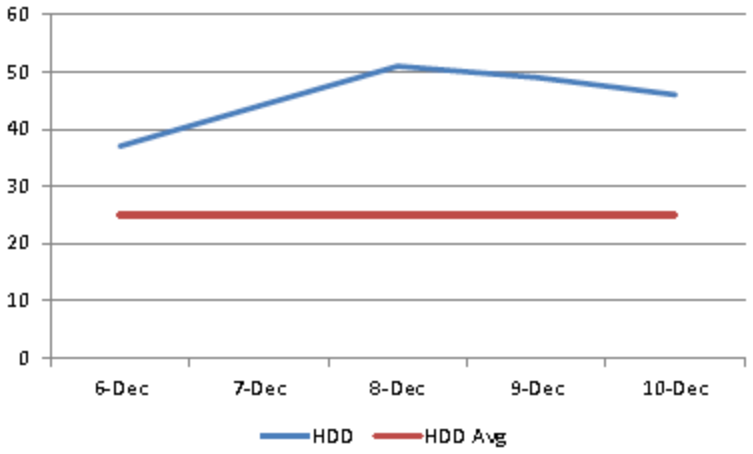
Actual Temperature and HDD

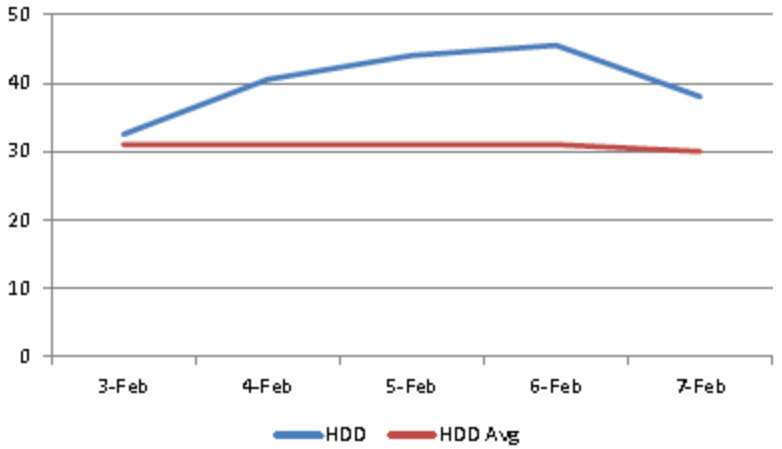
Boise

December	Hi	Lo	HDD	HDD Avg
6	26	15	44	34
7	24	2	52	34
8	11	-6	62	34
9	14	-7	61	34
10	15	4	55	34



Boise

February	Hi	Lo	HDD	HDD Avg
3	37	28	33	31
4	29	20	41	31
5	25	17	44	31
6	23	16	46	31
7	35	19	38	30



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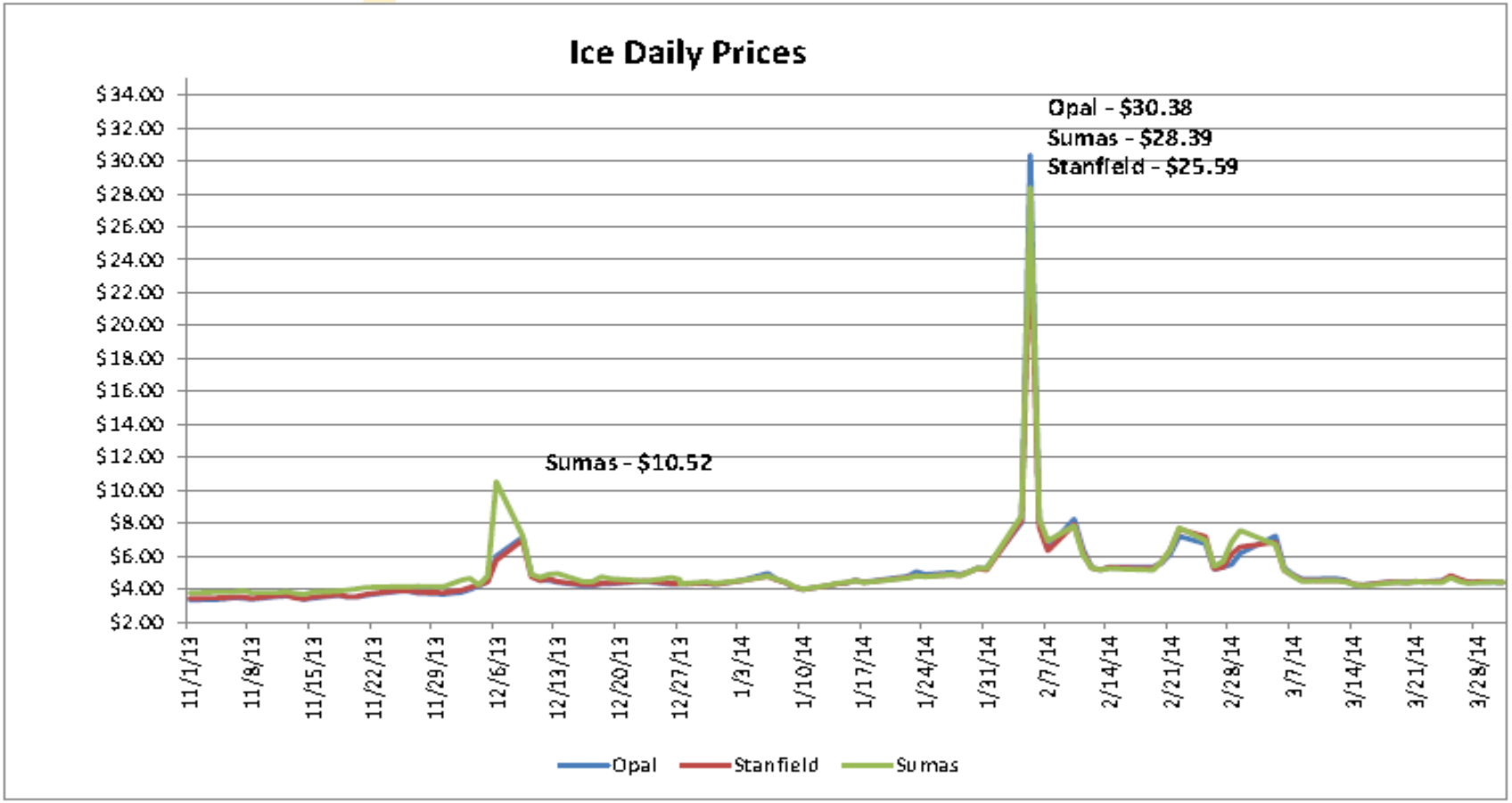
Prices Nov 2013 – Mar 13, 2014



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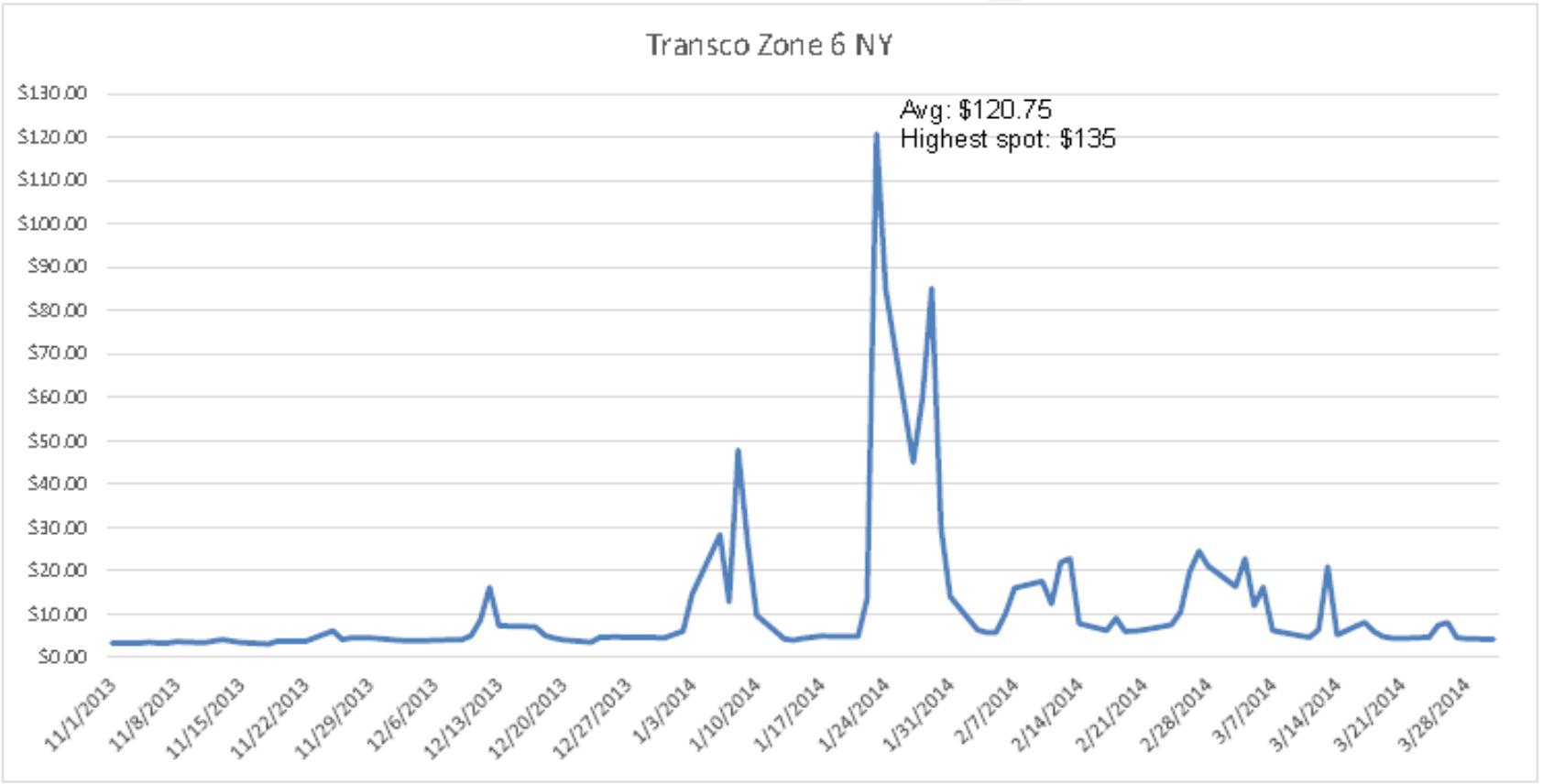
Prices Nov 2013 - Mar 2014



Source SNL

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Scheduled Throughput Capacities

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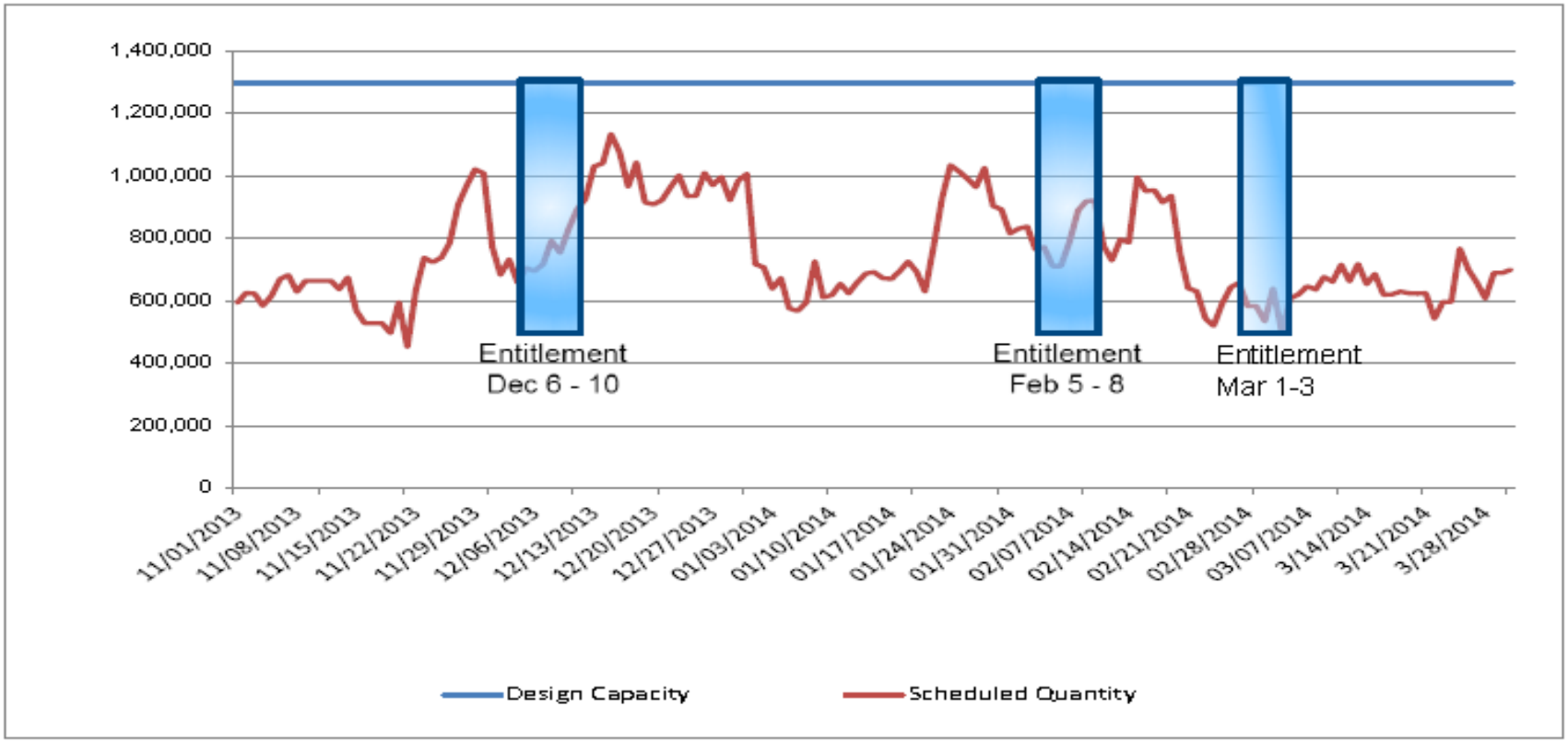
Sumas/Sipi



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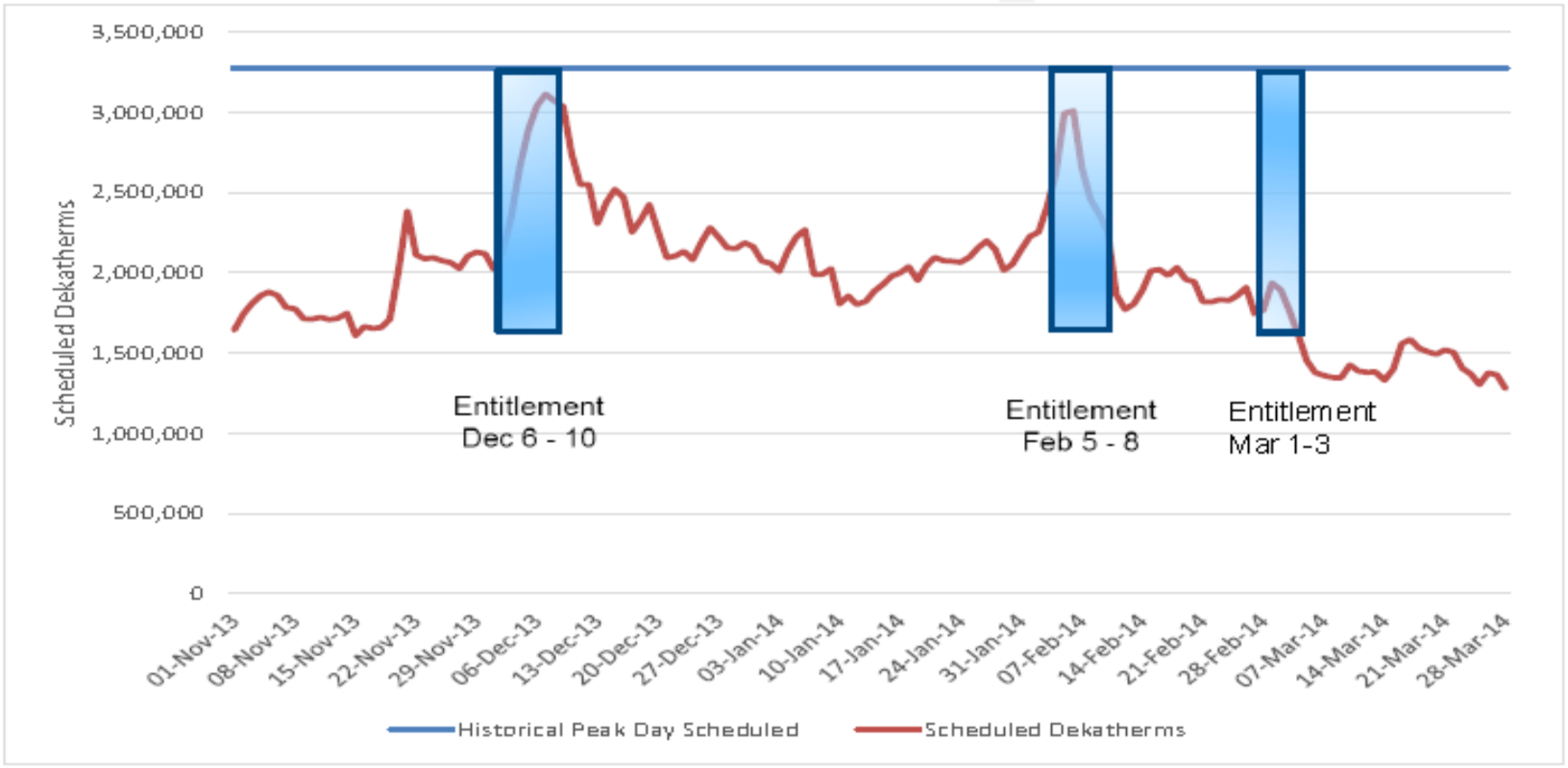
Total System Load North of Kemmerer November – Mar 15



Scheduled Quantities North of Kemmerer on Northwest's Historical Peak Scheduled Day 12-15-2008

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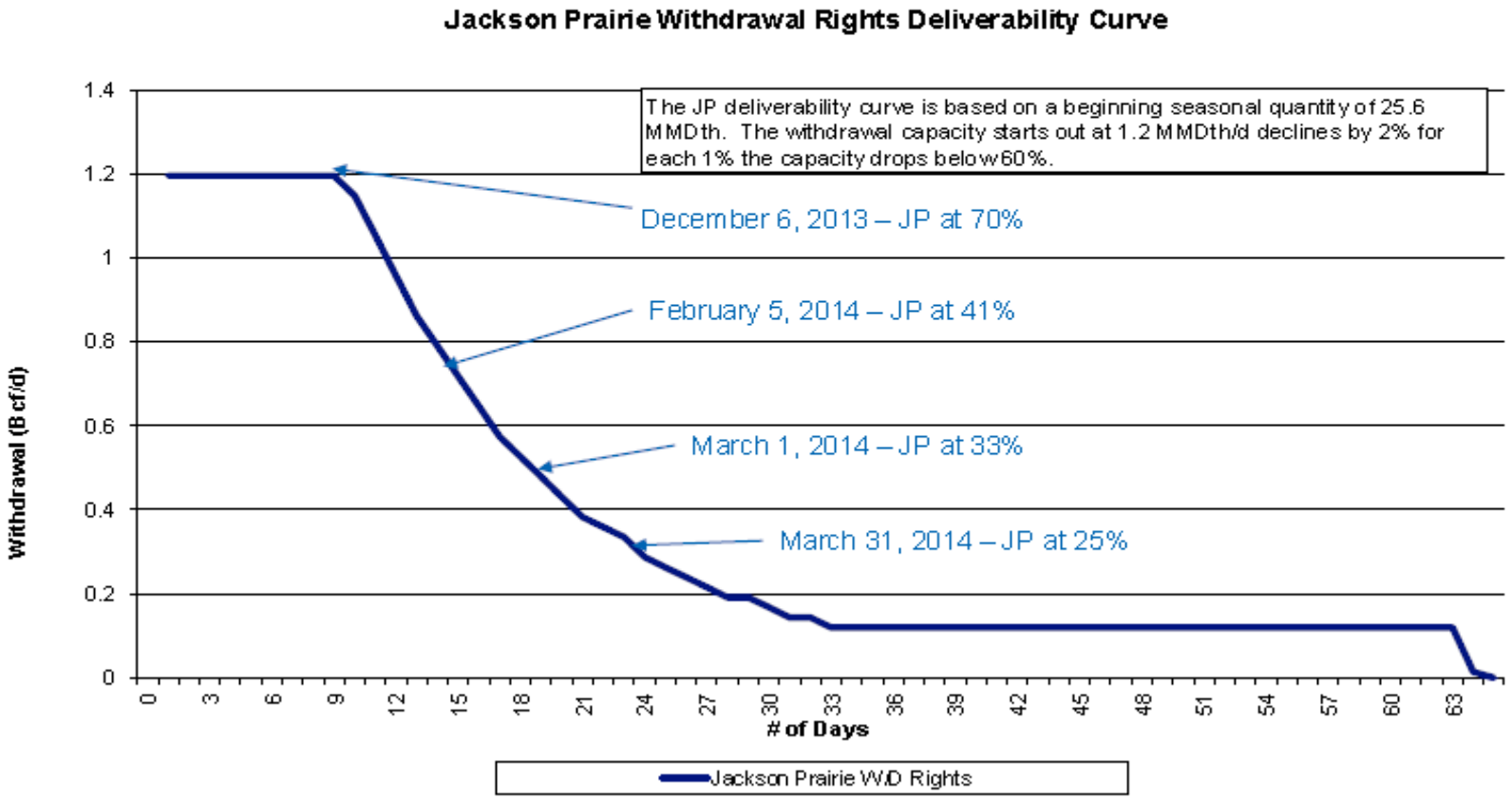
Jackson Prairie Storage Withdrawal



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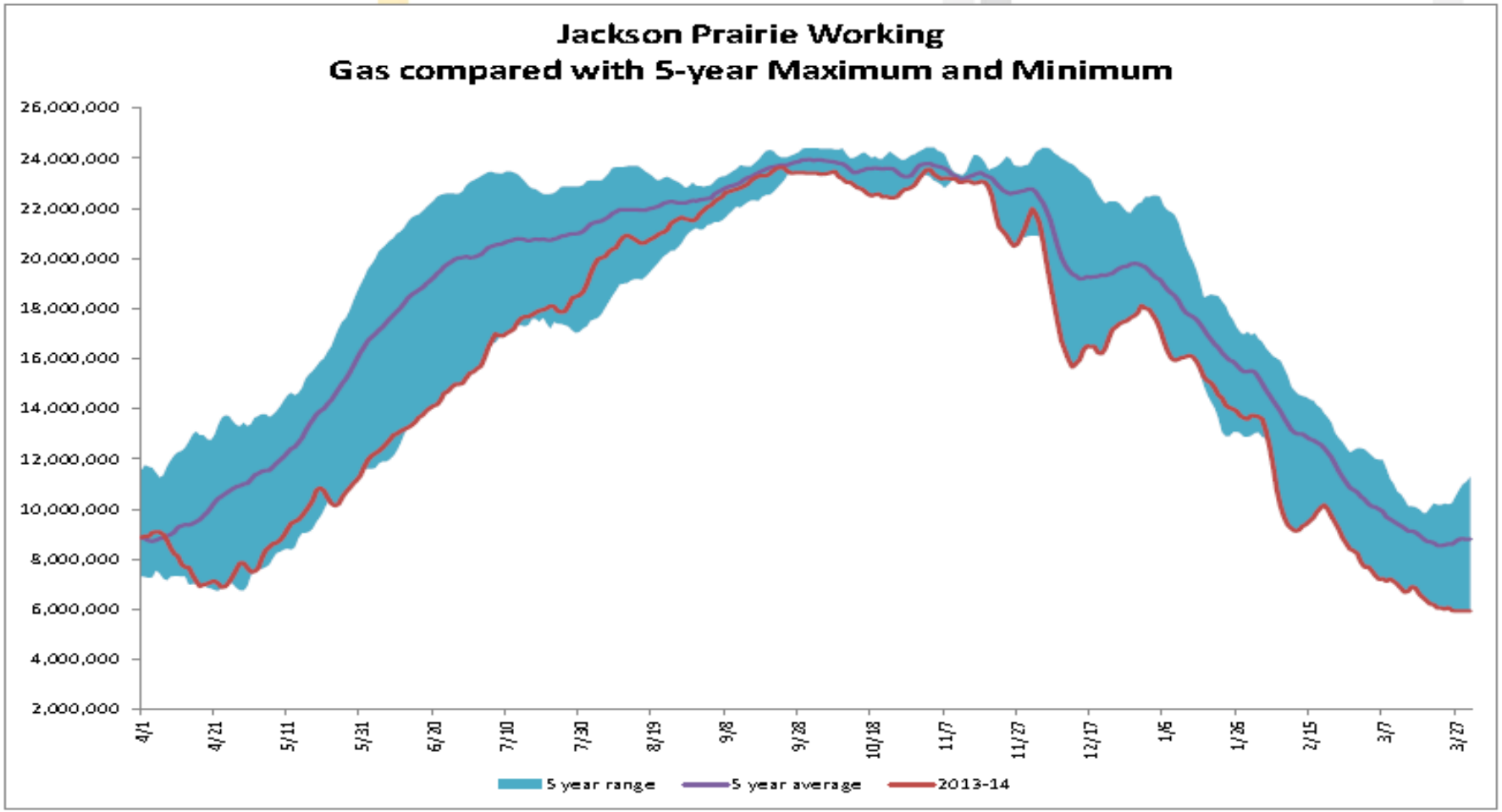
Jackson Prairie Storage Working Gas



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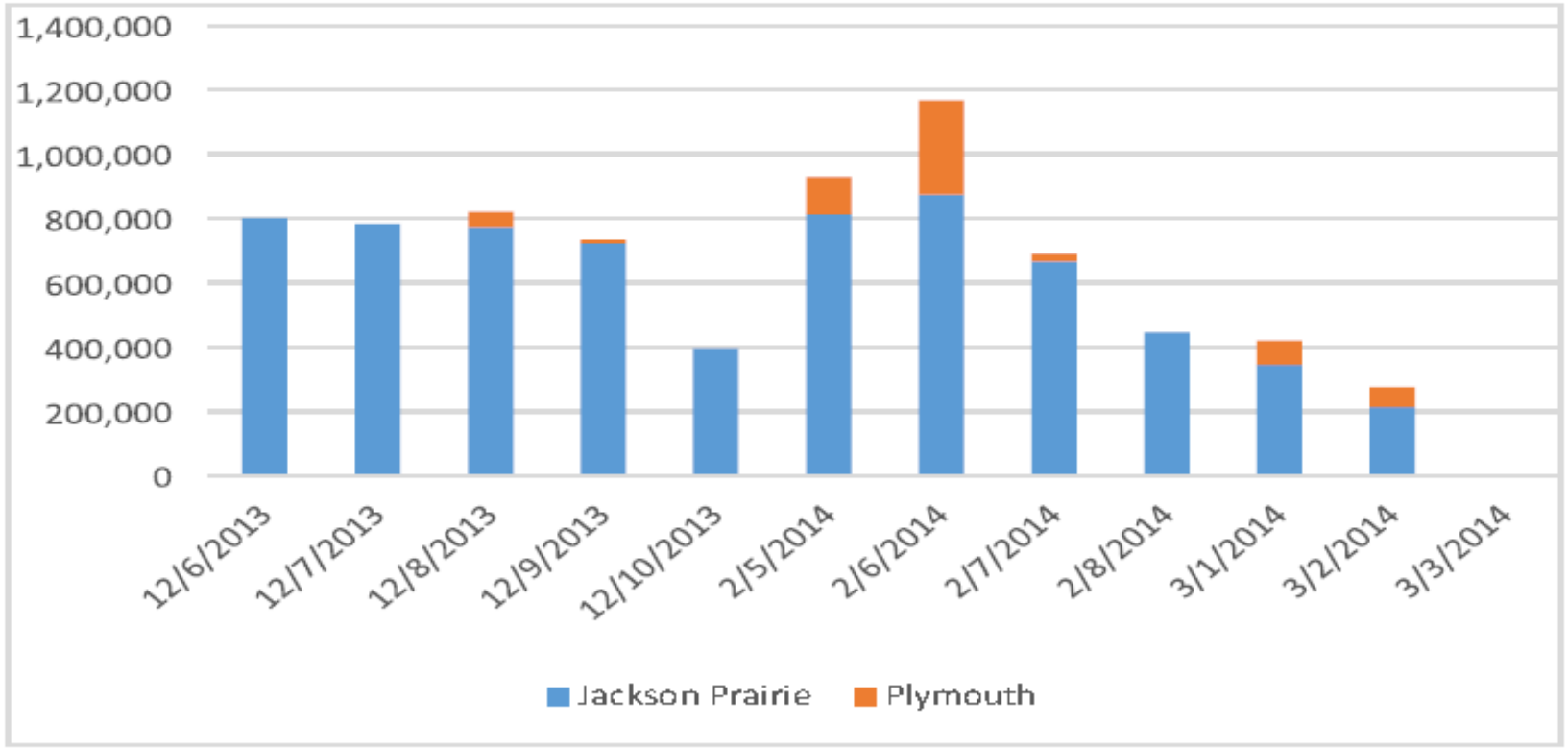
Storage Withdrawals during an Entitlement Period



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Cold Weather Event Comparison

- Northwest and some of its major customers experienced record throughputs this past winter.
- In the Northwest, prices spiked to over $10 per Dth in December and $30 per Dth in February. In the Northeast prices spiked to $50 Dth in December and $135 Dth in February.
- Are Northwest customer's prepared for a cold weather event such as the Polar Vortex that occurred in the Northeast? What about late in the season when storage levels are low and withdrawal capabilities decline?

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Capacity Overview

- Capacity on Northwest is in high demand as evidence by the following factors:
  - Northwest is fully subscribed;
  - Northwest's average contract life as of January 1, 2014 was 9.7 years; and
  - Northwest and its customers experienced record or near record throughput this past winter.

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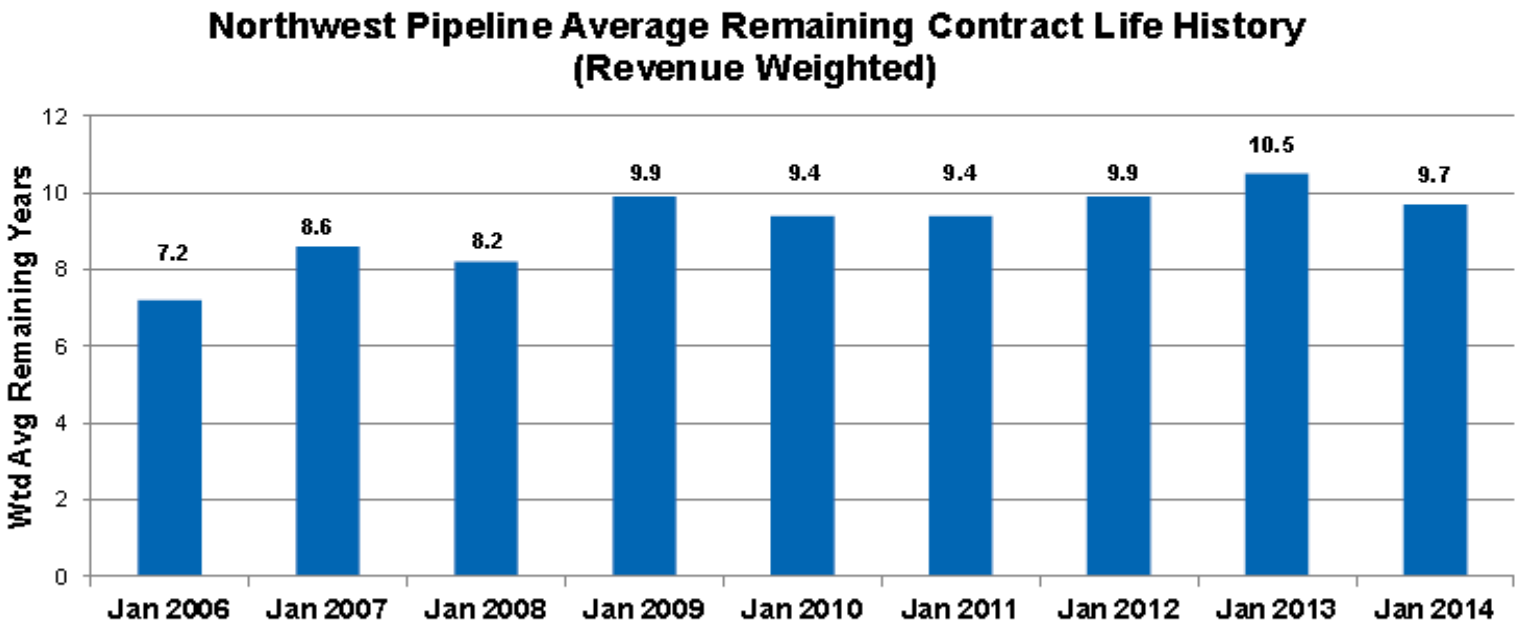

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Northwest Pipeline is like two pipelines in one

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> Bi-direction design allows for

- Access to multiple and diverse supply basins
- Added system reliability
- Lower rates
- Gas pricing options

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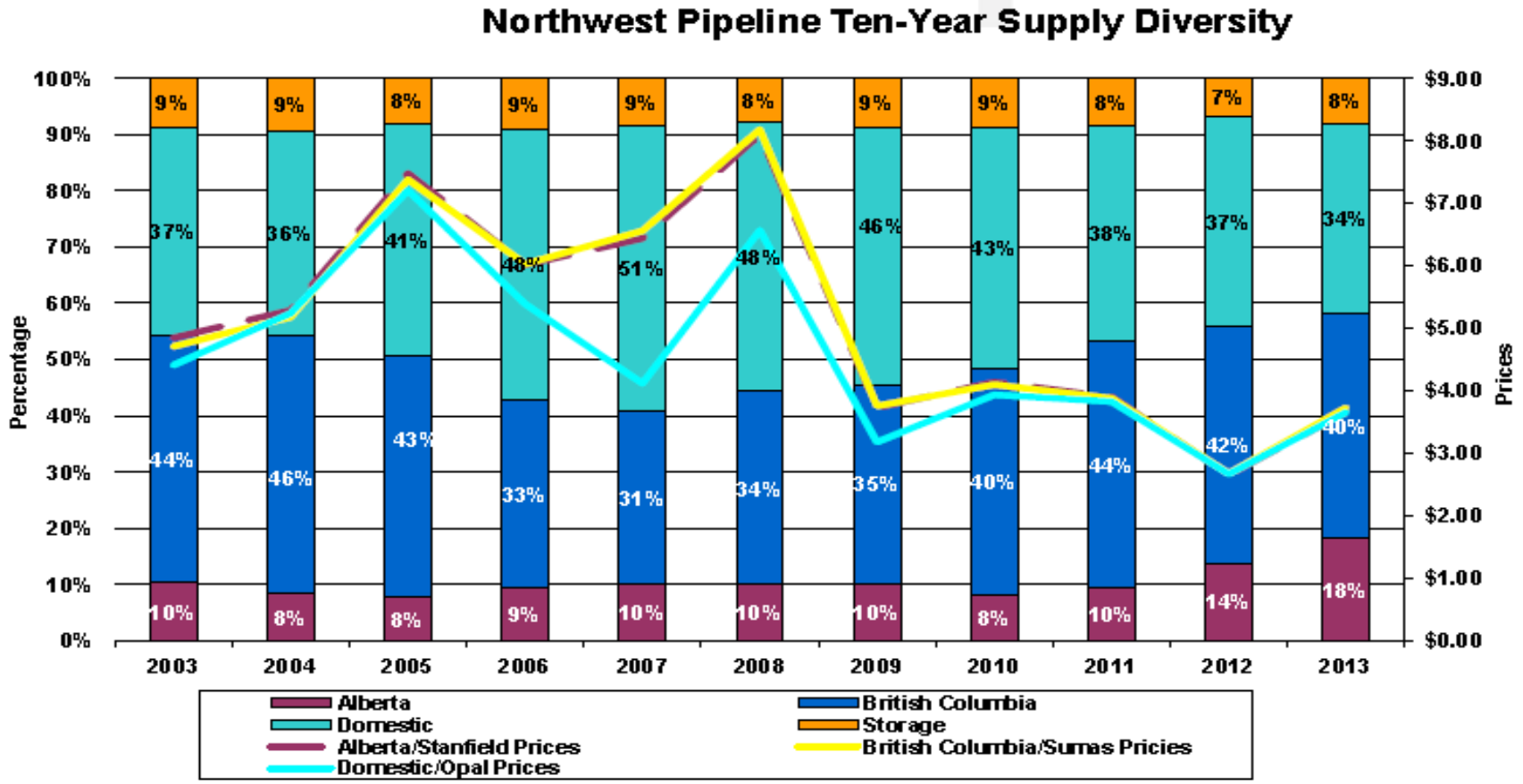
Northwest Pipeline Ten-Year Supply Diversity



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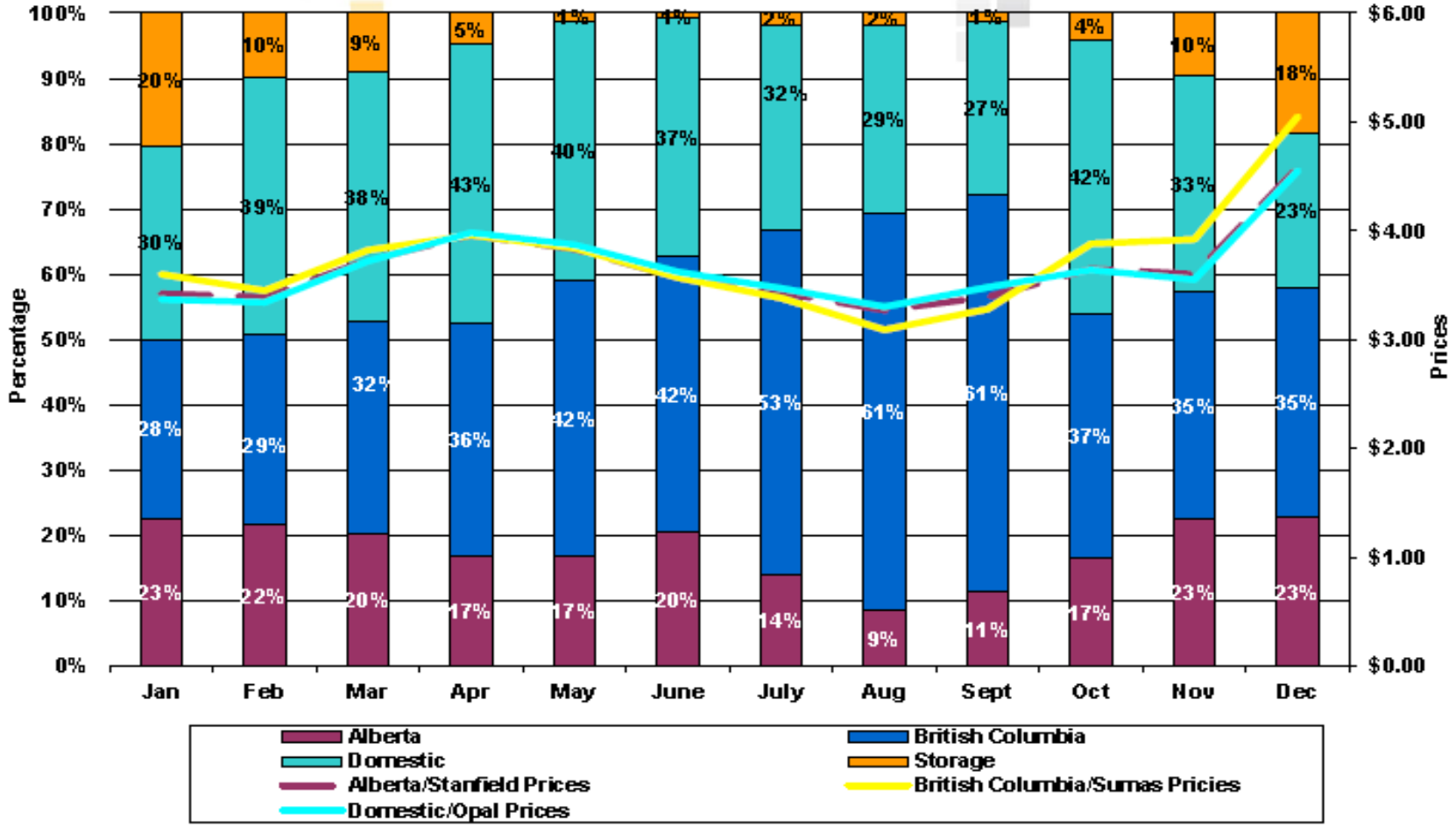
Northwest Pipeline 2013 Supply Diversity



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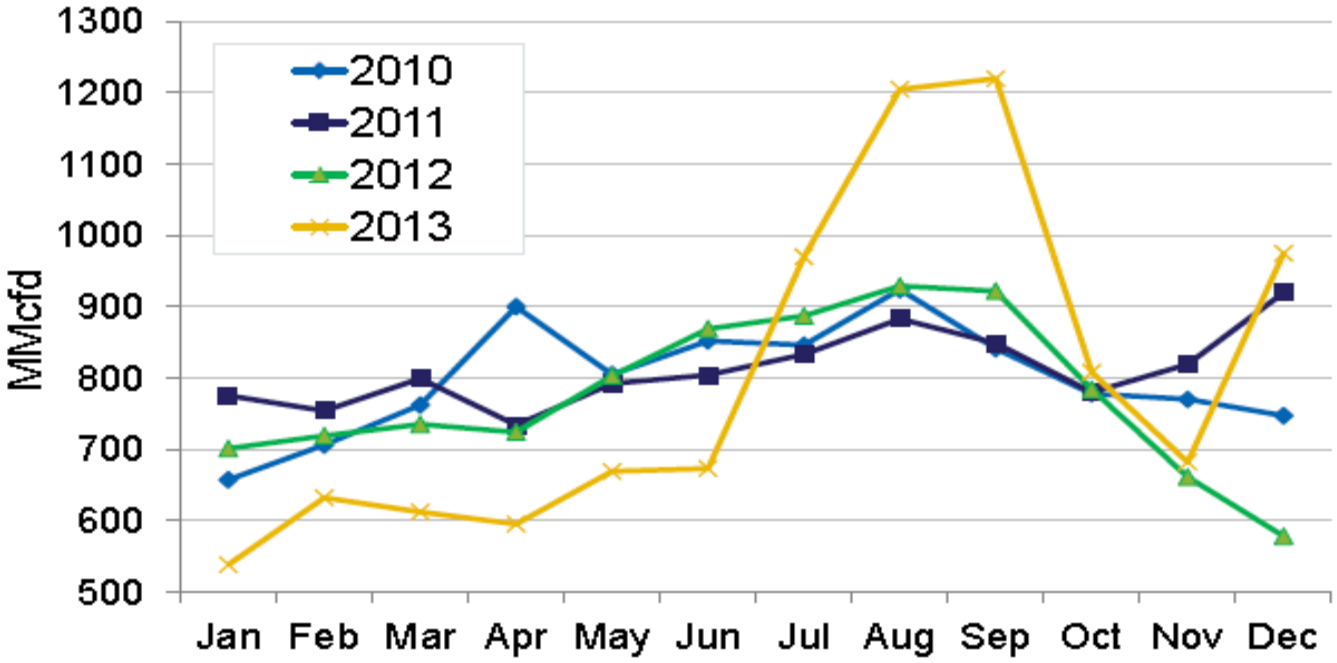
Huntingdon Export Market Deliveries 2010 to 2013



> Unprecedented volumes flowed during the 2013 summer months.

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Cascade's Contractual Rights

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- Cascade serves multiple markets across Northwest's system which creates unique contractual challenges.
- Cascade holds a variety of contracts to meet their unique needs, such as:
  - point-to-point contracts;
  - storage redelivery contracts, some of which have excess maximum daily delivery obligations ("MDDOs") that provide additional corridor rights flexibility; and
  - conjunctive contracts that have multiple receipt and delivery point with excess MDDOs that also provides additional corridor right flexibility.

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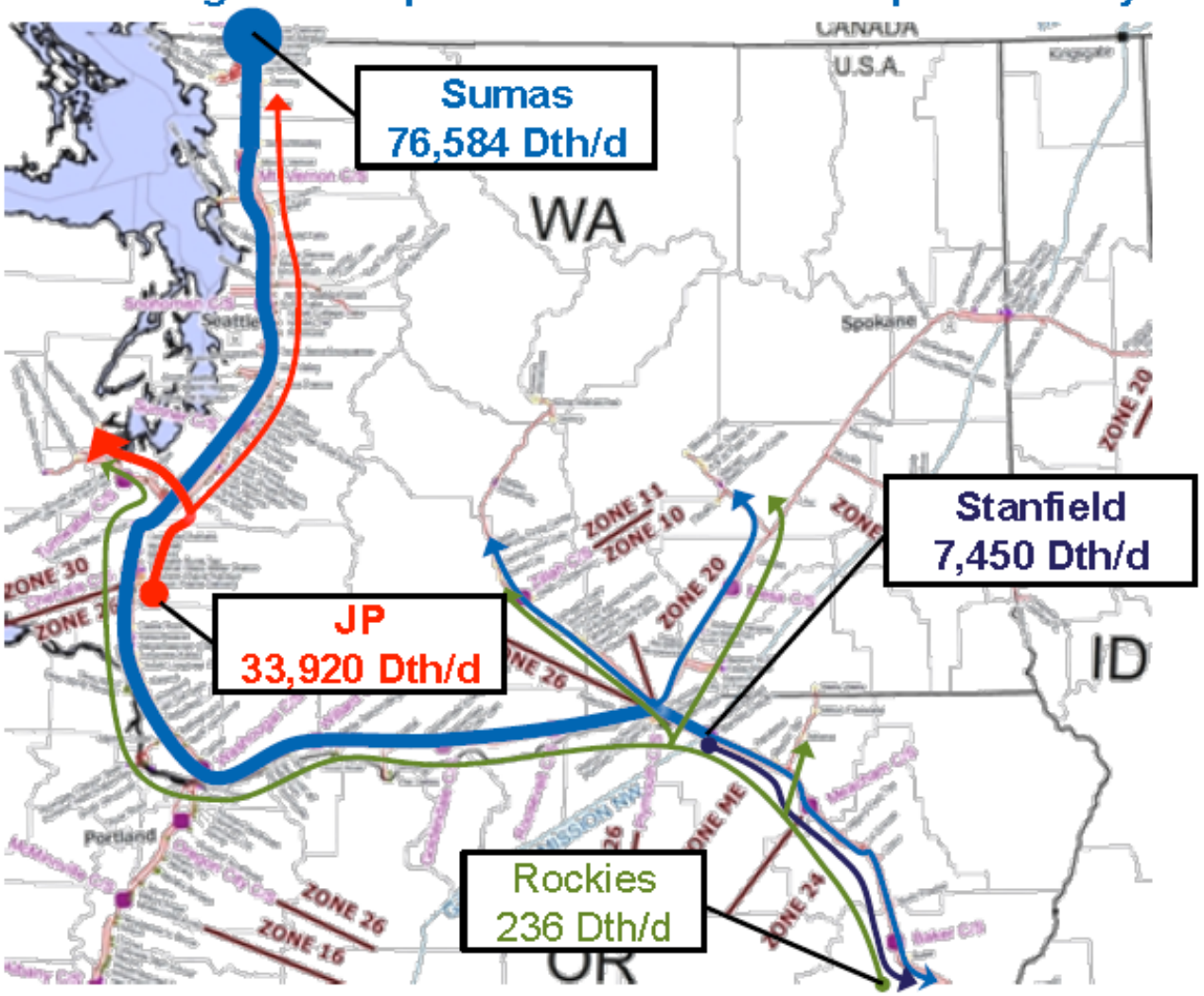
Cascade's Single Receipt Contracts with Multiple Delivery Points



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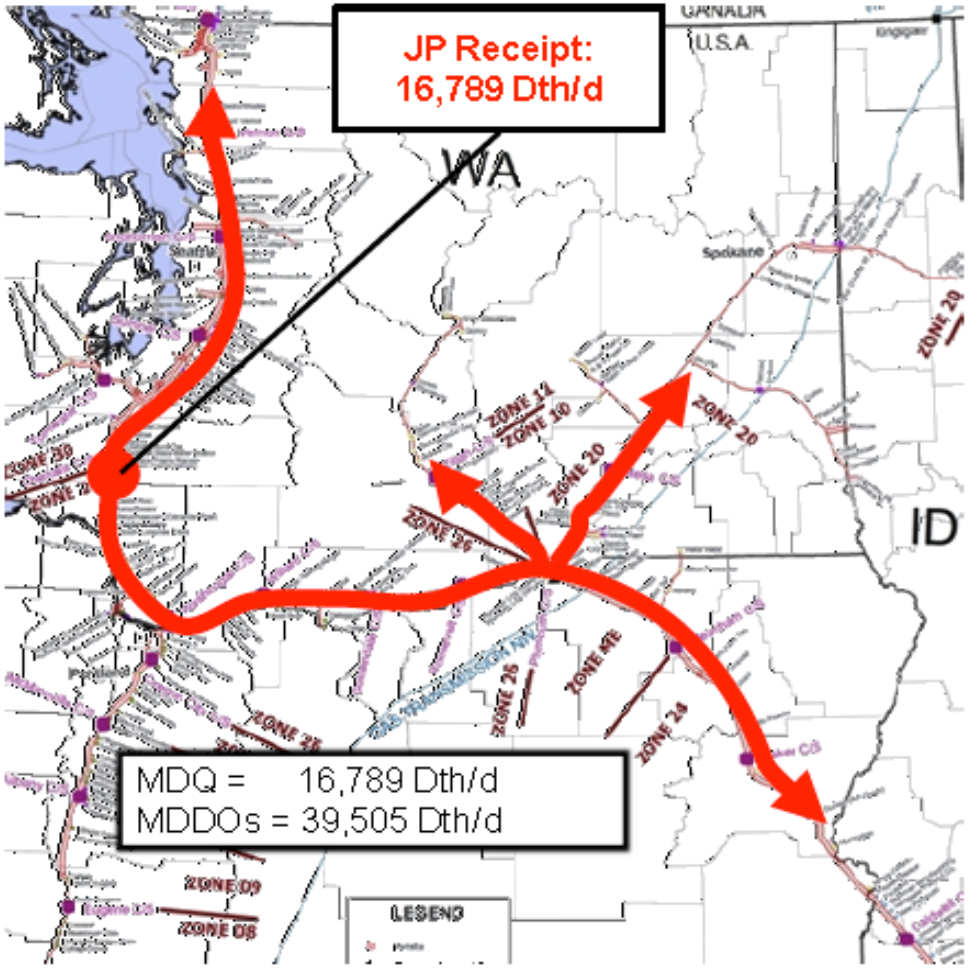
Cascade Conjunctive Storage Contract No.100302



Cascade's Contract No. 100302 contains:

- Multiple delivery points; and
- excess MDDOs.

As a result, it provides flexible corridor rights.

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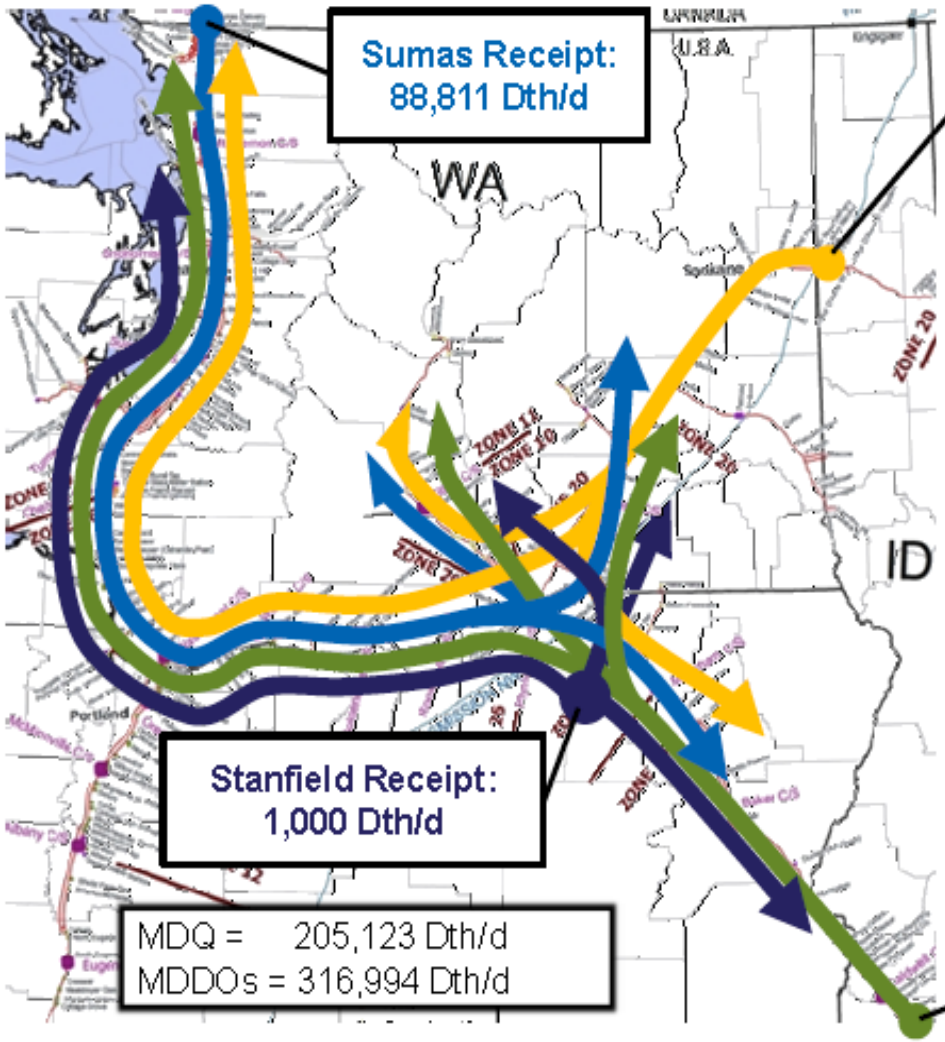
Cascade Conjunctive Transportation Contract No. 100002



Cascade's Contract No. 100002 contains:

- multiple receipt and delivery points; and
- excess MDDOs.

As a result, it provides flexible corridor rights.

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Capacity Allocation to Meet Peak-Day Demand

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- Below are some ideas to help identify potential capacity shortfalls based on peak-day load projections.
  - First, allocate capacity on contracts that have a single receipt point.
  - Second, allocate capacity on conjunctive contracts that provide corridor and delivery point flexibility.
- Allocationy Considerations:
  - Critical deliveries
  - Constrained laterals
  - Maintain Corridor Flexibility (longest-haul contractual rights)

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Business Development Projects

- Pacific Connector
- Washington Expansion
- Wenatchee Lateral

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Pacific Connector Gas Pipeline Project



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Pacific Connector Gas Pipeline (PCGP)

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- 232-mile of 36-inch diameter pipeline with:
  - 1,060,000 Dth/d of firm transportation
  - 41,000 horsepower at Malin
- Receipt interconnects with:
  - Gas Transmission Northwest
  - Ruby Pipeline
- Deliveries interconnect with:
  - Northwest Pipeline's Grants Pass Lateral
  - Jordan Cove Delivery Meter Station
- PCGP will be built primarily to serve the Jordan Cove LNG Terminal (located near Coos Bay, Oregon)
  - Waiting on permission to grant export to Non-Free Trade Agreement Countries
  - Currently first in the queue for DOE approval
    - Will facilitate permitting and marketing efforts
- Target in-service date 2018

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PCGP future growth opportunities

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- Will be able to serve:
  - Malin / Coos Bay corridor
    - Potential industrial facilities could be co-located near LNG terminal and make use of upgraded port facilities
  - Grants Pass Lateral
- New supply source on the Grants Pass Lateral will provide diversity and additional firm flow to serve new industrial/commercial markets:
  - Additional 76,196 Dth/d flowing south
  - Additional 42,525 Dth/d flowing north
    - Volumes can increase with compressor station piping modifications
  - Open Season will determine whether short-haul capacity is incorporated into design
- PCGP easily expandable to 1.5 Bcf
  - Future Open Season will be held to serve regional market growth

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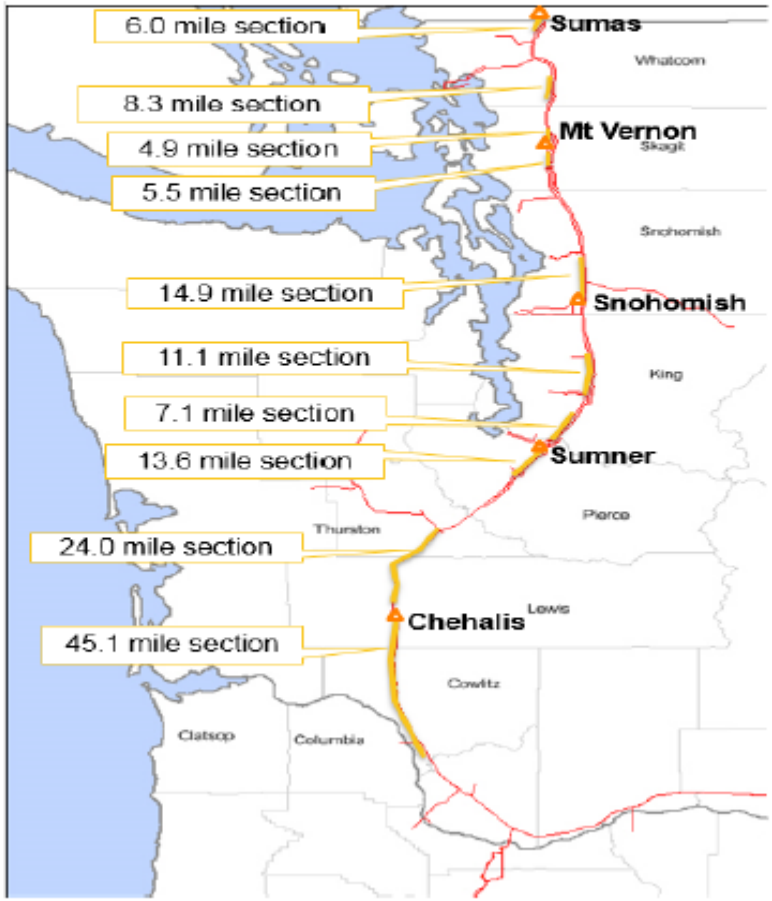
Washington Expansion Project



- FERC application filed 2013
- 140 miles of 36-inch diameter loop line with:
  - 750,000 Dth/d of firm transportation
  - 89,620 incremental horsepower required along I-5
- Rates (per Dth/d):
  - $0.74 traditional
  - $0.56 levelized
- Estimated cost $1.1 billion
- Targeted in-service date November 2018
  - Potential regional loads with in-service dates phased in

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Washington Expansion is market oriented

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- Provides competitively priced natural gas to committed users:
  - Supplies Oregon LNG terminal customers
  - Increases reliability:
    - Fills in un-looped sections in I-5 corridor
    - Continuous 30-inch pipe along side 36-inch loop
  - Provides opportunity to other potential customers in the region
    - Serving customers in the I-5 corridor is not contingent on Oregon LNG moving forward

- Potential users participated in an "open season" process
  - Transportation capacity was offered to <u>all customers</u> in a non-binding open season held in October 2012
    - Not limited to Oregon LNG terminal customers
    - Ongoing expressions of interest from parties for new capacity welcome
      - Capacity available as early as 2016
        - Depending on location and transportation capacity needs

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Taking a closer look at Central Oregon

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Using capacity to serve Central Oregon



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"Around the Horn"

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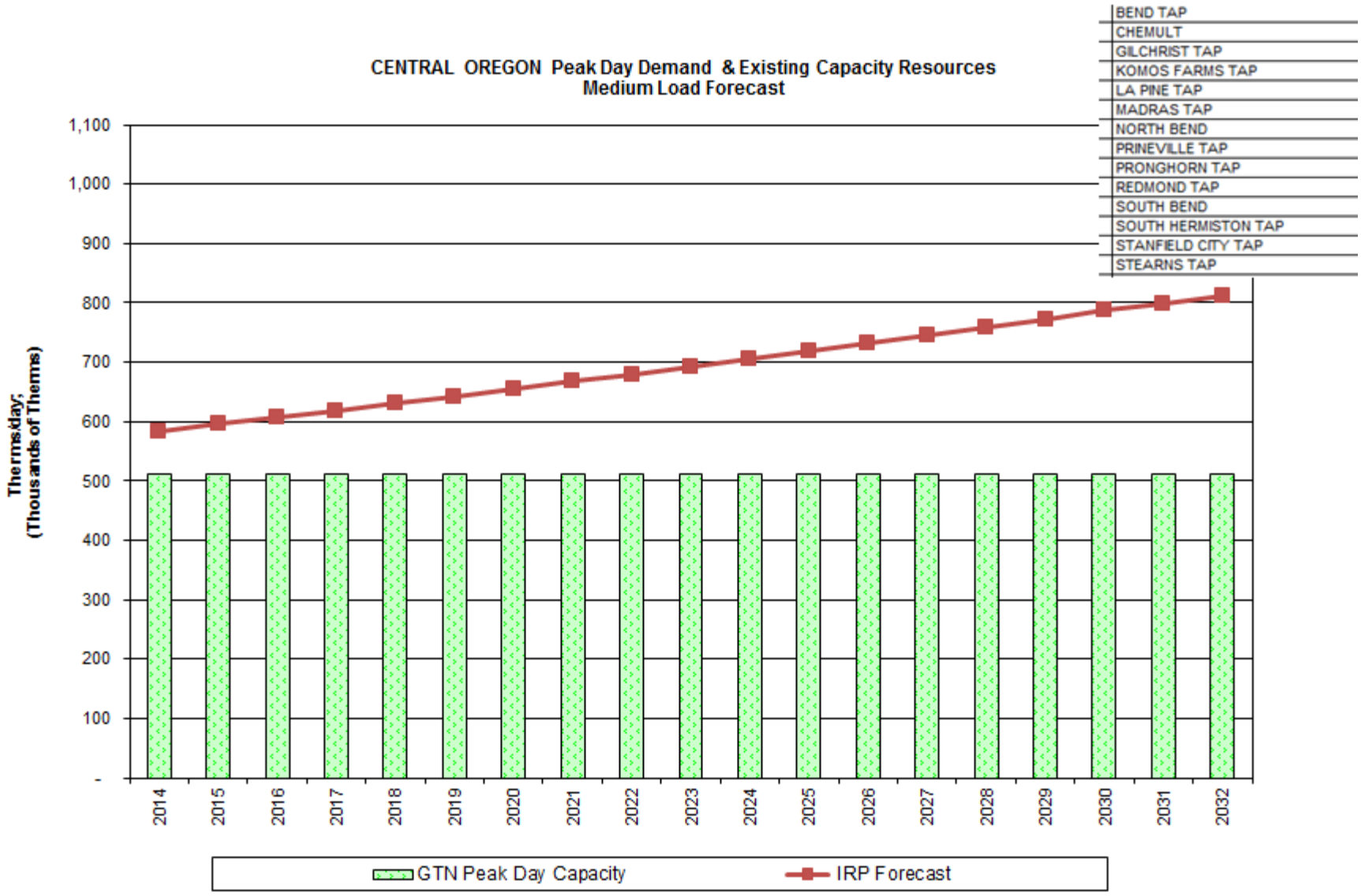
CENTRAL OREGON Peak Day Demand & Existing Capacity Resources
Medium Load Forecast
BEND TAP
CHEMULT
GILCHRIST TAP
KOMOS FARMS TAP
LA PINE TAP
MADRAS TAP
NORTH BEND
PRINEVILLE TAP
PRONGHORN TAP
REDMOND TAP
SOUTH BEND
SOUTH HERMISTON TAP
STANFIELD CITY TAP
STEARNS TAP
Therms/day;
(Thousands of Therms)
1,100
1,000
900
800
700
600
500
400
300
200
100
-
2014
2015
2016
2017
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2032
GTN Peak Day Capacity
IRP Forecast



Jay Story – Director, NW Distribution Markets

CNGC Capacity Workshop – Portland, OR

April 8, 2014

TransCanada
In business to deliver

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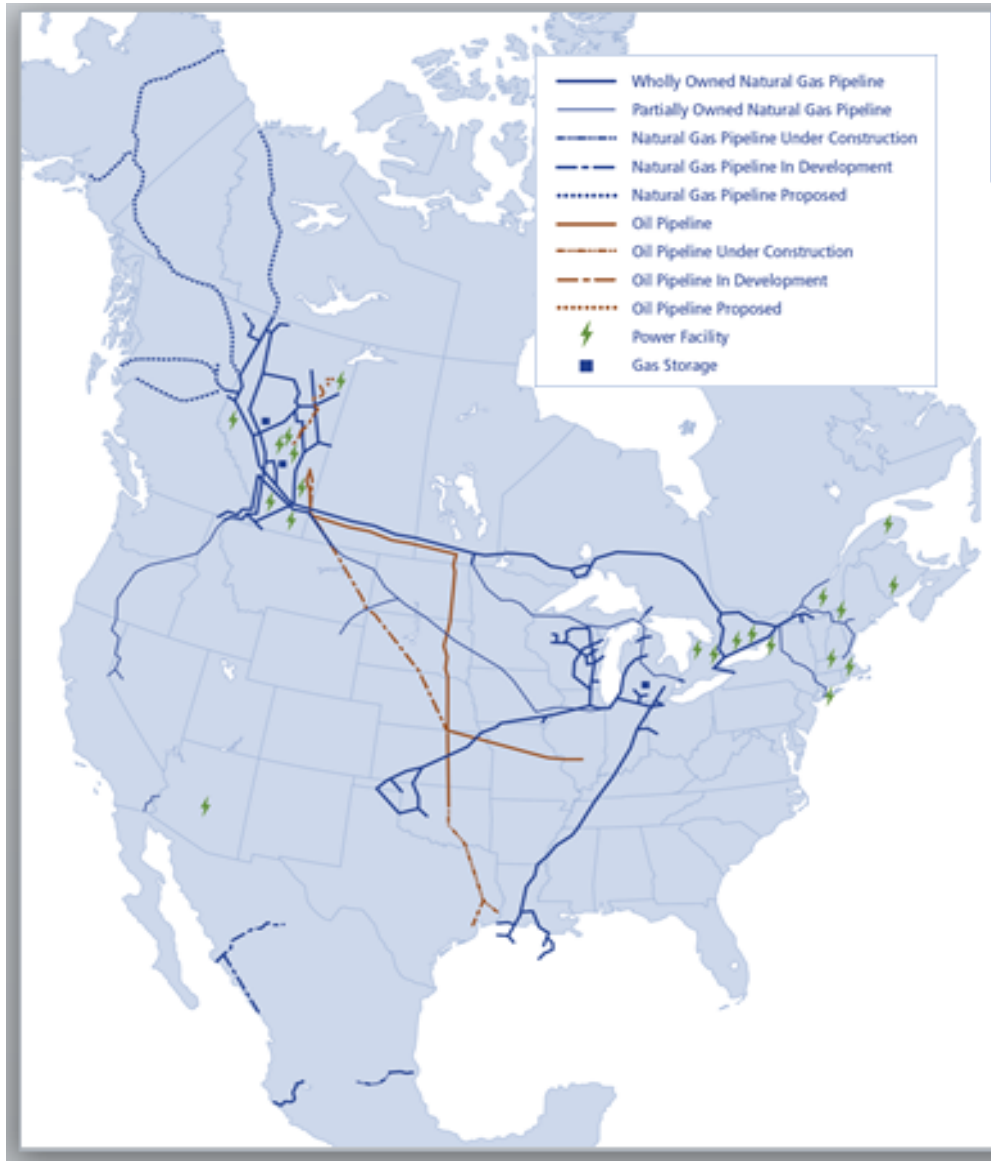

TransCanada Corporation (TSX/NYSE: TRP) Jan13

One of North America's Largest Natural Gas Pipeline Networks

- Operating 68,500 km (42,500 mi) of pipeline
- Average volume of 14 Bcf/d or 20% of continental demand

North America's 3rd Largest Natural Gas Storage Operator

- 380 Bcf of capacity

Canada's Largest Private Sector Power Generator

- 20 power plants, 10,900 MW
- Diversified portfolio, including wind, hydro, nuclear, coal, solar and natural gas

Premier North American Oil Pipeline System

- 1.4 million Bbl/d ultimate capacity*

* Keystone Wood River/Patoka and Cushing Extension sections in operation
Gulf Coast pipeline project in development
Keystone XL pipeline project in development
Houston Lateral pipeline project in development

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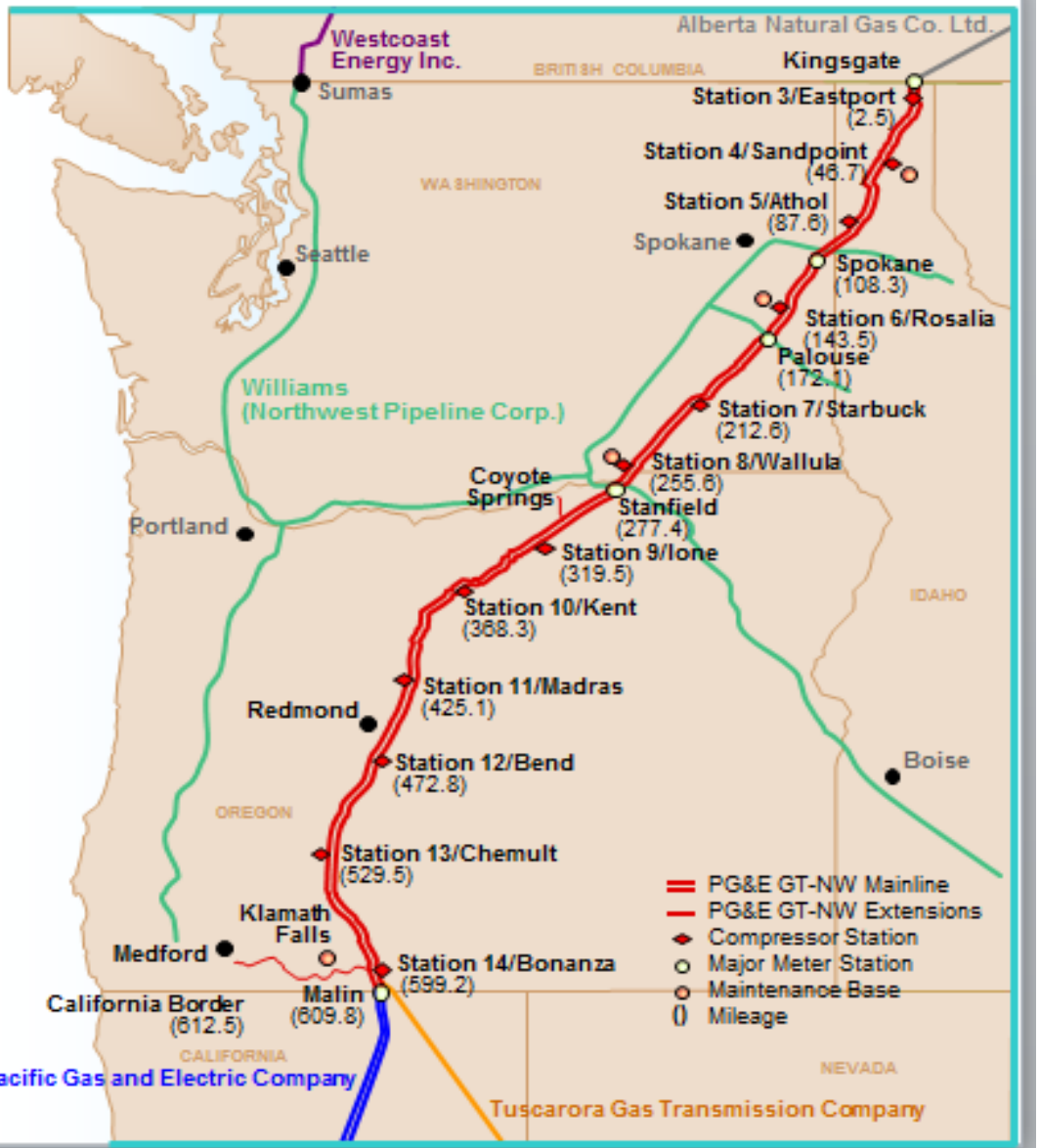
GTN System

Miles of Pipeline
More than 1,350

Compression
Greater than 520,000hp
(all aircraft or industrial turbines)

Physical Receipt Capability:
Kingsgate - 2.8 Bcf/d
Stanfield – 300 MMcf/d
Turquoise Flats – 1.1 Bcf/d

Physical Delivery Capability:
NW Markets – 1.4 Bcf/d
(approx 500 MMcf/d Generation Load)
California Markets – 2.1 Bcf/d



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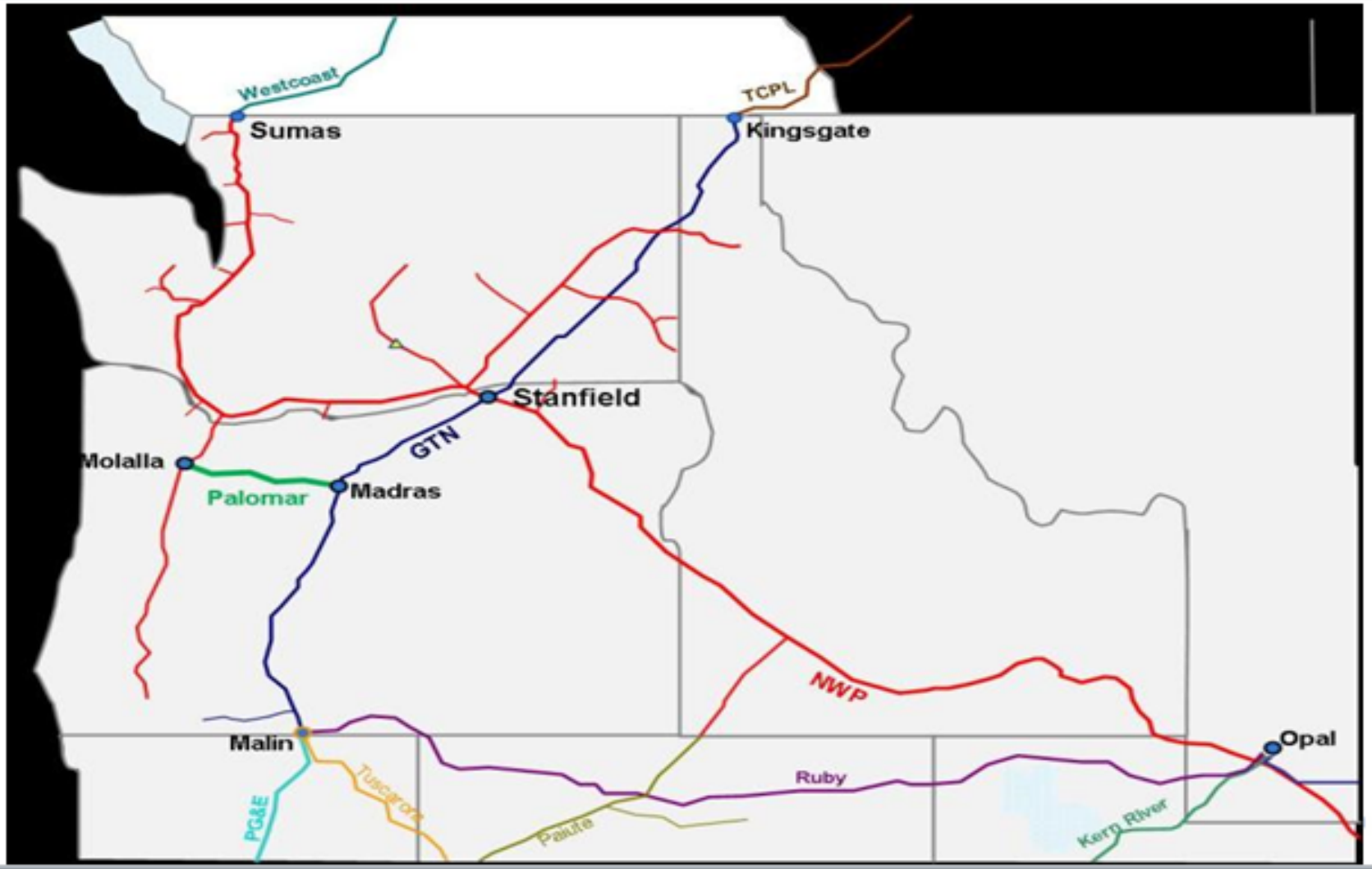
GTN – Interconnecting Pipelines





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GTN System Available Capacity



- **North to South Primary Path**
  - Kingsgate to Stanfield
    - Approximately 1 Bcf/d
  - Stanfield to Malin
    - Approximately 900 MMcf/d
- **South to North Primary Path**
  - Turquoise Flats to Stanfield
    - 95,000 Dth/d

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GTN System – Primary Path Options



- **North to South Primary Service**
  - Gas flows from physical receipt points to physical delivery points in a North to South direction
    - Examples of North to South Primary Paths
      - Kingsgate to Stanfield
      - Stanfield to Malin
      - Turquoise Flats to Malin
  - Shipper may use secondary receipt and delivery points anywhere inside the primary contract path
  - Shipper may not access receipt and/or delivery points outside of the primary contract path
  - Shipper may backhaul inside the primary path via displacement

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GTN System – Primary Path Options (cont'd)



- **South to North Primary Service**
  - Gas flows from physical receipt points to physical delivery points in a South to North direction
    - Examples of South to North Primary Paths
      - Turquoise Flats to Medford lateral
      - Turquoise Flats to Coyote Lateral
      - Turquoise Flats to Stanfield
  - Shipper may use secondary receipt and delivery points anywhere inside the primary contract path
  - Shipper may not access receipt and/or delivery points outside of the primary contract path
  - Shipper may backhaul inside the primary path via displacement

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GTN System – Primary Path Differences



- **North to South Primary Service**
  - Gas flows from physical receipt points to physical delivery points in a North to South direction
  - May be nominated on a South to North basis
  - South to North is secondary, displacement type service
  - Shipper can nominate a Malin to Kingsgate Path
- **South to North Primary Path**
  - Gas flows from physical receipt points to physical delivery points in a South to North direction
  - Turquoise Flats is only Primary Receipt Point for northbound service
  - Malin is not a valid receipt point for the northbound service

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GTN System – Primary Path Differences



QUESTIONS?

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KINDER MORGAN

Ruby Pipeline
Cascade Natural Gas

Rockies Gas Supply

April 8, 2014







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Cautionary Language

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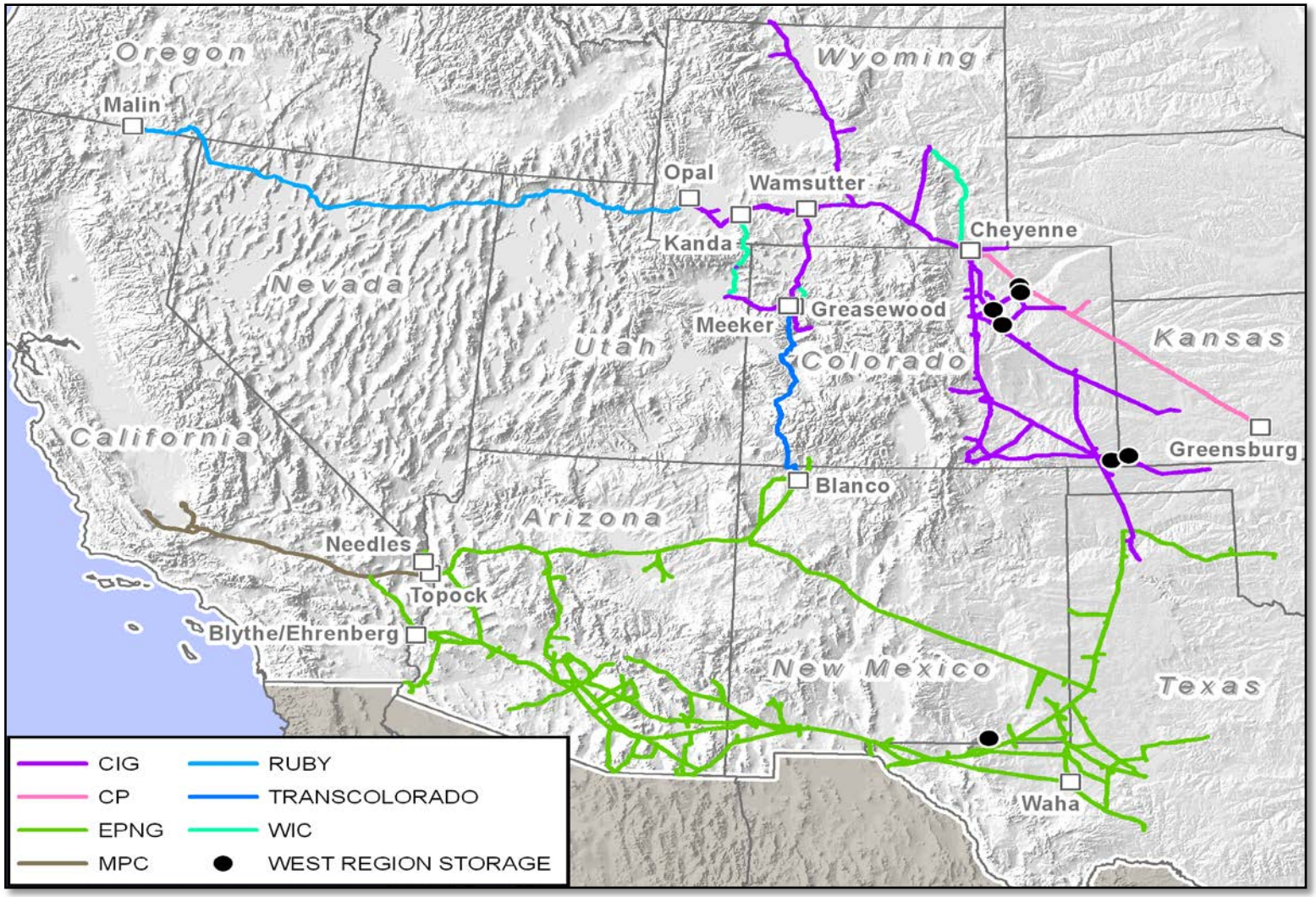
Kinder Morgan West Region Gas Assets



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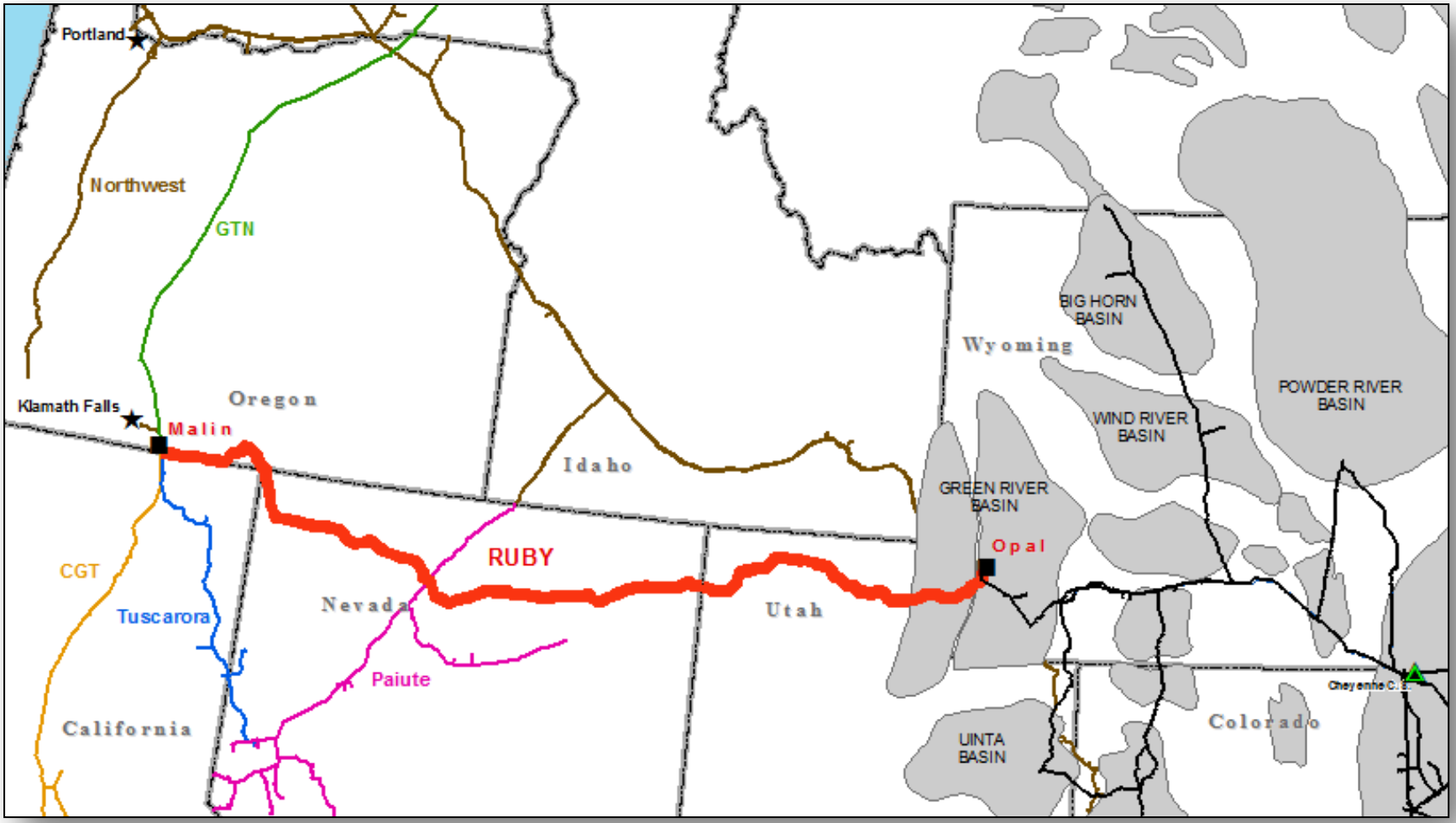
Ruby Pipeline



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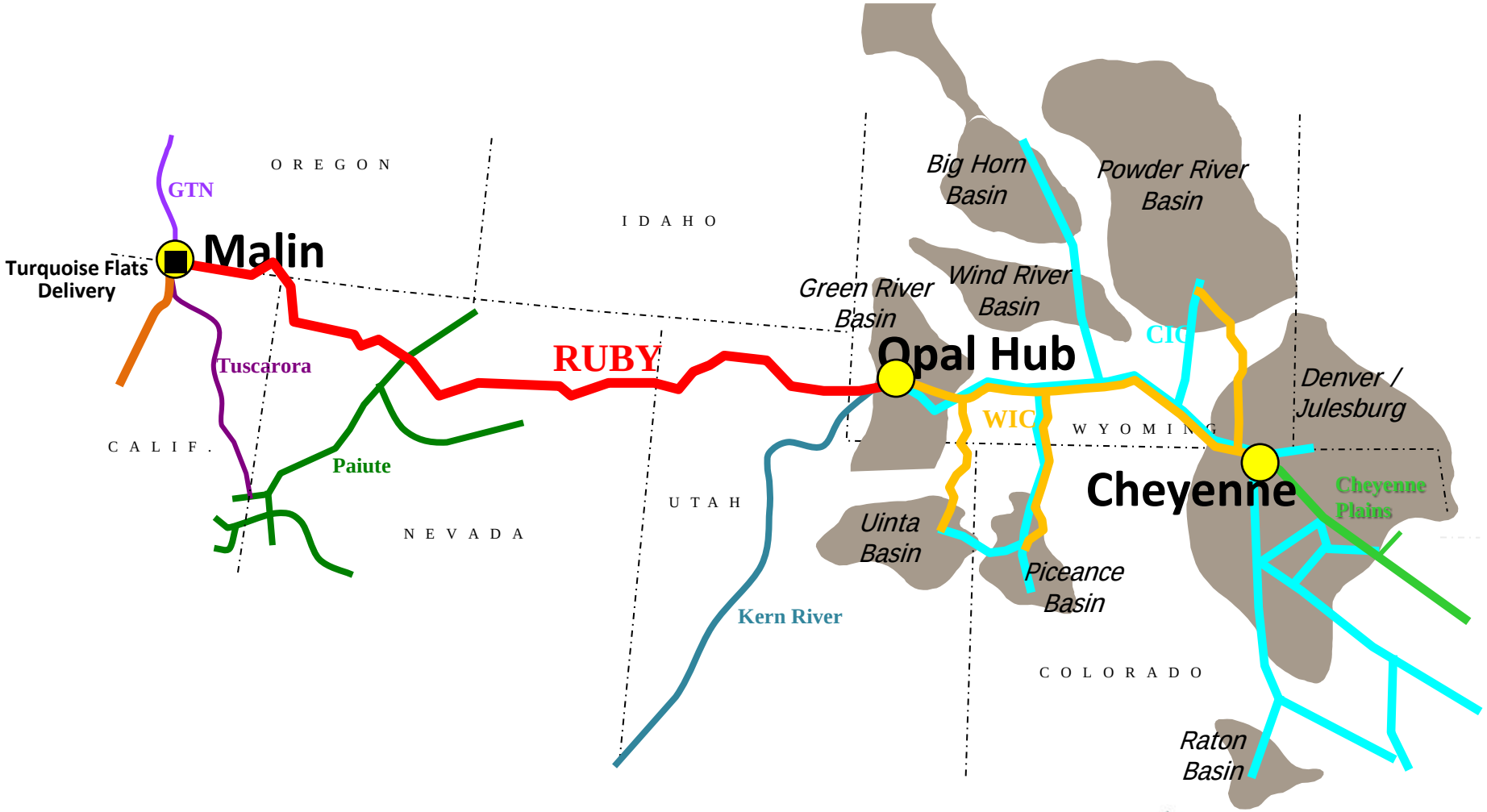
Ruby Supply Basin Access



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Meter Capacities

LOCATION NAME	AGG	METER CAPACITY MMCF/D	CONNECTING PIPELINE	MEAS PARTY
RECEIPTS				
DIAMONDVILLE	DMV	1,078	ENTERPRISE	RUBY
EMERALD SPRINGS	EMS	332	CIG	CIG
GEMSTONE CANYON	GEM	400	RYCKMAN CREEK	RUBY
PEARL CREEK	PRL	1,550	WILLIAMS	RUBY
TOPAZ RIDGE	TPZ	1,200	OVERTHRUST	OVT
DELIVERIES				
GEMSTONE CANYON	GEM	400	RYCKMAN CREEK	RUBY
GOLD PAN	GPN	20	PROSPECTOR	RUBY
ONYX HILL	OXH	1,522	PG&E - CGT	RUBY
OPAL VALLEY	OPV	223	PAIUTE (SWG)	RUBY
SAPPHIRE MTN.	SFR	347	TUSCARORA	RUBY
TURQUOISE FLATS	TQF	1,006	GTN	RUBY

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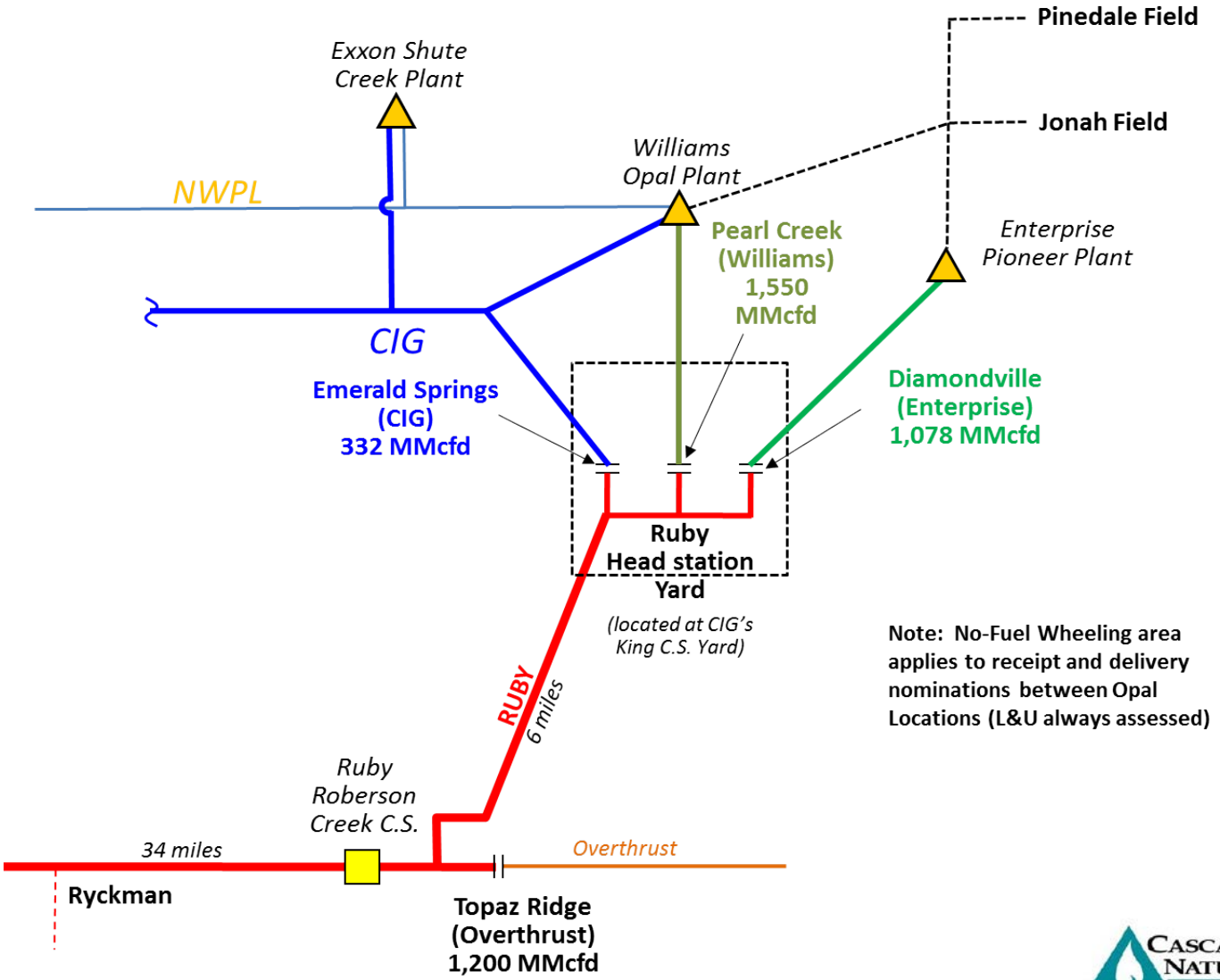
Ruby Opal Connections



Note: No-Fuel Wheeling area applies to receipt and delivery nominations between Opal Locations (L&U always assessed)

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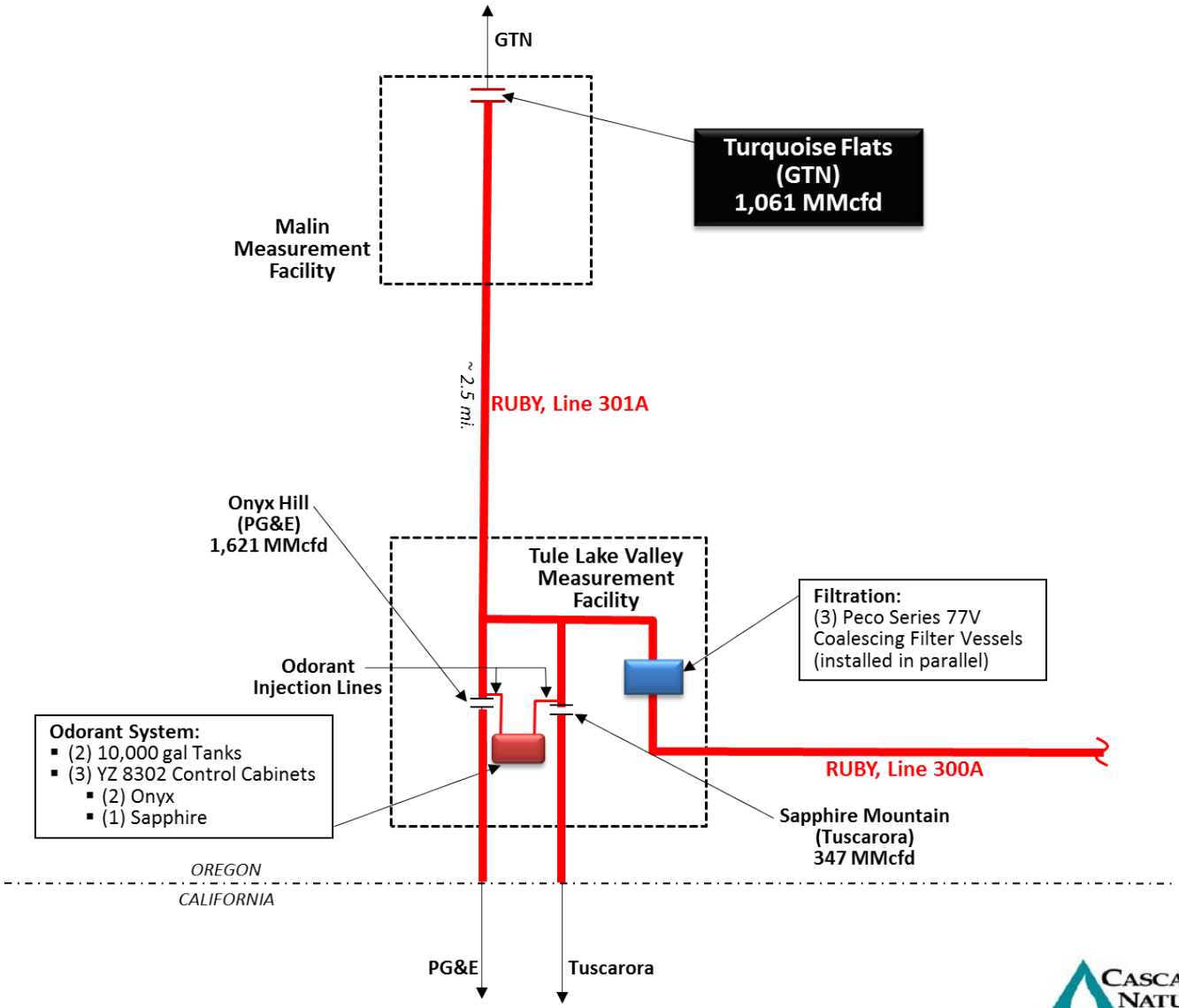
Ruby Malin Connections



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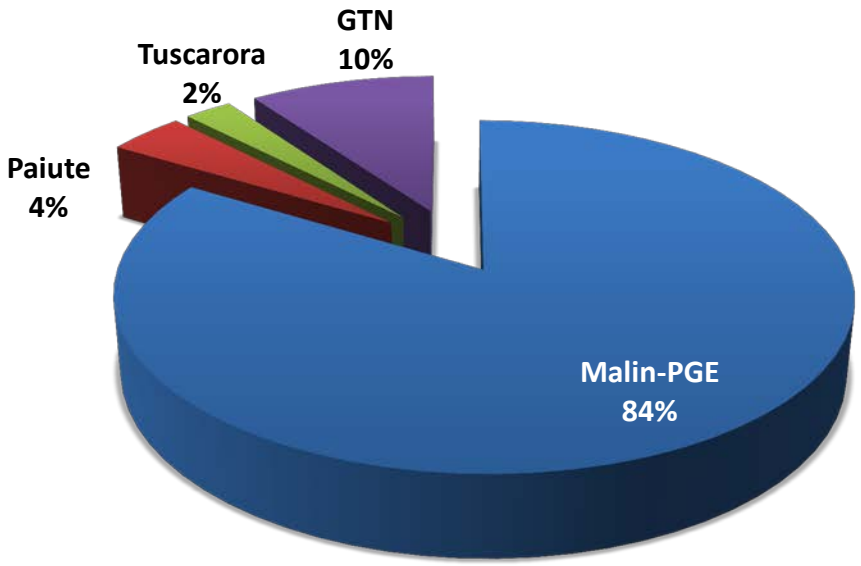
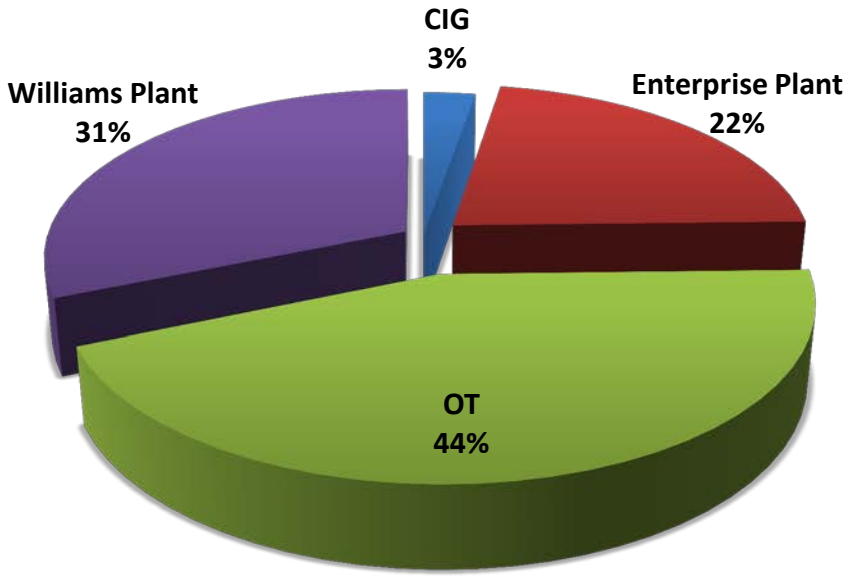
Ruby Flows – February, 2014

Ruby Delivery Breakdown



Ruby Receipt Breakdown



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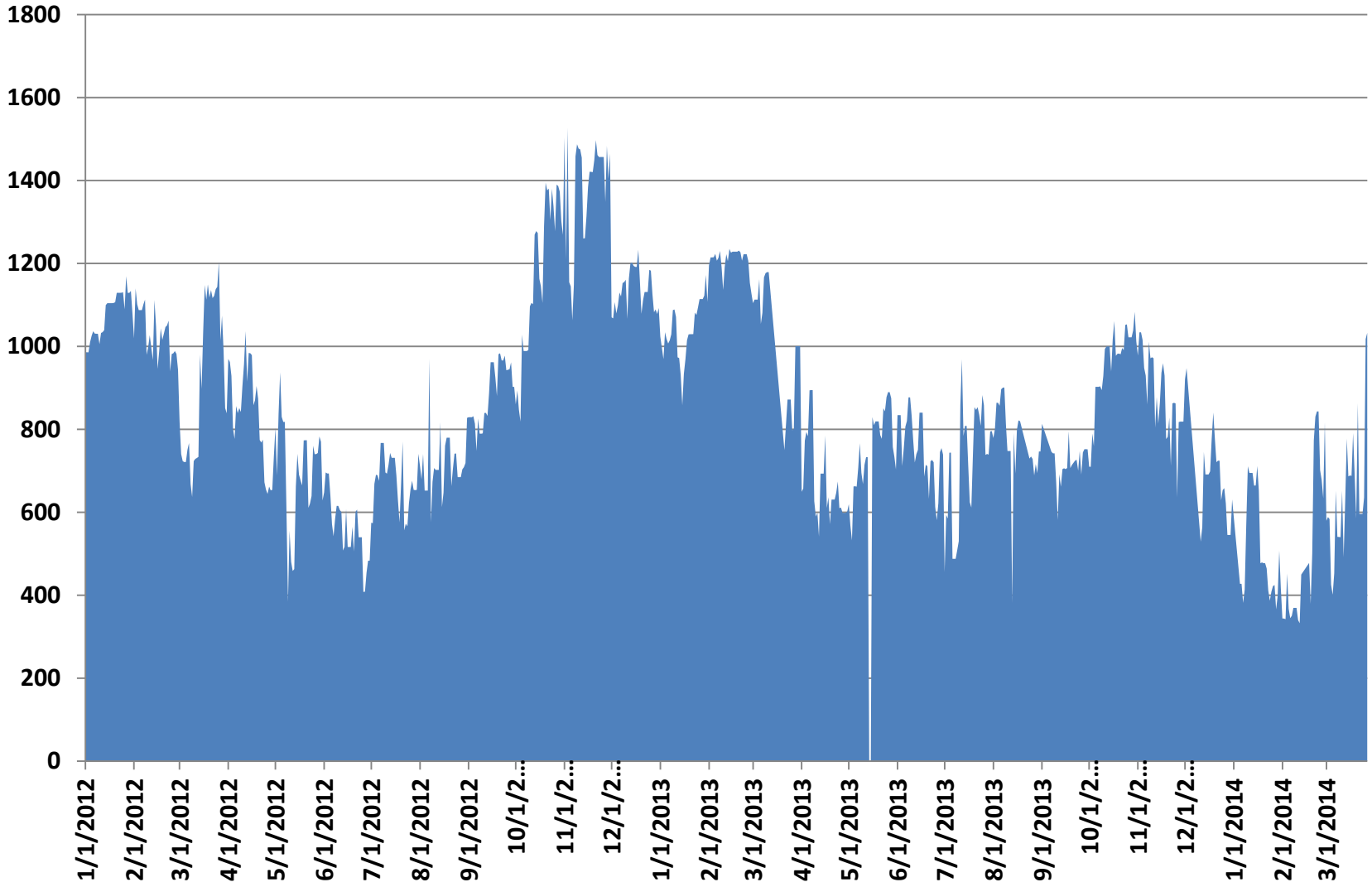
Ruby Flows



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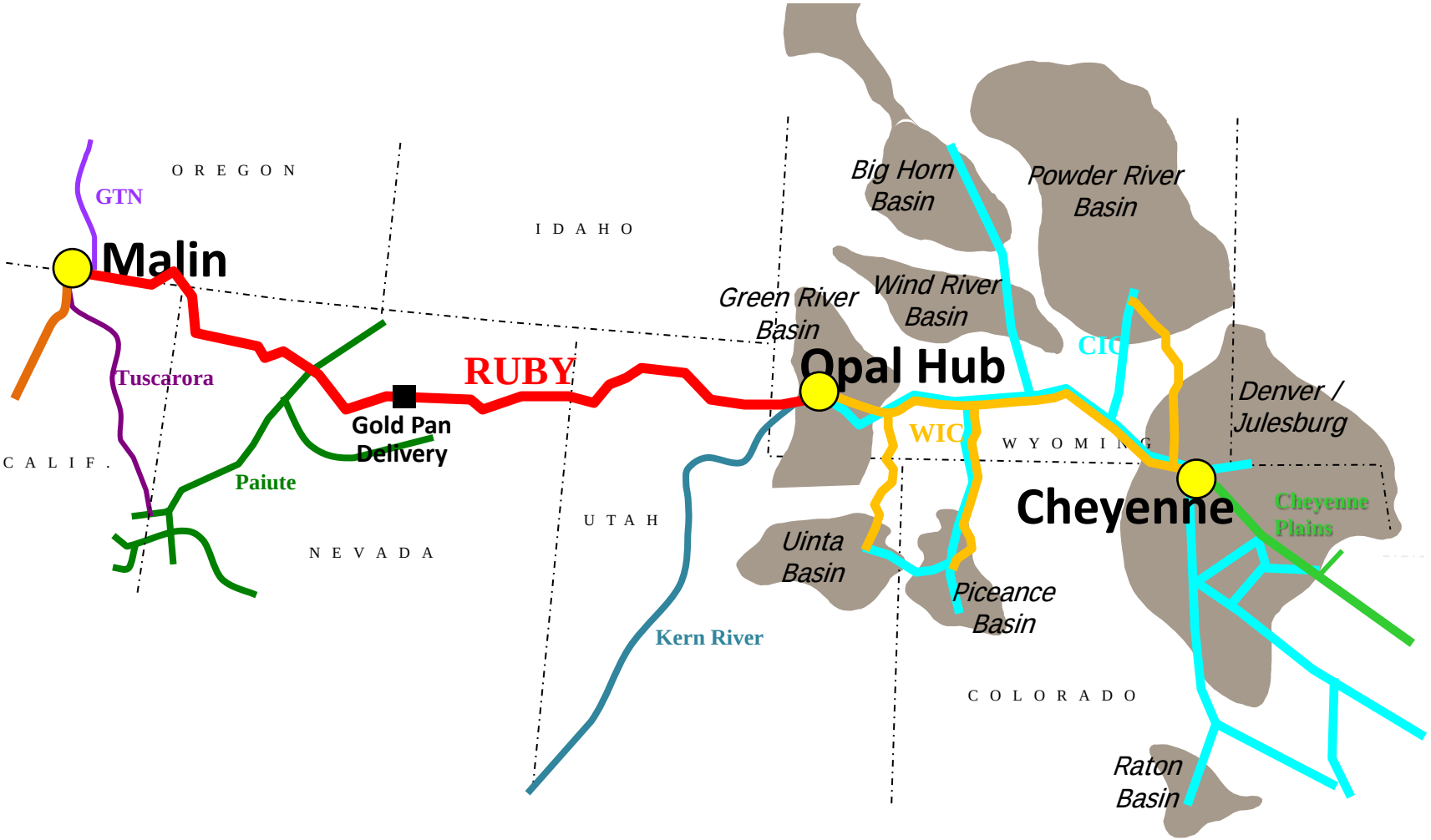
Current Cascade-Ruby Contract

- **Ruby Contract 61036000**
  - 10,000 Dth/d
  - November – April expires 10/31/37
  - Rcpt.- Pearl Creek (Williams) Del. – Turquoise Flats (GTN)
  - R1 - $22.8125 ($.75)
- **GTN Contract 12094**
  - Temporary release from El Paso Ruby Holding Co. LLC
  - 10,000 Dth/d
  - 11/1/12 – 3/31/18
  - 80% of max tariff rate
  - Rcpt.- Turquoise Flats (GTN) Del. – Stanfield

Winter Seasonal Capacity Availability

- Incremental 20,000/Dthd of available winter capacity
  - Can be combined with year round capacity
  - Any time before October 31, 2014
    - 2 months notice
  - Rate – R1 - $22.8125/ month ($.75 per Dthd)
  - 25-year term
- Ruby has additional, but limited, winter seasonal capacity above the 20,000 Dthd.

Ruby Supply Basin Access



Rockies Supply Summary

- Current Production = 10.3 Bcf/d
- Base case incremental wellhead supply growth from 2013 to 2023 = 3.2 Bcf/d:
  - DJ/Niobrara: 1.3
  - Green River: .5
  - Powder River: .2
  - Unita: .7
  - Piceance: .9
- Anticipate 30+ years of Rockies production growth
- Liquids Rich Gas Upside – Niobrara
- Resource/Production ratio = 100+ Years

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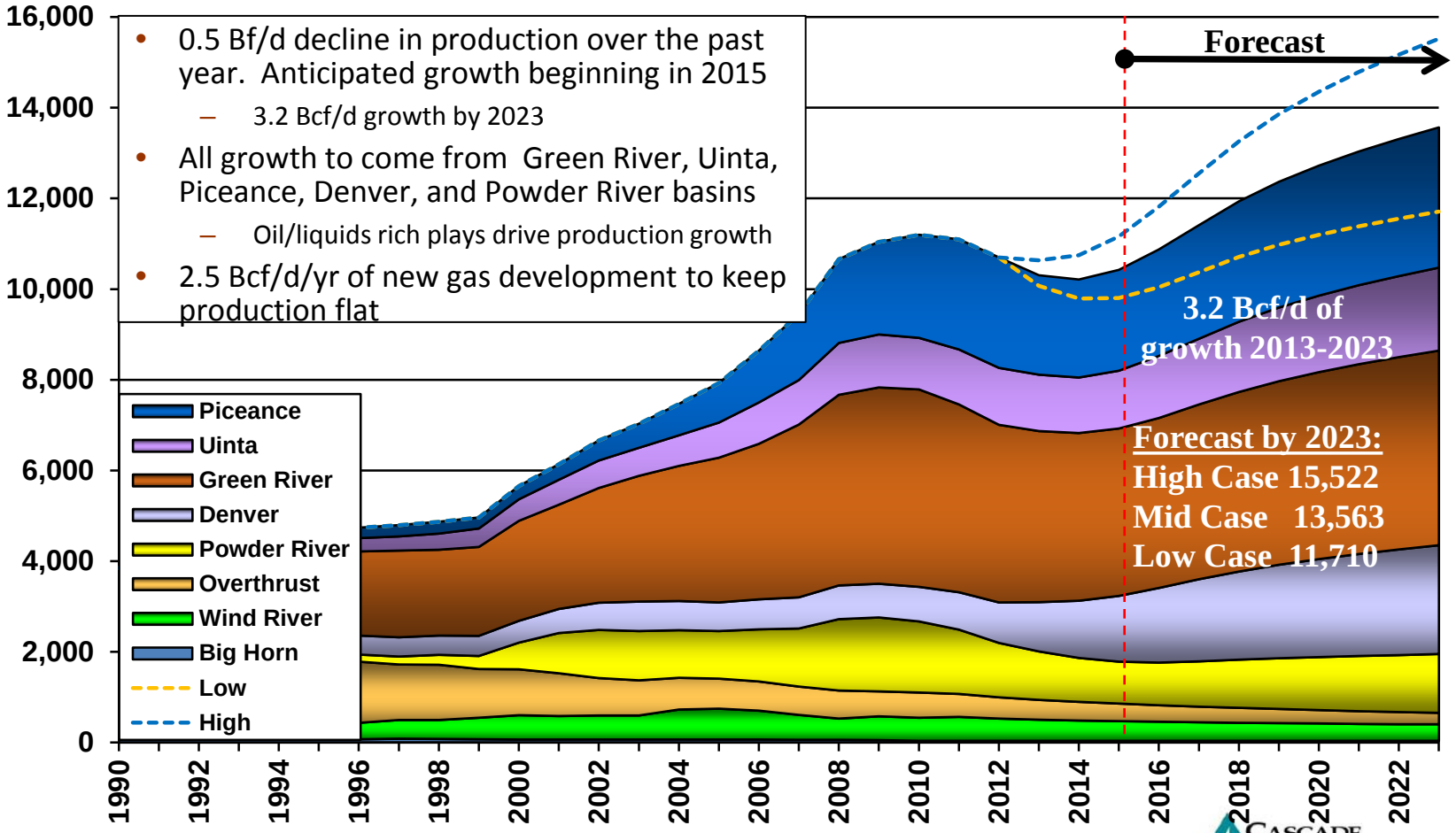
Rocky Mountain Production

Volumes are Wellhead – Measured in MMcfd



1990-2012: Wellhead total data from DI Desktop

2013-2023: Kinder Morgan forecast

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PGC Regional Resource Assessment

PGC Area	Traditional Gas Resources (Mean Value, Tcf)	Traditional Proportion of Total US	Change From 2010 Report	
Atlantic	741.3	33.4%	+387.7	110%
Gulf Coast	521.0	23.4%	+15.7	3.0%
Rocky Mountain	421.3	19.0%	+77.3	22.5%
Mid-Continent	269.5	12.1%	-2.7	-1.0%
Pacific	54.4	2.5%	+0.4	0.8%
North Central	20.8	0.9%	-0.8	-3.9%
Total Lower 48 U.S.*	**2,011.4**		+486.4	31.5%
Alaska	193.8	8.7%	0	0%
Total U.S. Traditional*	**2,225.6**		+486.4	28.0%

Data source: Potential Gas Committee (2013)

* Separately aggregated total. Area means are not arithmetically additive.

CBM not included

Ruby Pipeline Contacts

- **Tom Dobson**
  - Business Development, Account Director
  - 719-520-4606
  - Tom_dobson@kindermorgan.com

- **Steve Newell**
  - Marketing, Account Director
  - 719-520-4341
  - Stephen_newell@kindermorgan.com

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Some final comments

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Gas Supply Oversight Committee

- Committee meets at least four times each calendar year
- GSOC has final approval of the portfolio design
- Minutes of all GSOC meetings must be kept and must be approved by the Chair

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Gas Supply Oversight Committee

Voting Members:

- Exec VP Combined Utility Operations Support (Chair)
- Exec VP and General Manager – Western Region
- VP and Controller – Western Region
- VP, Operations
- Director, Gas Supply – Utility Group
- Director, Gas Supply & Gas Control – Western Region
- Director, Regulatory Affairs – CNGC

Non-Voting member:

- Manager, Supply Resource Planning (secretary) – CNGC

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THE RECEIPT VS DELIVERY "MISMATCH" ON CNGC'S PRINCIPLE NWP CAPACITY

- As a result of FERC Order 636, NWP was required to directly assign upstream capacity on GTN to the shippers that were using that capacity

- This caused NWP and GTN to directly assign GTN capacity to the LDC's upon the final conversion of the old bundled service.

- NWP allowed this direct assignment but refused to lower its capacity contract with Cascade to reflect the amount of direct assignment
    - In effect this increased Cascade's system wide capacity by the amount GTN would be directly providing to Cascade.

- The flexible receipt and delivery point situation that now exists on NWP with the 100002 contract is currently 316,994 dths/day of delivery rights vs. 205,123 dths of receipt rights.

- Cascade has the right to deliver gas supply to any delivery point within the states of Washington and Oregon so long as the Company's total Maximum Daily Delivery Obligation (delivery rights) is not exceeded.

- Cascade and NWP are constantly working together for ways to address Cascade's capacity shortfalls through re-alignment of our contractual rights where possible, which mitigates the need to acquire incremental capacity through expansions.

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RUBY AND GTN northbound CAPACITY

- In the recent past OPUC Staff has expressed concerns about Central Oregon's significant reliance on Alberta gas.

- Ruby capacity was acquired to enhance supply diversity and to address projected peak day capacity shortfalls.

- Utilizing Ruby provides the system with another path to move Rockies gas to serve Washington and Oregon from Stanfield when NWP constrained or operationally limited .

- Positions CNGC to acquire storage service at Ryckman Creek to primarily serve Central Oregon should future resource optimization analysis indicate the storage is a reasonable alternative resource.

- Current load forecasts indicates increasing peak day capacity shortfalls in Central Oregon over the next twenty years. A combination of incremental Ruby and GTN capacity may be a reasonable alternative to deliver Rockies supplies and enhance system flexibility to meet the needs of Central Oregon but Washington as well.

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Next Steps

- Questions?
- Comments?
- Concerns?
- Review Action Items

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Next Steps

The Agenda for the Second Meeting on May 1 (note the time change -- 9 a.m. to Noon).

- Introductions (10 min)
- Agenda (5 min)
- Update on Action Items from first workshop (20 min)
- Review of potential Ruby capacity (15 min)
- CNGC Ruby Scenario Runs (60 min)
- Discussion points for OR IRP addendum (30 min)
- Next Steps (10 min)
- Adjournment

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Adjournment

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Cascade Natural Gas Corporation

Capacity Workshop #1

Tuesday, April 8, 2014

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Cascade Natural Gas Workshop on Capacity Issues
April 8th, 2014 10:00 AM – 3:00 PM

Attachments:
Attachment A – Capacity Workshop 1 slides

I.) **Action Items** – Cascade Natural Gas must provide Oregon peak day load information for December. Cascade must also provide the system load for the entire heating season.

II.) **Introduction** – Mark Sellers-Vaughn opened the meeting with the agenda and background information. A few notes that were stated:
- Updated everyone that Cascade has filed and been granted an extension on the IRP filing date from both OPUC and WUTC.
- It was also mentioned that Cascade is working with MRE and Gelber & Associates on our load forecast modeling.
- Some background on current storage and allocation was given.

III.) **Williams Northwest Pipeline** – Mike Rasmuson presented Northwest Pipeline's information.
- Mike gave some background on the pipeline.
- He showed some weather forecasts and explained that if an extreme cold weather event hit during the latter part of the heating season there could be issues since storage capacities are low.
- Mike stated that NWP has been and will continue to look into expanding Jackson Prairie (JP) capacity.
- Cascade's contractual rights with NWP were summarized.
- 3 business development projects were shortly discussed.
    - Pacific Connector
    - Washington Expansion
    - Wenatchee lateral
        - **Action item:** Cascade needs to follow up and get information on the projects to analyze for the IRP.

IV.) **Closer look at Central Oregon** – Mark shortly discussed the capacity that serves Central Oregon and the shortfall of that capacity on peak day.

V.) **TransCanada** – Jay Story presented TransCanada Pipeline's information.
- Jay gave background information on the GTN system. Including:
    - Interconnecting Pipelines.
    - GTN System Available Capacity.
    - Primary Path Options and Differences.

VI.) **Ruby Pipeline** – Tom Dobson presented Ruby Pipeline information.

- Tom gave a background on the pipeline and showed maps of how the pipeline works and where the pipelines are.
- He summarized our current Cascade-Ruby contract.
- He showed the winter seasonal capacity availability.

VII.) **Final Comments** – Mark Sellers-Vaughn spoke about the final slides giving some information on GSOC and capacity issues.

VIII.) **Wrap-Up** – Mark Sellers-Vaughn noted that the next meeting will move from May 1st to May 5th. The agenda for the second meeting include:

- Update on Action Items from first workshop.
- Review of potential Ruby Capacity.
- CNGC Ruby Scenario Runs.
- Discussion points for OR IRP addendum.

Cascade Natural Gas Capacity Workshop #2
NWN Headquarters in Portland, OR
May 5th, 2014 9:00 AM – 11:30 AM

Attachments:
Attachment A – Capacity Workshop 2 slides
Attachment B – Attendance sheet

I.) **Action Items** – Cascade Natural Gas must provide OPUC with major inputs for non-Ruby alternative resources and possibly provide snapshots for a range of prices.

II.) **Introduction** – Mark Sellers-Vaughn (CNGC) opened the meeting with the agenda and background information. A few notes that were stated:
- Updated everyone that Cascade has filed and been granted an extension on the IRP filing date from both OPUC and WUTC.
- It was also mentioned that Cascade is working with MRE and Gelber & Associates on our load forecast modeling.
- Mark responded to action items from the first workshop meeting.

III.) **Forecast to be used in IRP Update** – Mark presented the forecast that will be used in the 2011 IRP Update.
- Current forecast methodologies were listed.
- Load growths were stated. Julianna Williams (WUTC) asked if the load growths consider conservation. The answer was yes.

IV.) **Recap of Capacity Issues** – Mark discussed conjunctive transportation, the capacity issues that serve Central Oregon and the shortfall of that capacity on peak day.
- Cascade Conjunctive Transportation Contracts were stated. Tamy Linver (NWN) asked if there was special meaning to the word "Conjunctive". The response was yes, conjunctive rights combine multiple imbalances into one imbalance.
- Ryckman Creek was also discussed.
- Teresa Hagins (NWP) also informed Cascade that there are small pockets along NWP near Kemmerer.
- Ryan Bracken (OPUC) asked if GTN was bi-directional. The answer is yes. A follow up question was if the flow was only on paper or if the actual molecules flow both ways. The answer was that GTN has the physical capability to flow natural gas both directions in the pipeline.

V.) **Overview of SENDOUT** – Mark discussed the overview of SENDOUT and SENDOUT inputs.
- He discussed input scenarios for Ruby and the Ruby impact SENDOUT inputs.
- Winter Seasonal Capacity Availability was stated.
- SENDOUT scenario results for Ruby were presented.

VI.) **Gas Supply Oversight Committee** – GSOC decision on current Ruby/GTN alternatives will be made no later than Friday, June 13, 2014.

VII.) **Final Comments** – Mark discussed the final slides.

- The outline of update to OR IRP was discussed.
- Conclusions were discussed.
- Next steps were presented
- Mark asked OPUC what CNGC may need to provide in the IRP update. The response was that it is CNGC's update and CNGC can include anything that needs to be updated.
- Mark asked WUTC if CNGC needs to file this update with the WUTC. Their response (Julianna)was that we did not need to file a formal update but they would like a copy of the update that is filed to OPUC.

VIII.) **Wrap-Up and important dates** – Mark discussed the IRP update process and dates. Mark asked if there needs to be another capacity issues workshop meeting. The decision was that there didn't need to be another meeting.

Sign-in Sheet

(503) 580-7667 CELL
(503) 378-3778 OFFICE

1. LISA GORSUCH OPUC lisa.gorsuch@state.or.us
2. Kelly Fukai Avista Kelly.Fukai@avistacorp.com
3. Ryan Bracken OPUC ryan.bracken@state.or.us
4. Jon Whiting CNGC Jon.whiting@CNGC.com
5. Steve Harper Avista steve.Harper@AvistaCorp.com
6. Jim Abrahamson CNGC Jim.Abrahamson@CNGC.com
7. Tamy S. Liver NNG tsl@nwnatural.com
8. Dean Gilbert NWN drg@nwnatural.com
9. Steve Storm NWN steve.stevestorm@nwnatural.com
10. Nadine Hanhan COB Nadine@oregoncub.org
11. Teresa Higgins NWP Teresa.L.Higgins@williams.com
12. Ben Hemson NW Gas Assoc. BHemson@NWGA.org
13. Dave Lenar NWN

Call-ins

1. John Klingele Public
2. Joan Wilmotte (CNGC)
3. Julianna Williams (WUTC)
4. Carolyn Stone (CNGC)
5. Amanda Sargent (CNGC)
6. Chris Robbins (CNGC)
7. Bob Morman (MDU)
8. John Cooley (CNGC)
9. Pamela Archer (CNGC)
10. Mike Parvinen (CNGC)
11. Omar Araujo (Fortis BC)
12. Steve from Ruby (didn't catch his last name) Steve Newell (Ruby)
13. Ed Finklea (NWIGU)
14. Micah Robinson (MRE)

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Capacity Workshop #2

Northwest Natural Gas Headquarters
Portland, Oregon

Monday, May 5, 2014

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Agenda

- Introductions
- Agenda
- Response to action items from 1st workshop
- Recap of forecast used for IRP update
- Recap of capacity issues
- Overview of SENDOUT optimization model
- SENDOUT inputs for scenarios for Ruby
- SENDOUT scenario results for Ruby
- GSOC Role in the process
- Review outline of draft update to OR IRP
- Next Steps
- Adjournment

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Why are we here

- OPUC agreed to IRP filing extension subject to having 2 workshops addressing capacity and potential to acquire additional Ruby capacity prior to Oct14
- First workshop on April 8, 2014 covered capacity system-wide
- Second workshop is specific to Ruby and GTN
- CNGC required to file an update to 2011 IRP (LC-54) by June 20th, containing CNGC analysis regarding any acquisition of incremental Ruby capacity which might occur before October 2014

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Response to Action Items

- Total Core peak day this past heating season was Saturday, December 7, 2013
  - Est 2,669,513 therms with 54 System HDD; normal 27 HDD
- Total Non-Core peak day this past heating season was Thursday, December 5, 2013
  - Est 4,291,483 therms
- Total System peak day this past heating season was Sunday, December 8, 2013
  - Est 6,812,672 therms (53 System HDD, normal is 27 HDD)

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Response to Action Items

- System peak day in Oregon this past heating season was Sunday, December 8, 2013
  - Est 1,606,690 therms

- System peak day in Washington this past heating season was Sunday, December 8, 2013
  - Est 5,205,982 therms

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Response to Action Items

- Total Core peak day in Oregon this heating season was Sunday, December 8, 2013
  - Est 730,344 therms

- Total Core peak day in Washington this last heating season was Saturday, December 7, 2013
  - Est 1,956,494 therms

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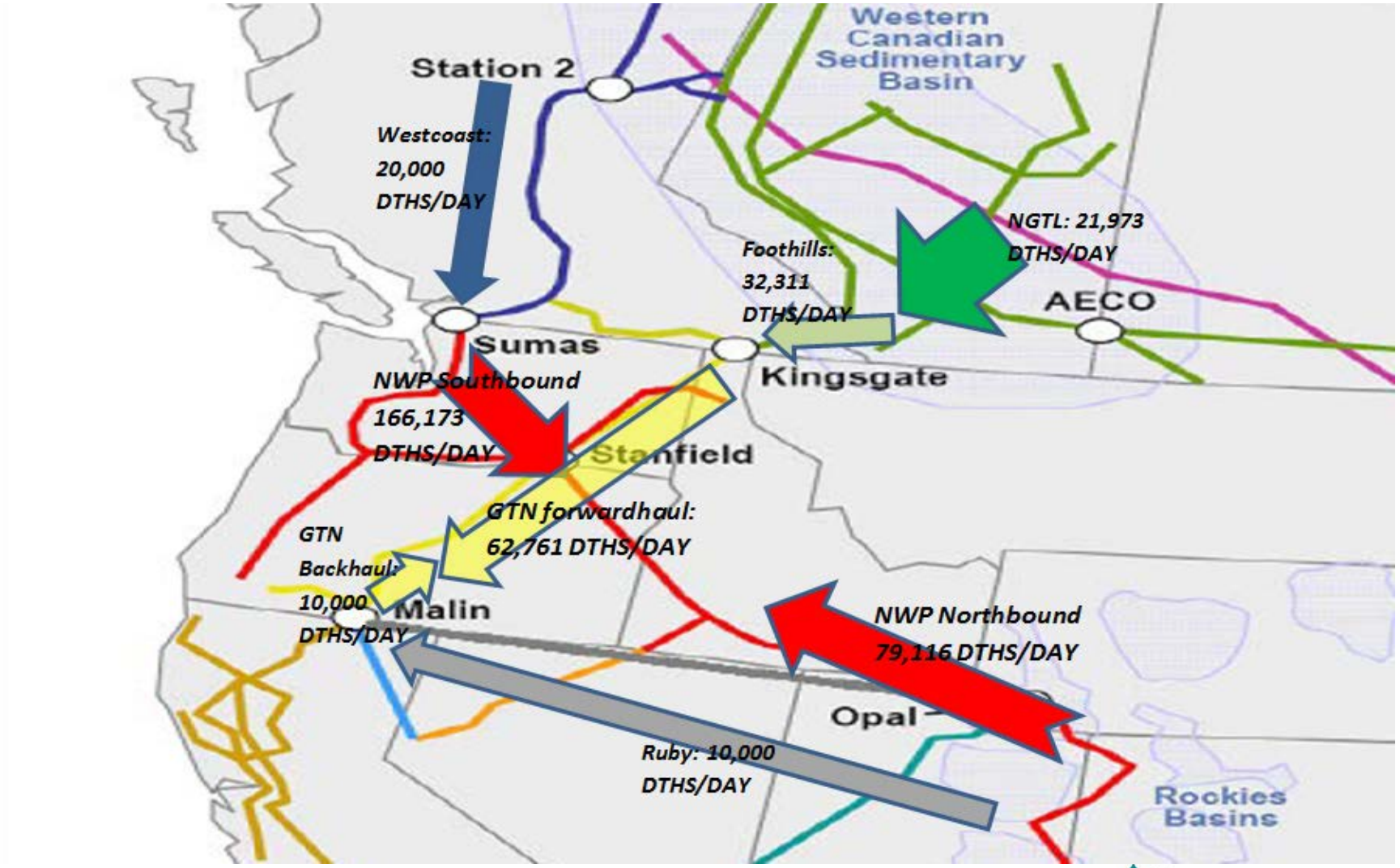
Example Transport Capacity Flow



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STORAGE

1) Goal is to cycle the storage accounts each heating season, dependent on demand and operating conditions
2) Assumes all accounts will be 35% full by June 30, 80% full by August 31, and 100% full by September 30
3) Unless noted, assumes normal weather with peak event
4) SGS01 balances based on historical data with inventory zero by end of April
5) SGS02, SGS622 and SGS626 assumes balance of 80% November, 40% December, 20% January and zero by end of February
6) Jackson Prairie storage and Plymouth LNG are utilized based on weather, market and operational conditions

Jackson Prairie
- SGS01
- SGS02
- SGS622
- SGS626

Plymouth LNG
- LS01

CASCADE STORAGE CONTRACTS		
	Storage Capacity	Withdrawl
Total	(decatherms)	(dths/day)
SGS01	604,351	16,789
SGS02	350,000	30,000
SGS622	102,782	3,500
SGS626	178,460	6,077
LS01	562,200	60,000

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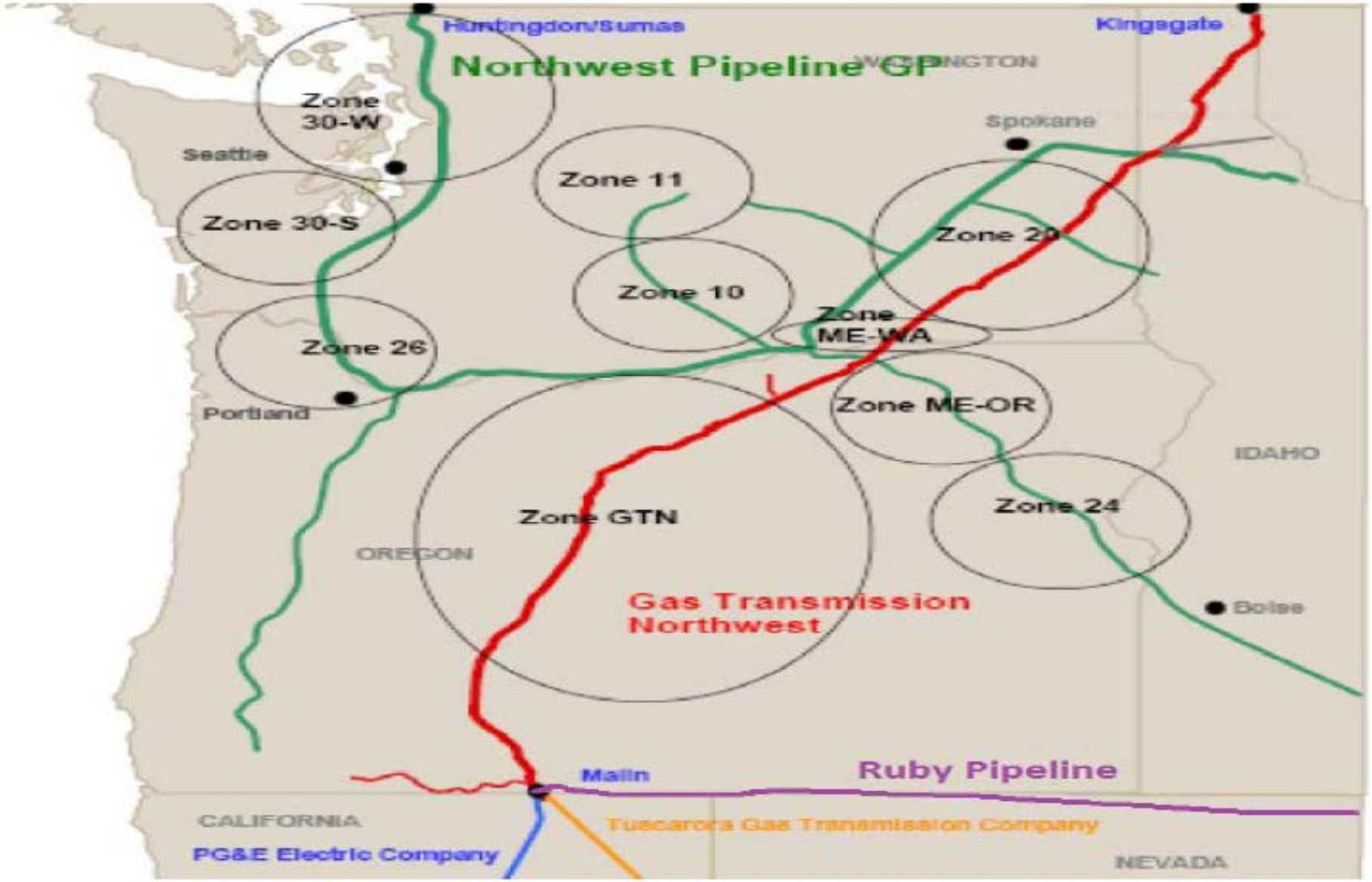
Cascade crosses multiple potential pipeline constraints due to the geographical complexity of our distribution system.



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Forecast to be used in IRP Update

- Update will use the forecast methodology from the 2012 IRP
- Forecast is not materially different than the 2011 Oregon IRP
- Forecast is at zonal level

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CURRENT FORECAST METHODOLOGY

- Cascade develops a 20-year forecast of customers, therm sales, and peak requirements Utilized in annual budgeting as well as long-term planning
- Customer counts are built from the district level up and take into account both demographic trends and economic conditions.
- •Usage forecast utilizes median household income, weather, and natural gas prices to determine therms per customer
- •A review of low and high growth scenarios examine load growth under poor and greater than expected improvements in economic conditions –Forecasts by Woods & Poole are altered to examine the strongest and weakest performing decades over thirty years
- •Peak day forecast is implemented in conjunction with a base load forecast, which attempts to ensure demand is met on the coldest days of the year –A 60-year weather history is obtained and peak day is based on the coldest day in the past 30 years , currently identified as 61 HDD
- –Therm usage is adjusted upward based on coldest day in *recent* history (56 HDD January 5, 2004) to 61 HDD to show what usage would have been at 61 HDD
- –Usage is applied to each district at the forecasted therm usage annual growth rate. The allocation rolls up to the IRP load zone level.
- •Various scenarios are developed

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Load Growth

Load growth across Cascade's system through 2032 is expected to fluctuate between 1.4 and 1.7% annually, with lower, recessionary growth in the short term. Load growth consists of a split between residential and commercial demand, with a slow decline in industrial demand.

	Residential	Commercial	Industrial	System
2012 – 2016	1.71%	1.68%	-3.22%	1.48%
2016 – 2021	1.78%	1.81%	-1.85%	1.66%
2021 – 2026	1.74%	1.83%	-1.06%	1.68%
2026 – 2031	1.50%	1.59%	-1.24%	1.46%
2011 – 2032	1.68%	1.73%	-1.84%	1.57%

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Peak Day

- Residential customers have higher temperature sensitivity than commercial or industrial
- Residential profile increases over planning horizon
- Peak Day is projected to increase at a higher rate than annual load

	Peak Growth		Peak Day Therms
2012 - 2013	1.263%	2013	3,649,738
2013 - 2020	1.918%	2020	4,166,993
2021 - 2025	1.910%	2025	4,580,669
2025 - 2032	1.760%	2032	5,176,348

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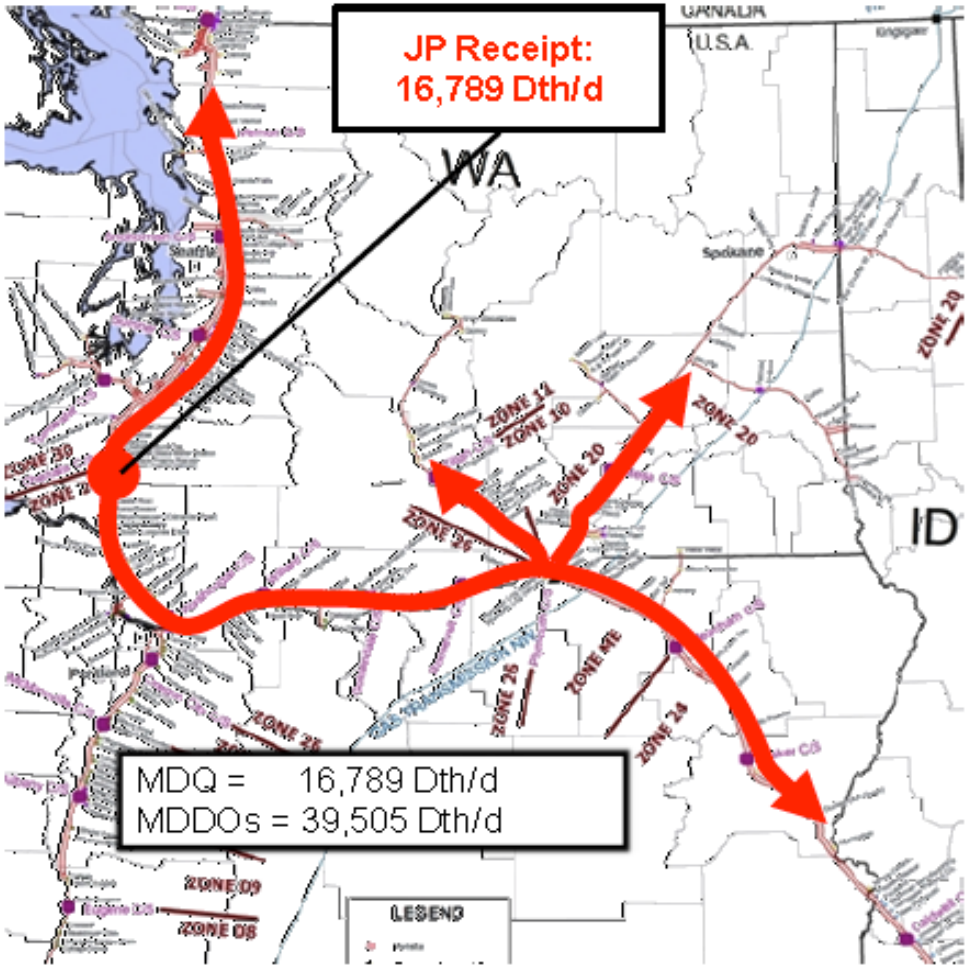
Cascade Conjunctive Storage Contract No.100302



Cascade's Contract No. 100302 contains:

- Multiple delivery points; and
- excess MDDOs.

As a result, it provides flexible corridor rights.

Source: Williams, Companies, Inc. All rights reserved.

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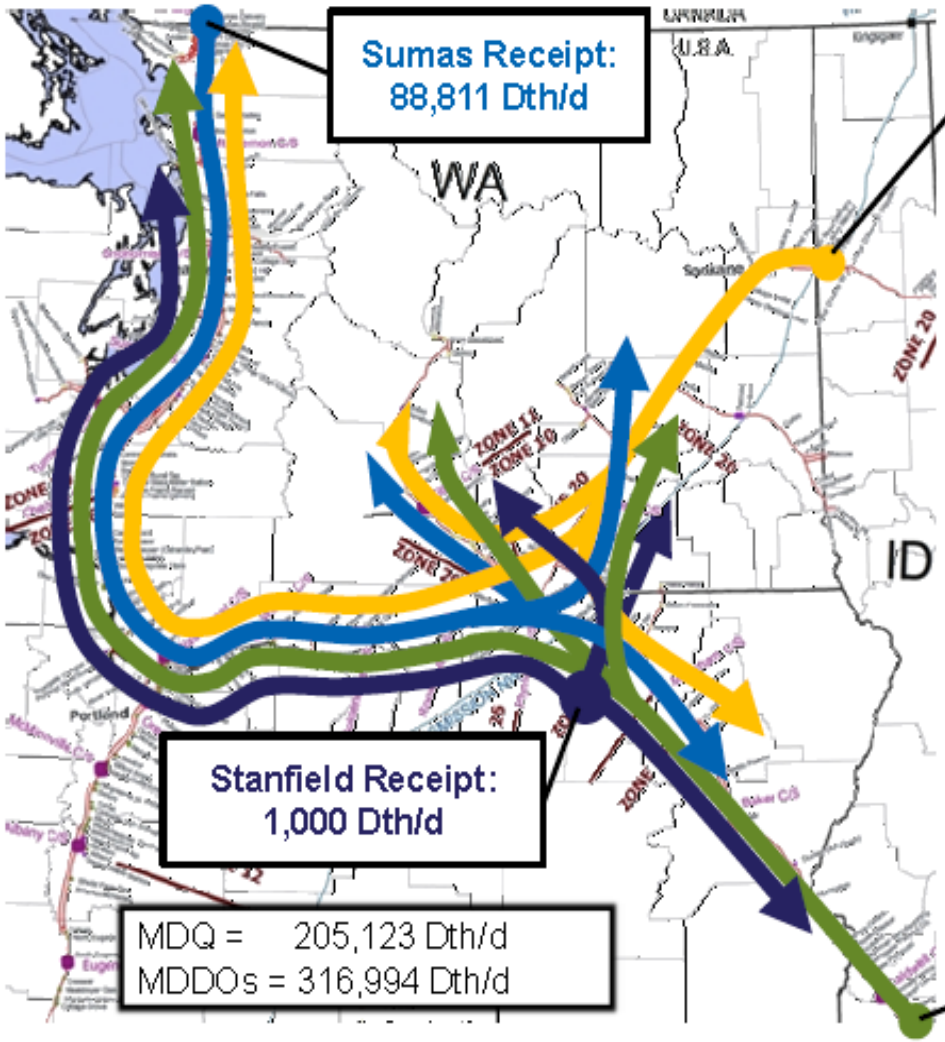
Cascade Conjunctive Transportation Contract No. 100002



Cascade's Contract No. 100002 contains:

- multiple receipt and delivery points; and
- excess MDDOs.

As a result, it provides flexible corridor rights.

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Capacity Allocation to Meet Peak-Day Demand

Williams
Ingenuity takes energy

- Below are some ideas to help identify potential capacity shortfalls based on peak-day load projections.
  - First, allocate capacity on contracts that have a single receipt point.
  - Second, allocate capacity on conjunctive contracts that provide corridor and delivery point flexibility.
- Allocationy Considerations:
  - Critical deliveries
  - Constrained laterals
  - Maintain Corridor Flexibility (longest-haul contractual rights)

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Using capacity to serve Central Oregon



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"Around the Horn"

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Ryckman Creek Storage



Ryckman Creek Storage

- Ryckman Creek Resources, LLC, a wholly-owned subsidiary of Peregrine Midstream Partners, LLC
- Ryckman Creek is located in Uinta County, Wyoming, near the Opal Hub.
- Ryckman Creek has converted a partially depleted oil and gas reservoir into a gas storage facility with 35 BCF of working gas and a maximum daily withdrawal rate of 480,000 Dths/d.
- Ryckman Creek Gas Storage Facility is located near the town of Evanston, Wyoming and approximately twenty-five miles southwest of the Opal Hub.
- Ryckman Creek currently has interconnects with Questar Gas Pipeline, Kern River Transmission, Questar Overthrust Pipeline, Ruby Pipeline and Northwest Pipeline.
- Previously conducted a non- binding Open Season to determine the interest of prospective customers in contracting for up to 8 BCF of firm working gas storage capacity beginning April 1, 2013.
- Events have impacted the timeline

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Overview of SENDOUT

- Resource integration is the last step in Cascade's IRP process.
- Reasonably least cost mix of demand and supply side resources given the forecasted load requirements of the core customers.
- Optimization model is SENDOUT™.
- This model permits the Company develop and analyze a variety of resource portfolios to help determine the type, size, and timing of resources best matched to forecast requirements.
- SENDOUT™ is very powerful and complex.
- It operates by combining a series of existing and potential demand side and supply side resources and optimizes their utilization, at the lowest net present cost over the entire planning period, for a given demand forecast.

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Overview of SENDOUT

- SENDOUT™'s broad capabilities allow the Company to develop supply and demand relationships that closely mirror Cascade's existing operations.
- Cascade continued to model demand areas grouped by the various pipeline zones, a practice that began with the 2008 IRP.
- Demand centers reflect on a daily basis, the aggregate 20 year load forecasts of Cascade's core market customers being served from either Northwest Pipeline GP (NWP) or Gas Transmission Northwest (GTN) interstate pipeline facilities.
- Individual transportation segments, storage, supply and demand side resources, both existing and potential, are targeted to these pipeline zones.
- SENDOUT™ considers each resource on an individual basis within the portfolio while also recognizing where physical system limitations exist.

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Overview of SENDOUT

- Resource characteristics include:
  - a supply contract's daily delivery capability
  - minimum take requirements
  - maximum daily transport capability by individual segment
  - and storage inventory limitations and withdrawal and injection curve characteristics can be part of each resource's basic model inputs.
  - The ability to model resources in this fashion allows SENDOUT™ to tailor its optimization within envisioned constraints and ensures that the model's optimal solution can work under anticipated operating conditions.
- However, because SENDOUT™ utilizes a linear programming approach, its results are considered "deterministic".
  - For example, the model knows the exact load and price for every day of the planning period
  - Based on the analyst's input and can therefore minimize costs in a way that would not be possible in the real world.
  - Therefore, it is important to acknowledge that provides helpful but not perfect information to guide decisions
  - It informs but does not decide ultimate resource portfolio

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One last disclaimer about optimization model

Decision Making Tool

- Analysis of optimization model results and other operational and contractual constraints allows Cascade to make more informed resource decisions. The IRP optimization model output and Monte-Carlo simulation analysis will provide the quantifiable output from numerous model inputs. The model does not prescribe the ultimate resource portfolio. It can only determine the least cost set of resources given their specific pricing and quantifiable constraint characteristics. However, there are many other combinations of resources that may be available over the planning horizon. Cascade must still make subjective risk judgments about unquantifiable and intangible issues related to resource selections. These will include future flexibility, supplier deliverability risk, pipeline(s) risk, financial risk to the utility and its ratepayers, operational constraints, regulatory risk, etc. The risk judgments are combined with the quantitative IRP analysis to form actual resource decisions.

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SENDOUT INPUTS

- Base Resources (current)

Category	SENDOUT ID	CD	WorkingInv	Inj Rights	WD Rights
Base Supplies		261,684			
Base Storage		56,366	1,235,593	VARIABLE	56,366
Base LS		-	562,200		60,000

- Current non-Ruby Alternative Resources

Category	SENDOUT ID	CD	WorkingInv	Inj Rights	WD Rights	Resv	Comm	Begin	
Incremental Jackson Prairie	INCREM SGS		350,000	10,000	15,000	$0.08 (MSQ)		Apr-17	20+
GTN Incremental (Kingsgate South)	INCR-PGT	40,000				$ 1.25	$ 0.0300	Nov-15	20+
NWP Incremental (All System)	INCR-WGPW	50,000				$ 1.50	$ 0.0300	Nov-16	20+
Station 2 to Kingsgate	S XING XPORT	5,000				$ 1.00	$ 0.0500	Nov-14	5 Yrs
Kingsgate to WCT Hunt	SOXING KNG	5,000				$ 1.00	$ 0.0500	Nov-14	5 Yrs
Washington Expansion down I-5	WaEXP-OR LNG	25,000				$ 1.25	$ 0.0300	Nov-16	20+
Mist Storage	MIST		300,000	10,000	10,000	$0.165 (MSQ)	$ 0.0600	Nov-18	20+
Biomass	BIOMASS	1,000				$ 6.00	$ -	Mar-17	20+
Satellite LNG	SATL LNG	1,000				$ 7.00	$ -	Nov-18	20+

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SENDOUT inputs for scenarios for Ruby

- 20 yr Increm Ruby Seasonal
- 20 yr increm Ruby Annual, includes Ryckman Creek
- All reasonably avail alternatives
- Ruby without Ryckman Creek
- Ruby with Ryckman parking service of 1 yr
- Ruby 3rd Party Cap Rel 7 yrs

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RUBY IMPACT SENDOUT INPUTS

- Ruby with discount, includes Ryckman Creek

Category	CD	WorkingInv	Inj Rights	WD Rights	Resv	Comm	Begin	
Ruby/GTN 20 Yr Increm Seasonal	Up to 20K (Nov-Mar)				$ 0.75	$ 0.0100	Nov-14	20 +
Ruby/GTN 20 Yr Increm Annual	Variable				$ 0.75	$ 0.0100	Nov-14	20 +
Ruby-BP Release/GTN	Up to 10K				$ 0.35	$ 0.0100	Nov-14	7 years
Ruby/GTN/Ryckman		500,000	10,000	14,000	$ 0.07 (MSQ)		Apr-15	20 +

- Ruby at full recourse tariff rate, includes Ryckman Creek

Category	CD	WorkingInv	Inj Rights	WD Rights	Resv	Comm	Begin	
Ruby/NWP/GTN Ryckman - NWP	2,500				$ 1.00	$ 0.0030	Apr-15	20+
Ruby/NWP/GTN Ryckman -Ruby	11,790				$ 0.95	$ 0.0100	Apr-15	20+
Ruby/GTN Ryckman Parking		250,000	10,000	20,000	$ 0.90	$ 0.0150	Nov-14	1 YR
	Up to 20K							

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Winter Seasonal Capacity Availability

- Incremental 20,000/Dths of available winter capacity
  - Can be combined with year round capacity
  - Any time before October 31, 2014
    - 2 months notice
  - Rate – R1 - $22.8125/ month ($.75 per Dths)
  - 25-year term
- Ruby has additional, but limited, winter seasonal capacity above the 20,000 Dths.

SENDOUT SCENARIO RESULTS FOR RUBY

- BASE RUBY DEAL
  - MODEL SELECTS RUBY CAPACITY APPROX 10,000 DTHS/DAY
  - MODEL COMBINES THIS WITH APPROX 20,000 DTHS DAY OF GTN TURQ-STAN CAPACITY FOR RYCKMAN DELIVERIES PLUS PEAK DAY
  - MODEL SELECTS RYCKMAN STORAGE AT 500,000 DTHS OR WORKING INVENTORY AND MDQ of APPROXIMATELY 14,000 DTHS/DAY

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SENDOUT SCENARIO RESULTS FOR RUBY

- ALL RESOURCE ALTERNATIVES
  - MODEL SELECTS RUBY CAPACITY APPROX 5,000 DTHS/DAY
  - MODEL COMBINES THIS WITH APPROX 5,000
  - MODEL SELECTS RYCKMAN STORAGE AT 500,000 DTHS OR WORKING INVENTORY AND MDQ of APPROXIMATELY 14,000 DTHS/DAY
  - MODEL ALSO SELECTS A INCREM STORAGE SIMILAR TO THE JP EXPANSION (350,000 DTHS)

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SENDOUT SCENARIO RESULTS FOR RUBY

- NO RYCKMAN STORAGE
  - MODEL SELECTS RUBY CAPACITY APPROX 11,000 DTHS/DAY; combines Annual with 3rd Party Cap Rel
  - MODEL COMBINES THIS WITH APPROX 21,000 DTHS DAY OF GTN TURQ-STAN CAPACITY FOR RYCKMAN DELIVERIES PLUS PEAK DAY
  - MODEL SELECTS CYCLES STORAGE ACCOUNTS MORE THAN ONCE
  - MODEL SELECTS INCREM GTN KINGSGATE-SOUTH OF APPROX 10,000 DTHS

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SENDOUT results for Ruby

- 20 yr Increm Ruby Seasonal - YES
- 20 yr increm Ruby Annual, includes Ryckman Creek - YES
- All reasonably avail alternatives - YES
- Ruby without Ryckman Creek - YES
- Ruby with Ryckman parking service of 1 yr - NO
- Ruby 3rd Party Cap Rel 7 yrs - YES

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Gas Supply Oversight Committee (GSOC) role in Ruby decision

- GSOC has final approval of the portfolio design
- Committee meets at least four times each calendar year
- Gas Supply reviews model results with GSOC
- Gas Supply make recommendation to GSOC
- GSOC considers results, recommendation and authorizes (or not) a action plan
- GSOC decision on current Ruby/GTN alternatives no later than Friday, June 13, 2014

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OUTLINE OF UPDATE TO OR IRP

- Update on discussions with NWP regarding delivery rights re-alignment and incremental vintage capacity acquisition program
- Update on incremental resources affecting Oregon
- Update on GSOC determination regarding securing Ruby capacity to meet load growth and add supply diversity
- Update on GSOC determination regarding securing Incremental Gas Transmission Northwest Pipeline (GTN) firm south-to-north capacity to meet load growth and add supply diversity
- Update on status of efforts to secure incremental storage for Oregon to meet load growth & mitigate price volatility over the planning horizon

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CONCLUSIONS

- NPV 20 YEAR PORTFOLIO COSTS ARE APPROXIMATELY THE SAME ACROSS SCENARIOS
- CASCADE'S BASE RESOURCE BASINS (ROCKIES, BC, AB) ARE STILL BEING UTILIZED ON EQUAL BASIS
- MIX OF ALTERNATIVES HAD LIMITED IMPACT ON THE OVERALL COSTS OF PORTFOLIO

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CONCLUSIONS

- EVEN WITHOUT RYCKMAN CREEK STORAGE, RUBY APPEARS TO BE VIABLE OPTION TO MOVE MORE ROCKIES GAS TO CENTRAL OREGON
- RUBY APPEARS TO CONTINUE TO ADD OPERATIONAL FLEXIBILITY
- MODEL LIKES THE VARIABLE QUANTITIES UNDER THE INCREMENTAL RUBY ANNUAL
  - DEPENDENT ON RUBY AGREEABLE TO LESS THAN 20,000 MAX
  - IN ABSENCE OF ANNUAL, THE SEASONAL DEAL IS AN ALTERNATIVE

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NEXT STEPS

- SOLICIT FEEDBACK FROM STAKEHOLDERS ON ALTERNATIVES
- GAS SUPPLY TO COMPLETE ANALYSIS OF SCENARIOS IN ORDER TO DETERMINE IF A RESOURCE ACQUISITION IS IN APPROPRIATE
- CONTINUE TO KEEP STAKEHOLDERS INFORMED OF PLANS
- PROVIDE GSOC WITH SUFFICIENT INFORMATION TO DETERMINE IF FURTHER ACTION (ACQUISITION) IS NECESSARY

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Does CNGC need to provide an IRP update to OPUC, if any, regarding

- Demand Forecasting
- Distribution System Constraint Analysis
- Demand Side Resources
- Supply Side Resources
- Integration

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Question for WUTC Staff on the OPUC IRP update

- Does Washington Staff want Cascade to file this update also with the WUTC?
- If so, does WUTC Staff have any additional items they expect to be covered in the update?

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THE PROCESS CONTINUES…

- Any Action Items?
- As required by OPUC, CNGC will file an update to 2011 IRP (LC-54) by Friday, June 20, 2014 with stakeholders
- Stakeholders comments on IRP update due Friday, July 18, 2014
- CNGC responds to stakeholder comments by Friday, August 1, 2014
- If needed, OPUC Staff issues final comments on IRP update by Friday, August 8, 2014
- If needed, CNGC responds to final comments on IRP update by Friday, August 15, 2014
- OPUC issues Staff Report on IRP update on Tuesday, August 26, 2014
- Public Meeting regarding 2011 OR IRP update (early September, 2014)

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ADJOURNMENT

Cascade Natural Gas Corporation

Capacity Workshop #2

Northwest Natural Gas Headquarters
Portland, Oregon

Monday, May 5, 2014

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Oregon Public Utility Commission
Adopted IRP Guidelines

Guideline 1: Substantive Requirements

a. *All resources must be evaluated on a consistent and comparable basis.*

- *All known resources for meeting the utility's load should be considered, including supply-side options which focus on the generation, purchase and transmission of power – or gas purchases, transportation, and storage – and demand-side options which focus on conservation and demand response.*

  Explanation: Cascade made every effort to include all known supply and demand side options. Supply side options studied include not only the gas itself, but also the pipeline capacity required to transport the gas, the Company's gas storage options, and the system enhancements necessary to distribute the gas. The demand side study looked at all the potential energy savings potentially available within the Company's service territory. Section 5 focuses on supply side resources, while Sections 3 and 6 focused on demand side options including conservation and demand response options. The use of a resource integration model allows the utility to compare resources on a consistent and comparable basis. The results of the integration modeling can be found in Section 7.

- *Utilities should compare different resource fuel types, technologies, lead times, in-service dates, durations and locations in portfolio risk modeling.*

  Explanation: Sections 5 and 6 of the text focus on the demand side and supply side alternatives. Section 6 discusses Demand side resources available including an assessment of the conservation potential that would be available over the planning horizon. The complete list of measures available in Cascade's Oregon service territory is provided in Appendix D.

  On the supply side, Section 5 discusses the supply resources available over the planning horizon. The supply-side options range from existing and proposed interstate pipeline capacity options, various storage options, including leased underground storage alternatives, imported LNG, as well as Satellite LNG facilities located at various locations within the Company's service territory, and unconventional supplies such as Bio-gas. Appendix E clearly defines each resource's availability, pricing assumptions, location and assumed in-service date.

- *Consistent assumptions and methods should be used for evaluation of all resources.*

Explanation: To the best of its ability, Cascade evaluated all resources, both supply and demand side, on a consistent basis and objectively applied the same common assumptions, approaches and methodology to each option. The resource integration analysis was accomplished through the use of the SENDOUT model. Section 7 contains the specific descriptions of the resource evaluation methodology.

- *The after-tax marginal weighted-average cost of capital (WACC) should be used to discount all future resource costs.*

  Explanation: In the 2014 IRP, the Company uses a real after-tax discount rate of 4.17 percent.

b. *Risk and Uncertainty must be considered.*

- *At a minimum, utilities should address the following sources of risk and uncertainty:*
  Natural gas utilities: demand (peak, swing and baseload), commodity supply and price, transportation availability and price, and cost to comply with any regulation of greenhouse gas emissions.

  Explanation: This Plan (study) is characterized by risk and uncertainty because the Company cannot perfectly predict the contributing data such as future customer counts, economic conditions, market changes and weather conditions. However, this study analyzes risk-related data such that the Company can make reasonable assumptions. Cascade utilized low, medium, and high demand scenarios with low, medium, and high supply cost and availability scenarios to evaluate a range of potential future environments. These scenarios were run through Monte Carlo analysis in the Sendout program to analyze variations in inputs and subsequent demand sensitivities, pricing, and resource timing and selection. Additionally, the company ran several scenarios that capture the range of costs associated with complying with potential greenhouse gas emissions. The company incorporated a range of scenarios that include varying implementation timelines, ranges of throughput subject to potential cap and trade legislation, along with a range of costs associated with purchasing carbon credits.

- *Utilities should identify in their plans any additional sources of risk and uncertainty.*

  Explanation: Various sources of risk and uncertainty are explained in Sections 3 (with respect to the Demand Forecast), 5 (Supply Side Resources), and 6 (Demand Side Resources).

c. *The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.*

- *The planning horizon for analyzing resource choices should be at least 20 years and account for end effects. Utilities should consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon and the life of the resource.*

  Explanation: This IRP contains the Company's long-range analysis of load and resources spanning a 20-year horizon.

- *Utilities should use present value of revenue requirement (PVRR) as the key cost metric. The plan should include analysis of current and estimated future costs for all long-lived resources such as power plants, gas storage facilities, and pipelines, as well as all short-lived resources such as gas supply and short-term power purchases.*

  Explanation: The Company's *SENDOUT*® modeling software uses a PVRR cost metric methodology, which provides resource portfolio costs in both nominal and real (present value) dollars that is applied to resources of varying expected lives.

- *To address risk, the plan should include, at a minimum:*

  1. *Two measures of PVRR risk: one that measures the variability of costs and one that measures the severity of bad outcomes.*

     Explanation: Through application of the SENDOUT® software, the Company modeled 200 scenarios around varying gas price and weather inputs via Monte Carlo iterations thereby developing a distribution of annual cost estimates utilizing SENDOUT®'s PVRR methodology. Section 7 further describes this analysis while Figure 7-J summarizes this analysis graphically. The variability of costs is plotted against the Base case while the scenarios beyond the 95th percentile capture the severity of bad outcomes.

  2. *Discussion of the proposed use and impact on costs and risks of physical and financial hedging.*

     Explanation: Section 5 discusses Cascade's physical and financial hedging methodology.

- *The utility should explain in its plan how its resource choices appropriately balance cost and risk.*

Explanation: Section 7 discusses Cascade's cost/risk trade off analysis.

d. *The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies.*

Explanation: In preparing this plan, Cascade considered the guidelines contained in OPUC Order No. 07-047 as evidenced in this appendix and discussed in greater detail throughout the Plan.

Cascade considered both current and expected state and federal energy policies in portfolio modeling. Section 2 describes the decision making process used to derive portfolios which are consistent with state resource policy directions.

Guideline 2: Procedural Requirements

a. *The public, which includes other utilities, should be allowed significant involvement in the preparation of the IRP. Involvement includes opportunities to contribute information and ideas, as well as to receive information. Parties must have an opportunity to make relevant inquiries of the utility formulating the plan. Disputes about whether information requests are relevant or unreasonably burdensome, or whether a utility is being properly responsive, may be submitted to the Commission for resolution.*

Explanation: The public has been given considerable opportunities to participate in the development of Cascade's 2014 IRP. Section 1 discusses an overview of the public process.

b. *While confidential information must be protected, the utility should make public, in its plan, any non-confidential information that is relevant to its resource evaluation and action plan. Confidential information may be protected through use of a protective order, through aggregation or shielding of data, or through any other mechanism approved by the Commission.*

Explanation: As evidenced by the material included throughout the plan, the Company has put forth all relevant non-confidential information necessary to produce a comprehensive Plan.

c. *The utility must provide a draft IRP for public review and comment prior to filing a final plan with the Commission.*

Explanation: The Company, as identified in its Work Plan(s) was scheduled to provide a draft of the IRP with both the WUTC, OPUC and to all Technical Advisory Group (TAG) members. On May 6, 2015 notified the parties that a medical emergency for a critical member of the team would require Cascade to request an extension from May 29 to July 17, 2015 for filing the IRP. It was anticipated that the team would be back to "full-strength" in mid-June. Unfortunately, the medical leave was not lifted until July necessitating a streamlined process to meet the new filing deadline. Cascade has recently added incremental staff in support of the IRP, which we hope will prevent future problems in this area.

Guideline 3: Plan Filing, Review, and Updates

a. *The utility must file an IRP for within two years of its previous IRP acknowledgement order.*

Explanation: The Company is required by OAR 860-027-0400(3) to file its Integrated Resource Plan within two years after the date the previous plan was acknowledged. Cascade's 2011 Integrated Resource Plan was acknowledged by Order 12-342 on August 14, 2012. Cascade Natural Gas Corporation previously requested and received an extension of its 2014 Integrated Resource Plan from the August 14, 2014 deadline to February 11, 2015, and ultimately to July 17, 2015. The initial extension was requested in order to allow additional time for Cascade to develop, document, build, test and ultimately implement a new demand forecast methodology and model to provide more load demand granularity to its SENDOUT supply resource analysis and preferred portfolio analyses. A similar request was made to the WUTC under docket UG-140181. It was ultimately agreed that Cascade would publish a concurrent Oregon/Washington IRP.

b. *The utility must present the results of its filed plan to the Commission at a public meeting prior to the deadline for written public comment.*

Explanation: Cascade will adhere to this guideline.

c. *Commission Staff and parties should complete their comments and recommendations within six months of IRP filing.*

Explanation: The Company received initial comments from Staff on its published draft plan and looks forward to working with Staff and interested parties in their review of this Plan.

Guideline 4: Plan Components

At a minimum the plan must include the following elements:
a. *An explanation of how the utility met each of the substantive and procedural*

requirements.

Explanation: This Appendix is intended to comply with this guideline by providing an itemized response to each of the substantive and procedural requirements.

b. *Analysis of high and low load growth scenarios in addition to stochastic load risk analysis with an explanation of major assumptions.*

Explanation: The Base Case demand forecast uses the Company's projected customer growth and projected prices. This IRP considers two departures from the Base Case demand forecast, including low, medium, and high demand growth forecasts, as well as stochastic risk analysis. Section 3 discusses the Demand Forecast scenarios and their assumptions and Section 7 provides the scenario and risk analysis results.

c. *For electric utilities … (Not applicable)*

d. *For natural gas utilities, a determination of the peaking, swing and base-load gas supply and associated transportation and storage expected for each year of the plan, given existing resources; and identification of gas supplies (peak, swing and base-load), transportation and storage needed to bridge the gap between expected loads and resources.*

Explanation: Section 5 details determination of gas supply and associated transportation and storage options, while Section 7 incorporates the forecasted demand load and necessary options to meet that load.

e. *Identification and estimated costs of all supply-side and demand-side resource options, taking into account anticipated advances in technology.*

Explanation: Section 6 along with Appendix D identifies the demand side resources options included in this plan. Section 5 along with Appendix E details all supply-side options included in this plan.

f. *Analysis of measures the utility intends to take to provide reliable service, including cost-risk tradeoffs.*

Explanation: Sections 3 and 4 discusses the modeling tools, customer growth forecasting and cost-risk considerations used to maintain and plan a reliable gas delivery system. Section 5 discusses the diversified infrastructure and multiple supply basin approach that acts to mitigate certain reliability risks.

g. *Identification of key assumptions about the future (e.g., fuel prices and environmental compliance costs) and alternative scenarios considered.*

Explanation: Section 7 details the key assumptions and alternative scenarios considered in the Plan.

h. *Construction of a representative set of resource portfolios to test various operating characteristics, resource types, fuels and sources, technologies, lead times, in-service dates, durations and general locations - system-wide or delivered to a specific portion of the system.*

Explanation: This Plan documents the development and results for resource options evaluated in this IRP See also guideline 1c for further discussion on resource mix alternatives to portfolios.

i. *Evaluation of the performance of the candidate portfolios over the range of identified risks and uncertainties.*

Explanation: The company evaluated its preferred portfolio by performing stochastic analysis using the Monte Carlo functionality within the SENDOUT model. The analysis allowed for varying price and weather scenarios under 200 different scenarios. Additionally the portfolio of options was reviewed under deterministic scenarios where demand and price vary. For resources selected, we considered other risk factors such as varying lead times required and potential changes in costs in order to test the Base case scenario assumptions.

j. *Results of testing and rank ordering of the portfolios by cost and risk metric, and interpretation of those results.*

Explanation: Section 7 describes the resource options evaluated, including discussion on uncertainties in lead times and costs as well as viability and resource availability. Table 7-1 describes the testing and ranks the order of the portfolios and the interpretation of those results.

k. *Analysis of the uncertainties associated with each portfolio evaluated.*

Explanation: See the responses to 1.b above.

l. *Selection of a portfolio that represents the best combination of cost and risk for the utility and its customers.*

Explanation: Cascade evaluated cost/risk tradeoffs for each of the risk analysis portfolios considered. Section 7 shows the company's portfolio risk analysis, as well as the process and determination of the preferred portfolio.

m. *Identification and explanation of any inconsistencies of the selected portfolio with any state and federal energy policies that may affect a utility's plan and any barriers to implementation.*

Explanation: This IRP has presumed no inconsistencies with existing policies. Potential barriers to implementation of the Plan relate to the ultimate availability and

timing of certain incremental resources selected (e.g. both Satellite and Import LNG, the Rockies pipeline expansion projects along with Biogas alternatives within CNG's distribution system).

n. *An action plan with resource activities the utility intends to undertake over the next two to four years to acquire the identified resources, regardless of whether the activity was acknowledged in a previous IRP, with the key attributes of each resource specified as in portfolio testing.*

Explanation: Section 8 presents the Company's 2-year action plan, which identifies the short term actions the Company plans to pursue.

Guideline 5: Transmission

Portfolio analysis should include costs to the utility for the fuel transportation and electric transmission required for each resource being considered. In addition, utilities should consider fuel transportation and electric transmission facilities as resource options, taking into account their value for making additional purchases and sales, accessing less costly resources in remote locations, acquiring alternative fuel supplies, and improving reliability.

Explanation: Not applicable to Cascade's gas utility operations

Guideline 6: Conservation

a. *Each utility should ensure that a conservation potential study is conducted periodically for its entire service territory.*

Explanation: As discussed in Section 6, Cascade retained the services of Stellar Processes to analyze the potential energy savings it can cost-effectively procure within its Washington service territory for this IRP and continues to use this model. A similar study was prepared by Stellar Processes for the ETO, in consultation with Cascade, to assess the potential energy savings within Cascade's Oregon service territory. The ETO and Cascade continue to work with Stellar Processes (Stellar) to review existing demographic and energy efficiency measures data sources to identify and quantify technical and achievable resource potential.

b. *To the extent that a utility controls the level of funding for conservation programs in its service territory, the utility should include in its action plan all best cost/risk portfolio conservation resources for meeting projected resource needs, specifying annual savings targets.*

Explanation: Achievable potential DSM savings per customer class in Cascade's Oregon and Washington service territories with cost-effective screening at the Company's Base Case avoided cost is summarized in Section 6.

c. *To the extent that an outside party administers conservation programs in a utility's service territory at a level of funding that is beyond the utility's control, the utility should: 1) determine the amount of conservation resources in the best cost/ risk portfolio without regard to any limits on funding of conservation programs; and 2) identify the preferred portfolio and action plan consistent with the outside party's projection of conservation acquisition.*

Explanation: Because the Company believes funding options are available and understands Staff agrees with this assumption, this guideline is being treated as not applicable.

Guideline 7: Demand Response

Plans should evaluate demand response resources, including voluntary rate programs, on par with other options for meeting energy, capacity, and transmission needs (for electric utilities) or gas supply and transportation needs (for natural gas utilities).

Explanation: Cascade has addressed periodically evaluated conceptual approaches to meeting capacity constraints using demand-response and similar voluntary programs. Interruptible sales service is the most reliable method of achieving demand response (see discussion in Section 6).

Guideline 8: Environmental Costs (As revised in UM1302)

Utilities should include, in their base-case analyses, the regulatory compliance costs they expect for CO2, NOx, SO2, and Hg emissions.

Explanation: Unlike electric utilities, environmental costs rarely impact a gas utility's supply-side resource choices. Section 6 discusses Cascade's assumptions regarding expected environmental costs through a range of possibilities. In Section 7, the Company discusses the impact on system costs based on alternative implementation time lines, cost adders and varying levels of allowances.

Guideline 9: Direct Access Loads

Explanation: Not applicable to natural gas utility.

Guideline 10: Multi-state Utilities

Multi-state utilities should plan their generation and transmission systems, or gas supply and delivery, on an integrated-system basis that achieves a best cost/risk portfolio for all their retail customers.

Explanation: Cascade's 2014 IRP includes its Oregon and Washington service territories and utilizes an integrated approach in determination of demand, supply, and cost/risk portfolios.

Guideline 11: Reliability

Natural gas utilities should analyze, on an integrated basis, gas supply, transportation, and storage, along with demand-side resources, to reliably meet peak, swing, and base-load system requirements. Electric and natural gas utility plans should demonstrate that the utility's chosen portfolio achieves its stated reliability, cost and risk objectives.

Explanation: Cascade analyzes on an integrated basis, gas supply, transportation, and storage along with demand-side resources to reliably meet peak, swing and base-load system requirements. As discussed throughout the Plan, Cascade's strategy is to reliably serve our firm gas sales customers in a way that minimizes costs over the long term and the Company believes that its base case portfolio meets these objectives.

Guideline 12: Distributed Generation

Explanation: Not applicable to natural gas utility.

Guideline 13: Resource Acquisition

a. *Electric utilities … (Not applicable)*

b. *Natural gas utilities should either describe in the IRP their bidding practices for gas supply and transportation, or provide a description of those practices following IRP acknowledgment.*

Explanation: Cascade's gas procurement strategy is outlined in Section 5

Washington Utilities & Transportation Commission
Adopted IRP Guidelines

WAC 480-90-238 Integrated Resource Planning.

Each natural gas utility regulated by the commission has the responsibility to meet system demand with the least cost mix of natural gas supply and conservation. In furtherance of that responsibility, each natural gas utility must develop an "integrated resource plan."

Content. At a minimum, integrated resource plans must include:

(a) A range of forecasts of future natural gas demand in firm and interruptible markets for each customer class that examine the effect of economic forces on the consumption of natural gas and that address changes in the number, type and efficiency of natural gas end-uses.

Section 3 describes the range of forecast of demand for the 20-year planning horizon. The text provides a range of forecasts that encompass the anticipated forces, both economic and weather-driven, that will impact the load forecasts over the planning horizon. The range of forecasts implicitly incorporates changes in the number, type and efficiency of natural gas end-uses as reflected in the changing use/customer figures over the planning horizon.

(b) An assessment of commercially available conservation, including load management, as well as an assessment of currently employed and new policies and programs needed to obtain the conservation improvements.

Section 6 of the Plan details the company's demand side resource alternatives. The section includes an assessment of technically feasible improvements in the efficient use of natural gas. The detailed list of measures and their savings potential within Cascade's service territory is included in Appendix D of the Plan.

(c) An assessment of conventional and commercially available nonconventional gas supplies.

(d) An assessment of opportunities for using company-owned or contracted storage.

(e) An assessment of pipeline transmission capability and reliability and opportunities for additional pipeline transmission resources.

Section 5, the supply resource section, includes a discussion of the supply side resource options available including an assessment of conventional and commercially available nonconventional gas supplies, an assessment of opportunities for additional company-owned and contracted storage, and assessment of both existing and future pipeline transmission alternatives for meeting Cascade's load requirements. Appendix E

contains the detailed list of resources evaluated in the integration model.

(f) A comparative evaluation of the cost of natural gas purchasing strategies, storage options, delivery resources, and improvements in conservation using a consistent method to calculate cost-effectiveness.

Section 7, the integration section, provides a comparative evaluation of the cost of the various resource options on a consistent and comparable method. The company believes that all resources described in this IRP have been evaluated on a consistent and comparable basis through the use of its optimization model.

(g) The integration of the demand forecasts and resource evaluations into a long-range (e.g., at least ten years; longer if appropriate to the life of the resources considered) integrated resource plan describing the mix of resources that is designated to meet current and future needs at the lowest reasonable cost to the utility and its ratepayers.

Explanation: The resource integration section describes the integration of the demand forecast and resource evaluations into a long range resource plan and describes the Company's strategies to reliably meet current and future needs at the lowest reasonable cost to Cascade's ratepayers. According to WAC 480-90-238, "Lowest reasonable cost" means

"the lowest cost mix of resources determined through a detailed and consistent analysis of a wide range of commercially available sources. At a minimum, this analysis must consider resource costs, market-volatility risks, demand-side resource uncertainties, the risks imposed on ratepayers, resource effect on system operations, public policies regarding resource preference adopted by Washington state or the federal government, the cost of risks associated with environmental effects including emissions of carbon dioxide, and the need for security of supply."

Cascade believes all resources described in this IRP have been evaluated on a consistent and comparable basis through the use of its optimization model. Uncertainty has been considered in each component of this plan. The demand forecast includes a reasonable range of uncertainty as quantified in the low, medium and high load growth scenarios along with the additional simulation analysis calculated through the Monte-Carlo functionality that assesses the impacts of weather on the load forecasts. The demand side and supply side resource sections describe relative uncertainties regarding reliability, cost and operating constraints and external costs. Uncertainties associated with the environmental effects of carbon emissions have been discussed in detail and an analysis of the potential impacts of carbon adders on the portfolio has been assessed. The company, through its analysis of limited Canadian supplies has identified alternatives to address concerns regarding security of supply. Price volatility

and market risks and their impacts on the Company's long-term resource portfolio have been assessed through the use of the Monte-Carlo functionality of the Sendout model.

(h) A short-term plan outlining the specific actions to be taken by the utility in implementing the long-range integrated resource plan during the two years following submission.

Section 8 includes the 2014 2-Year Action Plan that describes the specific actions the utility will take to implement the long-range integrated resource plan during the next two years

(i) A report on the utility's progress towards implementing the recommendations contained in its previously filed plan.
Through the workshops on capacity and forecast modeling, Cascade was able to provide an update on the Plan.

Timing. Unless otherwise ordered by the commission, each natural gas utility must submit a plan within two years after the date on which the previous plan was filed with the commission. Not later than twelve months prior to the due date of a plan, the utility must provide a work plan for informal commission review. The work plan must outline the content of the integrated resource plan to be developed by the utility and the method for assessing potential resources.

On December 20, 2013, the company submitted its detailed work plan which outlined the content of the plan to be developed and the methods to be used for assessing potential resources.

Cascade's 2014 Integrated Resource Plan will be filed with both the WUTC and OPUC on July 17, 2015.

Public participation. Consultations with commission staff and public participation are essential to the development of an effective plan. The work plan must outline the timing and extent of public participation. In addition, the commission will hear comment on the plan at a public hearing scheduled after the utility submits its plan for commission review.

The Company, as identified in its Work Plan(s) held workshops on the new forecast model, Cascade's unique pipeline capacity situation, and held four TAG meetings. To involve public interests in the development stages of this IRP, Cascade has a Technical Advisory Group (TAG). Four meetings were held, along with two forecast model and two capacity issue meetings, to discuss the major IRP topics including the key inputs demand forecast, distribution system planning, demand side resources, supply side resources, and resource integration and uncertainty analysis.
The Company was scheduled to provide a draft of the IRP with both the WUTC, OPUC and to all Technical Advisory Group (TAG) members. On May 6, 2015 notified the parties

that a medical emergency for a critical member of the team would require Cascade to request an extension from May 29 to July 17, 2015 for filing the IRP. It was anticipated that the team would be back to "full-strength" in mid-June. Unfortunately, the medical leave was not lifted until July necessitating a streamlined process to meet the new filing deadline. Cascade has recently added incremental staff in support of the IRP, which we hope will prevent future problems in this area

The TAG meetings were helpful to Cascade as questions were answered and varying points of view were explored. Appendix A contains an outline of the meeting content and a list of participants.



In the Community to Serve®

2014
Integrated Resource Plan

Appendix Volume 2 (Sec B-C)

Athena	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.09%	0.12%	0.61%	0.61%	1.10%	0.13%	0.61%	0.61%	1.09%
Residential Therms	317,211	320,645	321,068	323,031	325,017	328,560	329,010	331,025	333,035	336,652
Commercial Therms	151,489	153,167	153,331	154,269	155,217	156,948	157,124	158,086	159,046	160,813
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**468,701**	**473,811**	**474,400**	**477,300**	**480,235**	**485,508**	**486,134**	**489,111**	**492,081**	**497,465**
Daily Baseload Therms	430	435	435	438	441	446	446	449	452	457
Peak Day Therms	5,924	5,959	5,996	6,032	6,069	6,106	6,144	6,181	6,219	6,257
Therms Per Residential Customer	635	638	635	635	635	638	635	635	635	638
Therms Per Commercial Customer	2,381	2,393	2,381	2,381	2,381	2,393	2,381	2,381	2,381	2,393
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	499	502	505	509	512	515	518	521	524	527
Commercial Customers	64	64	64	65	65	66	66	66	67	67
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**563**	**566**	**570**	**573**	**577**	**580**	**584**	**588**	**591**	**595**

Baker	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.60%	-0.35%	0.14%	0.14%	0.61%	-0.32%	0.15%	0.15%	0.63%
Residential Therms	2,148,561	2,161,539	2,153,910	2,156,985	2,160,060	2,173,496	2,166,345	2,169,553	2,172,762	2,186,527
Commercial Therms	1,548,894	1,558,034	1,552,750	1,554,967	1,557,184	1,566,653	1,561,714	1,564,027	1,566,341	1,576,046
Industrial Therms	74,851	75,226	75,038	75,145	75,252	75,642	75,471	75,583	75,694	76,096
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,772,306**	**3,794,799**	**3,781,698**	**3,787,097**	**3,792,496**	**3,815,791**	**3,803,530**	**3,809,163**	**3,814,797**	**3,838,668**
Daily Baseload Therms	1,499	1,508	1,503	1,505	1,507	1,516	1,511	1,514	1,516	1,525
Peak Day Therms	41,829	41,881	41,933	41,993	42,053	42,113	42,175	42,238	42,300	42,365
Therms Per Residential Customer	667	670	667	667	667	670	667	667	667	670
Therms Per Commercial Customer	3,146	3,161	3,146	3,146	3,146	3,161	3,146	3,146	3,146	3,161
Therms Per Industrial Customer	24,921	25,014	24,921	24,921	24,921	25,014	24,921	24,921	24,921	25,014
Residential Customers	3,223	3,227	3,231	3,236	3,240	3,245	3,250	3,254	3,259	3,264
Commercial Customers	492	493	494	494	495	496	496	497	498	499
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,718**	**3,723**	**3,727**	**3,733**	**3,738**	**3,743**	**3,749**	**3,755**	**3,760**	**3,766**

Umatilla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.02%	0.18%	0.60%	0.61%	1.03%	0.18%	0.61%	0.60%	1.03%
Residential Therms	464,516	469,625	470,100	472,943	475,817	481,090	481,600	484,520	487,429	492,812
Commercial Therms	495,118	500,070	501,070	504,100	507,164	512,278	513,328	516,440	519,541	524,760
Industrial Therms	126,778	127,897	128,302	129,078	129,862	131,020	131,441	132,238	133,032	134,212
Ind., Inst., & Cmcl. Interrup. Therms	997,520	1,007,665	1,009,512	1,015,618	1,021,789	1,032,266	1,034,208	1,040,478	1,046,725	1,057,416
Total Core Therms	**2,083,932**	**2,105,256**	**2,108,985**	**2,121,739**	**2,134,632**	**2,156,653**	**2,160,576**	**2,173,674**	**2,186,727**	**2,209,199**
Daily Baseload Therms	1,254	1,267	1,269	1,277	1,285	1,298	1,300	1,308	1,316	1,330
Peak Day Therms	17,559	17,664	17,771	17,878	17,987	18,095	18,205	18,316	18,426	18,536
Therms Per Residential Customer	449	451	449	449	449	451	449	449	449	451
Therms Per Commercial Customer	3,023	3,035	3,023	3,023	3,023	3,035	3,023	3,023	3,023	3,035
Therms Per Industrial Customer	23,267	23,333	23,267	23,267	23,267	23,333	23,267	23,267	23,267	23,333
Residential Customers	1,035	1,041	1,047	1,054	1,060	1,067	1,073	1,080	1,086	1,093
Commercial Customers	164	165	166	167	168	169	170	171	172	173
Industrial Customers	5	5	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,206**	**1,213**	**1,221**	**1,228**	**1,236**	**1,243**	**1,251**	**1,258**	**1,266**	**1,273**

Chemult	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	0.61%	0.61%	0.61%	0.60%	0.60%	0.60%	0.59%	0.59%
Residential Therms	10,417	10,480	10,544	10,608	10,672	10,737	10,802	10,867	10,931	10,996
Commercial Therms	39,394	39,633	39,874	40,116	40,360	40,604	40,850	41,094	41,339	41,584
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**49,811**	**50,113**	**50,417**	**50,724**	**51,033**	**51,341**	**51,651**	**51,961**	**52,270**	**52,579**
Daily Baseload Therms	55	56	56	56	57	57	57	58	58	58
Peak Day Therms	633	637	641	644	648	652	656	660	664	668
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	26	26	26	26	26	26	26
Commercial Customers	21	21	21	21	21	22	22	22	22	22
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**46**	**46**	**47**	**47**	**47**	**47**	**48**	**48**	**48**	**48**

Gilchrist	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.05%	0.15%	0.61%	0.61%	1.06%	0.16%	0.61%	0.60%	1.06%
Residential Therms	94,136	95,117	95,271	95,850	96,434	97,449	97,614	98,207	98,801	99,836
Commercial Therms	136,704	138,149	138,352	139,192	140,041	141,535	141,755	142,615	143,478	145,002
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**230,840**	**233,265**	**233,622**	**235,042**	**236,476**	**238,984**	**239,369**	**240,823**	**242,280**	**244,838**
Daily Baseload Therms	98	99	99	100	100	101	101	102	103	104
Peak Day Therms	2,737	2,753	2,770	2,787	2,804	2,821	2,838	2,855	2,872	2,890
Therms Per Residential Customer	518	520	518	518	518	520	518	518	518	520
Therms Per Commercial Customer	3,390	3,406	3,390	3,390	3,390	3,406	3,390	3,390	3,390	3,406
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	182	183	184	185	186	187	188	190	191	192
Commercial Customers	40	41	41	41	41	42	42	42	42	43
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**222**	**223**	**225**	**226**	**227**	**229**	**230**	**232**	**233**	**234**

Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.16%	0.61%	0.61%	1.06%	0.16%	0.61%	0.61%	1.06%
Residential Therms	2,455,549	2,482,192	2,485,408	2,500,600	2,515,977	2,543,467	2,546,886	2,562,479	2,578,041	2,606,108
Commercial Therms	2,668,707	2,695,984	2,701,158	2,717,668	2,734,380	2,762,537	2,767,972	2,784,919	2,801,832	2,830,573
Industrial Therms	214,865	217,077	217,477	218,807	220,152	222,435	222,857	224,221	225,583	227,913
Ind., Inst., & Cmcl. Interrup. Therms	384,757	389,143	389,435	391,816	394,225	398,750	399,068	401,512	403,950	408,570
Total Core Therms	**5,723,878**	**5,784,396**	**5,793,478**	**5,828,891**	**5,864,735**	**5,927,190**	**5,936,782**	**5,973,130**	**6,009,406**	**6,073,164**
Daily Baseload Therms	3,824	3,864	3,870	3,894	3,918	3,959	3,966	3,990	4,014	4,057
Peak Day Therms	71,496	71,927	72,365	72,808	73,255	73,703	74,155	74,609	75,062	75,518
Therms Per Residential Customer	691	695	691	691	691	695	691	691	691	695
Therms Per Commercial Customer	3,835	3,851	3,835	3,835	3,835	3,851	3,835	3,835	3,835	3,851
Therms Per Industrial Customer	26,698	26,811	26,698	26,698	26,698	26,811	26,698	26,698	26,698	26,811
Residential Customers	3,551	3,573	3,595	3,617	3,639	3,661	3,683	3,706	3,729	3,751
Commercial Customers	696	700	704	709	713	717	722	726	731	735
Industrial Customers	8	8	8	8	8	8	8	8	8	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,259**	**4,285**	**4,311**	**4,337**	**4,364**	**4,391**	**4,418**	**4,445**	**4,472**	**4,499**

Huntington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.66%	-0.41%	0.14%	0.14%	0.68%	-0.39%	0.15%	0.15%	0.69%
Residential Therms	53,697	54,056	53,831	53,908	53,985	54,355	54,142	54,222	54,302	54,681
Commercial Therms	29,599	29,793	29,673	29,715	29,758	29,958	29,844	29,888	29,933	30,137
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**83,297**	**83,849**	**83,504**	**83,623**	**83,743**	**84,313**	**83,986**	**84,111**	**84,235**	**84,818**
Daily Baseload Therms	-48	-48	-48	-48	-48	-48	-48	-48	-48	-49
Peak Day Therms	1,229	1,230	1,232	1,234	1,236	1,237	1,239	1,241	1,243	1,245
Therms Per Residential Customer	435	438	435	435	435	438	435	435	435	438
Therms Per Commercial Customer	2,075	2,086	2,075	2,075	2,075	2,086	2,075	2,075	2,075	2,086
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	123	124	124	124	124	124	124	125	125	125
Commercial Customers	14	14	14	14	14	14	14	14	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**138**	**138**	**138**	**138**	**138**	**139**	**139**	**139**	**139**	**139**

La Pine	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.66%	1.74%	2.14%	2.10%	2.50%	1.58%	1.98%	1.95%	2.35%
Residential Therms	134,667	138,233	140,647	143,651	146,664	150,311	152,707	155,738	158,771	162,493
Commercial Therms	361,821	371,448	377,886	385,958	394,053	403,904	410,290	418,432	426,581	436,637
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**496,488**	**509,681**	**518,532**	**529,609**	**540,717**	**554,215**	**562,998**	**574,169**	**585,351**	**599,130**
Daily Baseload Therms	277	284	289	296	302	309	314	320	327	334
Peak Day Therms	5,537	5,660	5,783	5,907	6,031	6,155	6,279	6,404	6,529	6,654
Therms Per Residential Customer	655	658	655	655	655	658	655	655	655	658
Therms Per Commercial Customer	2,827	2,839	2,827	2,827	2,827	2,839	2,827	2,827	2,827	2,839
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	205	210	215	219	224	228	233	238	242	247
Commercial Customers	128	131	134	137	139	142	145	148	151	154
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**341**	**348**	**356**	**363**	**371**	**378**	**386**	**393**	**401**

Madras	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.89%	0.00%	0.47%	0.48%	0.93%	0.04%	0.50%	0.50%	0.96%
Residential Therms	667,477	673,608	673,445	676,580	679,798	686,322	686,430	689,846	693,289	700,131
Commercial Therms	1,194,761	1,205,332	1,205,443	1,211,054	1,216,816	1,228,082	1,228,687	1,234,801	1,240,964	1,252,792
Industrial Therms	740,463	747,233	747,084	750,561	754,132	761,337	761,489	765,279	769,098	776,655
Ind., Inst., & Cmcl. Interrup. Therms	342,322	345,099	345,383	346,990	348,641	351,613	352,043	353,794	355,560	358,687
Total Core Therms	**2,945,023**	**2,971,271**	**2,971,354**	**2,985,185**	**2,999,387**	**3,027,354**	**3,028,649**	**3,043,720**	**3,058,912**	**3,088,266**
Daily Baseload Therms	1,203	1,214	1,214	1,220	1,225	1,237	1,237	1,244	1,250	1,262
Peak Day Therms	35,792	35,950	36,112	36,281	36,453	36,629	36,809	36,992	37,177	37,366
Therms Per Residential Customer	591	593	591	591	591	593	591	591	591	593
Therms Per Commercial Customer	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229
Therms Per Industrial Customer	43,374	43,578	43,374	43,374	43,374	43,578	43,374	43,374	43,374	43,578
Residential Customers	1,130	1,135	1,140	1,146	1,151	1,157	1,162	1,168	1,174	1,180
Commercial Customers	372	373	375	377	379	380	382	384	386	388
Industrial Customers	17	17	17	17	17	17	18	18	18	18
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,520**	**1,527**	**1,534**	**1,541**	**1,548**	**1,556**	**1,563**	**1,571**	**1,579**	**1,587**

Milton-Freewater	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.09%	0.16%	0.63%	0.63%	1.09%	0.16%	0.62%	0.62%	1.09%
Residential Therms	108,664	109,909	110,020	110,708	111,404	112,684	112,799	113,501	114,202	115,505
Commercial Therms	312,335	315,685	316,234	318,213	320,211	323,655	324,221	326,240	328,253	331,759
Industrial Therms	30,458	30,783	30,839	31,032	31,226	31,560	31,617	31,814	32,011	32,350

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**451,457**	**456,376**	**457,093**	**459,953**	**462,841**	**467,899**	**468,637**	**471,555**	**474,466**	**479,615**
Daily Baseload Therms	434	439	440	442	445	450	451	454	456	461
Peak Day Therms	5,493	5,527	5,561	5,596	5,631	5,667	5,702	5,737	5,773	5,808
Therms Per Residential Customer	477	479	477	477	477	479	477	477	477	479
Therms Per Commercial Customer	3,165	3,179	3,165	3,165	3,165	3,179	3,165	3,165	3,165	3,179
Therms Per Industrial Customer	5,189	5,212	5,189	5,189	5,189	5,212	5,189	5,189	5,189	5,212
Residential Customers	228	229	231	232	234	235	237	238	240	241
Commercial Customers	99	99	100	101	101	102	102	103	104	104
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**335**	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**352**

Mission Tap	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.04%	0.17%	0.61%	0.61%	1.05%	0.18%	0.61%	0.61%	1.04%
Residential Therms	131,527	132,926	133,126	133,940	134,764	136,207	136,419	137,255	138,088	139,561
Commercial Therms	353,461	357,112	357,759	359,946	362,159	365,928	366,608	368,853	371,093	374,940
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**484,988**	**490,038**	**490,885**	**493,886**	**496,923**	**502,135**	**503,028**	**506,107**	**509,181**	**514,501**
Daily Baseload Therms	398	402	403	405	408	412	413	415	418	422
Peak Day Therms	5,304	5,336	5,368	5,401	5,434	5,467	5,501	5,535	5,568	5,602
Therms Per Residential Customer	615	618	615	615	615	618	615	615	615	618
Therms Per Commercial Customer	8,365	8,401	8,365	8,365	8,365	8,401	8,365	8,365	8,365	8,401
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	214	215	216	218	219	220	222	223	224	226
Commercial Customers	42	43	43	43	43	44	44	44	44	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**256**	**257**	**259**	**261**	**262**	**264**	**265**	**267**	**269**	**270**

Nyssa-Ontario	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.75%	-0.19%	0.29%	0.29%	0.76%	-0.18%	0.29%	0.29%	0.77%
Residential Therms	2,018,694	2,034,683	2,029,952	2,035,752	2,041,664	2,058,103	2,053,587	2,059,599	2,065,602	2,082,318
Commercial Therms	2,390,972	2,409,561	2,404,307	2,411,176	2,418,179	2,437,296	2,432,300	2,439,421	2,446,531	2,465,973
Industrial Therms	195,099	195,867	196,187	196,747	197,319	198,121	198,471	199,052	199,632	200,452
Ind., Inst., & Cmcl. Interrup. Therms	1,210,107	1,218,370	1,216,855	1,220,332	1,223,876	1,232,393	1,231,023	1,234,627	1,238,226	1,246,894
Total Core Therms	**5,814,872**	**5,858,480**	**5,847,301**	**5,864,007**	**5,881,038**	**5,925,912**	**5,915,382**	**5,932,699**	**5,949,991**	**5,995,637**
Daily Baseload Therms	1,495	1,506	1,503	1,508	1,512	1,523	1,521	1,525	1,530	1,541
Peak Day Therms	68,683	68,872	69,066	69,263	69,464	69,665	69,870	70,074	70,278	70,485
Therms Per Residential Customer	564	567	564	564	564	567	564	564	564	567
Therms Per Commercial Customer	2,662	2,675	2,662	2,662	2,662	2,675	2,662	2,662	2,662	2,675
Therms Per Industrial Customer	9,729	9,740	9,729	9,729	9,729	9,740	9,729	9,729	9,729	9,740
Residential Customers	3,578	3,588	3,598	3,608	3,619	3,629	3,640	3,650	3,661	3,672
Commercial Customers	898	901	903	906	908	911	914	916	919	922
Industrial Customers	20	20	20	20	20	20	20	20	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,498**	**4,511**	**4,523**	**4,536**	**4,549**	**4,563**	**4,576**	**4,589**	**4,603**	**4,616**

Pendleton	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.16%	0.61%	0.61%	1.07%	0.16%	0.61%	0.61%	1.06%
Residential Therms	2,982,375	3,015,250	3,018,640	3,037,091	3,055,768	3,089,684	3,093,307	3,112,246	3,131,147	3,165,777
Commercial Therms	2,484,845	2,511,048	2,515,060	2,530,433	2,545,994	2,573,035	2,577,271	2,593,050	2,608,798	2,636,404
Industrial Therms	196,449	198,577	198,838	200,054	201,284	203,479	203,757	205,004	206,249	208,490
Ind., Inst., & Cmcl. Interrup. Therms	1,066,300	1,076,337	1,079,266	1,085,863	1,092,540	1,102,908	1,105,962	1,112,733	1,119,491	1,130,070
Total Core Therms	**6,729,970**	**6,801,212**	**6,811,804**	**6,853,441**	**6,895,585**	**6,969,106**	**6,980,297**	**7,023,034**	**7,065,686**	**7,140,741**
Daily Baseload Therms	5,073	5,127	5,135	5,166	5,198	5,253	5,262	5,294	5,326	5,383
Peak Day Therms	81,573	82,066	82,565	83,070	83,581	84,092	84,608	85,126	85,643	86,163
Therms Per Residential Customer	618	621	618	618	618	621	618	618	618	621
Therms Per Commercial Customer	3,341	3,356	3,341	3,341	3,341	3,356	3,341	3,341	3,341	3,356
Therms Per Industrial Customer	32,546	32,701	32,546	32,546	32,546	32,701	32,546	32,546	32,546	32,701
Residential Customers	4,823	4,853	4,882	4,912	4,942	4,972	5,003	5,034	5,064	5,095
Commercial Customers	744	748	753	757	762	767	771	776	781	786
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,576**	**5,610**	**5,644**	**5,679**	**5,713**	**5,748**	**5,784**	**5,819**	**5,854**	**5,890**

Prineville	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.94%	0.04%	0.51%	0.52%	0.98%	0.08%	0.54%	0.54%	1.00%
Residential Therms	1,218,601	1,230,204	1,230,496	1,236,728	1,243,130	1,255,534	1,256,332	1,263,076	1,269,876	1,282,806
Commercial Therms	1,347,339	1,359,816	1,360,490	1,367,380	1,374,458	1,387,815	1,389,056	1,396,511	1,404,030	1,417,960
Industrial Therms	353,719	356,998	357,171	358,980	360,839	364,348	364,671	366,628	368,602	372,262
Ind., Inst., & Cmcl. Interrup. Therms	144,820	146,224	146,234	146,974	147,735	149,235	149,304	150,105	150,914	152,476
Total Core Therms	**3,064,479**	**3,093,242**	**3,094,390**	**3,110,061**	**3,126,162**	**3,156,931**	**3,159,363**	**3,176,321**	**3,193,422**	**3,225,504**
Daily Baseload Therms	1,006	1,016	1,016	1,021	1,026	1,037	1,037	1,043	1,049	1,059
Peak Day Therms	38,838	39,024	39,217	39,415	39,619	39,827	40,040	40,255	40,472	40,692
Therms Per Residential Customer	533	535	533	533	533	535	533	533	533	535
Therms Per Commercial Customer	2,658	2,670	2,658	2,658	2,658	2,670	2,658	2,658	2,658	2,670
Therms Per Industrial Customer	22,961	23,064	22,961	22,961	22,961	23,064	22,961	22,961	22,961	23,064
Residential Customers	2,288	2,299	2,310	2,322	2,334	2,346	2,359	2,371	2,384	2,397
Commercial Customers	507	509	512	514	517	520	523	525	528	531
Industrial Customers	15	15	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,812**	**2,825**	**2,839**	**2,854**	**2,869**	**2,884**	**2,899**	**2,915**	**2,930**	**2,946**

Redmond	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.69%	1.74%	2.15%	2.11%	2.52%	1.57%	1.98%	1.94%	2.36%
Residential Therms	4,225,250	4,339,683	4,414,623	4,509,561	4,604,614	4,721,156	4,794,789	4,889,888	4,984,895	5,103,250
Commercial Therms	3,142,295	3,227,481	3,283,130	3,353,735	3,424,425	3,511,187	3,565,857	3,636,582	3,707,238	3,795,356
Industrial Therms	420,377	431,233	439,218	448,664	458,121	469,140	477,042	486,503	495,956	507,109
Ind., Inst., & Cmcl. Interrup. Therms	302,356	309,805	315,907	322,701	329,503	337,038	343,112	349,917	356,716	364,315
Total Core Therms	**8,090,278**	**8,308,202**	**8,452,878**	**8,634,661**	**8,816,663**	**9,038,521**	**9,180,800**	**9,362,890**	**9,544,804**	**9,770,029**
Daily Baseload Therms	3,673	3,772	3,838	3,920	4,003	4,103	4,168	4,251	4,333	4,436
Peak Day Therms	96,107	98,259	100,414	102,573	104,736	106,896	109,061	111,224	113,385	115,547
Therms Per Residential Customer	646	649	646	646	646	649	646	646	646	649
Therms Per Commercial Customer	2,762	2,774	2,762	2,762	2,762	2,774	2,762	2,762	2,762	2,774
Therms Per Industrial Customer	34,487	34,603	34,487	34,487	34,487	34,603	34,487	34,487	34,487	34,603
Residential Customers	6,537	6,683	6,830	6,977	7,124	7,271	7,418	7,565	7,712	7,859
Commercial Customers	1,138	1,163	1,189	1,214	1,240	1,266	1,291	1,317	1,342	1,368
Industrial Customers	12	12	13	13	13	14	14	14	14	15
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7,688**	**7,860**	**8,033**	**8,205**	**8,378**	**8,551**	**8,724**	**8,897**	**9,070**	**9,243**

Stanfield	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.14%	0.61%	0.61%	1.08%	0.14%	0.61%	0.61%	1.08%
Residential Therms	169,890	171,738	171,956	173,007	174,071	175,977	176,209	177,288	178,365	180,311
Commercial Therms	69,839	70,573	70,688	71,120	71,558	72,315	72,437	72,880	73,323	74,096
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**239,729**	**242,311**	**242,644**	**244,127**	**245,629**	**248,292**	**248,646**	**250,169**	**251,688**	**254,407**
Daily Baseload Therms	100	102	102	102	103	104	104	105	105	107
Peak Day Therms	3,037	3,055	3,074	3,093	3,112	3,131	3,150	3,169	3,189	3,208
Therms Per Residential Customer	559	562	559	559	559	562	559	559	559	562
Therms Per Commercial Customer	2,125	2,135	2,125	2,125	2,125	2,135	2,125	2,125	2,125	2,135
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	304	306	307	309	311	313	315	317	319	321
Commercial Customers	33	33	33	33	34	34	34	34	35	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**351**	**353**	**356**

Stearns (Sunriver)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.68%	1.76%	2.15%	2.11%	2.50%	1.59%	1.98%	1.94%	2.34%
Residential Therms	3,601,958	3,699,092	3,763,395	3,844,328	3,925,359	4,024,255	4,087,480	4,168,551	4,249,543	4,349,947
Commercial Therms	1,125,999	1,155,399	1,176,466	1,201,766	1,227,097	1,256,962	1,277,778	1,303,121	1,328,439	1,358,691
Industrial Therms	15,567	15,964	16,265	16,615	16,965	17,368	17,665	18,016	18,366	18,773
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,743,524**	**4,870,456**	**4,956,126**	**5,062,709**	**5,169,421**	**5,298,585**	**5,382,923**	**5,489,687**	**5,596,348**	**5,727,411**
Daily Baseload Therms	3,430	3,522	3,584	3,661	3,738	3,832	3,893	3,970	4,047	4,142
Peak Day Therms	52,123	53,291	54,460	55,631	56,803	57,975	59,149	60,323	61,495	62,667
Therms Per Residential Customer	1,015	1,020	1,015	1,015	1,015	1,020	1,015	1,015	1,015	1,020
Therms Per Commercial Customer	5,036	5,054	5,036	5,036	5,036	5,054	5,036	5,036	5,036	5,054
Therms Per Industrial Customer	6,297	6,317	6,297	6,297	6,297	6,317	6,297	6,297	6,297	6,317
Residential Customers	3,548	3,628	3,708	3,787	3,867	3,947	4,027	4,107	4,186	4,266
Commercial Customers	224	229	234	239	244	249	254	259	264	269
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,775**	**3,859**	**3,944**	**4,029**	**4,113**	**4,198**	**4,283**	**4,368**	**4,453**	**4,538**

Dave Rasmussen	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.24%	2.19%	2.15%	2.11%	2.06%	2.03%	1.98%	1.94%	1.91%
Residential Therms	299,521	306,228	312,945	319,675	326,413	333,146	339,894	346,636	353,370	360,109
Commercial Therms	254,968	260,678	266,396	272,125	277,861	283,593	289,337	295,075	300,808	306,544
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**554,489**	**566,906**	**579,341**	**591,800**	**604,274**	**616,739**	**629,231**	**641,711**	**654,179**	**666,653**
Daily Baseload Therms	591	604	618	631	644	658	671	684	697	711
Peak Day Therms	6,515	6,661	6,807	6,954	7,100	7,247	7,394	7,540	7,687	7,833
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	185	189	193	198	202	206	210	214	218	222
Commercial Customers	25	25	26	26	27	27	28	28	29	30
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**210**	**214**	**219**	**224**	**228**	**233**	**238**	**243**	**247**	**252**

South Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.68%	1.75%	2.15%	2.11%	2.51%	1.58%	1.98%	1.94%	2.35%
Residential Therms	21,127,336	21,695,577	22,074,249	22,548,965	23,024,254	23,602,690	23,975,177	24,450,696	24,925,755	25,512,910
Commercial Therms	11,757,972	12,072,840	12,284,956	12,549,150	12,813,662	13,134,083	13,342,878	13,607,518	13,871,902	14,197,055
Industrial Therms	350,952	360,263	366,681	374,567	382,462	391,931	398,258	406,157	414,048	423,651
Ind., Inst., & Cmcl. Interrup. Therms	209,945	215,287	219,355	224,072	228,795	234,211	238,244	242,970	247,690	253,166
Total Core Therms	**33,446,205**	**34,343,967**	**34,945,241**	**35,696,753**	**36,449,173**	**37,362,915**	**37,954,557**	**38,707,340**	**39,459,396**	**40,386,782**
Daily Baseload Therms	17,910	18,391	18,713	19,115	19,518	20,007	20,324	20,727	21,130	21,626
Peak Day Therms	377,442	385,894	394,358	402,839	411,330	419,815	428,318	436,814	445,301	453,792
Therms Per Residential Customer	791	794	791	791	791	794	791	791	791	794
Therms Per Commercial Customer	2,898	2,910	2,898	2,898	2,898	2,910	2,898	2,898	2,898	2,910
Therms Per Industrial Customer	24,077	24,175	24,077	24,077	24,077	24,175	24,077	24,077	24,077	24,175
Residential Customers	26,725	27,324	27,923	28,524	29,125	29,726	30,328	30,929	31,530	32,132
Commercial Customers	4,058	4,149	4,240	4,331	4,422	4,513	4,605	4,696	4,787	4,879
Industrial Customers	15	15	15	16	16	16	17	17	17	18
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**30,800**	**31,490**	**32,181**	**32,873**	**33,566**	**34,258**	**34,952**	**35,645**	**36,338**	**37,031**

McCleary (Aberdeen/Hoquiam)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.89%	0.06%	0.47%	0.48%	0.88%	0.06%	0.46%	0.46%	0.87%
Residential Therms	2,574,425	2,597,925	2,598,865	2,611,206	2,623,616	2,647,435	2,648,299	2,660,605	2,672,808	2,696,738
Commercial Therms	2,494,174	2,516,273	2,517,853	2,529,809	2,541,832	2,564,228	2,565,745	2,577,668	2,589,490	2,611,981
Industrial Therms	121,894	123,133	123,051	123,635	124,223	125,480	125,391	125,974	126,552	127,816
Ind., Inst., & Cmcl. Interrup. Therms	1,141,674	1,151,070	1,152,513	1,157,985	1,163,489	1,173,007	1,174,435	1,179,892	1,185,304	1,194,851
Total Core Therms	**6,332,166**	**6,388,401**	**6,392,281**	**6,422,636**	**6,453,160**	**6,510,149**	**6,513,869**	**6,544,139**	**6,574,154**	**6,631,386**
Daily Baseload Therms	6,363	6,419	6,423	6,454	6,484	6,541	6,545	6,576	6,606	6,663
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	737	740	737	737	737	740	737	737	737	740
Therms Per Commercial Customer	3,352	3,366	3,352	3,352	3,352	3,366	3,352	3,352	3,352	3,366
Therms Per Industrial Customer	10,399	10,455	10,399	10,399	10,399	10,455	10,399	10,399	10,399	10,455
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Acme	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.33%	1.43%	1.84%	1.81%	2.22%	1.33%	1.73%	1.70%	2.12%
Residential Therms	57,112	58,442	59,277	60,367	61,462	62,828	63,660	64,764	65,868	67,263

Commercial Therms	39,117	40,027	40,600	41,347	42,097	43,031	43,603	44,359	45,115	46,069
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**96,229**	**98,469**	**99,877**	**101,714**	**103,559**	**105,859**	**107,263**	**109,122**	**110,983**	**113,333**
Daily Baseload Therms	30	31	32	32	33	33	34	34	35	36
Peak Day Therms	1,017	1,037	1,056	1,075	1,095	1,114	1,134	1,154	1,173	1,193
Therms Per Residential Customer	856	859	856	856	856	859	856	856	856	859
Therms Per Commercial Customer	4,265	4,283	4,265	4,265	4,265	4,283	4,265	4,265	4,265	4,283
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	67	68	69	71	72	73	74	76	77	78
Commercial Customers	9	9	10	10	10	10	10	10	11	11
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**76**	**77**	**79**	**80**	**82**	**83**	**85**	**86**	**88**	**89**

Arlington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.98%	1.11%	1.52%	1.50%	1.91%	1.04%	1.45%	1.43%	1.84%
Residential Therms	3,925,266	4,003,319	4,047,468	4,109,026	4,170,841	4,250,890	4,294,906	4,357,132	4,419,367	4,501,004
Commercial Therms	2,059,810	2,100,351	2,123,937	2,156,240	2,188,678	2,230,240	2,253,782	2,286,435	2,319,093	2,361,462
Industrial Therms	243,103	247,830	250,671	254,484	258,312	263,156	265,996	269,850	273,704	278,640
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**6,228,179**	**6,351,499**	**6,422,076**	**6,519,750**	**6,617,831**	**6,744,287**	**6,814,684**	**6,913,416**	**7,012,164**	**7,141,106**
Daily Baseload Therms	5,989	6,108	6,176	6,269	6,364	6,485	6,553	6,648	6,743	6,867
Peak Day Therms	59,326	60,247	61,173	62,103	63,037	63,973	64,913	65,853	66,794	67,737
Therms Per Residential Customer	834	838	834	834	834	838	834	834	834	838
Therms Per Commercial Customer	3,720	3,736	3,720	3,720	3,720	3,736	3,720	3,720	3,720	3,736
Therms Per Industrial Customer	10,113	10,152	10,113	10,113	10,113	10,152	10,113	10,113	10,113	10,152
Residential Customers	4,706	4,779	4,853	4,927	5,001	5,075	5,150	5,224	5,299	5,374
Commercial Customers	554	562	571	580	588	597	606	615	623	632
Industrial Customers	24	24	25	25	26	26	26	27	27	27
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**5,284**	**5,366**	**5,449**	**5,531**	**5,615**	**5,698**	**5,782**	**5,865**	**5,949**	**6,033**

Bremerton (Shelton)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.51%	0.65%	1.07%	1.06%	1.48%	0.62%	1.04%	1.02%	1.45%
Residential Therms	22,083,845	22,420,006	22,562,959	22,804,509	23,047,122	23,391,215	23,533,730	23,777,513	24,021,083	24,370,913
Commercial Therms	11,100,938	11,267,124	11,341,775	11,463,195	11,585,150	11,755,203	11,829,755	11,952,298	12,074,734	12,247,548
Industrial Therms	357,450	364,241	365,205	369,115	373,042	380,019	380,918	384,864	388,807	395,936
Ind., Inst., & Cmcl. Interrup. Therms	2,706,744	2,745,943	2,765,467	2,795,073	2,824,809	2,864,894	2,884,451	2,914,331	2,944,184	2,984,885
Total Core Therms	**36,248,977**	**36,797,315**	**37,035,406**	**37,431,892**	**37,830,124**	**38,391,332**	**38,628,855**	**39,029,006**	**39,428,808**	**39,999,282**
Daily Baseload Therms	24,579	24,951	25,112	25,381	25,651	26,032	26,193	26,464	26,735	27,122
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	710	713	710	710	710	713	710	710	710	713
Therms Per Commercial Customer	3,763	3,778	3,763	3,763	3,763	3,778	3,763	3,763	3,763	3,778
Therms Per Industrial Customer	27,376	27,597	27,376	27,376	27,376	27,597	27,376	27,376	27,376	27,597
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Castle Rock	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.89%	0.10%	0.50%	0.51%	0.91%	0.11%	0.51%	0.51%	0.91%
Residential Therms	37,685	38,045	38,057	38,248	38,441	38,815	38,833	39,030	39,229	39,611
Commercial Therms	128,083	129,201	129,348	129,997	130,654	131,816	131,985	132,657	133,331	134,519
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**165,768**	**167,246**	**167,405**	**168,245**	**169,095**	**170,631**	**170,817**	**171,688**	**172,559**	**174,130**
Daily Baseload Therms	163	164	164	165	166	167	168	168	169	171
Peak Day Therms	1,356	1,363	1,369	1,376	1,383	1,390	1,397	1,404	1,412	1,419
Therms Per Residential Customer	584	587	584	584	584	587	584	584	584	587
Therms Per Commercial Customer	2,628	2,638	2,628	2,628	2,628	2,638	2,628	2,628	2,628	2,638
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	64	65	65	65	66	66	66	67	67	67
Commercial Customers	49	49	49	49	50	50	50	50	51	51
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**113**	**114**	**114**	**115**	**115**	**116**	**117**	**117**	**118**	**118**

Walla Walla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.41%	-0.51%	-0.03%	-0.03%	0.45%	-0.48%	-0.01%	-0.01%	0.47%
Residential Therms	7,048,987	7,079,501	7,042,098	7,039,723	7,037,941	7,070,670	7,035,567	7,034,854	7,034,261	7,068,403
Commercial Therms	4,603,797	4,622,934	4,599,297	4,597,746	4,596,583	4,617,167	4,595,032	4,594,566	4,594,179	4,615,687
Industrial Therms	105,988	106,373	105,885	105,849	105,822	106,240	105,787	105,776	105,767	106,206
Ind., Inst., & Cmcl. Interrup. Therms	2,091,999	2,099,416	2,089,955	2,089,250	2,088,721	2,096,797	2,088,017	2,087,805	2,087,629	2,096,125
Total Core Therms	**13,850,771**	**13,908,224**	**13,837,235**	**13,832,568**	**13,829,068**	**13,890,875**	**13,824,401**	**13,823,002**	**13,821,835**	**13,886,421**
Daily Baseload Therms	11,078	11,124	11,067	11,063	11,060	11,110	11,057	11,056	11,055	11,106
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	661	665	661	661	661	665	661	661	661	665
Therms Per Commercial Customer	3,647	3,665	3,647	3,647	3,647	3,665	3,647	3,647	3,647	3,665
Therms Per Industrial Customer	13,833	13,891	13,833	13,833	13,833	13,891	13,833	13,833	13,833	13,891
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Deming	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.31%	1.40%	1.82%	1.79%	2.21%	1.30%	1.72%	1.69%	2.11%
Residential Therms	14,600	14,941	15,147	15,423	15,700	16,050	16,256	16,535	16,814	17,172
Commercial Therms	69,641	71,220	72,251	73,566	74,886	76,507	77,538	78,870	80,202	81,857
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	75,550	77,325	78,382	79,808	81,240	83,065	84,117	85,562	87,008	88,875
Total Core Therms	**159,792**	**163,486**	**165,780**	**168,797**	**171,826**	**175,622**	**177,911**	**180,966**	**184,024**	**187,905**
Daily Baseload Therms	93	95	96	98	100	102	103	105	107	109
Peak Day Therms	1,686	1,718	1,749	1,781	1,813	1,845	1,877	1,910	1,942	1,974
Therms Per Residential Customer	599	602	599	599	599	602	599	599	599	602
Therms Per Commercial Customer	5,858	5,881	5,858	5,858	5,858	5,881	5,858	5,858	5,858	5,881
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	24	25	25	26	26	27	27	28	28	29
Commercial Customers	12	12	12	13	13	13	13	13	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**37**	**38**	**39**	**39**	**40**	**41**	**42**	**42**	**43**	**44**

Wenatchee	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.61%	0.74%	1.16%	1.15%	1.57%	0.71%	1.12%	1.11%	1.53%
Residential Therms	717,185	728,807	734,079	742,609	751,177	763,104	768,384	777,017	785,648	797,812
Commercial Therms	3,641,190	3,699,239	3,726,961	3,770,269	3,813,773	3,873,320	3,901,132	3,944,960	3,988,781	4,049,492
Industrial Therms	427,657	434,587	437,731	442,817	447,927	455,038	458,187	463,334	468,481	475,735
Ind., Inst., & Cmcl. Interrup. Therms	288,978	293,869	295,785	299,222	302,674	307,699	309,608	313,086	316,564	321,694
Total Core Therms	**5,075,009**	**5,156,503**	**5,194,555**	**5,254,916**	**5,315,551**	**5,399,161**	**5,437,311**	**5,498,397**	**5,559,474**	**5,644,732**
Daily Baseload Therms	4,381	4,452	4,484	4,537	4,589	4,661	4,694	4,747	4,799	4,873
Peak Day Therms	49,673	50,257	50,843	51,434	52,028	52,622	53,220	53,817	54,415	55,015
Therms Per Residential Customer	510	513	510	510	510	513	510	510	510	513
Therms Per Commercial Customer	5,260	5,282	5,260	5,260	5,260	5,282	5,260	5,260	5,260	5,282
Therms Per Industrial Customer	28,178	28,302	28,178	28,178	28,178	28,302	28,178	28,178	28,178	28,302
Residential Customers	1,405	1,422	1,438	1,455	1,472	1,488	1,505	1,522	1,539	1,556
Commercial Customers	692	700	709	717	725	733	742	750	758	767
Industrial Customers	15	15	16	16	16	16	16	16	17	17
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,116**	**2,141**	**2,166**	**2,191**	**2,216**	**2,242**	**2,267**	**2,293**	**2,318**	**2,344**

Finley	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.79%	0.73%	1.25%	1.24%	1.75%	0.69%	1.20%	1.18%	1.70%
Residential Therms	16,238	16,532	16,650	16,857	17,066	17,367	17,483	17,692	17,901	18,209
Commercial Therms	96,866	98,599	99,325	100,563	101,805	103,580	104,296	105,544	106,790	108,599
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**113,103**	**115,132**	**115,974**	**117,420**	**118,870**	**120,948**	**121,779**	**123,236**	**124,692**	**126,808**
Daily Baseload Therms	28	29	29	29	30	30	30	31	31	32
Peak Day Therms	1,659	1,680	1,701	1,722	1,744	1,765	1,786	1,808	1,829	1,850
Therms Per Residential Customer	617	620	617	617	617	620	617	617	617	620
Therms Per Commercial Customer	7,357	7,395	7,357	7,357	7,357	7,395	7,357	7,357	7,357	7,395
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	27	27	27	28	28	28	29	29	29
Commercial Customers	13	13	14	14	14	14	14	14	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**39**	**40**	**41**	**41**	**42**	**42**	**43**	**43**	**44**	**44**

Grandview	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.55%	-0.27%	0.16%	0.16%	0.58%	-0.24%	0.18%	0.18%	0.60%
Residential Therms	638,980	642,921	640,790	641,788	642,834	646,987	645,018	646,152	647,296	651,578
Commercial Therms	727,358	731,803	729,418	730,553	731,744	736,430	734,231	735,521	736,823	741,657
Industrial Therms	623,608	626,245	625,375	626,348	627,369	630,205	629,501	630,607	631,724	634,677
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,989,946**	**2,000,968**	**1,995,583**	**1,998,689**	**2,001,947**	**2,013,622**	**2,008,751**	**2,012,281**	**2,015,842**	**2,027,912**
Daily Baseload Therms	1,114	1,120	1,117	1,119	1,121	1,128	1,125	1,127	1,129	1,136
Peak Day Therms	18,759	18,784	18,812	18,841	18,872	18,903	18,936	18,969	19,003	19,037
Therms Per Residential Customer	672	675	672	672	672	675	672	672	672	675
Therms Per Commercial Customer	3,944	3,963	3,944	3,944	3,944	3,963	3,944	3,944	3,944	3,963
Therms Per Industrial Customer	78,671	78,895	78,671	78,671	78,671	78,895	78,671	78,671	78,671	78,895
Residential Customers	952	953	954	956	957	959	961	962	964	966
Commercial Customers	184	185	185	185	186	186	186	186	187	187
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,144**	**1,145**	**1,147**	**1,149**	**1,151**	**1,153**	**1,155**	**1,157**	**1,159**	**1,161**

Zillah (Toppenish)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	-0.25%	0.19%	0.20%	0.64%	-0.22%	0.21%	0.21%	0.65%
Residential Therms	1,243,437	1,251,715	1,247,925	1,250,340	1,252,843	1,261,522	1,258,018	1,260,680	1,263,358	1,272,284
Commercial Therms	2,278,878	2,292,949	2,287,103	2,291,528	2,296,116	2,310,914	2,305,600	2,310,478	2,315,387	2,330,627
Industrial Therms	629,085	632,306	631,356	632,577	633,844	637,260	636,462	637,809	639,164	642,696
Ind., Inst., & Cmcl. Interrup. Therms	93,288	93,650	93,625	93,806	93,994	94,383	94,382	94,581	94,782	95,189
Total Core Therms	**4,244,688**	**4,270,621**	**4,260,008**	**4,268,250**	**4,276,797**	**4,304,079**	**4,294,463**	**4,303,548**	**4,312,691**	**4,340,795**
Daily Baseload Therms	2,905	2,923	2,916	2,921	2,927	2,946	2,939	2,946	2,952	2,971

Peak Day Therms	44,576	44,654	44,737	44,823	44,913	45,004	45,099	45,194	45,290	45,388
Therms Per Residential Customer	651	655	651	651	651	655	651	651	651	655
Therms Per Commercial Customer	4,565	4,585	4,565	4,565	4,565	4,585	4,565	4,565	4,565	4,585
Therms Per Industrial Customer	29,211	29,309	29,211	29,211	29,211	29,309	29,211	29,211	29,211	29,309
Residential Customers	1,909	1,912	1,916	1,919	1,923	1,927	1,931	1,935	1,939	1,943
Commercial Customers	499	500	501	502	503	504	505	506	507	508
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,431**	**2,435**	**2,439**	**2,444**	**2,449**	**2,454**	**2,459**	**2,464**	**2,469**	**2,475**

Kalama #2	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.53%	0.53%
Residential Therms	189,556	190,578	191,609	192,648	193,692	194,736	195,785	196,833	197,878	198,923
Commercial Therms	180,714	181,689	182,672	183,662	184,657	185,653	186,653	187,652	188,649	189,645
Industrial Therms	224,114	225,323	226,541	227,769	229,004	230,239	231,479	232,718	233,953	235,189
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**594,384**	**597,591**	**600,822**	**604,079**	**607,353**	**610,628**	**613,917**	**617,204**	**620,480**	**623,757**
Daily Baseload Therms	896	901	906	911	916	921	926	931	936	940
Peak Day Therms	6,464	6,499	6,534	6,569	6,605	6,640	6,676	6,712	6,748	6,783
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	169	170	171	172	173	174	175	176	177	178
Commercial Customers	48	48	48	48	49	49	49	49	50	50
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**220**	**221**	**222**	**223**	**224**	**226**	**227**	**228**	**229**	**230**

Lawrence	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.33%	1.39%	1.82%	1.80%	2.23%	1.29%	1.72%	1.69%	2.12%
Residential Therms	49,444	50,593	51,302	52,237	53,177	54,357	55,064	56,011	56,960	58,166
Commercial Therms	23,032	23,575	23,898	24,333	24,771	25,329	25,650	26,091	26,533	27,104
Industrial Therms	959	979	996	1,014	1,032	1,051	1,069	1,087	1,105	1,125
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**73,436**	**75,147**	**76,195**	**77,584**	**78,980**	**80,738**	**81,783**	**83,190**	**84,598**	**86,396**
Daily Baseload Therms	29	29	30	30	31	32	32	33	33	34
Peak Day Therms	824	839	855	870	886	902	918	933	949	965
Therms Per Residential Customer	811	815	811	811	811	815	811	811	811	815
Therms Per Commercial Customer	1,450	1,457	1,450	1,450	1,450	1,457	1,450	1,450	1,450	1,457
Therms Per Industrial Customer	942	943	942	942	942	943	942	942	942	943
Residential Customers	61	62	63	64	66	67	68	69	70	71
Commercial Customers	16	16	16	17	17	17	18	18	18	19
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**78**	**79**	**81**	**82**	**84**	**85**	**87**	**88**	**90**	**91**

Moxee (Beauchene)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.83%	0.17%	0.51%	0.51%	0.85%	0.18%	0.52%	0.52%	0.86%
Residential Therms	286,789	289,465	289,662	291,135	292,628	295,407	295,653	297,182	298,715	301,565
Commercial Therms	572,737	577,570	578,475	581,417	584,399	589,427	590,439	593,492	596,555	601,715
Industrial Therms	543,582	547,484	549,027	551,820	554,650	558,723	560,382	563,281	566,187	570,371
Ind., Inst., & Cmcl. Interrup. Therms	261,927	264,410	264,551	265,896	267,260	269,838	270,022	271,419	272,819	275,464
Total Core Therms	**1,665,035**	**1,678,930**	**1,681,714**	**1,690,267**	**1,698,937**	**1,713,395**	**1,716,496**	**1,725,373**	**1,734,276**	**1,749,115**
Daily Baseload Therms	584	589	590	593	596	601	602	605	608	613
Peak Day Therms	13,922	13,991	14,062	14,133	14,206	14,279	14,353	14,427	14,501	14,576
Therms Per Residential Customer	177	178	177	177	177	178	177	177	177	178
Therms Per Commercial Customer	1,416	1,421	1,416	1,416	1,416	1,421	1,416	1,416	1,416	1,421
Therms Per Industrial Customer	41,083	41,173	41,083	41,083	41,083	41,173	41,083	41,083	41,083	41,173
Residential Customers	1,618	1,626	1,634	1,643	1,651	1,660	1,668	1,677	1,685	1,694
Commercial Customers	405	407	409	411	413	415	417	419	421	424
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**2,041**	**2,051**	**2,061**	**2,072**	**2,082**	**2,093**	**2,104**	**2,115**	**2,126**	**2,137**

Othello	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.74%	0.74%	0.74%	0.75%	0.75%	0.75%	0.75%	0.74%	0.75%
Residential Therms	630,697	635,346	640,079	644,839	649,682	654,527	659,457	664,388	669,333	674,345
Commercial Therms	817,556	823,583	829,717	835,888	842,166	848,447	854,838	861,229	867,639	874,135
Industrial Therms	228,503	230,188	231,902	233,627	235,382	237,137	238,923	240,710	242,501	244,317
Ind., Inst., & Cmcl. Interrup. Therms	209,124	210,665	212,235	213,813	215,419	217,026	218,660	220,295	221,935	223,596
Total Core Therms	**1,885,879**	**1,899,782**	**1,913,933**	**1,928,166**	**1,942,649**	**1,957,137**	**1,971,878**	**1,986,623**	**2,001,408**	**2,016,393**
Daily Baseload Therms	2,031	2,046	2,061	2,076	2,092	2,108	2,123	2,139	2,155	2,171
Peak Day Therms	20,743	20,896	21,052	21,208	21,367	21,527	21,689	21,851	22,014	22,178
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,087	1,095	1,104	1,112	1,120	1,128	1,137	1,145	1,154	1,163
Commercial Customers	283	285	287	289	292	294	296	298	300	303
Industrial Customers	11	11	11	11	11	11	12	12	12	12
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,383**	**1,394**	**1,404**	**1,414**	**1,425**	**1,436**	**1,447**	**1,457**	**1,468**	**1,479**

North Pasco	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Total Therms Pct. Growth		1.98%	0.94%	1.44%	1.42%	1.91%	0.87%	1.36%	1.34%	1.84%
Residential Therms	2,783,628	2,839,055	2,865,608	2,906,795	2,948,044	3,004,590	3,030,602	3,071,882	3,113,069	3,170,492
Commercial Therms	1,910,833	1,948,813	1,967,107	1,995,381	2,023,696	2,062,441	2,080,369	2,108,705	2,136,978	2,176,321
Industrial Therms	105,919	107,782	109,038	110,605	112,175	114,067	115,316	116,887	118,454	120,365
Ind., Inst., & Cmcl. Interrup. Therms	208,056	212,169	214,183	217,262	220,345	224,540	226,515	229,601	232,679	236,938
Total Core Therms	**5,008,435**	**5,107,820**	**5,155,936**	**5,230,043**	**5,304,260**	**5,405,637**	**5,452,803**	**5,527,074**	**5,601,181**	**5,704,116**
Daily Baseload Therms	1,732	1,766	1,783	1,808	1,834	1,869	1,885	1,911	1,937	1,972
Peak Day Therms	72,894	73,966	75,041	76,120	77,200	78,279	79,362	80,443	81,521	82,601
Therms Per Residential Customer	1,493	1,501	1,493	1,493	1,493	1,501	1,493	1,493	1,493	1,501
Therms Per Commercial Customer	9,668	9,717	9,668	9,668	9,668	9,717	9,668	9,668	9,668	9,717
Therms Per Industrial Customer	52,183	52,331	52,183	52,183	52,183	52,331	52,183	52,183	52,183	52,331
Residential Customers	1,864	1,892	1,919	1,947	1,974	2,002	2,030	2,057	2,085	2,113
Commercial Customers	198	201	203	206	209	212	215	218	221	224
Industrial Customers	2	2	2	2	2	2	2	2	2	2
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,065**	**2,095**	**2,126**	**2,156**	**2,187**	**2,218**	**2,248**	**2,279**	**2,309**	**2,340**

Patterson	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.84%	1.83%	1.81%	1.80%	1.79%	1.78%	1.76%	1.75%	1.74%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	10,267	10,455	10,646	10,840	11,035	11,232	11,432	11,634	11,837	12,043
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	221,302	225,373	229,491	233,655	237,865	242,121	246,422	250,769	255,161	259,598
Total Core Therms	**231,568**	**235,828**	**240,138**	**244,494**	**248,900**	**253,353**	**257,854**	**262,402**	**266,998**	**271,641**
Daily Baseload Therms	316	322	328	334	340	346	352	358	365	371
Peak Day Therms	2,510	2,557	2,603	2,651	2,698	2,747	2,795	2,845	2,895	2,945
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	4	4	4	4	4	4	5	5	5	5
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**6**	**6**	**6**	**6**	**7**	**7**	**7**	**7**	**7**	**7**

Prosser	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.80%	1.24%	1.23%	1.67%	0.75%	1.19%	1.18%	1.62%
Residential Therms	294,153	299,343	301,590	305,335	309,091	314,403	316,624	320,396	324,164	329,571
Commercial Therms	508,359	517,034	521,212	527,684	534,175	543,046	547,193	553,713	560,226	569,245
Industrial Therms	165,395	168,159	169,577	171,682	173,794	176,619	178,029	180,151	182,270	185,140
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**967,907**	**984,535**	**992,379**	**1,004,702**	**1,017,060**	**1,034,068**	**1,041,846**	**1,054,259**	**1,066,660**	**1,083,956**
Daily Baseload Therms	418	426	429	434	440	447	450	456	461	469
Peak Day Therms	10,681	10,816	10,952	11,088	11,224	11,360	11,497	11,634	11,771	11,908
Therms Per Residential Customer	648	651	648	648	648	651	648	648	648	651
Therms Per Commercial Customer	3,660	3,676	3,660	3,660	3,660	3,676	3,660	3,660	3,660	3,676
Therms Per Industrial Customer	32,663	32,795	32,663	32,663	32,663	32,795	32,663	32,663	32,663	32,795
Residential Customers	454	460	465	471	477	483	489	494	500	506
Commercial Customers	139	141	142	144	146	148	150	151	153	155
Industrial Customers	5	5	5	5	5	5	5	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**605**	**613**	**621**	**628**	**636**	**644**	**651**	**659**	**667**

Quincy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.29%	1.28%	1.28%	1.28%	1.27%	1.27%	1.26%	1.25%	1.25%
Residential Therms	43,694	44,257	44,826	45,400	45,980	46,564	47,154	47,748	48,345	48,948
Commercial Therms	499,882	506,319	512,822	519,394	526,029	532,711	539,460	546,253	553,089	559,980
Industrial Therms	241,072	244,176	247,313	250,482	253,682	256,904	260,159	263,435	266,732	270,055
Ind., Inst., & Cmcl. Interrup. Therms	55,965	56,686	57,414	58,150	58,893	59,641	60,397	61,157	61,922	62,694
Total Core Therms	**840,614**	**851,438**	**862,375**	**873,425**	**884,583**	**895,819**	**907,170**	**918,593**	**930,089**	**941,676**
Daily Baseload Therms	633	641	649	657	666	674	683	691	700	709
Peak Day Therms	9,534	9,656	9,780	9,906	10,032	10,160	10,288	10,418	10,548	10,680
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	62	62	63	64	65	66	66	67	68	69
Commercial Customers	64	65	66	67	68	69	69	70	71	72
Industrial Customers	6	6	6	6	6	6	7	7	7	7
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**133**	**135**	**136**	**138**	**140**	**142**	**143**	**145**	**147**	**149**

Sunnyside	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.68%	-0.16%	0.27%	0.27%	0.70%	-0.14%	0.28%	0.28%	0.71%
Residential Therms	1,173,986	1,182,408	1,180,016	1,183,175	1,186,410	1,195,189	1,193,018	1,196,382	1,199,757	1,208,756
Commercial Therms	1,648,367	1,659,699	1,656,834	1,661,270	1,665,812	1,677,638	1,675,090	1,679,813	1,684,552	1,696,682
Industrial Therms	563,588	566,807	566,482	567,999	569,552	572,934	572,724	574,339	575,960	579,438
Ind., Inst., & Cmcl. Interrup. Therms	177,860	179,016	178,774	179,252	179,742	180,951	180,743	181,253	181,764	183,005
Total Core Therms	**3,563,801**	**3,587,930**	**3,582,105**	**3,591,697**	**3,601,517**	**3,626,711**	**3,621,575**	**3,631,787**	**3,642,034**	**3,667,881**
Daily Baseload Therms	2,831	2,850	2,845	2,853	2,860	2,880	2,876	2,885	2,893	2,913
Peak Day Therms	36,959	37,052	37,148	37,248	37,350	37,452	37,558	37,664	37,770	37,878
Therms Per Residential Customer	645	648	645	645	645	648	645	645	645	648
Therms Per Commercial Customer	3,232	3,246	3,232	3,232	3,232	3,246	3,232	3,232	3,232	3,246
Therms Per Industrial Customer	36,077	36,192	36,077	36,077	36,077	36,192	36,077	36,077	36,077	36,192
Residential Customers	1,821	1,826	1,831	1,836	1,841	1,846	1,851	1,856	1,861	1,867

Commercial Customers	510	511	513	514	515	517	518	520	521	523
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,349**	**2,355**	**2,361**	**2,367**	**2,374**	**2,380**	**2,387**	**2,394**	**2,401**	**2,408**

Moses Lake	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.42%	1.51%	1.96%	1.95%	2.40%	1.49%	1.94%	1.94%	2.39%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	168,939	173,429	175,646	179,087	182,587	187,406	189,767	193,449	197,193	202,361
Industrial Therms	3,727,207	3,817,134	3,875,178	3,951,091	4,028,305	4,124,754	4,186,719	4,267,949	4,350,559	4,453,905
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,896,146**	**3,990,563**	**4,050,824**	**4,130,178**	**4,210,892**	**4,312,159**	**4,376,486**	**4,461,397**	**4,547,752**	**4,656,265**
Daily Baseload Therms	2,349	2,406	2,442	2,490	2,539	2,600	2,638	2,690	2,742	2,807
Peak Day Therms	41,354	42,168	42,996	43,838	44,695	45,566	46,452	47,354	48,270	49,202
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	33,134	33,358	33,134	33,134	33,134	33,358	33,134	33,134	33,134	33,358
Therms Per Industrial Customer	522,158	524,435	522,158	522,158	522,158	524,435	522,158	522,158	522,158	524,435
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	6	6	6	6	6	6
Industrial Customers	7	7	7	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**12**	**12**	**13**	**13**	**13**	**13**	**14**	**14**	**14**	**15**

Woodland	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.21%	2.29%	2.64%	2.57%	2.93%	2.03%	2.39%	2.33%	2.70%
Residential Therms	384,193	396,629	405,590	416,298	427,011	439,643	448,432	459,142	469,843	482,667
Commercial Therms	718,536	741,679	758,554	778,580	798,615	822,113	838,679	858,710	878,722	902,566
Industrial Therms	376,491	388,372	397,459	407,952	418,450	430,491	439,442	449,938	460,423	472,619
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,479,219**	**1,526,680**	**1,561,603**	**1,602,829**	**1,644,076**	**1,692,246**	**1,726,553**	**1,767,790**	**1,808,988**	**1,857,851**
Daily Baseload Therms	880	908	929	953	978	1,007	1,027	1,051	1,076	1,105
Peak Day Therms	13,098	13,463	13,828	14,193	14,558	14,923	15,288	15,653	16,018	16,383
Therms Per Residential Customer	644	647	644	644	644	647	644	644	644	647
Therms Per Commercial Customer	3,598	3,613	3,598	3,598	3,598	3,613	3,598	3,598	3,598	3,613
Therms Per Industrial Customer	26,143	26,238	26,143	26,143	26,143	26,238	26,143	26,143	26,143	26,238
Residential Customers	597	613	630	647	663	680	697	713	730	746
Commercial Customers	200	205	211	216	222	228	233	239	244	250
Industrial Customers	14	15	15	16	16	16	17	17	18	18
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**811**	**833**	**856**	**879**	**901**	**924**	**947**	**969**	**992**	**1,014**

Bellingham II	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.26%	1.50%	1.84%	1.81%	2.16%	1.39%	1.73%	1.70%	2.05%
Residential Therms	491,897	503,024	510,544	519,936	529,364	540,775	548,301	557,805	567,316	578,955
Commercial Therms	4,383	4,481	4,550	4,633	4,717	4,818	4,886	4,971	5,055	5,158
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**496,280**	**507,506**	**515,093**	**524,569**	**534,082**	**545,593**	**553,187**	**562,776**	**572,371**	**584,113**
Daily Baseload Therms	687	703	713	726	740	756	766	779	793	809
Peak Day Therms	3,567	3,635	3,703	3,771	3,839	3,908	3,976	4,045	4,114	4,183
Therms Per Residential Customer	16,088	16,146	16,088	16,088	16,088	16,146	16,088	16,088	16,088	16,146
Therms Per Commercial Customer	4,301	4,315	4,301	4,301	4,301	4,315	4,301	4,301	4,301	4,315
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	31	31	32	32	33	33	34	35	35	36
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**32**	**32**	**33**	**33**	**34**	**35**	**35**	**36**	**36**	**37**

LDS Church	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.01%	0.60%	1.76%	1.74%	2.92%	0.51%	1.67%	1.65%	2.83%
Residential Therms	3,396	3,499	3,519	3,581	3,644	3,751	3,769	3,832	3,895	4,006
Commercial Therms	9,386	9,668	9,727	9,899	10,071	10,364	10,418	10,592	10,766	11,070
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**12,783**	**13,168**	**13,246**	**13,480**	**13,715**	**14,115**	**14,187**	**14,424**	**14,662**	**15,076**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	128	130	133	135	137	140	142	144	147	149
Therms Per Residential Customer	1,668	1,688	1,668	1,668	1,668	1,688	1,668	1,668	1,668	1,688
Therms Per Commercial Customer	9,217	9,326	9,217	9,217	9,217	9,326	9,217	9,217	9,217	9,326
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	**4**

Kalama #1	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.45%	0.46%	0.47%	0.48%	0.48%	0.49%	0.49%	0.49%	0.49%
Residential Therms	874	878	882	886	890	895	899	903	908	912
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**874**	**878**	**882**	**886**	**890**	**895**	**899**	**903**	**908**	**912**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	17	17	17	17	17	17	17	17	18	18
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.60%	-0.31%	0.16%	0.16%	0.63%	-0.29%	0.18%	0.18%	0.64%
Residential Therms	1,626	1,636	1,631	1,633	1,636	1,646	1,641	1,644	1,647	1,658
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,626**	**1,636**	**1,631**	**1,633**	**1,636**	**1,646**	**1,641**	**1,644**	**1,647**	**1,658**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	19	19	19
Therms Per Residential Customer	812	816	812	812	812	816	812	812	812	816
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	631	632	633	634	635	636	637	638	639	640
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**631**	**632**	**633**	**634**	**635**	**636**	**637**	**638**	**639**	**640**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	12,365	12,382	12,400	12,419	12,439	12,460	12,482	12,503	12,526	12,548
Commercial Therms	4,097	4,103	4,109	4,115	4,122	4,129	4,136	4,143	4,151	4,158
Industrial Therms	1,681	1,683	1,686	1,688	1,691	1,694	1,697	1,700	1,703	1,706
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,143**	**18,168**	**18,195**	**18,223**	**18,253**	**18,283**	**18,315**	**18,347**	**18,379**	**18,413**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	163	164	164	164	164	165	165	165	166	166
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.75%	-0.23%	0.27%	0.28%	0.77%	-0.21%	0.28%	0.29%	0.78%
Residential Therms	5,358	5,398	5,386	5,400	5,415	5,457	5,446	5,461	5,477	5,520
Commercial Therms	419,116	422,260	421,296	422,437	423,605	426,877	425,990	427,204	428,422	431,774
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**424,474**	**427,658**	**426,681**	**427,837**	**429,020**	**432,334**	**431,436**	**432,665**	**433,899**	**437,294**
Daily Baseload Therms	196	198	197	198	198	200	199	200	201	202
Peak Day Therms	4,831	4,843	4,856	4,869	4,882	4,896	4,910	4,924	4,938	4,952
Therms Per Residential Customer	216	217	216	216	216	217	216	216	216	217
Therms Per Commercial Customer	4,436	4,458	4,436	4,436	4,436	4,458	4,436	4,436	4,436	4,458
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	25	25	25	25	25	25	25
Commercial Customers	94	95	95	95	95	96	96	96	97	97
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**120**	**121**	**121**	**121**	**122**	**122**	**122**

Sandvik Metals	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.34%	0.40%	0.86%	0.86%	1.32%	0.38%	0.85%	0.84%	1.30%
Residential Therms	3,068,560	3,109,817	3,121,832	3,148,783	3,175,877	3,218,217	3,230,310	3,257,607	3,284,864	3,327,988
Commercial Therms	2,131,225	2,159,721	2,168,224	2,186,943	2,205,761	2,235,003	2,243,566	2,262,525	2,281,456	2,311,237
Industrial Therms	127,428	128,837	129,641	130,760	131,885	133,328	134,145	135,279	136,411	137,876
Ind., Inst., & Cmcl. Interrup. Therms	238,908	242,076	243,056	245,154	247,263	250,514	251,501	253,627	255,749	259,059
Total Core Therms	**5,566,122**	**5,640,451**	**5,662,752**	**5,711,640**	**5,760,786**	**5,837,062**	**5,859,522**	**5,909,038**	**5,958,480**	**6,036,161**
Daily Baseload Therms	3,488	3,534	3,548	3,579	3,610	3,657	3,671	3,702	3,733	3,782
Peak Day Therms	70,595	71,206	71,821	72,441	73,064	73,688	74,316	74,944	75,571	76,201
Therms Per Residential Customer	407	409	407	407	407	409	407	407	407	409
Therms Per Commercial Customer	2,654	2,667	2,654	2,654	2,654	2,667	2,654	2,654	2,654	2,667
Therms Per Industrial Customer	14,438	14,473	14,438	14,438	14,438	14,473	14,438	14,438	14,438	14,473
Residential Customers	7,542	7,607	7,673	7,739	7,806	7,873	7,940	8,007	8,074	8,141
Commercial Customers	803	810	817	824	831	838	845	852	859	867
Industrial Customers	9	9	9	9	9	9	9	9	9	10
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**8,358**	**8,430**	**8,503**	**8,577**	**8,650**	**8,724**	**8,799**	**8,873**	**8,947**	**9,022**

East Stanwood Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.92%	1.05%	1.46%	1.45%	1.85%	0.99%	1.40%	1.38%	1.79%
Residential Therms	5,948,514	6,063,266	6,126,408	6,216,026	6,306,016	6,423,677	6,486,607	6,577,173	6,667,740	6,787,695
Commercial Therms	3,817,078	3,890,003	3,931,230	3,988,736	4,046,482	4,121,231	4,162,364	4,220,479	4,278,595	4,354,774

Industrial Therms	112,177	114,226	115,532	117,222	118,919	121,016	122,324	124,032	125,740	127,874
Ind., Inst., & Cmcl. Interrup. Therms	573,307	583,882	590,452	599,089	607,762	618,589	625,167	633,896	642,625	653,643
Total Core Therms	**10,451,076**	**10,651,377**	**10,763,622**	**10,921,073**	**11,079,179**	**11,284,513**	**11,396,463**	**11,555,581**	**11,714,699**	**11,923,987**
Daily Baseload Therms	7,145	7,282	7,359	7,466	7,574	7,715	7,791	7,900	8,009	8,152
Peak Day Therms	101,621	103,136	104,660	106,191	107,728	109,267	110,813	112,360	113,907	115,459
Therms Per Residential Customer	748	751	748	748	748	751	748	748	748	751
Therms Per Commercial Customer	4,145	4,162	4,145	4,145	4,145	4,162	4,145	4,145	4,145	4,162
Therms Per Industrial Customer	45,023	45,172	45,023	45,023	45,023	45,172	45,023	45,023	45,023	45,172
Residential Customers	7,955	8,073	8,193	8,312	8,433	8,553	8,674	8,795	8,916	9,038
Commercial Customers	921	935	948	962	976	990	1,004	1,018	1,032	1,046
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	5	5	5	5	5	5	6	6	6	6
Total Core Customers	**8,883**	**9,016**	**9,149**	**9,283**	**9,417**	**9,551**	**9,687**	**9,822**	**9,957**	**10,093**

Kennewick Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.71%	0.75%	1.22%	1.20%	1.67%	0.70%	1.17%	1.15%	1.62%
Residential Therms	9,256,048	9,416,833	9,485,122	9,600,419	9,716,002	9,880,359	9,947,642	10,063,557	10,179,283	10,346,320
Commercial Therms	10,142,277	10,314,387	10,393,284	10,519,621	10,646,270	10,822,093	10,900,089	11,027,103	11,153,908	11,332,466
Industrial Therms	178,296	181,096	182,709	184,930	187,156	190,010	191,618	193,851	196,080	198,971
Ind., Inst., & Cmcl. Interrup. Therms	983,245	999,713	1,007,579	1,019,826	1,032,104	1,048,922	1,056,711	1,069,024	1,081,317	1,098,389
Total Core Therms	**20,559,866**	**20,912,029**	**21,068,694**	**21,324,797**	**21,581,533**	**21,941,383**	**22,096,060**	**22,353,535**	**22,610,588**	**22,976,146**
Daily Baseload Therms	13,971	14,211	14,317	14,491	14,666	14,910	15,015	15,190	15,365	15,613
Peak Day Therms	263,963	267,223	270,496	273,784	277,080	280,376	283,686	286,992	290,292	293,599
Therms Per Residential Customer	667	670	667	667	667	670	667	667	667	670
Therms Per Commercial Customer	4,514	4,534	4,514	4,514	4,514	4,534	4,514	4,514	4,514	4,534
Therms Per Industrial Customer	21,786	21,858	21,786	21,786	21,786	21,858	21,786	21,786	21,786	21,858
Residential Customers	13,887	14,059	14,231	14,404	14,578	14,751	14,925	15,099	15,273	15,447
Commercial Customers	2,247	2,275	2,303	2,331	2,359	2,387	2,415	2,443	2,471	2,499
Industrial Customers	8	8	8	8	9	9	9	9	9	9
Interruptible Customers	12	12	12	12	12	13	13	13	13	13
Total Core Customers	**16,154**	**16,354**	**16,554**	**16,755**	**16,957**	**17,159**	**17,361**	**17,564**	**17,766**	**17,968**

Longview South Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.03%	-0.03%	0.51%	0.51%	1.05%	-0.02%	0.51%	0.51%	1.05%
Residential Therms	809,799	818,265	817,927	822,084	826,290	835,045	834,793	839,083	843,376	852,311
Commercial Therms	2,870,764	2,900,388	2,899,578	2,914,316	2,929,227	2,959,863	2,959,369	2,974,576	2,989,797	3,021,064
Industrial Therms	158,660	160,322	160,253	161,067	161,891	163,609	163,557	164,398	165,239	166,992
Ind., Inst., & Cmcl. Interrup. Therms	531,869	537,300	537,207	539,938	542,700	548,318	548,285	551,102	553,922	559,656
Total Core Therms	**4,371,092**	**4,416,276**	**4,414,965**	**4,437,405**	**4,460,110**	**4,506,836**	**4,506,004**	**4,529,158**	**4,552,334**	**4,600,023**
Daily Baseload Therms	3,157	3,189	3,188	3,205	3,221	3,255	3,254	3,271	3,288	3,322
Peak Day Therms	42,871	43,084	43,301	43,521	43,744	43,968	44,194	44,421	44,649	44,877
Therms Per Residential Customer	442	444	442	442	442	444	442	442	442	444
Therms Per Commercial Customer	3,324	3,342	3,324	3,324	3,324	3,342	3,324	3,324	3,324	3,342
Therms Per Industrial Customer	11,768	11,832	11,768	11,768	11,768	11,832	11,768	11,768	11,768	11,832
Residential Customers	1,834	1,843	1,852	1,862	1,871	1,881	1,890	1,900	1,910	1,920
Commercial Customers	864	868	872	877	881	886	890	895	899	904
Industrial Customers	13	14	14	14	14	14	14	14	14	14
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**2,717**	**2,730**	**2,744**	**2,758**	**2,772**	**2,786**	**2,801**	**2,815**	**2,829**	**2,844**

Sedro-Woolley Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.85%	0.96%	1.39%	1.37%	1.80%	0.91%	1.33%	1.31%	1.74%
Residential Therms	18,699,679	19,047,730	19,228,779	19,495,508	19,763,109	20,119,960	20,300,344	20,569,687	20,838,886	21,202,551
Commercial Therms	9,245,554	9,416,682	9,507,154	9,639,030	9,771,338	9,946,763	10,036,960	10,170,130	10,303,228	10,481,966
Industrial Therms	1,247,957	1,270,263	1,283,268	1,301,068	1,318,927	1,341,768	1,354,780	1,372,756	1,390,721	1,413,965
Ind., Inst., & Cmcl. Interrup. Therms	1,347,459	1,371,582	1,385,585	1,404,805	1,424,087	1,448,790	1,462,799	1,482,208	1,501,605	1,526,745
Total Core Therms	**30,540,649**	**31,106,257**	**31,404,785**	**31,840,411**	**32,277,461**	**32,857,282**	**33,154,883**	**33,594,780**	**34,034,440**	**34,625,227**
Daily Baseload Therms	15,073	15,352	15,499	15,714	15,930	16,216	16,363	16,580	16,797	17,089
Peak Day Therms	321,421	325,958	330,516	335,100	339,700	344,307	348,934	353,564	358,191	362,833
Therms Per Residential Customer	759	762	759	759	759	762	759	759	759	762
Therms Per Commercial Customer	2,881	2,893	2,881	2,881	2,881	2,893	2,881	2,881	2,881	2,893
Therms Per Industrial Customer	15,301	15,357	15,301	15,301	15,301	15,357	15,301	15,301	15,301	15,357
Residential Customers	24,642	24,990	25,339	25,691	26,043	26,397	26,751	27,106	27,461	27,817
Commercial Customers	3,210	3,255	3,300	3,346	3,392	3,438	3,484	3,531	3,577	3,623
Industrial Customers	82	83	84	85	86	87	89	90	91	92
Interruptible Customers	9	9	10	10	10	10	10	10	10	10
Total Core Customers	**27,942**	**28,337**	**28,733**	**29,132**	**29,532**	**29,932**	**30,334**	**30,737**	**31,139**	**31,543**

Sumas SPE Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.33%	1.43%	1.84%	1.81%	2.22%	1.33%	1.73%	1.70%	2.12%
Residential Therms	33,667,349	34,453,869	34,943,601	35,586,434	36,231,769	37,039,539	37,527,883	38,178,369	38,829,297	39,654,625
Commercial Therms	15,535,928	15,896,016	16,124,860	16,421,498	16,719,290	17,088,969	17,317,387	17,617,556	17,917,929	18,295,494
Industrial Therms	847,807	866,861	879,945	896,133	912,384	931,917	945,022	961,403	977,794	997,713
Ind., Inst., & Cmcl. Interrup. Therms	1,248,418	1,277,412	1,295,743	1,319,580	1,343,510	1,373,278	1,391,571	1,415,692	1,439,829	1,470,235
Total Core Therms	**51,299,503**	**52,494,158**	**53,244,150**	**54,223,645**	**55,206,952**	**56,433,703**	**57,181,863**	**58,173,019**	**59,164,848**	**60,418,067**
Daily Baseload Therms	29,106	29,784	30,209	30,765	31,323	32,019	32,444	33,006	33,569	34,280
Peak Day Therms	531,961	542,021	552,127	562,284	572,481	582,698	592,960	603,238	613,523	623,838
Therms Per Residential Customer	791	794	791	791	791	794	791	791	791	794
Therms Per Commercial Customer	3,114	3,127	3,114	3,114	3,114	3,127	3,114	3,114	3,114	3,127
Therms Per Industrial Customer	17,857	17,920	17,857	17,857	17,857	17,920	17,857	17,857	17,857	17,920
Residential Customers	42,562	43,367	44,175	44,988	45,804	46,621	47,442	48,265	49,088	49,913
Commercial Customers	4,988	5,083	5,178	5,273	5,368	5,464	5,560	5,657	5,753	5,850
Industrial Customers	47	48	49	50	51	52	53	54	55	56
Interruptible Customers	13	13	13	14	14	14	14	15	15	15

Total Core Customers	**47,611**	**48,511**	**49,416**	**50,325**	**51,237**	**52,152**	**53,070**	**53,990**	**54,910**	**55,834**

Yakima Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.59%	-0.31%	0.16%	0.16%	0.62%	-0.28%	0.18%	0.18%	0.64%
Residential Therms	13,645,150	13,728,555	13,683,802	13,705,102	13,727,443	13,815,368	13,774,097	13,798,301	13,822,724	13,913,413
Commercial Therms	12,358,765	12,431,226	12,393,773	12,413,064	12,433,299	12,509,835	12,475,555	12,497,477	12,519,598	12,598,615
Industrial Therms	2,990,116	3,005,670	2,998,586	3,003,253	3,008,149	3,024,677	3,018,372	3,023,676	3,029,028	3,046,142
Ind., Inst., & Cmcl. Interrup. Therms	891,720	896,927	894,245	895,637	897,097	902,599	900,146	901,728	903,324	909,004
Total Core Therms	**29,885,750**	**30,062,378**	**29,970,406**	**30,017,057**	**30,065,988**	**30,252,479**	**30,168,171**	**30,221,183**	**30,274,674**	**30,467,174**
Daily Baseload Therms	15,353	15,444	15,396	15,420	15,446	15,541	15,498	15,525	15,553	15,652
Peak Day Therms	333,048	333,504	333,991	334,511	335,057	335,613	336,195	336,786	337,382	337,994
Therms Per Residential Customer	749	752	749	749	749	752	749	749	749	752
Therms Per Commercial Customer	3,781	3,798	3,781	3,781	3,781	3,798	3,781	3,781	3,781	3,798
Therms Per Industrial Customer	40,955	41,112	40,955	40,955	40,955	41,112	40,955	40,955	40,955	41,112
Residential Customers	18,224	18,249	18,276	18,304	18,334	18,364	18,396	18,429	18,461	18,495
Commercial Customers	3,268	3,273	3,278	3,283	3,288	3,294	3,299	3,305	3,311	3,317
Industrial Customers	73	73	73	73	73	74	74	74	74	74
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,576**	**21,606**	**21,637**	**21,671**	**21,706**	**21,743**	**21,780**	**21,819**	**21,857**	**21,897**

Zone 10	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.72%	-0.13%	0.31%	0.31%	0.74%	-0.11%	0.32%	0.32%	0.75%
Residential Therms	3,364,547	3,390,405	3,384,351	3,394,690	3,405,253	3,432,206	3,426,801	3,437,757	3,448,748	3,476,395
Commercial Therms	5,167,060	5,205,587	5,198,676	5,215,151	5,231,970	5,272,157	5,266,251	5,283,668	5,301,139	5,342,369
Industrial Therms	1,983,357	1,995,200	1,994,475	2,000,295	2,006,251	2,018,712	2,018,414	2,024,606	2,030,819	2,043,657
Ind., Inst., & Cmcl. Interrup. Therms	271,148	272,665	272,398	273,058	273,736	275,334	275,125	275,834	276,547	278,193
Total Core Therms	**10,786,111**	**10,863,857**	**10,849,901**	**10,883,193**	**10,917,210**	**10,998,408**	**10,986,590**	**11,021,865**	**11,057,253**	**11,140,615**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	111,157	111,489	111,831	112,183	112,542	112,904	113,274	113,646	114,019	114,397
Therms Per Residential Customer	653	657	653	653	653	657	653	653	653	657
Therms Per Commercial Customer	3,875	3,891	3,874	3,873	3,873	3,890	3,872	3,872	3,871	3,888
Therms Per Industrial Customer	38,776	38,891	38,757	38,748	38,739	38,854	38,722	38,713	38,704	38,820
Residential Customers	5,149	5,164	5,179	5,195	5,211	5,228	5,244	5,261	5,278	5,295
Commercial Customers	1,334	1,338	1,342	1,346	1,351	1,355	1,360	1,365	1,369	1,374
Industrial Customers	51	51	51	52	52	52	52	52	52	53
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,536**	**6,556**	**6,576**	**6,596**	**6,617**	**6,638**	**6,660**	**6,681**	**6,703**	**6,725**

Zone 11	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.75%	-0.11%	0.34%	0.34%	0.78%	-0.08%	0.35%	0.35%	0.79%
Residential Therms	14,698,807	14,797,114	14,758,387	14,790,279	14,823,278	14,926,536	14,891,371	14,926,346	14,961,548	15,067,898
Commercial Therms	17,491,689	17,636,614	17,633,327	17,706,580	17,781,105	17,932,170	17,932,577	18,009,387	18,086,445	18,241,575
Industrial Therms	4,202,426	4,231,917	4,232,656	4,248,371	4,264,407	4,295,341	4,297,101	4,313,726	4,330,428	4,362,302
Ind., Inst., & Cmcl. Interrup. Therms	1,498,589	1,511,893	1,511,995	1,518,905	1,525,924	1,539,776	1,540,172	1,547,389	1,554,629	1,568,855
Total Core Therms	**37,891,512**	**38,177,538**	**38,136,364**	**38,264,136**	**38,394,714**	**38,693,823**	**38,661,221**	**38,796,849**	**38,933,051**	**39,240,631**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	411,019	412,262	413,544	414,865	416,216	417,580	418,977	420,383	421,796	423,229
Therms Per Residential Customer	689	692	688	688	688	691	687	687	687	690
Therms Per Commercial Customer	3,866	3,885	3,871	3,873	3,875	3,893	3,879	3,881	3,883	3,901
Therms Per Industrial Customer	39,094	39,214	39,065	39,050	39,036	39,156	39,008	38,994	38,980	39,101
Residential Customers	21,336	21,386	21,438	21,493	21,549	21,605	21,664	21,722	21,781	21,842
Commercial Customers	4,524	4,540	4,556	4,572	4,589	4,606	4,623	4,641	4,658	4,676
Industrial Customers	107	108	108	109	109	110	110	111	111	112
Interruptible Customers	20	21	21	21	21	21	21	21	21	21
Total Core Customers	**25,988**	**26,054**	**26,123**	**26,194**	**26,268**	**26,342**	**26,418**	**26,495**	**26,572**	**26,650**

Zone 20	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.80%	1.25%	1.24%	1.68%	0.77%	1.21%	1.20%	1.64%
Residential Therms	15,755,171	16,017,584	16,129,290	16,317,694	16,506,671	16,775,060	16,885,495	17,075,127	17,264,450	17,537,353
Commercial Therms	15,267,695	15,518,532	15,633,304	15,817,482	16,002,285	16,258,969	16,372,924	16,558,555	16,743,965	17,005,119
Industrial Therms	4,367,353	4,465,037	4,528,468	4,611,012	4,694,902	4,799,295	4,866,722	4,954,675	5,044,005	5,155,433
Ind., Inst., & Cmcl. Interrup. Therms	1,639,333	1,664,624	1,677,052	1,696,055	1,715,132	1,741,002	1,753,388	1,772,547	1,791,680	1,817,983
Total Core Therms	**37,029,552**	**37,665,776**	**37,968,114**	**38,442,244**	**38,918,990**	**39,574,327**	**39,878,529**	**40,360,904**	**40,844,101**	**41,515,889**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	471,209	477,139	483,106	489,113	495,150	501,201	507,292	513,391	519,497	525,633
Therms Per Residential Customer	646	649	646	647	647	651	648	648	649	652
Therms Per Commercial Customer	4,302	4,324	4,308	4,311	4,314	4,335	4,319	4,321	4,324	4,346
Therms Per Industrial Customer	117,217	118,474	118,788	119,577	120,370	121,656	121,971	122,780	123,598	124,919
Residential Customers	24,408	24,680	24,954	25,229	25,506	25,782	26,060	26,337	26,614	26,892
Commercial Customers	3,549	3,589	3,629	3,669	3,710	3,750	3,791	3,832	3,872	3,913
Industrial Customers	37	38	38	39	39	39	40	40	41	41
Interruptible Customers	19	19	19	20	20	20	20	20	21	21
Total Core Customers	**28,013**	**28,326**	**28,640**	**28,957**	**29,274**	**29,592**	**29,911**	**30,230**	**30,548**	**30,868**

Zone 24	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.25%	0.23%	0.23%	0.70%	-0.24%	0.24%	0.23%	0.71%
Residential Therms	4,220,952	4,250,277	4,237,693	4,246,645	4,255,709	4,285,954	4,274,073	4,283,374	4,292,666	4,323,526
Commercial Therms	3,969,465	3,997,388	3,986,730	3,995,858	4,005,120	4,033,906	4,023,859	4,033,337	4,042,804	4,072,156
Industrial Therms	269,950	271,092	271,225	271,892	272,571	273,763	273,942	274,635	275,327	276,548
Ind., Inst., & Cmcl. Interrup. Therms	1,210,107	1,218,370	1,216,855	1,220,332	1,223,876	1,232,393	1,231,023	1,234,627	1,238,226	1,246,894
Total Core Therms	**9,670,474**	**9,737,128**	**9,712,503**	**9,734,727**	**9,757,277**	**9,826,016**	**9,802,897**	**9,825,973**	**9,849,023**	**9,919,124**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095

Therms Per Residential Customer	610	613	610	609	609	612	609	609	609	612
Therms Per Commercial Customer	2,826	2,839	2,825	2,825	2,825	2,839	2,825	2,824	2,824	2,838
Therms Per Industrial Customer	11,708	11,727	11,703	11,700	11,698	11,717	11,693	11,690	11,688	11,707
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Zone 26	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.48%	0.59%	1.03%	1.03%	1.46%	0.57%	1.00%	0.99%	1.43%
Residential Therms	1,422,106	1,444,395	1,454,065	1,470,163	1,486,324	1,509,133	1,518,741	1,534,992	1,551,233	1,574,424
Commercial Therms	3,908,364	3,963,412	3,980,798	4,017,394	4,054,189	4,110,677	4,128,117	4,165,229	4,202,335	4,259,837
Industrial Therms	759,265	774,017	784,253	796,789	809,345	824,339	834,478	847,053	859,616	874,800
Ind., Inst., & Cmcl. Interrup. Therms	753,171	762,673	766,698	773,592	780,565	790,439	794,707	801,871	809,083	819,254
Total Core Therms	**6,842,905**	**6,944,498**	**6,985,814**	**7,057,938**	**7,130,423**	**7,234,588**	**7,276,043**	**7,349,145**	**7,422,267**	**7,528,315**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	66,316	66,982	67,652	68,327	69,006	69,685	70,369	71,053	71,738	72,425
Therms Per Residential Customer	533	536	534	535	535	538	536	537	537	540
Therms Per Commercial Customer	3,359	3,376	3,361	3,361	3,362	3,379	3,364	3,365	3,366	3,382
Therms Per Industrial Customer	23,913	23,998	23,942	23,955	23,967	24,050	23,990	24,001	24,011	24,092
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,164	1,174	1,185	1,195	1,206	1,216	1,227	1,238	1,249	1,259
Industrial Customers	32	32	33	33	34	34	35	35	36	36
Interruptible Customers	7	7	7	7	7	7	7	7	7	8
Total Core Customers	**3,870**	**3,908**	**3,946**	**3,984**	**4,023**	**4,062**	**4,101**	**4,139**	**4,178**	**4,217**

Zone 30-S	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.42%	0.56%	0.98%	0.98%	1.40%	0.54%	0.95%	0.94%	1.36%
Residential Therms	24,658,270	25,017,931	25,161,824	25,415,715	25,670,738	26,038,650	26,182,029	26,438,118	26,693,891	27,067,650
Commercial Therms	13,595,111	13,783,398	13,859,627	13,993,004	14,126,982	14,319,431	14,395,500	14,529,965	14,664,224	14,859,529
Industrial Therms	479,344	487,374	488,256	492,750	497,265	505,499	506,310	510,838	515,358	523,752
Ind., Inst., & Cmcl. Interrup. Therms	3,848,418	3,897,013	3,917,980	3,953,058	3,988,298	4,037,901	4,058,886	4,094,223	4,129,488	4,179,737
Total Core Therms	**42,581,143**	**43,185,716**	**43,427,687**	**43,854,528**	**44,283,284**	**44,901,481**	**45,142,724**	**45,573,145**	**46,002,962**	**46,630,668**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	382,514	386,328	390,160	394,015	397,887	401,757	405,649	409,536	413,418	417,309
Therms Per Residential Customer	713	716	713	713	713	716	713	713	713	716
Therms Per Commercial Customer	3,680	3,696	3,681	3,681	3,682	3,697	3,683	3,683	3,683	3,699
Therms Per Industrial Customer	19,345	19,514	19,396	19,421	19,445	19,614	19,494	19,518	19,542	19,710
Residential Customers	34,585	34,938	35,293	35,650	36,008	36,367	36,727	37,087	37,446	37,807
Commercial Customers	3,694	3,730	3,765	3,801	3,837	3,873	3,909	3,945	3,981	4,017
Industrial Customers	25	25	25	25	26	26	26	26	26	27
Interruptible Customers	14	14	14	14	14	15	15	15	15	15
Total Core Customers	**38,318**	**38,707**	**39,098**	**39,491**	**39,885**	**40,280**	**40,677**	**41,073**	**41,469**	**41,866**

Zone 30-W	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.12%	1.23%	1.64%	1.62%	2.03%	1.15%	1.56%	1.53%	1.95%
Residential Therms	62,857,257	64,198,683	64,986,045	66,058,539	67,135,081	68,511,827	69,296,790	70,381,309	71,466,142	72,871,439
Commercial Therms	30,803,931	31,452,023	31,838,205	32,359,283	32,882,330	33,547,252	33,932,587	34,459,482	34,986,517	35,664,956
Industrial Therms	2,452,004	2,500,159	2,530,411	2,569,921	2,609,574	2,658,909	2,689,192	2,729,127	2,769,065	2,819,316
Ind., Inst., & Cmcl. Interrup. Therms	3,244,735	3,310,201	3,350,162	3,403,282	3,456,600	3,523,723	3,563,655	3,617,357	3,671,066	3,739,499
Total Core Therms	**99,357,927**	**101,461,067**	**102,704,824**	**104,391,024**	**106,083,584**	**108,241,711**	**109,482,224**	**111,187,275**	**112,892,790**	**115,095,209**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,021,551	1,038,721	1,055,970	1,073,310	1,090,716	1,108,153	1,125,667	1,143,201	1,160,740	1,178,332
Therms Per Residential Customer	785	789	785	785	785	789	785	786	786	789
Therms Per Commercial Customer	3,172	3,185	3,172	3,172	3,172	3,185	3,172	3,172	3,172	3,185
Therms Per Industrial Customer	15,659	15,718	15,663	15,664	15,666	15,725	15,669	15,671	15,673	15,731
Residential Customers	80,050	81,398	82,752	84,113	85,479	86,848	88,223	89,600	90,977	92,358
Commercial Customers	9,711	9,874	10,038	10,202	10,367	10,532	10,698	10,864	11,030	11,197
Industrial Customers	157	159	162	164	167	169	172	174	177	179
Interruptible Customers	28	29	29	30	30	31	31	32	32	33
Total Core Customers	**89,946**	**91,460**	**92,980**	**94,509**	**96,043**	**97,580**	**99,124**	**100,670**	**102,216**	**103,767**

Zone GTN	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.47%	1.55%	1.96%	1.92%	2.33%	1.42%	1.82%	1.79%	2.20%
Residential Therms	31,549,253	32,359,960	32,887,569	33,558,952	34,231,411	35,057,577	35,577,437	36,250,791	36,923,597	37,762,789
Commercial Therms	19,431,091	19,901,348	20,203,679	20,591,597	20,980,331	21,460,080	21,758,923	22,148,630	22,538,103	23,025,716
Industrial Therms	1,881,078	1,911,691	1,926,419	1,949,387	1,972,518	2,004,124	2,019,125	2,042,583	2,066,070	2,098,451
Ind., Inst., & Cmcl. Interrup. Therms	999,443	1,016,414	1,026,878	1,040,738	1,054,674	1,072,096	1,082,703	1,096,786	1,110,880	1,128,645
Total Core Therms	**53,860,866**	**55,189,414**	**56,044,546**	**57,140,673**	**58,238,934**	**59,593,877**	**60,438,188**	**61,538,790**	**62,638,649**	**64,015,600**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	767	771	768	768	768	772	769	769	770	773
Therms Per Commercial Customer	2,969	2,982	2,970	2,970	2,970	2,983	2,970	2,971	2,971	2,984
Therms Per Industrial Customer	30,480	30,578	30,420	30,391	30,363	30,463	30,309	30,284	30,259	30,362
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Zone ME-OR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.16%	0.61%	0.62%	1.07%	0.16%	0.61%	0.61%	1.06%

Residential Therms	5,995,326	6,060,920	6,068,263	6,105,371	6,142,929	6,210,602	6,218,421	6,256,505	6,294,513	6,363,603
Commercial Therms	5,970,838	6,032,996	6,043,542	6,080,528	6,117,961	6,182,104	6,193,196	6,231,148	6,269,023	6,334,490
Industrial Therms	441,772	446,436	447,154	449,892	452,662	457,474	458,231	461,039	463,843	468,754
Ind., Inst., & Cmcl. Interrup. Therms	1,451,057	1,465,481	1,468,701	1,477,679	1,486,766	1,501,657	1,505,030	1,514,245	1,523,441	1,538,640
Total Core Therms	**13,858,993**	**14,005,833**	**14,027,661**	**14,113,469**	**14,200,319**	**14,351,838**	**14,374,879**	**14,462,937**	**14,550,820**	**14,705,487**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	169,789	170,815	171,856	172,907	173,971	175,035	176,109	177,188	178,265	179,348
Therms Per Residential Customer	644	647	644	644	644	647	644	644	644	647
Therms Per Commercial Customer	3,632	3,647	3,632	3,632	3,632	3,647	3,632	3,632	3,632	3,647
Therms Per Industrial Customer	22,140	22,238	22,138	22,138	22,137	22,236	22,136	22,135	22,135	22,234
Residential Customers	9,316	9,372	9,429	9,487	9,545	9,604	9,663	9,722	9,781	9,840
Commercial Customers	1,644	1,654	1,664	1,674	1,685	1,695	1,705	1,716	1,726	1,737
Industrial Customers	20	20	20	20	20	21	21	21	21	21
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**10,987**	**11,053**	**11,121**	**11,189**	**11,258**	**11,326**	**11,396**	**11,466**	**11,535**	**11,606**

Zone ME-WA	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.49%	-0.42%	0.05%	0.06%	0.53%	-0.39%	0.07%	0.07%	0.54%
Residential Therms	7,513,503	7,549,126	7,512,198	7,512,666	7,513,758	7,551,760	7,517,167	7,519,374	7,521,690	7,561,215
Commercial Therms	5,098,915	5,123,003	5,100,367	5,101,846	5,103,746	5,129,445	5,108,359	5,111,006	5,113,719	5,140,447
Industrial Therms	232,766	234,270	234,187	234,927	235,685	237,260	237,227	238,013	238,799	240,418
Ind., Inst., & Cmcl. Interrup. Therms	3,089,520	3,107,081	3,099,467	3,104,868	3,110,510	3,129,063	3,122,224	3,128,283	3,134,354	3,153,541
Total Core Therms	**15,934,704**	**16,013,480**	**15,946,219**	**15,954,307**	**15,963,699**	**16,047,528**	**15,984,978**	**15,996,676**	**16,008,562**	**16,095,621**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	188,513	188,526	188,557	188,607	188,672	188,744	188,833	188,926	189,022	189,130
Therms Per Residential Customer	643	646	642	642	642	645	642	642	642	645
Therms Per Commercial Customer	3,576	3,592	3,575	3,574	3,574	3,590	3,573	3,573	3,572	3,589
Therms Per Industrial Customer	17,754	17,830	17,784	17,798	17,813	17,889	17,841	17,856	17,870	17,945
Residential Customers	11,693	11,693	11,695	11,697	11,701	11,705	11,710	11,716	11,721	11,728
Commercial Customers	1,426	1,426	1,427	1,427	1,428	1,429	1,430	1,431	1,431	1,432
Industrial Customers	13	13	13	13	13	13	13	13	13	13
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,137**	**13,138**	**13,140**	**13,143**	**13,147**	**13,152**	**13,158**	**13,165**	**13,171**	**13,179**

Bellingham Disctrict	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.33%	1.43%	1.84%	1.81%	2.22%	1.33%	1.73%	1.70%	2.12%
Residential Therms	34,283,798	35,084,368	35,583,390	36,237,979	36,895,115	37,717,300	38,214,934	38,877,316	39,540,149	40,380,189
Commercial Therms	15,681,489	16,044,988	16,275,885	16,575,276	16,875,832	17,249,018	17,479,481	17,782,438	18,085,601	18,466,752
Industrial Therms	848,766	867,840	880,941	897,147	913,416	932,968	946,091	962,490	978,900	998,838
Ind., Inst., & Cmcl. Interrup. Therms	1,323,969	1,354,737	1,374,125	1,399,388	1,424,750	1,456,344	1,475,688	1,501,253	1,526,836	1,559,110
Total Core Therms	**52,138,022**	**53,351,934**	**54,114,341**	**55,109,790**	**56,109,113**	**57,355,629**	**58,116,194**	**59,123,498**	**60,131,486**	**61,404,889**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	539,184	549,379	559,622	569,916	580,251	590,607	601,007	611,424	621,848	632,303
Therms Per Residential Customer	802	806	802	802	802	806	802	802	802	806
Therms Per Commercial Customer	3,119	3,132	3,119	3,119	3,119	3,132	3,119	3,119	3,119	3,132
Therms Per Industrial Customer	17,502	17,563	17,502	17,502	17,502	17,563	17,502	17,502	17,502	17,563
Residential Customers	42,747	43,555	44,367	45,183	46,003	46,824	47,648	48,474	49,300	50,129
Commercial Customers	5,027	5,122	5,218	5,314	5,410	5,507	5,604	5,701	5,798	5,896
Industrial Customers	48	49	50	51	52	53	54	55	56	57
Interruptible Customers	14	14	14	15	15	15	16	16	16	16
Total Core Customers	**47,836**	**48,741**	**49,650**	**50,563**	**51,480**	**52,399**	**53,322**	**54,246**	**55,171**	**56,098**

Mount Vernon District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.88%	1.00%	1.42%	1.41%	1.82%	0.94%	1.36%	1.34%	1.76%
Residential Therms	28,573,459	29,114,315	29,402,655	29,820,560	30,239,966	30,794,527	31,081,857	31,503,993	31,925,993	32,491,250
Commercial Therms	15,122,442	15,407,035	15,562,320	15,784,006	16,006,498	16,298,234	16,453,106	16,677,044	16,900,916	17,198,203
Industrial Therms	1,603,237	1,632,319	1,649,471	1,672,774	1,696,158	1,725,941	1,743,101	1,766,638	1,790,165	1,820,478
Ind., Inst., & Cmcl. Interrup. Therms	1,920,766	1,955,464	1,976,037	2,003,894	2,031,850	2,067,380	2,087,967	2,116,103	2,144,230	2,180,389
Total Core Therms	**47,219,904**	**48,109,133**	**48,590,483**	**49,281,234**	**49,974,471**	**50,886,082**	**51,366,030**	**52,063,778**	**52,761,304**	**53,690,320**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	482,367	489,342	496,348	503,394	510,465	517,547	524,660	531,777	538,892	546,029
Therms Per Residential Customer	766	769	766	766	766	769	766	766	766	769
Therms Per Commercial Customer	3,228	3,242	3,229	3,229	3,229	3,243	3,230	3,230	3,230	3,244
Therms Per Industrial Customer	14,832	14,886	14,830	14,829	14,829	14,883	14,827	14,826	14,825	14,879
Residential Customers	37,303	37,843	38,385	38,930	39,477	40,025	40,575	41,126	41,676	42,228
Commercial Customers	4,684	4,752	4,820	4,888	4,957	5,025	5,094	5,163	5,232	5,302
Industrial Customers	108	110	111	113	114	116	118	119	121	122
Interruptible Customers	14	15	15	15	15	15	16	16	16	16
Total Core Customers	**42,110**	**42,719**	**43,330**	**43,946**	**44,563**	**45,181**	**45,803**	**46,424**	**47,045**	**47,668**

Bremerton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.51%	0.65%	1.07%	1.06%	1.48%	0.62%	1.04%	1.02%	1.45%
Residential Therms	22,083,845	22,420,006	22,562,959	22,804,509	23,047,122	23,391,215	23,533,730	23,777,513	24,021,083	24,370,913
Commercial Therms	11,100,938	11,267,124	11,341,775	11,463,195	11,585,150	11,755,203	11,829,755	11,952,298	12,074,734	12,247,548
Industrial Therms	357,450	364,241	365,205	369,115	373,042	380,019	380,918	384,864	388,807	395,936
Ind., Inst., & Cmcl. Interrup. Therms	2,706,744	2,745,943	2,765,467	2,795,073	2,824,809	2,864,894	2,884,451	2,914,331	2,944,184	2,984,885
Total Core Therms	**36,248,977**	**36,797,315**	**37,035,406**	**37,431,892**	**37,830,124**	**38,391,332**	**38,628,855**	**39,029,006**	**39,428,808**	**39,999,282**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	710	713	710	710	710	713	710	710	710	713
Therms Per Commercial Customer	3,763	3,778	3,763	3,763	3,763	3,778	3,763	3,763	3,763	3,778
Therms Per Industrial Customer	27,376	27,597	27,376	27,376	27,376	27,597	27,376	27,376	27,376	27,597
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241

Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Longview District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.47%	0.55%	1.00%	1.00%	1.45%	0.53%	0.98%	0.97%	1.42%
Residential Therms	1,422,106	1,444,395	1,454,065	1,470,163	1,486,324	1,509,133	1,518,741	1,534,992	1,551,233	1,574,424
Commercial Therms	3,898,097	3,952,957	3,970,152	4,006,554	4,043,154	4,099,445	4,116,685	4,153,595	4,190,498	4,247,794
Industrial Therms	759,265	774,017	784,253	796,789	809,345	824,339	834,478	847,053	859,616	874,800
Ind., Inst., & Cmcl. Interrup. Therms	531,869	537,300	537,207	539,938	542,700	548,318	548,285	551,102	553,922	559,656
Total Core Therms	**6,611,337**	**6,708,670**	**6,745,677**	**6,813,444**	**6,881,523**	**6,981,235**	**7,018,190**	**7,086,742**	**7,155,269**	**7,256,674**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	63,806	64,426	65,049	65,677	66,307	66,939	67,573	68,208	68,843	69,480
Therms Per Residential Customer	533	536	534	535	535	538	536	537	537	540
Therms Per Commercial Customer	3,362	3,379	3,364	3,365	3,365	3,382	3,367	3,368	3,369	3,386
Therms Per Industrial Customer	24,706	24,796	24,739	24,755	24,770	24,858	24,799	24,812	24,825	24,912
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,160	1,170	1,180	1,191	1,201	1,212	1,223	1,233	1,244	1,255
Industrial Customers	31	31	32	32	33	33	34	34	35	35
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**3,864**	**3,901**	**3,940**	**3,978**	**4,016**	**4,055**	**4,094**	**4,133**	**4,171**	**4,210**

Aberdeen District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.89%	0.06%	0.47%	0.48%	0.88%	0.06%	0.46%	0.46%	0.87%
Residential Therms	2,574,425	2,597,925	2,598,865	2,611,206	2,623,616	2,647,435	2,648,299	2,660,605	2,672,808	2,696,738
Commercial Therms	2,494,174	2,516,273	2,517,853	2,529,809	2,541,832	2,564,228	2,565,745	2,577,668	2,589,490	2,611,981
Industrial Therms	121,894	123,133	123,051	123,635	124,223	125,480	125,391	125,974	126,552	127,816
Ind., Inst., & Cmcl. Interrup. Therms	1,141,674	1,151,070	1,152,513	1,157,985	1,163,489	1,173,007	1,174,435	1,179,892	1,185,304	1,194,851
Total Core Therms	**6,332,166**	**6,388,401**	**6,392,281**	**6,422,636**	**6,453,160**	**6,510,149**	**6,513,869**	**6,544,139**	**6,574,154**	**6,631,386**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	737	740	737	737	737	740	737	737	737	740
Therms Per Commercial Customer	3,352	3,366	3,352	3,352	3,352	3,366	3,352	3,352	3,352	3,366
Therms Per Industrial Customer	10,399	10,455	10,399	10,399	10,399	10,455	10,399	10,399	10,399	10,455
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Kennewick District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.69%	0.73%	1.19%	1.18%	1.65%	0.68%	1.15%	1.13%	1.60%
Residential Therms	15,124,474	15,382,238	15,489,211	15,672,855	15,856,989	16,120,533	16,226,038	16,410,739	16,595,118	16,863,009
Commercial Therms	14,291,467	14,531,975	14,638,587	14,813,347	14,988,567	15,234,349	15,339,752	15,515,510	15,690,970	15,940,666
Industrial Therms	411,643	417,716	421,387	426,295	431,216	437,405	441,079	446,017	450,945	457,212
Ind., Inst., & Cmcl. Interrup. Therms	1,651,510	1,679,331	1,694,309	1,715,897	1,737,577	1,766,097	1,781,149	1,803,020	1,824,906	1,853,984
Total Core Therms	**31,479,095**	**32,011,260**	**32,243,494**	**32,628,394**	**33,014,349**	**33,558,383**	**33,788,018**	**34,175,286**	**34,561,939**	**35,114,871**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	411,622	416,632	421,662	426,717	431,786	436,855	441,946	447,031	452,108	457,197
Therms Per Residential Customer	649	652	649	650	650	654	651	651	652	655
Therms Per Commercial Customer	4,378	4,400	4,382	4,384	4,386	4,409	4,390	4,392	4,394	4,417
Therms Per Industrial Customer	20,523	20,593	20,544	20,554	20,564	20,633	20,582	20,590	20,598	20,666
Residential Customers	23,320	23,585	23,851	24,118	24,386	24,654	24,923	25,192	25,461	25,730
Commercial Customers	3,265	3,303	3,341	3,379	3,417	3,455	3,494	3,532	3,571	3,609
Industrial Customers	20	20	21	21	21	21	21	22	22	22
Interruptible Customers	18	18	18	19	19	19	19	19	20	20
Total Core Customers	**26,623**	**26,926**	**27,230**	**27,536**	**27,843**	**28,149**	**28,458**	**28,765**	**29,073**	**29,381**

Walla Walla District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.41%	-0.51%	-0.03%	-0.03%	0.45%	-0.48%	-0.01%	-0.01%	0.47%
Residential Therms	7,048,987	7,079,501	7,042,098	7,039,723	7,037,941	7,070,670	7,035,567	7,034,854	7,034,261	7,068,403
Commercial Therms	4,603,797	4,622,934	4,599,297	4,597,746	4,596,583	4,617,167	4,595,032	4,594,566	4,594,179	4,615,687
Industrial Therms	105,988	106,373	105,885	105,849	105,822	106,240	105,787	105,776	105,767	106,206
Ind., Inst., & Cmcl. Interrup. Therms	2,091,999	2,099,416	2,089,955	2,089,250	2,088,721	2,096,797	2,088,017	2,087,805	2,087,629	2,096,125
Total Core Therms	**13,850,771**	**13,908,224**	**13,837,235**	**13,832,568**	**13,829,068**	**13,890,875**	**13,824,401**	**13,823,002**	**13,821,835**	**13,886,421**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	661	665	661	661	661	665	661	661	661	665
Therms Per Commercial Customer	3,647	3,665	3,647	3,647	3,647	3,665	3,647	3,647	3,647	3,665
Therms Per Industrial Customer	13,833	13,891	13,833	13,833	13,833	13,891	13,833	13,833	13,833	13,891
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Wenatchee District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	1.04%	1.37%	1.37%	1.70%	1.02%	1.36%	1.35%	1.69%
Residential Therms	1,391,576	1,408,410	1,418,983	1,432,847	1,446,840	1,464,195	1,474,996	1,489,153	1,503,326	1,521,104
Commercial Therms	5,127,566	5,202,569	5,245,147	5,304,637	5,364,555	5,441,884	5,485,197	5,545,892	5,606,702	5,685,967
Industrial Therms	4,624,439	4,726,084	4,792,124	4,878,016	4,965,295	5,073,832	5,143,988	5,235,428	5,328,273	5,444,011
Ind., Inst., & Cmcl. Interrup. Therms	554,067	561,221	565,434	571,185	576,986	584,365	588,664	594,538	600,421	607,984
Total Core Therms	**11,697,648**	**11,898,285**	**12,021,687**	**12,186,685**	**12,353,676**	**12,564,276**	**12,692,846**	**12,865,010**	**13,038,722**	**13,259,066**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	121,304	122,977	124,671	126,386	128,122	129,874	131,649	133,440	135,248	137,076
Therms Per Residential Customer	545	546	545	545	545	546	545	544	544	546
Therms Per Commercial Customer	4,908	4,928	4,916	4,919	4,923	4,942	4,930	4,933	4,936	4,956
Therms Per Industrial Customer	117,152	118,293	118,509	119,190	119,873	121,037	121,252	121,949	122,652	123,845
Residential Customers	2,554	2,579	2,605	2,631	2,657	2,682	2,709	2,735	2,761	2,788
Commercial Customers	1,045	1,056	1,067	1,078	1,090	1,101	1,113	1,124	1,136	1,147
Industrial Customers	39	40	40	41	41	42	42	43	43	44
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**3,645**	**3,682**	**3,719**	**3,757**	**3,795**	**3,833**	**3,871**	**3,909**	**3,948**	**3,986**

Yakima District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.63%	-0.24%	0.21%	0.22%	0.66%	-0.22%	0.23%	0.23%	0.68%
Residential Therms	17,302,475	17,414,454	17,363,834	17,396,960	17,431,374	17,549,074	17,502,633	17,539,339	17,576,303	17,697,533
Commercial Therms	18,517,677	18,636,643	18,592,219	18,632,069	18,673,273	18,798,296	18,758,235	18,801,842	18,845,714	18,974,473
Industrial Therms	5,517,055	5,548,355	5,542,088	5,555,368	5,569,049	5,602,111	5,597,169	5,611,562	5,626,035	5,660,170
Ind., Inst., & Cmcl. Interrup. Therms	1,424,794	1,434,003	1,431,194	1,434,591	1,438,093	1,447,771	1,445,293	1,448,981	1,452,690	1,462,661
Total Core Therms	**42,762,001**	**43,033,455**	**42,929,335**	**43,018,988**	**43,111,790**	**43,397,252**	**43,303,330**	**43,401,724**	**43,500,742**	**43,794,838**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	462,969	463,839	464,751	465,708	466,698	467,702	468,743	469,794	470,851	471,931
Therms Per Residential Customer	692	695	691	691	691	694	691	691	691	694
Therms Per Commercial Customer	3,630	3,646	3,629	3,628	3,628	3,643	3,627	3,626	3,625	3,641
Therms Per Industrial Customer	40,156	40,290	40,148	40,144	40,140	40,275	40,133	40,129	40,125	40,260
Residential Customers	25,018	25,066	25,116	25,169	25,223	25,279	25,336	25,394	25,452	25,512
Commercial Customers	5,101	5,112	5,123	5,135	5,147	5,160	5,172	5,185	5,198	5,211
Industrial Customers	137	138	138	138	139	139	139	140	140	141
Interruptible Customers	19	19	19	19	19	19	19	19	19	19
Total Core Customers	**30,275**	**30,334**	**30,396**	**30,461**	**30,529**	**30,597**	**30,667**	**30,738**	**30,810**	**30,883**

Central Oregon (Bend) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.47%	1.55%	1.96%	1.92%	2.33%	1.42%	1.82%	1.79%	2.20%
Residential Therms	31,549,253	32,359,960	32,887,569	33,558,952	34,231,411	35,057,577	35,577,437	36,250,791	36,923,597	37,762,789
Commercial Therms	19,431,091	19,901,348	20,203,679	20,591,597	20,980,331	21,460,080	21,758,923	22,148,630	22,538,103	23,025,716
Industrial Therms	1,881,078	1,911,691	1,926,419	1,949,387	1,972,518	2,004,124	2,019,125	2,042,583	2,066,070	2,098,451
Ind., Inst., & Cmcl. Interrup. Therms	999,443	1,016,414	1,026,878	1,040,738	1,054,674	1,072,096	1,082,703	1,096,786	1,110,880	1,128,645
Total Core Therms	**53,860,866**	**55,189,414**	**56,044,546**	**57,140,673**	**58,238,934**	**59,593,877**	**60,438,188**	**61,538,790**	**62,638,649**	**64,015,600**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	767	771	768	768	768	772	769	769	770	773
Therms Per Commercial Customer	2,969	2,982	2,970	2,970	2,970	2,983	2,970	2,971	2,971	2,984
Therms Per Industrial Customer	30,480	30,578	30,420	30,391	30,363	30,463	30,309	30,284	30,259	30,362
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Pendleton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.05%	0.16%	0.61%	0.61%	1.06%	0.16%	0.61%	0.61%	1.06%
Residential Therms	6,459,842	6,530,545	6,538,363	6,578,314	6,618,746	6,691,692	6,700,021	6,741,025	6,781,942	6,856,415
Commercial Therms	6,465,955	6,533,065	6,544,613	6,584,629	6,625,125	6,694,382	6,706,524	6,747,588	6,788,564	6,859,249
Industrial Therms	568,550	574,333	575,456	578,970	582,525	588,494	589,671	593,277	596,874	602,966
Ind., Inst., & Cmcl. Interrup. Therms	2,448,578	2,473,145	2,478,214	2,493,296	2,508,554	2,533,923	2,539,238	2,554,722	2,570,167	2,596,057
Total Core Therms	**15,942,926**	**16,111,089**	**16,136,646**	**16,235,209**	**16,334,950**	**16,508,491**	**16,535,455**	**16,636,612**	**16,737,547**	**16,914,686**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	187,349	188,479	189,626	190,785	191,958	193,130	194,315	195,504	196,691	197,884
Therms Per Residential Customer	624	627	624	624	624	627	624	624	624	627
Therms Per Commercial Customer	3,577	3,592	3,577	3,577	3,577	3,592	3,577	3,577	3,577	3,592
Therms Per Industrial Customer	22,382	22,473	22,380	22,380	22,379	22,471	22,378	22,378	22,378	22,469
Residential Customers	10,351	10,413	10,477	10,541	10,606	10,670	10,736	10,801	10,867	10,933
Commercial Customers	1,808	1,819	1,830	1,841	1,852	1,864	1,875	1,887	1,898	1,910
Industrial Customers	25	26	26	26	26	26	26	27	27	27
Interruptible Customers	9	9	9	9	9	9	9	9	10	10
Total Core Customers	**12,193**	**12,267**	**12,342**	**12,417**	**12,493**	**12,570**	**12,647**	**12,724**	**12,801**	**12,879**

Eastern Oregon (Ontario) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.25%	0.23%	0.23%	0.70%	-0.24%	0.24%	0.23%	0.71%
Residential Therms	4,220,952	4,250,277	4,237,693	4,246,645	4,255,709	4,285,954	4,274,073	4,283,374	4,292,666	4,323,526
Commercial Therms	3,969,465	3,997,388	3,986,730	3,995,858	4,005,120	4,033,906	4,023,859	4,033,337	4,042,804	4,072,156
Industrial Therms	269,950	271,092	271,225	271,892	272,571	273,763	273,942	274,635	275,327	276,548
Ind., Inst., & Cmcl. Interrup. Therms	1,210,107	1,218,370	1,216,855	1,220,332	1,223,876	1,232,393	1,231,023	1,234,627	1,238,226	1,246,894
Total Core Therms	**9,670,474**	**9,737,128**	**9,712,503**	**9,734,727**	**9,757,277**	**9,826,016**	**9,802,897**	**9,825,973**	**9,849,023**	**9,919,124**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095
Therms Per Residential Customer	610	613	610	609	609	612	609	609	609	612
Therms Per Commercial Customer	2,826	2,839	2,825	2,825	2,825	2,839	2,825	2,824	2,824	2,838
Therms Per Industrial Customer	11,708	11,727	11,703	11,700	11,698	11,717	11,693	11,690	11,688	11,707
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Oregon	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.97%	1.06%	1.49%	1.47%	1.89%	0.99%	1.41%	1.39%	1.82%
Residential Therms	42,230,047	43,140,783	43,663,625	44,383,911	45,105,866	46,035,222	46,551,532	47,275,191	47,998,205	48,942,729
Commercial Therms	29,866,512	30,431,802	30,735,021	31,172,083	31,610,576	32,188,368	32,489,306	32,929,554	33,369,470	33,957,122
Industrial Therms	2,719,579	2,757,117	2,773,100	2,800,249	2,827,614	2,866,381	2,882,739	2,910,494	2,938,271	2,977,964
Ind., Inst., & Cmcl. Interrup. Therms	4,658,127	4,707,929	4,721,947	4,754,366	4,787,105	4,838,412	4,852,964	4,886,136	4,919,272	4,971,595
Total Core Therms	**79,474,265**	**81,037,631**	**81,893,694**	**83,110,609**	**84,331,161**	**85,928,384**	**86,776,540**	**88,001,375**	**89,225,219**	**90,849,410**
Daily Baseload Therms	42,704	43,559	44,038	44,709	45,382	46,255	46,729	47,404	48,078	48,966
Peak Day Therms	917,850	931,647	945,493	959,398	973,346	987,293	1,001,294	1,015,293	1,029,281	1,043,295
Therms Per Residential Customer	12,494	12,543	12,494	12,494	12,494	12,543	12,494	12,494	12,494	12,543
Therms Per Commercial Customer	69,176	69,427	69,176	69,176	69,176	69,427	69,176	69,176	69,176	69,427
Therms Per Industrial Customer	253,546	254,548	253,546	253,546	253,546	254,548	253,546	253,546	253,546	254,548
Residential Customers	58,405	59,334	60,265	61,200	62,138	63,075	64,016	64,956	65,896	66,837
Commercial Customers	9,757	9,901	10,045	10,189	10,334	10,479	10,625	10,770	10,916	11,062
Industrial Customers	110	111	112	113	114	115	116	117	119	120
Interruptible Customers	18	18	18	18	18	18	19	19	19	19
Total Core Customers	**68,290**	**69,363**	**70,440**	**71,521**	**72,605**	**73,688**	**74,776**	**75,863**	**76,949**	**78,037**

Washington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.56%	0.68%	1.11%	1.10%	1.53%	0.65%	1.08%	1.07%	1.50%
Residential Therms	129,805,144	131,945,612	132,916,060	134,486,803	136,065,288	138,264,082	139,236,794	140,828,504	142,420,274	144,663,563
Commercial Therms	90,837,647	92,182,499	92,743,235	93,706,640	94,675,444	96,057,823	96,622,987	97,600,853	98,578,804	99,989,072
Industrial Therms	14,349,737	14,560,078	14,664,404	14,824,987	14,987,566	15,208,336	15,318,002	15,485,801	15,655,059	15,885,468
Ind., Inst., & Cmcl. Interrup. Therms	13,347,392	13,518,486	13,586,240	13,707,201	13,828,976	14,004,973	14,073,949	14,197,027	14,320,123	14,499,646
Total Core Therms	**248,339,921**	**252,206,675**	**253,909,938**	**256,725,631**	**259,557,273**	**263,535,214**	**265,251,733**	**268,112,184**	**270,974,259**	**275,037,748**
Daily Baseload Therms	157,600	159,997	161,039	162,777	164,526	166,992	168,042	169,808	171,575	174,094
Peak Day Therms	2,634,720	2,663,783	2,693,050	2,722,541	2,752,202	2,781,929	2,811,854	2,841,821	2,871,805	2,901,917
Therms Per Residential Customer	39,332	39,492	39,332	39,332	39,332	39,492	39,332	39,332	39,332	39,492
Therms Per Commercial Customer	167,963	168,759	167,963	167,963	167,963	168,759	167,963	167,963	167,963	168,759
Therms Per Industrial Customer	1,216,798	1,221,074	1,216,798	1,216,798	1,216,798	1,221,074	1,216,798	1,216,798	1,216,798	1,221,074
Residential Customers	178,852	180,912	182,985	185,072	187,170	189,272	191,386	193,503	195,619	197,743
Commercial Customers	25,238	25,505	25,775	26,046	26,320	26,593	26,869	27,144	27,420	27,697
Industrial Customers	417	421	425	429	434	438	442	447	451	455
Interruptible Customers	95	96	97	98	99	100	101	102	103	103
Total Core Customers	**204,601**	**206,934**	**209,281**	**211,646**	**214,022**	**216,403**	**218,798**	**221,195**	**223,592**	**225,998**

System	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.66%	0.77%	1.20%	1.19%	1.62%	0.73%	1.16%	1.15%	1.58%
Residential Therms	172,035,192	175,086,395	176,579,685	178,870,714	181,171,154	184,299,305	185,788,325	188,103,694	190,418,480	193,606,292
Commercial Therms	120,704,159	122,614,301	123,478,256	124,878,723	126,286,020	128,246,192	129,112,293	130,530,407	131,948,274	133,946,193
Industrial Therms	17,069,316	17,317,195	17,437,504	17,625,236	17,815,179	18,074,717	18,200,741	18,396,296	18,593,330	18,863,432
Ind., Inst., & Cmcl. Interrup. Therms	18,005,519	18,226,415	18,308,187	18,461,567	18,616,081	18,843,385	18,926,914	19,083,163	19,239,395	19,471,240
Total Core Therms	**327,814,186**	**333,244,306**	**335,803,632**	**339,836,240**	**343,888,434**	**349,463,598**	**352,028,273**	**356,113,559**	**360,199,478**	**365,887,158**
Daily Baseload Therms	200,304	203,556	205,077	207,486	209,907	213,246	214,771	217,212	219,654	223,060
Peak Day Therms	3,552,570	3,595,429	3,638,543	3,681,940	3,725,548	3,769,222	3,813,148	3,857,114	3,901,086	3,945,213
Therms Per Residential Customer	51,825	52,035	51,825	51,825	51,825	52,035	51,825	51,825	51,825	52,035
Therms Per Commercial Customer	237,139	238,186	237,139	237,139	237,139	238,186	237,139	237,139	237,139	238,186
Therms Per Industrial Customer	1,470,344	1,475,621	1,470,344	1,470,344	1,470,344	1,475,621	1,470,344	1,470,344	1,470,344	1,475,621
Residential Customers	237,257	240,246	243,250	246,273	249,308	252,347	255,402	258,459	261,514	264,579
Commercial Customers	34,995	35,406	35,819	36,236	36,654	37,072	37,493	37,915	38,336	38,759
Industrial Customers	527	532	537	543	548	553	559	564	569	575
Interruptible Customers	112	113	115	116	117	118	119	120	121	123
Total Core Customers	**272,891**	**276,297**	**279,721**	**283,166**	**286,627**	**290,091**	**293,573**	**297,058**	**300,541**	**304,035**

Athena	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.12%	0.60%	0.59%	1.07%	0.09%	0.57%	0.57%	1.05%	0.08%	0.56%
Residential Therms	337,068	339,078	341,088	344,723	345,077	347,056	349,038	352,687	352,991	354,961
Commercial Therms	160,972	161,932	162,892	164,669	164,797	165,742	166,689	168,473	168,577	169,518
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**498,040**	**501,010**	**503,981**	**509,393**	**509,874**	**512,798**	**515,727**	**521,160**	**521,567**	**524,479**
Daily Baseload Therms	457	460	463	468	468	471	473	478	479	481
Peak Day Therms	6,294	6,332	6,369	6,407	6,444	6,481	6,518	6,555	6,592	6,628
Therms Per Residential Customer	635	635	635	638	635	635	635	638	635	635
Therms Per Commercial Customer	2,381	2,381	2,381	2,393	2,381	2,381	2,381	2,393	2,381	2,381
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	531	534	537	540	543	546	550	553	556	559
Commercial Customers	68	68	68	69	69	70	70	70	71	71
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**602**	**605**	**609**	**612**	**616**	**620**	**623**	**627**	**630**

Baker	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.32%	0.15%	0.15%	0.61%	-0.33%	0.13%	0.13%	0.61%	-0.34%	0.13%
Residential Therms	2,179,313	2,182,522	2,185,731	2,199,290	2,191,881	2,194,823	2,197,765	2,211,247	2,203,649	2,206,590
Commercial Therms	1,571,063	1,573,377	1,575,690	1,585,245	1,580,124	1,582,244	1,584,365	1,593,864	1,588,607	1,590,727
Industrial Therms	75,923	76,034	76,146	76,540	76,361	76,463	76,565	76,956	76,770	76,873
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,826,299**	**3,831,933**	**3,837,567**	**3,861,074**	**3,848,366**	**3,853,531**	**3,858,696**	**3,882,067**	**3,869,026**	**3,874,190**
Daily Baseload Therms	1,521	1,523	1,525	1,534	1,529	1,531	1,533	1,543	1,538	1,540
Peak Day Therms	42,428	42,490	42,553	42,613	42,672	42,730	42,787	42,844	42,902	42,959
Therms Per Residential Customer	667	667	667	670	667	667	667	670	667	667
Therms Per Commercial Customer	3,146	3,146	3,146	3,161	3,146	3,146	3,146	3,161	3,146	3,146
Therms Per Industrial Customer	24,921	24,921	24,921	25,014	24,921	24,921	24,921	25,014	24,921	24,921
Residential Customers	3,269	3,274	3,279	3,283	3,288	3,292	3,297	3,301	3,306	3,310
Commercial Customers	499	500	501	502	502	503	504	504	505	506
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,771**	**3,777**	**3,783**	**3,788**	**3,793**	**3,798**	**3,803**	**3,808**	**3,814**	**3,819**

Umatilla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.17%	0.59%	0.59%	1.01%	0.15%	0.57%	0.56%	0.99%	0.13%	0.55%
Residential Therms	493,269	496,183	499,092	504,502	504,871	507,734	510,603	516,034	516,325	519,178
Commercial Therms	525,765	528,871	531,972	537,208	538,131	541,183	544,241	549,488	550,340	553,381
Industrial Therms	134,625	135,421	136,215	137,396	137,792	138,573	139,356	140,536	140,918	141,697
Ind., Inst., & Cmcl. Interrup. Therms	1,059,265	1,065,524	1,071,771	1,082,501	1,084,179	1,090,329	1,096,489	1,107,245	1,108,776	1,114,904
Total Core Therms	**2,212,923**	**2,225,999**	**2,239,051**	**2,261,607**	**2,264,973**	**2,277,819**	**2,290,688**	**2,313,303**	**2,316,358**	**2,329,159**
Daily Baseload Therms	1,332	1,340	1,348	1,361	1,363	1,371	1,379	1,392	1,394	1,402
Peak Day Therms	18,646	18,756	18,866	18,976	19,085	19,193	19,302	19,410	19,518	19,626
Therms Per Residential Customer	449	449	449	451	449	449	449	451	449	449
Therms Per Commercial Customer	3,023	3,023	3,023	3,035	3,023	3,023	3,023	3,035	3,023	3,023
Therms Per Industrial Customer	23,267	23,267	23,267	23,333	23,267	23,267	23,267	23,333	23,267	23,267
Residential Customers	1,099	1,106	1,112	1,119	1,125	1,131	1,138	1,144	1,150	1,157
Commercial Customers	174	175	176	177	178	179	180	181	182	183
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,281**	**1,289**	**1,296**	**1,304**	**1,311**	**1,319**	**1,326**	**1,333**	**1,341**	**1,348**

Chemult	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.58%	0.58%	0.57%	0.57%	0.56%	0.55%	0.55%	0.54%	0.54%	0.53%
Residential Therms	11,060	11,124	11,188	11,252	11,314	11,377	11,439	11,501	11,563	11,625
Commercial Therms	41,826	42,069	42,310	42,550	42,788	43,025	43,261	43,495	43,729	43,961
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**52,886**	**53,193**	**53,499**	**53,802**	**54,103**	**54,402**	**54,700**	**54,997**	**55,292**	**55,586**
Daily Baseload Therms	59	59	59	60	60	60	61	61	61	62
Peak Day Therms	672	676	680	684	687	691	695	699	702	706
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	27	27	27	27	27	27	28	28	28	28
Commercial Customers	22	22	22	23	23	23	23	23	23	23
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**49**	**49**	**49**	**50**	**50**	**50**	**50**	**51**	**51**	**51**

Gilchrist	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	99,991	100,586	101,180	102,220	102,359	102,945	103,531	104,573	104,700	105,283
Commercial Therms	145,206	146,070	146,933	148,465	148,645	149,496	150,346	151,883	152,044	152,891
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**245,197**	**246,657**	**248,114**	**250,684**	**251,004**	**252,440**	**253,877**	**256,457**	**256,744**	**258,174**
Daily Baseload Therms	104	105	105	106	106	107	108	109	109	109
Peak Day Therms	2,907	2,924	2,941	2,959	2,976	2,993	3,010	3,027	3,044	3,061
Therms Per Residential Customer	518	518	518	520	518	518	518	520	518	518
Therms Per Commercial Customer	3,390	3,390	3,390	3,406	3,390	3,390	3,390	3,406	3,390	3,390
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	193	194	195	196	198	199	200	201	202	203
Commercial Customers	43	43	43	44	44	44	44	45	45	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**236**	**237**	**239**	**240**	**241**	**243**	**244**	**246**	**247**	**248**

Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	2,609,258	2,624,821	2,640,383	2,668,593	2,671,261	2,686,576	2,701,922	2,730,240	2,732,522	2,747,776
Commercial Therms	2,835,759	2,852,673	2,869,586	2,898,440	2,903,144	2,919,789	2,936,467	2,965,397	2,969,723	2,986,301
Industrial Therms	228,314	229,676	231,038	233,378	233,740	235,080	236,423	238,769	239,100	240,435
Ind., Inst., & Cmcl. Interrup. Therms	408,841	411,280	413,718	418,366	418,557	420,956	423,361	428,031	428,155	430,545
Total Core Therms	**6,082,174**	**6,118,449**	**6,154,725**	**6,218,777**	**6,226,701**	**6,262,401**	**6,298,173**	**6,362,438**	**6,369,501**	**6,405,057**
Daily Baseload Therms	4,063	4,087	4,111	4,154	4,160	4,183	4,207	4,250	4,255	4,279
Peak Day Therms	75,971	76,424	76,878	77,329	77,777	78,222	78,669	79,115	79,560	80,004
Therms Per Residential Customer	691	691	691	695	691	691	691	695	691	691
Therms Per Commercial Customer	3,835	3,835	3,835	3,851	3,835	3,835	3,835	3,851	3,835	3,835
Therms Per Industrial Customer	26,698	26,698	26,698	26,811	26,698	26,698	26,698	26,811	26,698	26,698
Residential Customers	3,774	3,796	3,819	3,841	3,863	3,886	3,908	3,930	3,952	3,974
Commercial Customers	739	744	748	753	757	761	766	770	774	779
Industrial Customers	9	9	9	9	9	9	9	9	9	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	5
Total Core Customers	**4,526**	**4,553**	**4,580**	**4,607**	**4,633**	**4,660**	**4,687**	**4,713**	**4,740**	**4,766**

Huntington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.39%	0.15%	0.15%	0.68%	-0.39%	0.13%	0.13%	0.67%	-0.40%	0.13%
Residential Therms	54,466	54,546	54,626	55,000	54,780	54,854	54,927	55,299	55,074	55,148
Commercial Therms	30,023	30,067	30,111	30,313	30,196	30,237	30,277	30,478	30,358	30,399
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**84,489**	**84,613**	**84,738**	**85,313**	**84,976**	**85,090**	**85,204**	**85,777**	**85,432**	**85,546**
Daily Baseload Therms	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49
Peak Day Therms	1,247	1,248	1,250	1,252	1,254	1,255	1,257	1,259	1,260	1,262
Therms Per Residential Customer	435	435	435	438	435	435	435	438	435	435
Therms Per Commercial Customer	2,075	2,075	2,075	2,086	2,075	2,075	2,075	2,086	2,075	2,075
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	125	125	126	126	126	126	126	126	127	127
Commercial Customers	14	14	15	15	15	15	15	15	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**140**	**140**	**140**	**140**	**140**	**141**	**141**	**141**	**141**	**141**

La Pine	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.44%	1.85%	1.81%	2.22%	1.31%	1.72%	1.69%	2.10%	1.20%	1.61%
Residential Therms	164,849	167,893	170,937	174,717	177,025	180,068	183,116	186,948	189,214	192,268
Commercial Therms	442,913	451,091	459,270	469,483	475,627	483,802	491,990	502,349	508,376	516,579
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**607,762**	**618,984**	**630,208**	**644,200**	**652,653**	**663,870**	**675,106**	**689,297**	**697,590**	**708,847**
Daily Baseload Therms	339	345	352	360	364	371	377	385	389	396
Peak Day Therms	6,778	6,904	7,029	7,154	7,279	7,404	7,530	7,655	7,780	7,906
Therms Per Residential Customer	655	655	655	658	655	655	655	658	655	655
Therms Per Commercial Customer	2,827	2,827	2,827	2,839	2,827	2,827	2,827	2,839	2,827	2,827
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	252	256	261	265	270	275	279	284	289	293
Commercial Customers	157	160	162	165	168	171	174	177	180	183
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**408**	**416**	**423**	**431**	**438**	**446**	**453**	**461**	**469**	**476**

Madras	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.06%	0.51%	0.51%	0.96%	0.06%	0.51%	0.51%	0.96%	0.06%	0.51%
Residential Therms	700,346	703,903	707,490	714,490	714,723	718,370	722,018	729,145	729,397	733,131
Commercial Therms	1,253,595	1,259,962	1,266,383	1,278,485	1,279,331	1,285,858	1,292,387	1,304,708	1,305,596	1,312,279
Industrial Therms	776,926	780,872	784,852	792,583	792,876	796,921	800,968	808,840	809,155	813,297
Ind., Inst., & Cmcl. Interrup. Therms	359,179	361,004	362,843	366,043	366,553	368,423	370,294	373,551	374,079	375,993
Total Core Therms	**3,090,046**	**3,105,741**	**3,121,568**	**3,151,601**	**3,153,483**	**3,169,572**	**3,185,667**	**3,216,245**	**3,218,227**	**3,234,700**
Daily Baseload Therms	1,262	1,269	1,275	1,288	1,288	1,295	1,302	1,314	1,315	1,322
Peak Day Therms	37,555	37,746	37,938	38,132	38,326	38,522	38,717	38,914	39,113	39,313
Therms Per Residential Customer	591	591	591	593	591	591	591	593	591	591
Therms Per Commercial Customer	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215
Therms Per Industrial Customer	43,374	43,374	43,374	43,578	43,374	43,374	43,374	43,578	43,374	43,374
Residential Customers	1,186	1,192	1,198	1,204	1,210	1,217	1,223	1,229	1,235	1,242
Commercial Customers	390	392	394	396	398	400	402	404	406	408
Industrial Customers	18	18	18	18	18	18	18	19	19	19
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,595**	**1,603**	**1,611**	**1,619**	**1,628**	**1,636**	**1,644**	**1,653**	**1,661**	**1,670**

Milton-Freewater	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.14%	0.60%	0.60%	1.06%	0.12%	0.58%	0.58%	1.04%	0.10%	0.56%
Residential Therms	115,605	116,303	117,001	118,310	118,385	119,070	119,756	121,069	121,123	121,803
Commercial Therms	332,286	334,293	336,299	339,816	340,276	342,247	344,219	347,741	348,147	350,102
Industrial Therms	32,404	32,600	32,795	33,136	33,183	33,375	33,568	33,909	33,951	34,141

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**480,294**	**483,196**	**486,096**	**491,262**	**491,844**	**494,693**	**497,543**	**502,719**	**503,220**	**506,046**
Daily Baseload Therms	462	465	468	473	473	476	479	484	484	487
Peak Day Therms	5,844	5,879	5,914	5,949	5,984	6,019	6,054	6,088	6,123	6,157
Therms Per Residential Customer	477	477	477	479	477	477	477	479	477	477
Therms Per Commercial Customer	3,165	3,165	3,165	3,179	3,165	3,165	3,165	3,179	3,165	3,165
Therms Per Industrial Customer	5,189	5,189	5,189	5,212	5,189	5,189	5,189	5,212	5,189	5,189
Residential Customers	243	244	245	247	248	250	251	253	254	256
Commercial Customers	105	106	106	107	108	108	109	109	110	111
Industrial Customers	6	6	6	6	6	6	6	7	7	7
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**354**	**356**	**358**	**360**	**362**	**364**	**366**	**369**	**371**	**373**

Mission Tap	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.16%	0.60%	0.59%	1.02%	0.14%	0.57%	0.57%	1.00%	0.13%	0.56%
Residential Therms	139,760	140,594	141,427	142,908	143,081	143,902	144,724	146,209	146,363	147,180
Commercial Therms	375,586	377,827	380,067	383,930	384,511	386,716	388,925	392,799	393,329	395,525
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**515,347**	**518,420**	**521,494**	**526,837**	**527,593**	**530,617**	**533,648**	**539,008**	**539,692**	**542,705**
Daily Baseload Therms	423	425	428	432	433	435	438	442	443	445
Peak Day Therms	5,636	5,669	5,703	5,736	5,769	5,803	5,836	5,869	5,902	5,935
Therms Per Residential Customer	615	615	615	618	615	615	615	618	615	615
Therms Per Commercial Customer	8,365	8,365	8,365	8,401	8,365	8,365	8,365	8,401	8,365	8,365
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	228	230	231	232	234	235	236	238	239
Commercial Customers	45	45	45	46	46	46	46	47	47	47
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**272**	**274**	**275**	**277**	**278**	**280**	**282**	**283**	**285**	**286**

Nyssa-Ontario	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.19%	0.29%	0.29%	0.75%	-0.20%	0.27%	0.27%	0.74%	-0.21%	0.27%
Residential Therms	2,077,588	2,083,572	2,089,546	2,106,173	2,101,170	2,106,882	2,112,643	2,129,179	2,123,908	2,129,589
Commercial Therms	2,460,727	2,467,814	2,474,890	2,494,223	2,488,659	2,495,423	2,502,248	2,521,467	2,515,590	2,522,318
Industrial Therms	200,791	201,369	201,946	202,748	203,070	203,622	204,179	204,963	205,267	205,816
Ind., Inst., & Cmcl. Interrup. Therms	1,245,411	1,248,998	1,252,579	1,261,178	1,259,547	1,262,971	1,266,425	1,274,954	1,273,178	1,276,583
Total Core Therms	**5,984,516**	**6,001,753**	**6,018,961**	**6,064,322**	**6,052,447**	**6,068,898**	**6,085,494**	**6,130,563**	**6,117,943**	**6,134,305**
Daily Baseload Therms	1,539	1,543	1,547	1,559	1,556	1,560	1,564	1,576	1,573	1,577
Peak Day Therms	70,686	70,890	71,093	71,292	71,489	71,683	71,879	72,071	72,262	72,456
Therms Per Residential Customer	564	564	564	567	564	564	564	567	564	564
Therms Per Commercial Customer	2,662	2,662	2,662	2,675	2,662	2,662	2,662	2,675	2,662	2,662
Therms Per Industrial Customer	9,729	9,729	9,729	9,740	9,729	9,729	9,729	9,740	9,729	9,729
Residential Customers	3,682	3,693	3,704	3,714	3,724	3,734	3,745	3,754	3,764	3,775
Commercial Customers	924	927	930	932	935	937	940	943	945	948
Industrial Customers	21	21	21	21	21	21	21	21	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,630**	**4,643**	**4,656**	**4,669**	**4,682**	**4,695**	**4,708**	**4,720**	**4,733**	**4,745**

Pendleton	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	3,169,062	3,187,963	3,206,865	3,241,681	3,244,367	3,262,968	3,281,607	3,316,567	3,318,771	3,337,297
Commercial Therms	2,640,388	2,656,136	2,671,884	2,699,616	2,703,130	2,718,628	2,734,157	2,761,980	2,765,122	2,780,558
Industrial Therms	208,747	209,992	211,237	213,489	213,707	214,932	216,160	218,421	218,608	219,828
Ind., Inst., & Cmcl. Interrup. Therms	1,133,047	1,139,805	1,146,563	1,157,165	1,159,971	1,166,622	1,173,285	1,183,897	1,186,573	1,193,197
Total Core Therms	**7,151,244**	**7,193,896**	**7,236,548**	**7,311,951**	**7,321,175**	**7,363,150**	**7,405,210**	**7,480,865**	**7,489,075**	**7,530,880**
Daily Baseload Therms	5,391	5,423	5,455	5,512	5,519	5,550	5,582	5,639	5,645	5,677
Peak Day Therms	86,680	87,197	87,714	88,228	88,739	89,248	89,758	90,267	90,774	91,281
Therms Per Residential Customer	618	618	618	621	618	618	618	621	618	618
Therms Per Commercial Customer	3,341	3,341	3,341	3,356	3,341	3,341	3,341	3,356	3,341	3,341
Therms Per Industrial Customer	32,546	32,546	32,546	32,701	32,546	32,546	32,546	32,701	32,546	32,546
Residential Customers	5,125	5,156	5,187	5,217	5,247	5,277	5,307	5,338	5,368	5,398
Commercial Customers	790	795	800	804	809	814	818	823	828	832
Industrial Customers	6	6	6	7	7	7	7	7	7	7
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,925**	**5,961**	**5,996**	**6,031**	**6,066**	**6,101**	**6,136**	**6,170**	**6,205**	**6,240**

Prineville	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.09%	0.55%	0.54%	1.01%	0.08%	0.54%	0.55%	1.00%	0.08%	0.54%
Residential Therms	1,283,761	1,290,788	1,297,816	1,311,048	1,311,985	1,319,069	1,326,267	1,339,691	1,340,606	1,347,861
Commercial Therms	1,419,382	1,427,152	1,434,922	1,449,178	1,450,587	1,458,420	1,466,379	1,480,838	1,482,233	1,490,254
Industrial Therms	372,632	374,672	376,712	380,458	380,825	382,881	384,970	388,770	389,133	391,238
Ind., Inst., & Cmcl. Interrup. Therms	152,564	153,399	154,234	155,833	155,918	156,760	157,615	159,238	159,319	160,181
Total Core Therms	**3,228,338**	**3,246,011**	**3,263,683**	**3,296,518**	**3,299,314**	**3,317,130**	**3,335,231**	**3,368,537**	**3,371,291**	**3,389,535**
Daily Baseload Therms	1,060	1,066	1,072	1,082	1,083	1,089	1,095	1,106	1,107	1,113
Peak Day Therms	40,914	41,138	41,362	41,588	41,814	42,040	42,269	42,497	42,726	42,957
Therms Per Residential Customer	533	533	533	535	533	533	533	535	533	533
Therms Per Commercial Customer	2,658	2,658	2,658	2,670	2,658	2,658	2,658	2,670	2,658	2,658
Therms Per Industrial Customer	22,961	22,961	22,961	23,064	22,961	22,961	22,961	23,064	22,961	22,961
Residential Customers	2,410	2,423	2,436	2,450	2,463	2,476	2,490	2,503	2,517	2,530
Commercial Customers	534	537	540	543	546	549	552	555	558	561
Industrial Customers	16	16	16	16	17	17	17	17	17	17
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,962**	**2,979**	**2,995**	**3,011**	**3,027**	**3,044**	**3,060**	**3,077**	**3,094**	**3,110**

Redmond	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.42%	1.83%	1.80%	2.21%	1.27%	1.69%	1.66%	2.08%	1.16%	1.58%
Residential Therms	5,174,771	5,269,571	5,364,187	5,483,682	5,552,799	5,646,748	5,740,673	5,861,132	5,928,041	6,021,553
Commercial Therms	3,848,448	3,918,950	3,989,316	4,078,288	4,129,585	4,199,454	4,269,306	4,359,003	4,408,651	4,478,195
Industrial Therms	514,847	524,279	533,692	544,912	552,457	561,805	571,149	582,419	589,791	599,095
Ind., Inst., & Cmcl. Interrup. Therms	370,303	377,087	383,858	391,473	397,355	404,077	410,799	418,419	424,207	430,898
Total Core Therms	**9,908,369**	**10,089,887**	**10,271,053**	**10,498,356**	**10,632,196**	**10,812,084**	**10,991,928**	**11,220,973**	**11,350,690**	**11,529,740**
Daily Baseload Therms	4,498	4,581	4,663	4,766	4,827	4,909	4,990	5,094	5,153	5,234
Peak Day Therms	117,704	119,860	122,013	124,161	126,303	128,440	130,576	132,707	134,838	136,965
Therms Per Residential Customer	646	646	646	649	646	646	646	649	646	646
Therms Per Commercial Customer	2,762	2,762	2,762	2,774	2,762	2,762	2,762	2,774	2,762	2,762
Therms Per Industrial Customer	34,487	34,487	34,487	34,603	34,487	34,487	34,487	34,603	34,487	34,487
Residential Customers	8,006	8,153	8,299	8,445	8,591	8,736	8,881	9,026	9,171	9,316
Commercial Customers	1,394	1,419	1,445	1,470	1,495	1,521	1,546	1,571	1,596	1,622
Industrial Customers	15	15	15	16	16	16	17	17	17	17
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**9,416**	**9,588**	**9,760**	**9,932**	**10,103**	**10,274**	**10,445**	**10,616**	**10,786**	**10,956**

Stanfield	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	180,525	181,602	182,678	184,635	184,815	185,874	186,936	188,900	189,053	190,108
Commercial Therms	74,211	74,653	75,096	75,873	75,974	76,410	76,846	77,625	77,716	78,150
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**254,735**	**256,255**	**257,774**	**260,507**	**260,789**	**262,284**	**263,782**	**266,525**	**266,769**	**268,259**
Daily Baseload Therms	107	107	108	109	109	110	111	112	112	112
Peak Day Therms	3,227	3,247	3,266	3,285	3,304	3,323	3,342	3,361	3,380	3,399
Therms Per Residential Customer	559	559	559	562	559	559	559	562	559	559
Therms Per Commercial Customer	2,125	2,125	2,125	2,135	2,125	2,125	2,125	2,135	2,125	2,125
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	323	325	327	329	330	332	334	336	338	340
Commercial Customers	35	35	35	36	36	36	36	36	37	37
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**358**	**360**	**362**	**364**	**366**	**368**	**370**	**372**	**375**	**377**

Stearns (Sunriver)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.43%	1.83%	1.80%	2.20%	1.29%	1.69%	1.66%	2.07%	1.17%	1.58%
Residential Therms	4,411,409	4,492,225	4,572,883	4,674,222	4,733,672	4,813,762	4,893,832	4,995,956	5,053,560	5,133,277
Commercial Therms	1,379,040	1,404,304	1,429,518	1,459,978	1,479,782	1,504,819	1,529,849	1,560,470	1,579,781	1,604,701
Industrial Therms	19,065	19,415	19,763	20,173	20,458	20,804	21,150	21,561	21,841	22,185
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**5,809,514**	**5,915,943**	**6,022,165**	**6,154,373**	**6,233,912**	**6,339,384**	**6,444,831**	**6,577,987**	**6,655,182**	**6,760,164**
Daily Baseload Therms	4,201	4,278	4,355	4,451	4,508	4,584	4,661	4,757	4,813	4,889
Peak Day Therms	63,837	65,006	66,174	67,339	68,500	69,659	70,818	71,974	73,129	74,283
Therms Per Residential Customer	1,015	1,015	1,015	1,020	1,015	1,015	1,015	1,020	1,015	1,015
Therms Per Commercial Customer	5,036	5,036	5,036	5,054	5,036	5,036	5,036	5,054	5,036	5,036
Therms Per Industrial Customer	6,297	6,297	6,297	6,317	6,297	6,297	6,297	6,317	6,297	6,297
Residential Customers	4,346	4,426	4,505	4,584	4,663	4,742	4,821	4,900	4,979	5,057
Commercial Customers	274	279	284	289	294	299	304	309	314	319
Industrial Customers	3	3	3	3	3	3	3	3	3	4
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4,623**	**4,707**	**4,792**	**4,876**	**4,960**	**5,044**	**5,128**	**5,212**	**5,296**	**5,379**

Dave Rasmussen	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.87%	1.83%	1.80%	1.76%	1.72%	1.69%	1.66%	1.63%	1.61%	1.58%
Residential Therms	366,830	373,551	380,258	386,954	393,628	400,288	406,946	413,588	420,228	426,857
Commercial Therms	312,266	317,987	323,696	329,396	335,078	340,747	346,415	352,069	357,722	363,365
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**679,097**	**691,538**	**703,954**	**716,350**	**728,706**	**741,035**	**753,361**	**765,657**	**777,950**	**790,222**
Daily Baseload Therms	724	737	751	764	777	790	803	816	829	843
Peak Day Therms	7,980	8,126	8,272	8,417	8,562	8,707	8,852	8,997	9,141	9,285
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	231	235	239	243	247	251	256	260	264
Commercial Customers	30	31	31	32	32	33	33	34	34	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**257**	**261**	**266**	**271**	**275**	**280**	**285**	**289**	**294**	**299**

South Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.43%	1.83%	1.80%	2.20%	1.28%	1.69%	1.66%	2.07%	1.17%	1.58%
Residential Therms	25,875,185	26,349,210	26,822,316	27,414,821	27,765,421	28,235,190	28,704,844	29,301,824	29,641,732	30,109,312
Commercial Therms	14,400,287	14,664,096	14,927,393	15,255,403	15,452,258	15,713,698	15,975,074	16,305,455	16,496,479	16,756,701
Industrial Therms	429,819	437,694	445,553	455,233	461,219	469,022	476,824	486,567	492,387	500,154
Ind., Inst., & Cmcl. Interrup. Therms	257,125	261,835	266,537	272,039	275,908	280,577	285,244	290,764	294,554	299,200
Total Core Therms	**40,962,416**	**41,712,835**	**42,461,798**	**43,397,496**	**43,954,806**	**44,698,487**	**45,441,985**	**46,384,611**	**46,925,152**	**47,665,367**
Daily Baseload Therms	21,935	22,336	22,738	23,239	23,537	23,935	24,333	24,838	25,128	25,524
Peak Day Therms	462,262	470,731	479,183	487,620	496,031	504,424	512,814	521,184	529,552	537,905
Therms Per Residential Customer	791	791	791	794	791	791	791	794	791	791
Therms Per Commercial Customer	2,898	2,898	2,898	2,910	2,898	2,898	2,898	2,910	2,898	2,898
Therms Per Industrial Customer	24,077	24,077	24,077	24,175	24,077	24,077	24,077	24,175	24,077	24,077
Residential Customers	32,731	33,331	33,929	34,527	35,122	35,717	36,311	36,903	37,496	38,087
Commercial Customers	4,970	5,061	5,152	5,242	5,333	5,423	5,513	5,603	5,693	5,783
Industrial Customers	18	18	19	19	19	19	20	20	20	21
Interruptible Customers	3	3	3	3	3	3	3	4	4	4
Total Core Customers	**37,722**	**38,413**	**39,103**	**39,791**	**40,478**	**41,163**	**41,847**	**42,530**	**43,213**	**43,895**

McCleary (Aberdeen/Hoquiam)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.03%	0.44%	0.44%	0.84%	0.01%	0.41%	0.41%	0.82%	-0.01%	0.40%
Residential Therms	2,697,007	2,709,003	2,720,826	2,744,446	2,744,024	2,755,364	2,766,704	2,790,003	2,788,970	2,799,999
Commercial Therms	2,612,935	2,624,557	2,636,012	2,658,189	2,658,486	2,669,473	2,680,459	2,702,315	2,702,031	2,712,716
Industrial Therms	127,698	128,266	128,825	130,078	129,924	130,461	130,998	132,237	132,052	132,574
Ind., Inst., & Cmcl. Interrup. Therms	1,196,035	1,201,355	1,206,598	1,215,990	1,216,886	1,221,915	1,226,944	1,236,175	1,236,818	1,241,709
Total Core Therms	**6,633,675**	**6,663,181**	**6,692,262**	**6,748,702**	**6,749,320**	**6,777,212**	**6,805,105**	**6,860,730**	**6,859,870**	**6,886,997**
Daily Baseload Therms	6,666	6,695	6,724	6,781	6,782	6,810	6,838	6,894	6,893	6,920
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	737	737	737	740	737	737	737	740	737	737
Therms Per Commercial Customer	3,352	3,352	3,352	3,366	3,352	3,352	3,352	3,366	3,352	3,352
Therms Per Industrial Customer	10,399	10,399	10,399	10,455	10,399	10,399	10,399	10,455	10,399	10,399
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Acme	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.22%	1.63%	1.60%	2.01%	1.11%	1.52%	1.50%	1.91%	1.02%	1.44%
Residential Therms	68,081	69,189	70,297	71,712	72,509	73,613	74,719	76,149	76,929	78,034

Commercial Therms	46,631	47,390	48,149	49,116	49,664	50,420	51,177	52,155	52,691	53,448
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**114,712**	**116,579**	**118,446**	**120,828**	**122,173**	**124,033**	**125,896**	**128,305**	**129,619**	**131,481**
Daily Baseload Therms	36	37	37	38	39	39	40	41	41	42
Peak Day Therms	1,213	1,232	1,252	1,272	1,292	1,311	1,331	1,351	1,370	1,390
Therms Per Residential Customer	856	856	856	859	856	856	856	859	856	856
Therms Per Commercial Customer	4,265	4,265	4,265	4,283	4,265	4,265	4,265	4,283	4,265	4,265
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	80	81	82	83	85	86	87	89	90	91
Commercial Customers	11	11	11	11	12	12	12	12	12	13
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**91**	**92**	**93**	**95**	**96**	**98**	**99**	**101**	**102**	**104**

Arlington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.96%	1.37%	1.35%	1.76%	0.89%	1.29%	1.28%	1.68%	0.82%	1.23%
Residential Therms	4,544,030	4,606,379	4,668,664	4,751,181	4,792,911	4,854,835	4,916,822	5,000,051	5,040,580	5,102,443
Commercial Therms	2,384,511	2,417,229	2,449,914	2,492,719	2,515,113	2,547,608	2,580,136	2,623,289	2,645,079	2,677,542
Industrial Therms	281,425	285,286	289,144	294,127	296,839	300,674	304,513	309,534	312,178	316,009
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**7,209,966**	**7,308,895**	**7,407,721**	**7,538,027**	**7,604,863**	**7,703,116**	**7,801,472**	**7,932,874**	**7,997,836**	**8,095,995**
Daily Baseload Therms	6,933	7,028	7,123	7,249	7,313	7,407	7,502	7,628	7,691	7,785
Peak Day Therms	68,678	69,620	70,561	71,502	72,439	73,375	74,312	75,247	76,183	77,118
Therms Per Residential Customer	834	834	834	838	834	834	834	838	834	834
Therms Per Commercial Customer	3,720	3,720	3,720	3,736	3,720	3,720	3,720	3,736	3,720	3,720
Therms Per Industrial Customer	10,113	10,113	10,113	10,152	10,113	10,113	10,113	10,152	10,113	10,113
Residential Customers	5,448	5,523	5,598	5,672	5,747	5,821	5,895	5,969	6,044	6,118
Commercial Customers	641	650	658	667	676	685	693	702	711	720
Industrial Customers	28	28	29	29	29	30	30	30	31	31
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**6,117**	**6,201**	**6,285**	**6,369**	**6,452**	**6,535**	**6,619**	**6,702**	**6,785**	**6,869**

Bremerton (Shelton)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.57%	0.99%	0.98%	1.40%	0.53%	0.94%	0.93%	1.35%	0.48%	0.90%
Residential Therms	24,508,276	24,751,474	24,994,086	25,345,963	25,476,704	25,716,496	25,956,448	26,309,630	26,434,489	26,673,057
Commercial Therms	12,319,632	12,441,881	12,563,835	12,737,558	12,806,434	12,926,971	13,047,588	13,221,846	13,287,886	13,407,807
Industrial Therms	396,692	400,629	404,556	411,777	412,367	416,249	420,133	427,433	427,870	431,732
Ind., Inst., & Cmcl. Interrup. Therms	3,003,898	3,033,706	3,063,442	3,104,307	3,122,595	3,151,986	3,181,396	3,222,334	3,239,988	3,269,228
Total Core Therms	**40,228,499**	**40,627,689**	**41,025,920**	**41,599,604**	**41,818,101**	**42,211,702**	**42,605,565**	**43,181,243**	**43,390,233**	**43,781,824**
Daily Baseload Therms	27,278	27,548	27,818	28,207	28,355	28,622	28,889	29,280	29,421	29,687
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	710	710	710	713	710	710	710	713	710	710
Therms Per Commercial Customer	3,763	3,763	3,763	3,778	3,763	3,763	3,763	3,778	3,763	3,763
Therms Per Industrial Customer	27,376	27,376	27,376	27,597	27,376	27,376	27,376	27,597	27,376	27,376
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563
Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Castle Rock	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.10%	0.50%	0.50%	0.90%	0.09%	0.49%	0.49%	0.88%	0.08%	0.48%
Residential Therms	39,627	39,826	40,026	40,411	40,422	40,618	40,815	41,201	41,208	41,404
Commercial Therms	134,684	135,362	136,039	137,235	137,385	138,053	138,723	139,921	140,057	140,723
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**174,310**	**175,188**	**176,065**	**177,646**	**177,807**	**178,671**	**179,539**	**181,123**	**181,264**	**182,127**
Daily Baseload Therms	171	172	173	174	174	175	176	178	178	179
Peak Day Therms	1,426	1,433	1,440	1,447	1,454	1,462	1,469	1,476	1,483	1,490
Therms Per Residential Customer	584	584	584	587	584	584	584	587	584	584
Therms Per Commercial Customer	2,628	2,628	2,628	2,638	2,628	2,628	2,628	2,638	2,628	2,628
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	68	68	68	69	69	69	70	70	71	71
Commercial Customers	51	52	52	52	52	53	53	53	53	54
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**121**	**121**	**122**	**123**	**123**	**124**	**124**

Walla Walla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.47%	0.00%	0.00%	0.47%	-0.47%	0.00%	0.00%	0.47%	-0.47%	0.00%
Residential Therms	7,033,904	7,033,786	7,033,786	7,068,045	7,033,548	7,033,311	7,033,311	7,067,568	7,033,311	7,033,429
Commercial Therms	4,593,946	4,593,869	4,593,869	4,615,453	4,593,713	4,593,558	4,593,558	4,615,142	4,593,558	4,593,636
Industrial Therms	105,762	105,760	105,760	106,201	105,756	105,753	105,753	106,194	105,753	105,754
Ind., Inst., & Cmcl. Interrup. Therms	2,087,523	2,087,488	2,087,488	2,096,019	2,087,418	2,087,347	2,087,347	2,095,877	2,087,347	2,087,382
Total Core Therms	**13,821,135**	**13,820,902**	**13,820,902**	**13,885,718**	**13,820,436**	**13,819,969**	**13,819,969**	**13,884,781**	**13,819,969**	**13,820,202**
Daily Baseload Therms	11,054	11,054	11,054	11,106	11,053	11,053	11,053	11,105	11,053	11,053
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	661	661	661	665	661	661	661	665	661	661
Therms Per Commercial Customer	3,647	3,647	3,647	3,665	3,647	3,647	3,647	3,665	3,647	3,647
Therms Per Industrial Customer	13,833	13,833	13,833	13,891	13,833	13,833	13,833	13,891	13,833	13,833
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Deming	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.20%	1.61%	1.59%	2.01%	1.10%	1.51%	1.49%	1.91%	1.01%	1.43%
Residential Therms	17,375	17,655	17,936	18,299	18,496	18,776	19,057	19,425	19,617	19,898
Commercial Therms	82,875	84,213	85,551	87,229	88,226	89,561	90,899	92,595	93,573	94,911
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	89,907	91,359	92,810	94,707	95,712	97,160	98,612	100,533	101,513	102,965
Total Core Therms	**190,156**	**193,227**	**196,297**	**200,235**	**202,434**	**205,498**	**208,567**	**212,553**	**214,703**	**217,774**
Daily Baseload Therms	110	112	114	116	117	119	121	123	124	126
Peak Day Therms	2,007	2,039	2,071	2,104	2,136	2,168	2,201	2,233	2,266	2,298
Therms Per Residential Customer	599	599	599	602	599	599	599	602	599	599
Therms Per Commercial Customer	5,858	5,858	5,858	5,881	5,858	5,858	5,858	5,881	5,858	5,858
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	29	29	30	30	31	31	32	32	33	33
Commercial Customers	14	14	15	15	15	15	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**44**	**45**	**46**	**47**	**47**	**48**	**49**	**49**	**50**	**51**

Wenatchee	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.66%	1.08%	1.06%	1.48%	0.61%	1.02%	1.02%	1.43%	0.57%	0.98%
Residential Therms	802,951	811,601	820,243	832,526	837,467	846,036	854,627	867,003	871,775	880,338
Commercial Therms	4,076,633	4,120,547	4,164,425	4,225,689	4,251,869	4,295,376	4,338,992	4,400,686	4,426,054	4,469,530
Industrial Therms	478,799	483,957	489,111	496,434	499,381	504,491	509,613	516,993	519,839	524,945
Ind., Inst., & Cmcl. Interrup. Therms	323,536	327,021	330,503	335,691	337,443	340,896	344,358	349,593	351,267	354,718
Total Core Therms	**5,681,920**	**5,743,126**	**5,804,282**	**5,890,340**	**5,926,160**	**5,986,800**	**6,047,590**	**6,134,275**	**6,168,935**	**6,229,530**
Daily Baseload Therms	4,905	4,958	5,011	5,085	5,116	5,168	5,221	5,296	5,326	5,378
Peak Day Therms	55,614	56,213	56,811	57,409	58,004	58,598	59,193	59,787	60,381	60,974
Therms Per Residential Customer	510	510	510	513	510	510	510	513	510	510
Therms Per Commercial Customer	5,260	5,260	5,260	5,282	5,260	5,260	5,260	5,282	5,260	5,260
Therms Per Industrial Customer	28,178	28,178	28,178	28,302	28,178	28,178	28,178	28,302	28,178	28,178
Residential Customers	1,573	1,590	1,607	1,624	1,641	1,658	1,674	1,691	1,708	1,725
Commercial Customers	775	783	792	800	808	817	825	833	841	850
Industrial Customers	17	17	17	18	18	18	18	18	18	19
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,369**	**2,395**	**2,420**	**2,446**	**2,471**	**2,496**	**2,522**	**2,547**	**2,572**	**2,597**

Finley	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.63%	1.14%	1.13%	1.64%	0.57%	1.08%	1.07%	1.58%	0.52%	1.03%
Residential Therms	18,320	18,528	18,737	19,047	19,152	19,358	19,565	19,878	19,977	20,182
Commercial Therms	109,285	110,531	111,774	113,599	114,250	115,481	116,714	118,552	119,171	120,398
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**127,604**	**129,059**	**130,511**	**132,646**	**133,402**	**134,840**	**136,278**	**138,430**	**139,147**	**140,580**
Daily Baseload Therms	32	32	32	33	33	34	34	34	35	35
Peak Day Therms	1,872	1,893	1,914	1,935	1,957	1,978	1,999	2,020	2,041	2,062
Therms Per Residential Customer	617	617	617	620	617	617	617	620	617	617
Therms Per Commercial Customer	7,357	7,357	7,357	7,395	7,357	7,357	7,357	7,395	7,357	7,357
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	30	30	30	31	31	31	32	32	32	33
Commercial Customers	15	15	15	15	16	16	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**45**	**45**	**46**	**46**	**47**	**47**	**48**	**48**	**49**	**49**

Grandview	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.24%	0.18%	0.18%	0.60%	-0.24%	0.17%	0.18%	0.59%	-0.24%	0.18%
Residential Therms	649,627	650,806	651,981	656,286	654,307	655,450	656,614	660,918	658,927	660,097
Commercial Therms	739,477	740,819	742,156	747,015	744,804	746,106	747,431	752,288	750,064	751,395
Industrial Therms	633,998	635,150	636,296	639,263	638,566	639,682	640,818	643,775	643,076	644,217
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**2,023,102**	**2,026,775**	**2,030,433**	**2,042,563**	**2,037,676**	**2,041,238**	**2,044,864**	**2,056,982**	**2,052,067**	**2,055,709**
Daily Baseload Therms	1,133	1,135	1,137	1,144	1,141	1,143	1,145	1,152	1,149	1,151
Peak Day Therms	19,071	19,106	19,140	19,175	19,208	19,242	19,276	19,310	19,344	19,378
Therms Per Residential Customer	672	672	672	675	672	672	672	675	672	672
Therms Per Commercial Customer	3,944	3,944	3,944	3,963	3,944	3,944	3,944	3,963	3,944	3,944
Therms Per Industrial Customer	78,671	78,671	78,671	78,895	78,671	78,671	78,671	78,895	78,671	78,671
Residential Customers	967	969	971	973	974	976	978	980	981	983
Commercial Customers	187	188	188	188	189	189	189	190	190	190
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,163**	**1,165**	**1,167**	**1,169**	**1,171**	**1,173**	**1,175**	**1,178**	**1,180**	**1,182**

Zillah (Toppenish)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.22%	0.22%	0.21%	0.65%	-0.22%	0.21%	0.21%	0.64%	-0.22%	0.21%
Residential Therms	1,268,791	1,271,531	1,274,258	1,283,228	1,279,664	1,282,326	1,285,026	1,293,995	1,290,388	1,293,091
Commercial Therms	2,325,344	2,330,365	2,335,364	2,350,676	2,345,270	2,350,150	2,355,097	2,370,399	2,364,926	2,369,878
Industrial Therms	641,912	643,298	644,678	648,225	647,413	648,760	650,126	653,664	652,839	654,206
Ind., Inst., & Cmcl. Interrup. Therms	95,190	95,396	95,600	96,007	96,006	96,206	96,408	96,813	96,810	97,013
Total Core Therms	**4,331,237**	**4,340,589**	**4,349,901**	**4,378,136**	**4,368,352**	**4,377,442**	**4,386,657**	**4,414,871**	**4,404,964**	**4,414,188**
Daily Baseload Therms	2,965	2,971	2,977	2,997	2,990	2,996	3,002	3,022	3,015	3,021

Peak Day Therms	45,485	45,583	45,681	45,779	45,875	45,970	46,067	46,163	46,259	46,356
Therms Per Residential Customer	651	651	651	655	651	651	651	655	651	651
Therms Per Commercial Customer	4,565	4,565	4,565	4,585	4,565	4,565	4,565	4,585	4,565	4,565
Therms Per Industrial Customer	29,211	29,211	29,211	29,309	29,211	29,211	29,211	29,309	29,211	29,211
Residential Customers	1,948	1,952	1,956	1,960	1,964	1,968	1,973	1,977	1,981	1,985
Commercial Customers	509	511	512	513	514	515	516	517	518	519
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,480**	**2,485**	**2,491**	**2,496**	**2,501**	**2,507**	**2,512**	**2,517**	**2,522**	**2,528**

Kalama #2	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.52%	0.52%	0.51%	0.51%	0.50%	0.49%	0.49%	0.48%	0.48%	0.47%
Residential Therms	199,960	200,996	202,026	203,049	204,062	205,066	206,067	207,060	208,047	209,028
Commercial Therms	190,634	191,621	192,603	193,578	194,544	195,501	196,456	197,402	198,343	199,279
Industrial Therms	236,415	237,640	238,858	240,067	241,264	242,452	243,636	244,809	245,976	247,137
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**627,009**	**630,257**	**633,487**	**636,693**	**639,869**	**643,019**	**646,159**	**649,271**	**652,366**	**655,444**
Daily Baseload Therms	945	950	955	960	965	970	974	979	984	988
Peak Day Therms	6,819	6,854	6,889	6,924	6,958	6,993	7,027	7,061	7,094	7,128
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	179	179	180	181	182	183	184	185	186	187
Commercial Customers	50	50	51	51	51	51	52	52	52	52
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**232**	**233**	**234**	**235**	**236**	**238**	**239**	**240**	**241**	**242**

Lawrence	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.19%	1.62%	1.59%	2.02%	1.09%	1.52%	1.50%	1.93%	1.00%	1.43%
Residential Therms	58,861	59,813	60,765	61,990	62,667	63,617	64,568	65,808	66,470	67,421
Commercial Therms	27,419	27,862	28,306	28,886	29,192	29,634	30,077	30,665	30,963	31,407
Industrial Therms	1,142	1,161	1,179	1,199	1,216	1,235	1,253	1,273	1,290	1,308
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**87,422**	**88,836**	**90,250**	**92,074**	**93,075**	**94,486**	**95,899**	**97,746**	**98,723**	**100,136**
Daily Baseload Therms	34	35	35	36	36	37	38	38	39	39
Peak Day Therms	981	997	1,013	1,028	1,044	1,060	1,076	1,092	1,108	1,124
Therms Per Residential Customer	811	811	811	815	811	811	811	815	811	811
Therms Per Commercial Customer	1,450	1,450	1,450	1,457	1,450	1,450	1,450	1,457	1,450	1,450
Therms Per Industrial Customer	942	942	942	943	942	942	942	943	942	942
Residential Customers	73	74	75	76	77	78	80	81	82	83
Commercial Customers	19	19	20	20	20	20	21	21	21	22
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**93**	**94**	**96**	**97**	**99**	**100**	**102**	**103**	**105**	**106**

Moxee (Beauchene)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.51%	0.51%	0.85%	0.17%	0.50%	0.50%	0.83%	0.16%	0.49%
Residential Therms	301,802	303,351	304,899	307,778	307,985	309,522	311,065	313,962	314,149	315,696
Commercial Therms	602,719	605,813	608,904	614,111	615,068	618,136	621,219	626,451	627,377	630,467
Industrial Therms	572,037	574,974	577,907	582,121	583,758	586,670	589,595	593,818	595,440	598,373
Ind., Inst., & Cmcl. Interrup. Therms	275,638	277,053	278,466	281,138	281,286	282,689	284,098	286,788	286,915	288,328
Total Core Therms	**1,752,196**	**1,761,190**	**1,770,176**	**1,785,147**	**1,788,097**	**1,797,016**	**1,805,978**	**1,821,019**	**1,823,881**	**1,832,863**
Daily Baseload Therms	614	618	621	626	627	630	633	639	640	643
Peak Day Therms	14,651	14,726	14,801	14,877	14,951	15,026	15,101	15,176	15,251	15,326
Therms Per Residential Customer	177	177	177	178	177	177	177	178	177	177
Therms Per Commercial Customer	1,416	1,416	1,416	1,421	1,416	1,416	1,416	1,421	1,416	1,416
Therms Per Industrial Customer	41,083	41,083	41,083	41,173	41,083	41,083	41,083	41,173	41,083	41,083
Residential Customers	1,703	1,712	1,720	1,729	1,738	1,746	1,755	1,764	1,772	1,781
Commercial Customers	426	428	430	432	434	437	439	441	443	445
Industrial Customers	14	14	14	14	14	14	14	14	14	15
Interruptible Customers	5	5	5	5	5	5	5	5	6	6
Total Core Customers	**2,148**	**2,159**	**2,170**	**2,181**	**2,192**	**2,203**	**2,214**	**2,225**	**2,236**	**2,247**

Othello	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.74%	0.74%	0.74%	0.73%	0.73%	0.73%	0.72%	0.72%	0.71%	0.72%
Residential Therms	679,333	684,384	689,428	694,466	699,531	704,608	709,678	714,793	719,900	725,052
Commercial Therms	880,601	887,149	893,688	900,219	906,784	913,365	919,938	926,568	933,188	939,866
Industrial Therms	246,124	247,954	249,782	251,607	253,442	255,281	257,118	258,972	260,822	262,688
Ind., Inst., & Cmcl. Interrup. Therms	225,250	226,925	228,598	230,268	231,948	233,631	235,312	237,008	238,702	240,410
Total Core Therms	**2,031,308**	**2,046,413**	**2,061,495**	**2,076,561**	**2,091,705**	**2,106,884**	**2,122,047**	**2,137,341**	**2,152,612**	**2,168,017**
Daily Baseload Therms	2,187	2,204	2,220	2,236	2,252	2,269	2,285	2,302	2,318	2,335
Peak Day Therms	22,343	22,509	22,675	22,840	23,007	23,174	23,341	23,509	23,677	23,846
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,171	1,180	1,189	1,197	1,206	1,215	1,224	1,232	1,241	1,250
Commercial Customers	305	307	309	312	314	316	318	321	323	325
Industrial Customers	12	12	12	12	12	12	12	13	13	13
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,490**	**1,501**	**1,512**	**1,523**	**1,534**	**1,546**	**1,557**	**1,568**	**1,579**	**1,590**

North Pasco	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034

Total Therms Pct. Growth	0.79%	1.29%	1.26%	1.76%	0.71%	1.20%	1.19%	1.68%	0.65%	1.14%
Residential Therms	3,195,384	3,236,449	3,277,362	3,335,197	3,358,791	3,399,245	3,439,700	3,497,815	3,520,212	3,560,392
Commercial Therms	2,193,483	2,221,673	2,249,758	2,289,380	2,305,655	2,333,425	2,361,195	2,401,005	2,416,463	2,444,045
Industrial Therms	121,586	123,149	124,705	126,618	127,804	129,343	130,882	132,791	133,946	135,475
Ind., Inst., & Cmcl. Interrup. Therms	238,832	241,901	244,959	249,247	251,045	254,069	257,092	261,400	263,110	266,113
Total Core Therms	**5,749,284**	**5,823,172**	**5,896,784**	**6,000,442**	**6,043,294**	**6,116,082**	**6,188,870**	**6,293,011**	**6,333,731**	**6,406,024**
Daily Baseload Therms	1,988	2,013	2,039	2,075	2,089	2,115	2,140	2,176	2,190	2,215
Peak Day Therms	83,677	84,752	85,824	86,892	87,956	89,015	90,075	91,129	92,183	93,235
Therms Per Residential Customer	1,493	1,493	1,493	1,501	1,493	1,493	1,493	1,501	1,493	1,493
Therms Per Commercial Customer	9,668	9,668	9,668	9,717	9,668	9,668	9,668	9,717	9,668	9,668
Therms Per Industrial Customer	52,183	52,183	52,183	52,331	52,183	52,183	52,183	52,331	52,183	52,183
Residential Customers	2,140	2,168	2,195	2,222	2,250	2,277	2,304	2,331	2,358	2,385
Commercial Customers	227	230	233	236	238	241	244	247	250	253
Industrial Customers	2	2	2	2	2	2	3	3	3	3
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,370**	**2,401**	**2,431**	**2,462**	**2,492**	**2,522**	**2,552**	**2,582**	**2,611**	**2,641**

Patterson	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.73%	1.71%	1.70%	1.69%	1.68%	1.66%	1.65%	1.64%	1.63%	1.61%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	12,251	12,461	12,673	12,887	13,103	13,321	13,541	13,763	13,987	14,213
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	264,080	268,605	273,175	277,788	282,445	287,144	291,886	296,670	301,495	306,362
Total Core Therms	**276,331**	**281,066**	**285,848**	**290,675**	**295,548**	**300,465**	**305,427**	**310,433**	**315,482**	**320,575**
Daily Baseload Therms	377	384	390	397	404	410	417	424	431	438
Peak Day Therms	2,996	3,047	3,099	3,151	3,204	3,257	3,311	3,365	3,420	3,475
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	5	5	5	5	6	6
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7**	**7**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**

Prosser	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.69%	1.13%	1.12%	1.56%	0.63%	1.07%	1.06%	1.50%	0.58%	1.02%
Residential Therms	331,703	335,468	339,225	344,677	346,704	350,424	354,145	359,634	361,564	365,268
Commercial Therms	573,254	579,760	586,254	595,336	599,179	605,607	612,038	621,170	624,859	631,261
Industrial Therms	186,508	188,625	190,738	193,626	194,943	197,034	199,127	202,028	203,298	205,381
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,091,466**	**1,103,853**	**1,116,218**	**1,133,639**	**1,140,826**	**1,153,065**	**1,165,310**	**1,182,832**	**1,189,721**	**1,201,910**
Daily Baseload Therms	472	477	483	490	493	499	504	511	514	520
Peak Day Therms	12,045	12,182	12,318	12,454	12,590	12,725	12,860	12,995	13,129	13,264
Therms Per Residential Customer	648	648	648	651	648	648	648	651	648	648
Therms Per Commercial Customer	3,660	3,660	3,660	3,676	3,660	3,660	3,660	3,676	3,660	3,660
Therms Per Industrial Customer	32,663	32,663	32,663	32,795	32,663	32,663	32,663	32,795	32,663	32,663
Residential Customers	512	518	523	529	535	541	546	552	558	564
Commercial Customers	157	158	160	162	164	165	167	169	171	172
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**674**	**682**	**689**	**697**	**705**	**712**	**720**	**727**	**735**	**742**

Quincy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.24%	1.23%	1.22%	1.21%	1.20%	1.19%	1.19%	1.18%	1.17%	1.17%
Residential Therms	49,553	50,162	50,774	51,390	52,008	52,629	53,253	53,881	54,513	55,148
Commercial Therms	566,902	573,872	580,878	587,924	594,990	602,094	609,240	616,423	623,650	630,916
Industrial Therms	273,393	276,754	280,133	283,531	286,939	290,364	293,811	297,275	300,760	304,264
Ind., Inst., & Cmcl. Interrup. Therms	63,469	64,249	65,033	65,822	66,613	67,409	68,209	69,013	69,822	70,636
Total Core Therms	**953,316**	**965,037**	**976,819**	**988,667**	**1,000,551**	**1,012,496**	**1,024,514**	**1,036,592**	**1,048,745**	**1,060,965**
Daily Baseload Therms	718	726	735	744	753	762	771	780	789	799
Peak Day Therms	10,812	10,945	11,078	11,213	11,347	11,483	11,619	11,756	11,894	12,033
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	70	71	72	72	73	74	75	76	77	78
Commercial Customers	73	74	75	76	77	77	78	79	80	81
Industrial Customers	7	7	7	7	7	7	7	7	8	8
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**151**	**153**	**154**	**156**	**158**	**160**	**162**	**164**	**166**	**168**

Sunnyside	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.14%	0.28%	0.28%	0.70%	-0.15%	0.27%	0.28%	0.70%	-0.15%	0.27%
Residential Therms	1,206,565	1,209,985	1,213,390	1,222,431	1,220,146	1,223,483	1,226,849	1,235,890	1,233,538	1,236,896
Commercial Therms	1,694,111	1,698,913	1,703,694	1,715,877	1,713,180	1,717,865	1,722,591	1,734,769	1,731,983	1,736,698
Industrial Therms	579,228	580,870	582,504	585,993	585,748	587,350	588,965	592,445	592,177	593,789
Ind., Inst., & Cmcl. Interrup. Therms	182,796	183,314	183,830	185,075	184,853	185,359	185,869	187,113	186,882	187,391
Total Core Therms	**3,662,700**	**3,673,081**	**3,683,419**	**3,709,375**	**3,703,927**	**3,714,056**	**3,724,274**	**3,750,217**	**3,744,580**	**3,754,773**
Daily Baseload Therms	2,909	2,917	2,926	2,946	2,942	2,950	2,958	2,979	2,974	2,982
Peak Day Therms	37,984	38,092	38,199	38,306	38,412	38,517	38,623	38,728	38,833	38,939
Therms Per Residential Customer	645	645	645	648	645	645	645	648	645	645
Therms Per Commercial Customer	3,232	3,232	3,232	3,246	3,232	3,232	3,232	3,246	3,232	3,232
Therms Per Industrial Customer	36,077	36,077	36,077	36,192	36,077	36,077	36,077	36,192	36,077	36,077
Residential Customers	1,872	1,877	1,883	1,888	1,893	1,898	1,903	1,909	1,914	1,919

Commercial Customers	524	526	527	529	530	532	533	534	536	537
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,414**	**2,421**	**2,428**	**2,435**	**2,441**	**2,448**	**2,455**	**2,462**	**2,468**	**2,475**

Moses Lake	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.47%	1.92%	1.92%	2.37%	1.45%	1.90%	1.90%	2.35%	1.43%	1.88%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	204,872	208,808	212,810	218,345	221,013	225,216	229,489	235,412	238,243	242,728
Industrial Therms	4,519,964	4,606,808	4,695,096	4,805,718	4,876,078	4,968,816	5,063,075	5,181,366	5,256,222	5,355,155
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,724,836**	**4,815,616**	**4,907,906**	**5,024,063**	**5,097,090**	**5,194,033**	**5,292,563**	**5,416,778**	**5,494,465**	**5,597,883**
Daily Baseload Therms	2,848	2,903	2,959	3,029	3,073	3,131	3,191	3,266	3,312	3,375
Peak Day Therms	50,150	51,113	52,093	53,089	54,101	55,130	56,176	57,239	58,319	59,417
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	33,134	33,134	33,134	33,358	33,134	33,134	33,134	33,358	33,134	33,134
Therms Per Industrial Customer	522,158	522,158	522,158	524,435	522,158	522,158	522,158	524,435	522,158	522,158
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	6	6	6	7	7	7	7	7	7	7
Industrial Customers	9	9	9	9	9	10	10	10	10	10
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**15**	**15**	**15**	**16**	**16**	**16**	**17**	**17**	**17**	**18**

Woodland	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.80%	2.18%	2.13%	2.50%	1.61%	1.99%	1.95%	2.33%	1.46%	1.84%
Residential Therms	491,237	501,925	512,601	525,571	533,909	544,538	555,171	568,281	576,410	587,026
Commercial Therms	918,734	938,724	958,691	982,794	998,542	1,018,421	1,038,307	1,062,661	1,078,028	1,097,883
Industrial Therms	481,388	491,863	502,325	514,630	523,206	533,621	544,041	556,451	564,854	575,257
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,891,359**	**1,932,512**	**1,973,616**	**2,022,994**	**2,055,657**	**2,096,581**	**2,137,519**	**2,187,394**	**2,219,291**	**2,260,167**
Daily Baseload Therms	1,125	1,149	1,174	1,203	1,223	1,247	1,271	1,301	1,320	1,344
Peak Day Therms	16,748	17,112	17,476	17,840	18,202	18,565	18,927	19,289	19,651	20,013
Therms Per Residential Customer	644	644	644	647	644	644	644	647	644	644
Therms Per Commercial Customer	3,598	3,598	3,598	3,613	3,598	3,598	3,598	3,613	3,598	3,598
Therms Per Industrial Customer	26,143	26,143	26,143	26,238	26,143	26,143	26,143	26,238	26,143	26,143
Residential Customers	763	780	796	813	829	846	862	879	895	912
Commercial Customers	255	261	266	272	278	283	289	294	300	305
Industrial Customers	18	19	19	20	20	20	21	21	22	22
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,037**	**1,059**	**1,082**	**1,104**	**1,127**	**1,149**	**1,172**	**1,194**	**1,217**	**1,239**

Bellingham II	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.28%	1.63%	1.60%	1.95%	1.18%	1.52%	1.50%	1.85%	1.09%	1.44%
Residential Therms	586,379	595,922	605,463	617,241	624,518	634,026	643,549	655,438	662,579	672,098
Commercial Therms	5,225	5,310	5,395	5,499	5,565	5,650	5,735	5,839	5,904	5,989
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**591,605**	**601,233**	**610,858**	**622,740**	**630,083**	**639,676**	**649,284**	**661,278**	**668,483**	**678,087**
Daily Baseload Therms	819	833	846	862	873	886	899	916	926	939
Peak Day Therms	4,253	4,322	4,391	4,460	4,529	4,598	4,667	4,736	4,805	4,874
Therms Per Residential Customer	16,088	16,088	16,088	16,146	16,088	16,088	16,088	16,146	16,088	16,088
Therms Per Commercial Customer	4,301	4,301	4,301	4,315	4,301	4,301	4,301	4,315	4,301	4,301
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	36	37	38	38	39	39	40	41	41	42
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**38**	**38**	**39**	**40**	**40**	**41**	**41**	**42**	**43**	**43**

LDS Church	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.41%	1.58%	1.56%	2.73%	0.33%	1.49%	1.47%	2.65%	0.25%	1.41%
Residential Therms	4,022	4,086	4,149	4,264	4,277	4,340	4,404	4,522	4,532	4,596
Commercial Therms	11,116	11,292	11,468	11,780	11,820	11,996	12,172	12,493	12,525	12,702
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**15,139**	**15,378**	**15,617**	**16,044**	**16,096**	**16,336**	**16,576**	**17,015**	**17,057**	**17,298**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	151	154	156	159	161	163	166	168	171	173
Therms Per Residential Customer	1,668	1,668	1,668	1,688	1,668	1,668	1,668	1,688	1,668	1,668
Therms Per Commercial Customer	9,217	9,217	9,217	9,326	9,217	9,217	9,217	9,326	9,217	9,217
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	3	3	3	3	3	3	3
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Kalama #1	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.49%	0.49%	0.49%	0.49%	0.49%	0.48%	0.48%	0.48%	0.48%	0.48%
Residential Therms	917	921	926	930	935	939	944	948	953	958
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**917**	**921**	**926**	**930**	**935**	**939**	**944**	**948**	**953**	**958**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	18	18	18	18	18	18	18	18	18	19
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.28%	0.18%	0.18%	0.64%	-0.28%	0.17%	0.18%	0.64%	-0.28%	0.18%
Residential Therms	1,653	1,656	1,659	1,670	1,665	1,668	1,671	1,681	1,677	1,680
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,653**	**1,656**	**1,659**	**1,670**	**1,665**	**1,668**	**1,671**	**1,681**	**1,677**	**1,680**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	20	20	20
Therms Per Residential Customer	812	812	812	816	812	812	812	816	812	812
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	641	642	644	645	646	647	648	649	650	652
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**641**	**642**	**644**	**645**	**646**	**647**	**648**	**649**	**650**	**652**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	12,571	12,594	12,616	12,639	12,661	12,683	12,706	12,728	12,751	12,773
Commercial Therms	4,166	4,173	4,181	4,188	4,196	4,203	4,211	4,218	4,225	4,233
Industrial Therms	1,709	1,712	1,715	1,718	1,721	1,724	1,727	1,730	1,734	1,737
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,446**	**18,479**	**18,512**	**18,546**	**18,578**	**18,611**	**18,644**	**18,677**	**18,710**	**18,743**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	166	166	167	167	167	168	168	168	169	169
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.21%	0.29%	0.28%	0.78%	-0.21%	0.28%	0.28%	0.77%	-0.22%	0.27%
Residential Therms	5,508	5,524	5,540	5,583	5,571	5,586	5,602	5,645	5,633	5,648
Commercial Therms	430,878	432,111	433,340	436,708	435,777	436,981	438,195	441,565	440,608	441,819
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**436,386**	**437,635**	**438,880**	**442,291**	**441,348**	**442,567**	**443,797**	**447,210**	**446,240**	**447,467**
Daily Baseload Therms	202	202	203	205	204	205	205	207	206	207
Peak Day Therms	4,966	4,980	4,995	5,009	5,023	5,037	5,051	5,064	5,078	5,092
Therms Per Residential Customer	216	216	216	217	216	216	216	217	216	216
Therms Per Commercial Customer	4,436	4,436	4,436	4,458	4,436	4,436	4,436	4,458	4,436	4,436
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	26	26	26	26	26	26	26	26	26
Commercial Customers	97	97	98	98	98	99	99	99	99	100
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**123**	**123**	**123**	**124**	**124**	**124**	**125**	**125**	**125**	**126**

Sandvik Metals	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.35%	0.82%	0.81%	1.27%	0.32%	0.78%	0.77%	1.23%	0.29%	0.75%
Residential Therms	3,339,480	3,366,737	3,393,913	3,437,289	3,447,958	3,474,787	3,501,657	3,545,176	3,555,131	3,581,838
Commercial Therms	2,319,389	2,338,320	2,357,194	2,387,145	2,394,730	2,413,364	2,432,026	2,462,071	2,469,166	2,487,715
Industrial Therms	138,679	139,811	140,939	142,404	143,184	144,298	145,414	146,874	147,634	148,743
Ind., Inst., & Cmcl. Interrup. Therms	260,001	262,123	264,239	267,567	268,447	270,536	272,628	275,966	276,791	278,870
Total Core Therms	**6,057,549**	**6,106,991**	**6,156,285**	**6,234,405**	**6,254,318**	**6,302,984**	**6,351,724**	**6,430,087**	**6,448,722**	**6,497,166**
Daily Baseload Therms	3,796	3,826	3,857	3,906	3,919	3,949	3,980	4,029	4,041	4,071
Peak Day Therms	76,828	77,455	78,080	78,704	79,323	79,941	80,559	81,174	81,789	82,403
Therms Per Residential Customer	407	407	407	409	407	407	407	409	407	407
Therms Per Commercial Customer	2,654	2,654	2,654	2,667	2,654	2,654	2,654	2,667	2,654	2,654
Therms Per Industrial Customer	14,438	14,438	14,438	14,473	14,438	14,438	14,438	14,473	14,438	14,438
Residential Customers	8,208	8,275	8,342	8,409	8,475	8,541	8,607	8,672	8,738	8,804
Commercial Customers	874	881	888	895	902	909	916	923	930	937
Industrial Customers	10	10	10	10	10	10	10	10	10	10
Interruptible Customers	4	4	4	4	5	5	5	5	5	5
Total Core Customers	**9,096**	**9,170**	**9,244**	**9,318**	**9,391**	**9,464**	**9,538**	**9,610**	**9,683**	**9,756**

East Stanwood Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.92%	1.32%	1.31%	1.71%	0.84%	1.25%	1.23%	1.64%	0.78%	1.19%
Residential Therms	6,849,131	6,939,826	7,030,419	7,151,598	7,211,077	7,301,094	7,391,192	7,513,353	7,571,028	7,660,916
Commercial Therms	4,394,990	4,453,188	4,511,321	4,588,243	4,627,247	4,685,009	4,742,824	4,820,334	4,858,222	4,915,902

Industrial Therms	129,161	130,871	132,580	134,730	135,986	137,684	139,383	141,545	142,774	144,470
Ind., Inst., & Cmcl. Interrup. Therms	660,107	668,848	677,579	688,687	694,990	703,666	712,350	723,523	729,682	738,345
Total Core Therms	**12,033,389**	**12,192,733**	**12,351,899**	**12,563,257**	**12,669,301**	**12,827,453**	**12,985,748**	**13,198,754**	**13,301,706**	**13,459,632**
Daily Baseload Therms	8,227	8,336	8,444	8,589	8,661	8,770	8,878	9,023	9,094	9,202
Peak Day Therms	117,006	118,555	120,103	121,649	123,189	124,727	126,266	127,802	129,339	130,874
Therms Per Residential Customer	748	748	748	751	748	748	748	751	748	748
Therms Per Commercial Customer	4,145	4,145	4,145	4,162	4,145	4,145	4,145	4,162	4,145	4,145
Therms Per Industrial Customer	45,023	45,023	45,023	45,172	45,023	45,023	45,023	45,172	45,023	45,023
Residential Customers	9,159	9,280	9,401	9,522	9,643	9,763	9,884	10,004	10,124	10,245
Commercial Customers	1,060	1,074	1,088	1,102	1,116	1,130	1,144	1,158	1,172	1,186
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	6	6	6	6	6	6	6	6	6	7
Total Core Customers	**10,228**	**10,363**	**10,499**	**10,634**	**10,768**	**10,903**	**11,037**	**11,172**	**11,306**	**11,440**

Kennewick Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.65%	1.11%	1.09%	1.56%	0.59%	1.05%	1.03%	1.50%	0.53%	1.00%
Residential Therms	10,410,590	10,525,982	10,641,089	10,809,174	10,869,922	10,983,601	11,097,280	11,266,193	11,323,685	11,436,650
Commercial Therms	11,407,362	11,533,802	11,659,930	11,839,437	11,910,673	12,035,236	12,159,800	12,340,016	12,407,882	12,531,663
Industrial Therms	200,536	202,759	204,976	207,872	209,384	211,574	213,763	216,661	218,124	220,300
Ind., Inst., & Cmcl. Interrup. Therms	1,105,889	1,118,146	1,130,374	1,147,527	1,154,682	1,166,758	1,178,834	1,196,045	1,202,884	1,214,884
Total Core Therms	**23,124,376**	**23,380,689**	**23,636,368**	**24,004,010**	**24,144,661**	**24,397,169**	**24,649,676**	**25,018,915**	**25,152,576**	**25,403,497**
Daily Baseload Therms	15,714	15,888	16,062	16,312	16,407	16,579	16,751	17,002	17,092	17,263
Peak Day Therms	296,888	300,179	303,462	306,734	309,988	313,230	316,471	319,702	322,928	326,150
Therms Per Residential Customer	667	667	667	670	667	667	667	670	667	667
Therms Per Commercial Customer	4,514	4,514	4,514	4,534	4,514	4,514	4,514	4,534	4,514	4,514
Therms Per Industrial Customer	21,786	21,786	21,786	21,858	21,786	21,786	21,786	21,858	21,786	21,786
Residential Customers	15,620	15,793	15,965	16,138	16,309	16,479	16,650	16,820	16,990	17,159
Commercial Customers	2,527	2,555	2,583	2,611	2,639	2,666	2,694	2,721	2,749	2,776
Industrial Customers	9	9	9	10	10	10	10	10	10	10
Interruptible Customers	13	14	14	14	14	14	14	14	15	15
Total Core Customers	**18,169**	**18,371**	**18,572**	**18,772**	**18,971**	**19,169**	**19,368**	**19,566**	**19,763**	**19,960**

Longview South Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.03%	0.51%	0.50%	1.03%	-0.04%	0.49%	0.49%	1.02%	-0.05%	0.48%
Residential Therms	851,988	856,299	860,601	869,598	869,143	873,377	877,620	886,644	886,055	890,265
Commercial Therms	3,020,326	3,035,608	3,050,859	3,082,340	3,081,142	3,096,152	3,111,193	3,142,758	3,141,094	3,156,018
Industrial Therms	166,926	167,771	168,614	170,380	170,287	171,117	171,948	173,719	173,601	174,426
Ind., Inst., & Cmcl. Interrup. Therms	559,578	562,410	565,235	571,007	570,846	573,627	576,413	582,200	581,953	584,718
Total Core Therms	**4,598,818**	**4,622,088**	**4,645,308**	**4,693,325**	**4,691,419**	**4,714,273**	**4,737,175**	**4,785,321**	**4,782,703**	**4,805,427**
Daily Baseload Therms	3,321	3,338	3,355	3,389	3,388	3,404	3,421	3,456	3,454	3,470
Peak Day Therms	45,104	45,333	45,560	45,787	46,013	46,237	46,461	46,685	46,908	47,131
Therms Per Residential Customer	442	442	442	444	442	442	442	444	442	442
Therms Per Commercial Customer	3,324	3,324	3,324	3,342	3,324	3,324	3,324	3,342	3,324	3,324
Therms Per Industrial Customer	11,768	11,768	11,768	11,832	11,768	11,768	11,768	11,832	11,768	11,768
Residential Customers	1,929	1,939	1,949	1,958	1,968	1,978	1,987	1,997	2,006	2,016
Commercial Customers	909	913	918	922	927	931	936	940	945	949
Industrial Customers	14	14	14	14	14	15	15	15	15	15
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**2,858**	**2,873**	**2,887**	**2,902**	**2,916**	**2,930**	**2,944**	**2,959**	**2,973**	**2,987**

Sedro-Woolley Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.84%	1.26%	1.24%	1.67%	0.77%	1.19%	1.18%	1.60%	0.71%	1.13%
Residential Therms	21,378,010	21,647,644	21,916,697	22,283,827	22,453,203	22,720,365	22,987,817	23,357,649	23,521,412	23,787,991
Commercial Therms	10,569,783	10,703,096	10,836,122	11,016,520	11,101,383	11,233,474	11,365,709	11,547,389	11,629,531	11,761,334
Industrial Therms	1,426,700	1,444,695	1,462,651	1,486,073	1,498,455	1,516,285	1,534,134	1,557,685	1,569,744	1,587,535
Ind., Inst., & Cmcl. Interrup. Therms	1,540,454	1,559,883	1,579,270	1,604,605	1,617,930	1,637,181	1,656,453	1,681,929	1,694,903	1,714,112
Total Core Therms	**34,914,947**	**35,355,319**	**35,794,741**	**36,391,025**	**36,670,971**	**37,107,304**	**37,544,113**	**38,144,651**	**38,415,590**	**38,850,972**
Daily Baseload Therms	17,232	17,449	17,666	17,960	18,098	18,314	18,529	18,826	18,959	19,174
Peak Day Therms	367,458	372,092	376,717	381,337	385,939	390,531	395,128	399,713	404,300	408,882
Therms Per Residential Customer	759	759	759	762	759	759	759	762	759	759
Therms Per Commercial Customer	2,881	2,881	2,881	2,893	2,881	2,881	2,881	2,893	2,881	2,881
Therms Per Industrial Customer	15,301	15,301	15,301	15,357	15,301	15,301	15,301	15,357	15,301	15,301
Residential Customers	28,171	28,527	28,881	29,235	29,588	29,940	30,293	30,644	30,996	31,347
Commercial Customers	3,669	3,716	3,762	3,808	3,854	3,900	3,946	3,991	4,037	4,083
Industrial Customers	93	94	96	97	98	99	100	101	103	104
Interruptible Customers	11	11	11	11	11	11	11	12	12	12
Total Core Customers	**31,945**	**32,348**	**32,750**	**33,151**	**33,551**	**33,950**	**34,350**	**34,749**	**35,147**	**35,546**

Sumas SPE Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.22%	1.63%	1.60%	2.01%	1.11%	1.52%	1.50%	1.91%	1.02%	1.44%
Residential Therms	40,134,097	40,787,235	41,440,225	42,276,960	42,744,435	43,395,213	44,047,023	44,893,221	45,349,464	46,000,979
Commercial Therms	18,520,034	18,821,427	19,122,752	19,505,363	19,724,585	20,024,889	20,325,669	20,712,430	20,926,685	21,227,330
Industrial Therms	1,010,652	1,027,099	1,043,542	1,063,691	1,076,385	1,092,773	1,109,186	1,129,516	1,141,984	1,158,391
Ind., Inst., & Cmcl. Interrup. Therms	1,488,212	1,512,431	1,536,644	1,567,461	1,585,006	1,609,137	1,633,307	1,664,461	1,681,603	1,705,762
Total Core Therms	**61,152,995**	**62,148,192**	**63,143,164**	**64,413,475**	**65,130,411**	**66,122,012**	**67,115,186**	**68,399,629**	**69,099,737**	**70,092,462**
Daily Baseload Therms	34,697	35,261	35,826	36,547	36,953	37,516	38,079	38,808	39,205	39,769
Peak Day Therms	634,139	644,459	654,777	665,092	675,384	685,667	695,966	706,251	716,545	726,839
Therms Per Residential Customer	791	791	791	794	791	791	791	794	791	791
Therms Per Commercial Customer	3,114	3,114	3,114	3,127	3,114	3,114	3,114	3,127	3,114	3,114
Therms Per Industrial Customer	17,857	17,857	17,857	17,920	17,857	17,857	17,857	17,920	17,857	17,857
Residential Customers	50,737	51,563	52,388	53,214	54,037	54,860	55,684	56,507	57,330	58,154
Commercial Customers	5,947	6,043	6,140	6,237	6,333	6,430	6,526	6,623	6,719	6,816
Industrial Customers	57	58	58	59	60	61	62	63	64	65
Interruptible Customers	15	16	16	16	16	17	17	17	17	18

Total Core Customers	**56,756**	**57,679**	**58,603**	**59,526**	**60,447**	**61,367**	**62,289**	**63,210**	**64,131**	**65,052**

Yakima Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.27%	0.18%	0.18%	0.63%	-0.28%	0.17%	0.18%	0.63%	-0.28%	0.18%
Residential Therms	13,872,502	13,897,692	13,922,772	14,013,935	13,972,440	13,996,863	14,021,724	14,112,860	14,071,118	14,096,089
Commercial Therms	12,564,682	12,587,498	12,610,214	12,689,638	12,655,199	12,677,320	12,699,837	12,779,215	12,744,575	12,767,191
Industrial Therms	3,039,936	3,045,456	3,050,952	3,068,150	3,061,836	3,067,188	3,072,636	3,089,808	3,083,460	3,088,932
Ind., Inst., & Cmcl. Interrup. Therms	906,577	908,223	909,862	915,572	913,108	914,704	916,329	922,035	919,557	921,189
Total Core Therms	**30,383,697**	**30,438,869**	**30,493,800**	**30,687,294**	**30,602,583**	**30,656,075**	**30,710,526**	**30,903,918**	**30,818,709**	**30,873,401**
Daily Baseload Therms	15,609	15,637	15,665	15,765	15,721	15,749	15,777	15,876	15,832	15,860
Peak Day Therms	338,597	339,212	339,824	340,436	341,036	341,633	342,239	342,839	343,445	344,054
Therms Per Residential Customer	749	749	749	752	749	749	749	752	749	749
Therms Per Commercial Customer	3,781	3,781	3,781	3,798	3,781	3,781	3,781	3,798	3,781	3,781
Therms Per Industrial Customer	40,955	40,955	40,955	41,112	40,955	40,955	40,955	41,112	40,955	40,955
Residential Customers	18,528	18,561	18,595	18,628	18,661	18,694	18,727	18,760	18,793	18,826
Commercial Customers	3,323	3,329	3,335	3,341	3,347	3,353	3,359	3,364	3,370	3,376
Industrial Customers	74	74	74	75	75	75	75	75	75	75
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,936**	**21,976**	**22,015**	**22,055**	**22,094**	**22,133**	**22,172**	**22,211**	**22,250**	**22,289**

Zone 10	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.11%	0.32%	0.32%	0.75%	-0.11%	0.31%	0.31%	0.74%	-0.12%	0.31%
Residential Therms	3,470,910	3,482,039	3,493,130	3,520,930	3,515,146	3,526,034	3,537,011	3,564,847	3,558,845	3,569,804
Commercial Therms	5,336,352	5,354,031	5,371,650	5,413,092	5,406,629	5,423,932	5,441,369	5,482,844	5,476,058	5,493,465
Industrial Therms	2,043,356	2,049,655	2,055,932	2,068,824	2,068,391	2,074,550	2,080,764	2,093,642	2,093,123	2,099,329
Ind., Inst., & Cmcl. Interrup. Therms	277,986	278,709	279,430	281,082	280,859	281,564	282,277	283,926	283,693	284,404
Total Core Therms	**11,128,604**	**11,164,434**	**11,200,142**	**11,283,928**	**11,271,025**	**11,306,081**	**11,341,420**	**11,425,259**	**11,411,718**	**11,447,003**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	114,771	115,148	115,525	115,900	116,271	116,641	117,013	117,383	117,754	118,126
Therms Per Residential Customer	653	653	653	656	653	653	653	656	653	653
Therms Per Commercial Customer	3,870	3,870	3,870	3,886	3,869	3,869	3,868	3,885	3,868	3,867
Therms Per Industrial Customer	38,687	38,679	38,671	38,787	38,654	38,646	38,638	38,755	38,623	38,615
Residential Customers	5,312	5,329	5,346	5,363	5,380	5,397	5,414	5,430	5,447	5,464
Commercial Customers	1,379	1,383	1,388	1,393	1,397	1,402	1,407	1,411	1,416	1,421
Industrial Customers	53	53	53	53	54	54	54	54	54	54
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,747**	**6,769**	**6,791**	**6,813**	**6,834**	**6,856**	**6,877**	**6,899**	**6,920**	**6,942**

Zone 11	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.08%	0.35%	0.35%	0.78%	-0.09%	0.34%	0.34%	0.78%	-0.09%	0.34%
Residential Therms	15,032,957	15,068,972	15,104,872	15,211,856	15,176,117	15,211,283	15,246,920	15,354,001	15,317,838	15,353,571
Commercial Therms	18,241,814	18,319,841	18,397,760	18,554,069	18,552,904	18,629,907	18,707,484	18,864,340	18,862,264	18,939,923
Industrial Therms	4,364,166	4,381,141	4,398,103	4,430,236	4,431,914	4,448,713	4,465,656	4,497,894	4,499,499	4,516,514
Ind., Inst., & Cmcl. Interrup. Therms	1,569,220	1,576,546	1,583,866	1,598,223	1,598,450	1,605,698	1,612,994	1,627,428	1,627,561	1,634,870
Total Core Therms	**39,208,156**	**39,346,500**	**39,484,600**	**39,794,384**	**39,759,384**	**39,895,600**	**40,033,053**	**40,343,664**	**40,307,162**	**40,444,877**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	424,651	426,087	427,521	428,955	430,373	431,787	433,214	434,634	436,060	437,490
Therms Per Residential Customer	686	686	686	689	685	685	685	688	684	684
Therms Per Commercial Customer	3,886	3,888	3,890	3,909	3,894	3,896	3,898	3,916	3,902	3,903
Therms Per Industrial Customer	38,954	38,940	38,927	39,048	38,901	38,889	38,876	38,997	38,851	38,839
Residential Customers	21,901	21,961	22,021	22,082	22,141	22,200	22,260	22,319	22,378	22,438
Commercial Customers	4,694	4,711	4,729	4,747	4,764	4,782	4,799	4,817	4,835	4,852
Industrial Customers	112	113	113	113	114	114	115	115	116	116
Interruptible Customers	21	22	22	22	22	22	22	22	22	22
Total Core Customers	**26,728**	**26,807**	**26,885**	**26,964**	**27,041**	**27,118**	**27,196**	**27,273**	**27,351**	**27,429**

Zone 20	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.72%	1.16%	1.15%	1.60%	0.67%	1.11%	1.11%	1.55%	0.63%	1.08%
Residential Therms	17,643,106	17,832,080	18,020,528	18,295,174	18,395,353	18,581,599	18,767,880	19,043,855	19,138,905	19,324,114
Commercial Therms	17,114,992	17,300,283	17,485,153	17,748,124	17,853,105	18,036,088	18,219,161	18,483,625	18,584,114	18,766,414
Industrial Therms	5,226,889	5,320,480	5,415,498	5,534,219	5,609,891	5,709,312	5,810,252	5,936,664	6,016,748	6,122,362
Ind., Inst., & Cmcl. Interrup. Therms	1,829,971	1,849,096	1,868,169	1,894,610	1,906,122	1,924,993	1,943,866	1,970,419	1,981,487	2,000,277
Total Core Therms	**41,814,958**	**42,301,939**	**42,789,349**	**43,472,126**	**43,764,471**	**44,251,992**	**44,741,159**	**45,434,563**	**45,721,254**	**46,213,166**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	531,757	537,901	544,047	550,195	556,331	562,467	568,620	574,773	580,937	587,113
Therms Per Residential Customer	649	650	650	653	651	651	651	655	652	652
Therms Per Commercial Customer	4,329	4,331	4,334	4,355	4,338	4,340	4,343	4,364	4,347	4,349
Therms Per Industrial Customer	125,250	126,086	126,932	128,302	128,650	129,522	130,401	131,819	132,181	133,081
Residential Customers	27,169	27,446	27,721	27,997	28,270	28,543	28,816	29,088	29,359	29,630
Commercial Customers	3,954	3,994	4,035	4,075	4,115	4,155	4,196	4,235	4,275	4,315
Industrial Customers	42	42	43	43	44	44	45	45	46	46
Interruptible Customers	21	21	22	22	22	22	22	23	23	23
Total Core Customers	**31,185**	**31,503**	**31,820**	**32,137**	**32,451**	**32,765**	**33,078**	**33,391**	**33,703**	**34,015**

Zone 24	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.24%	0.23%	0.23%	0.70%	-0.25%	0.22%	0.22%	0.69%	-0.26%	0.21%
Residential Therms	4,311,367	4,320,640	4,329,903	4,360,462	4,347,832	4,356,558	4,365,336	4,395,725	4,382,631	4,391,327
Commercial Therms	4,061,813	4,071,258	4,080,691	4,109,781	4,098,979	4,107,904	4,116,890	4,145,809	4,134,555	4,143,444
Industrial Therms	276,713	277,403	278,093	279,288	279,430	280,085	280,744	281,919	282,038	282,689
Ind., Inst., & Cmcl. Interrup. Therms	1,245,411	1,248,998	1,252,579	1,261,178	1,259,547	1,262,971	1,266,425	1,274,954	1,273,178	1,276,583
Total Core Therms	**9,895,304**	**9,918,299**	**9,941,266**	**10,010,709**	**9,985,788**	**10,007,518**	**10,029,394**	**10,098,407**	**10,072,401**	**10,094,042**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676

Therms Per Residential Customer	609	609	609	612	609	609	609	612	609	609
Therms Per Commercial Customer	2,824	2,824	2,824	2,837	2,823	2,823	2,823	2,837	2,823	2,823
Therms Per Industrial Customer	11,683	11,681	11,678	11,698	11,674	11,671	11,669	11,688	11,664	11,662
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Zone 26	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.54%	0.97%	0.96%	1.39%	0.50%	0.92%	0.92%	1.35%	0.46%	0.89%
Residential Therms	1,583,728	1,599,968	1,616,179	1,639,559	1,648,471	1,664,539	1,680,618	1,704,135	1,712,672	1,728,680
Commercial Therms	4,276,628	4,313,777	4,350,865	4,408,834	4,424,717	4,461,449	4,498,220	4,556,506	4,571,509	4,608,116
Industrial Therms	884,730	897,273	909,796	925,076	934,757	947,190	959,625	974,980	984,431	996,820
Ind., Inst., & Cmcl. Interrup. Therms	823,658	831,015	838,410	848,795	853,290	860,771	868,299	878,870	883,449	891,080
Total Core Therms	**7,568,744**	**7,642,033**	**7,715,250**	**7,822,264**	**7,861,235**	**7,933,949**	**8,006,762**	**8,114,491**	**8,152,060**	**8,224,696**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	73,110	73,796	74,482	75,167	75,850	76,531	77,214	77,894	78,575	79,256
Therms Per Residential Customer	538	539	539	542	540	541	541	544	542	542
Therms Per Commercial Customer	3,367	3,368	3,368	3,385	3,370	3,371	3,371	3,388	3,373	3,373
Therms Per Industrial Customer	24,029	24,038	24,046	24,126	24,060	24,067	24,074	24,153	24,085	24,091
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,270	1,281	1,292	1,302	1,313	1,324	1,334	1,345	1,356	1,366
Industrial Customers	37	37	38	38	39	39	40	40	41	41
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**4,256**	**4,295**	**4,334**	**4,373**	**4,412**	**4,450**	**4,489**	**4,527**	**4,566**	**4,604**

Zone 30-S	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.50%	0.91%	0.90%	1.32%	0.45%	0.87%	0.86%	1.28%	0.42%	0.83%
Residential Therms	27,205,283	27,460,477	27,714,913	28,090,409	28,220,728	28,471,861	28,723,152	29,099,633	29,223,459	29,473,055
Commercial Therms	14,932,567	15,066,438	15,199,847	15,395,747	15,464,920	15,596,444	15,728,048	15,924,161	15,989,917	16,120,523
Industrial Therms	524,390	528,894	533,381	541,854	542,291	546,709	551,130	559,670	559,922	564,306
Ind., Inst., & Cmcl. Interrup. Therms	4,199,933	4,235,061	4,270,041	4,320,296	4,339,481	4,373,900	4,408,339	4,458,509	4,476,805	4,510,937
Total Core Therms	**46,862,173**	**47,290,870**	**47,718,181**	**48,348,306**	**48,567,421**	**48,988,914**	**49,410,670**	**50,041,973**	**50,250,102**	**50,668,821**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	421,179	425,051	428,911	432,758	436,583	440,390	444,201	447,995	451,785	455,568
Therms Per Residential Customer	713	713	713	716	713	713	713	716	713	713
Therms Per Commercial Customer	3,684	3,684	3,685	3,700	3,685	3,686	3,686	3,701	3,687	3,687
Therms Per Industrial Customer	19,588	19,611	19,634	19,803	19,679	19,701	19,723	19,891	19,766	19,787
Residential Customers	38,165	38,524	38,881	39,238	39,592	39,945	40,298	40,650	41,002	41,353
Commercial Customers	4,053	4,089	4,125	4,161	4,196	4,232	4,267	4,302	4,337	4,372
Industrial Customers	27	27	27	27	28	28	28	28	28	29
Interruptible Customers	15	15	15	16	16	16	16	16	16	16
Total Core Customers	**42,260**	**42,655**	**43,049**	**43,442**	**43,832**	**44,221**	**44,609**	**44,997**	**45,384**	**45,770**

Zone 30-W	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.06%	1.47%	1.45%	1.86%	0.97%	1.38%	1.36%	1.78%	0.89%	1.31%
Residential Therms	73,639,986	74,727,750	75,814,615	77,237,071	77,984,094	79,065,879	80,149,152	81,585,617	82,312,610	83,394,377
Commercial Therms	36,042,585	36,571,009	37,098,978	37,785,354	38,152,794	38,678,241	39,204,398	39,897,189	40,255,173	40,780,564
Industrial Therms	2,849,080	2,889,112	2,929,096	2,979,820	3,008,882	3,048,650	3,088,469	3,139,552	3,167,970	3,207,712
Ind., Inst., & Cmcl. Interrup. Therms	3,778,679	3,832,520	3,886,304	3,955,460	3,993,638	4,047,144	4,100,721	4,170,446	4,207,700	4,261,183
Total Core Therms	**116,310,330**	**118,020,390**	**119,728,993**	**121,957,705**	**123,139,408**	**124,839,914**	**126,542,741**	**128,792,804**	**129,943,454**	**131,643,836**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,195,885	1,213,471	1,231,042	1,248,602	1,266,114	1,283,601	1,301,113	1,318,593	1,336,085	1,353,571
Therms Per Residential Customer	786	786	786	789	786	786	786	789	786	786
Therms Per Commercial Customer	3,172	3,172	3,172	3,185	3,172	3,172	3,172	3,185	3,172	3,172
Therms Per Industrial Customer	15,676	15,677	15,679	15,737	15,681	15,683	15,684	15,742	15,687	15,688
Residential Customers	93,736	95,116	96,496	97,874	99,249	100,622	101,997	103,369	104,743	106,116
Commercial Customers	11,363	11,530	11,697	11,863	12,029	12,195	12,361	12,526	12,692	12,858
Industrial Customers	182	184	187	189	192	194	197	199	202	204
Interruptible Customers	33	34	34	35	35	35	36	36	37	37
Total Core Customers	**105,314**	**106,864**	**108,413**	**109,961**	**111,505**	**113,047**	**114,590**	**116,131**	**117,674**	**119,215**

Zone GTN	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.29%	1.69%	1.66%	2.07%	1.16%	1.57%	1.55%	1.96%	1.06%	1.48%
Residential Therms	38,268,727	38,940,453	39,610,935	40,458,040	40,947,741	41,613,690	42,279,602	43,133,259	43,608,096	44,271,275
Commercial Therms	23,317,173	23,706,334	24,094,838	24,587,099	24,869,655	25,255,728	25,641,853	26,137,897	26,412,328	26,797,077
Industrial Therms	2,113,290	2,136,932	2,160,572	2,193,359	2,207,835	2,231,433	2,255,062	2,288,158	2,302,305	2,325,968
Ind., Inst., & Cmcl. Interrup. Therms	1,139,171	1,153,325	1,167,471	1,185,389	1,195,734	1,209,837	1,223,951	1,241,972	1,252,158	1,266,273
Total Core Therms	**64,838,361**	**65,937,043**	**67,033,815**	**68,423,888**	**69,220,965**	**70,310,688**	**71,400,468**	**72,801,286**	**73,574,887**	**74,660,593**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	770	770	770	774	771	771	771	775	772	772
Therms Per Commercial Customer	2,971	2,971	2,972	2,984	2,972	2,972	2,972	2,985	2,972	2,972
Therms Per Industrial Customer	30,212	30,189	30,167	30,272	30,125	30,105	30,085	30,191	30,047	30,029
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Zone ME-OR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%

Residential Therms	6,370,753	6,408,759	6,446,764	6,516,215	6,522,171	6,559,572	6,597,047	6,666,773	6,671,770	6,709,017
Commercial Therms	6,344,992	6,382,861	6,420,728	6,486,470	6,495,859	6,533,122	6,570,458	6,636,390	6,644,898	6,682,003
Industrial Therms	469,465	472,267	475,070	480,003	480,630	483,387	486,150	491,099	491,659	494,404
Ind., Inst., & Cmcl. Interrup. Therms	1,541,888	1,551,085	1,560,281	1,575,531	1,578,528	1,587,578	1,596,646	1,611,928	1,614,729	1,623,742
Total Core Therms	**14,727,098**	**14,814,972**	**14,902,843**	**15,058,220**	**15,077,187**	**15,163,658**	**15,250,301**	**15,406,190**	**15,423,055**	**15,509,166**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	180,425	181,501	182,578	183,650	184,714	185,773	186,834	187,894	188,951	190,006
Therms Per Residential Customer	644	644	644	647	644	644	644	647	644	644
Therms Per Commercial Customer	3,632	3,632	3,632	3,647	3,632	3,632	3,632	3,647	3,632	3,632
Therms Per Industrial Customer	22,134	22,134	22,133	22,232	22,133	22,132	22,132	22,231	22,132	22,132
Residential Customers	9,899	9,958	10,017	10,076	10,135	10,193	10,251	10,309	10,367	10,425
Commercial Customers	1,747	1,758	1,768	1,778	1,789	1,799	1,809	1,819	1,830	1,840
Industrial Customers	21	21	21	22	22	22	22	22	22	22
Interruptible Customers	7	8	8	8	8	8	8	8	8	8
Total Core Customers	**11,675**	**11,745**	**11,815**	**11,884**	**11,953**	**12,021**	**12,090**	**12,159**	**12,227**	**12,295**

Zone ME-WA	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.38%	0.08%	0.08%	0.54%	-0.38%	0.08%	0.08%	0.54%	-0.38%	0.08%
Residential Therms	7,527,173	7,529,969	7,532,878	7,572,548	7,538,419	7,541,045	7,543,913	7,583,602	7,549,635	7,552,607
Commercial Therms	5,119,711	5,122,740	5,125,841	5,152,662	5,131,844	5,134,742	5,137,799	5,164,629	5,143,898	5,147,017
Industrial Therms	240,387	241,181	241,975	243,596	243,548	244,326	245,109	246,730	246,670	247,451
Ind., Inst., & Cmcl. Interrup. Therms	3,146,788	3,153,012	3,159,259	3,178,520	3,171,597	3,177,676	3,183,836	3,203,122	3,196,123	3,202,286
Total Core Therms	**16,034,059**	**16,046,901**	**16,059,953**	**16,147,326**	**16,085,408**	**16,097,788**	**16,110,657**	**16,198,084**	**16,136,327**	**16,149,361**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	189,234	189,341	189,451	189,561	189,664	189,766	189,875	189,983	190,091	190,202
Therms Per Residential Customer	641	641	641	644	641	641	641	644	641	641
Therms Per Commercial Customer	3,572	3,571	3,571	3,587	3,570	3,570	3,569	3,585	3,569	3,568
Therms Per Industrial Customer	17,897	17,911	17,925	17,999	17,951	17,964	17,978	18,052	18,003	18,016
Residential Customers	11,734	11,740	11,747	11,753	11,759	11,765	11,772	11,778	11,784	11,791
Commercial Customers	1,433	1,434	1,435	1,436	1,437	1,438	1,439	1,440	1,441	1,442
Industrial Customers	13	13	13	14	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,186**	**13,193**	**13,201**	**13,208**	**13,215**	**13,223**	**13,230**	**13,237**	**13,245**	**13,252**

Bellingham Disctrict	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.22%	1.63%	1.60%	2.01%	1.11%	1.52%	1.50%	1.91%	1.02%	1.44%
Residential Therms	40,868,816	41,533,900	42,198,835	43,050,465	43,526,903	44,189,586	44,853,321	45,714,563	46,179,590	46,843,026
Commercial Therms	18,693,301	18,997,495	19,301,621	19,687,873	19,909,051	20,212,150	20,515,729	20,906,178	21,122,342	21,425,786
Industrial Therms	1,011,794	1,028,260	1,044,722	1,064,890	1,077,601	1,094,007	1,110,439	1,130,789	1,143,274	1,159,699
Ind., Inst., & Cmcl. Interrup. Therms	1,578,119	1,603,789	1,629,455	1,662,168	1,680,718	1,706,298	1,731,919	1,764,994	1,783,116	1,808,726
Total Core Therms	**62,152,029**	**63,163,444**	**64,174,632**	**65,465,396**	**66,194,273**	**67,202,040**	**68,211,408**	**69,516,524**	**70,228,322**	**71,237,238**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	642,743	653,203	663,660	674,115	684,546	694,968	705,406	715,831	726,264	736,698
Therms Per Residential Customer	802	802	802	806	802	802	802	806	802	802
Therms Per Commercial Customer	3,119	3,119	3,119	3,132	3,119	3,119	3,119	3,132	3,119	3,119
Therms Per Industrial Customer	17,502	17,502	17,502	17,563	17,502	17,502	17,502	17,564	17,502	17,502
Residential Customers	50,957	51,786	52,615	53,444	54,271	55,098	55,925	56,752	57,579	58,406
Commercial Customers	5,993	6,091	6,188	6,285	6,383	6,480	6,577	6,674	6,772	6,869
Industrial Customers	58	59	60	61	62	63	63	64	65	66
Interruptible Customers	17	17	17	17	18	18	18	18	19	19
Total Core Customers	**57,025**	**57,953**	**58,880**	**59,808**	**60,733**	**61,658**	**62,584**	**63,509**	**64,435**	**65,360**

Mount Vernon District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.87%	1.29%	1.27%	1.69%	0.80%	1.22%	1.20%	1.62%	0.74%	1.16%
Residential Therms	32,771,170	33,193,849	33,615,781	34,186,606	34,457,192	34,876,293	35,295,831	35,871,053	36,133,020	36,551,351
Commercial Therms	17,349,285	17,573,514	17,797,357	18,097,481	18,243,743	18,466,091	18,688,669	18,991,011	19,132,832	19,354,778
Industrial Therms	1,837,286	1,860,853	1,884,374	1,914,930	1,931,281	1,954,643	1,978,030	2,008,763	2,024,696	2,048,013
Ind., Inst., & Cmcl. Interrup. Therms	2,200,560	2,228,731	2,256,849	2,293,292	2,312,920	2,340,847	2,368,802	2,405,452	2,424,584	2,452,457
Total Core Therms	**54,158,301**	**54,856,947**	**55,554,361**	**56,492,309**	**56,945,135**	**57,637,874**	**58,331,332**	**59,276,280**	**59,715,132**	**60,406,598**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	553,142	560,268	567,382	574,487	581,567	588,633	595,706	602,762	609,821	616,874
Therms Per Residential Customer	766	766	766	769	766	766	766	769	766	766
Therms Per Commercial Customer	3,230	3,231	3,231	3,245	3,231	3,231	3,231	3,245	3,232	3,232
Therms Per Industrial Customer	14,824	14,823	14,822	14,877	14,821	14,820	14,820	14,874	14,818	14,818
Residential Customers	42,779	43,330	43,880	44,430	44,978	45,525	46,072	46,618	47,164	47,710
Commercial Customers	5,370	5,440	5,509	5,578	5,646	5,715	5,783	5,852	5,920	5,989
Industrial Customers	124	126	127	129	130	132	133	135	137	138
Interruptible Customers	16	17	17	17	17	18	18	18	18	18
Total Core Customers	**48,290**	**48,912**	**49,533**	**50,153**	**50,772**	**51,389**	**52,006**	**52,622**	**53,239**	**53,855**

Bremerton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.57%	0.99%	0.98%	1.40%	0.53%	0.94%	0.93%	1.35%	0.48%	0.90%
Residential Therms	24,508,276	24,751,474	24,994,086	25,345,963	25,476,704	25,716,496	25,956,448	26,309,630	26,434,489	26,673,057
Commercial Therms	12,319,632	12,441,881	12,563,835	12,737,558	12,806,434	12,926,971	13,047,588	13,221,846	13,287,886	13,407,807
Industrial Therms	396,692	400,629	404,556	411,777	412,367	416,249	420,133	427,433	427,870	431,732
Ind., Inst., & Cmcl. Interrup. Therms	3,003,898	3,033,706	3,063,442	3,104,307	3,122,595	3,151,986	3,181,396	3,222,334	3,239,988	3,269,228
Total Core Therms	**40,228,499**	**40,627,689**	**41,025,920**	**41,599,604**	**41,818,101**	**42,211,702**	**42,605,565**	**43,181,243**	**43,390,233**	**43,781,824**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	710	710	710	713	710	710	710	713	710	710
Therms Per Commercial Customer	3,763	3,763	3,763	3,778	3,763	3,763	3,763	3,778	3,763	3,763
Therms Per Industrial Customer	27,376	27,376	27,376	27,597	27,376	27,376	27,376	27,597	27,376	27,376
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563

Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Longview District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.49%	0.94%	0.93%	1.38%	0.45%	0.90%	0.89%	1.33%	0.42%	0.86%
Residential Therms	1,583,728	1,599,968	1,616,179	1,639,559	1,648,471	1,664,539	1,680,618	1,704,135	1,712,672	1,728,680
Commercial Therms	4,264,377	4,301,316	4,338,192	4,395,947	4,411,614	4,448,128	4,484,679	4,542,743	4,557,522	4,593,904
Industrial Therms	884,730	897,273	909,796	925,076	934,757	947,190	959,625	974,980	984,431	996,820
Ind., Inst., & Cmcl. Interrup. Therms	559,578	562,410	565,235	571,007	570,846	573,627	576,413	582,200	581,953	584,718
Total Core Therms	**7,292,413**	**7,360,967**	**7,429,402**	**7,531,589**	**7,565,687**	**7,633,484**	**7,701,335**	**7,804,057**	**7,836,577**	**7,904,121**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	70,114	70,749	71,383	72,016	72,646	73,274	73,902	74,529	75,155	75,780
Therms Per Residential Customer	538	539	539	542	540	541	541	544	542	542
Therms Per Commercial Customer	3,370	3,371	3,372	3,389	3,373	3,374	3,375	3,391	3,376	3,377
Therms Per Industrial Customer	24,849	24,861	24,872	24,958	24,893	24,904	24,913	24,998	24,932	24,941
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,265	1,276	1,287	1,297	1,308	1,318	1,329	1,339	1,350	1,360
Industrial Customers	36	36	37	37	38	38	39	39	39	40
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**4,249**	**4,288**	**4,327**	**4,365**	**4,404**	**4,442**	**4,481**	**4,519**	**4,557**	**4,596**

Aberdeen District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.03%	0.44%	0.44%	0.84%	0.01%	0.41%	0.41%	0.82%	-0.01%	0.40%
Residential Therms	2,697,007	2,709,003	2,720,826	2,744,446	2,744,024	2,755,364	2,766,704	2,790,003	2,788,970	2,799,999
Commercial Therms	2,612,935	2,624,557	2,636,012	2,658,189	2,658,486	2,669,473	2,680,459	2,702,315	2,702,031	2,712,716
Industrial Therms	127,698	128,266	128,825	130,078	129,924	130,461	130,998	132,237	132,052	132,574
Ind., Inst., & Cmcl. Interrup. Therms	1,196,035	1,201,355	1,206,598	1,215,990	1,216,886	1,221,915	1,226,944	1,236,175	1,236,818	1,241,709
Total Core Therms	**6,633,675**	**6,663,181**	**6,692,262**	**6,748,702**	**6,749,320**	**6,777,212**	**6,805,105**	**6,860,730**	**6,859,870**	**6,886,997**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	737	737	737	740	737	737	737	740	737	737
Therms Per Commercial Customer	3,352	3,352	3,352	3,366	3,352	3,352	3,352	3,366	3,352	3,352
Therms Per Industrial Customer	10,399	10,399	10,399	10,455	10,399	10,399	10,399	10,455	10,399	10,399
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Kennewick District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.63%	1.09%	1.08%	1.54%	0.57%	1.03%	1.02%	1.49%	0.52%	0.99%
Residential Therms	16,963,773	17,147,697	17,331,100	17,600,707	17,695,822	17,876,991	18,058,201	18,329,062	18,419,005	18,599,061
Commercial Therms	16,041,770	16,216,787	16,391,329	16,642,447	16,738,411	16,910,828	17,083,276	17,335,408	17,426,669	17,598,032
Industrial Therms	460,801	465,718	470,620	476,894	480,371	485,214	490,059	496,327	499,705	504,518
Ind., Inst., & Cmcl. Interrup. Therms	1,868,801	1,890,776	1,912,746	1,942,129	1,956,619	1,978,506	2,000,440	2,030,081	2,044,281	2,066,230
Total Core Therms	**35,335,144**	**35,720,977**	**36,105,796**	**36,662,178**	**36,871,223**	**37,251,540**	**37,631,976**	**38,190,877**	**38,389,659**	**38,767,842**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	462,260	467,326	472,379	477,417	482,428	487,421	492,415	497,391	502,361	507,326
Therms Per Residential Customer	653	653	653	657	654	654	654	658	655	655
Therms Per Commercial Customer	4,398	4,400	4,401	4,424	4,405	4,406	4,408	4,430	4,411	4,412
Therms Per Industrial Customer	20,613	20,619	20,626	20,692	20,637	20,642	20,647	20,712	20,656	20,660
Residential Customers	25,998	26,266	26,533	26,799	27,064	27,328	27,592	27,855	28,118	28,380
Commercial Customers	3,648	3,686	3,724	3,762	3,800	3,838	3,876	3,913	3,951	3,988
Industrial Customers	22	23	23	23	23	24	24	24	24	24
Interruptible Customers	20	20	21	21	21	21	21	22	22	22
Total Core Customers	**29,688**	**29,994**	**30,300**	**30,605**	**30,909**	**31,211**	**31,513**	**31,814**	**32,115**	**32,415**

Walla Walla District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.47%	0.00%	0.00%	0.47%	-0.47%	0.00%	0.00%	0.47%	-0.47%	0.00%
Residential Therms	7,033,904	7,033,786	7,033,786	7,068,045	7,033,548	7,033,311	7,033,311	7,067,568	7,033,311	7,033,429
Commercial Therms	4,593,946	4,593,869	4,593,869	4,615,453	4,593,713	4,593,558	4,593,558	4,615,142	4,593,558	4,593,636
Industrial Therms	105,762	105,760	105,760	106,201	105,756	105,753	105,753	106,194	105,753	105,754
Ind., Inst., & Cmcl. Interrup. Therms	2,087,523	2,087,488	2,087,488	2,096,019	2,087,418	2,087,347	2,087,347	2,095,877	2,087,347	2,087,382
Total Core Therms	**13,821,135**	**13,820,902**	**13,820,902**	**13,885,718**	**13,820,436**	**13,819,969**	**13,819,969**	**13,884,781**	**13,819,969**	**13,820,202**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	661	661	661	665	661	661	661	665	661	661
Therms Per Commercial Customer	3,647	3,647	3,647	3,665	3,647	3,647	3,647	3,665	3,647	3,647
Therms Per Industrial Customer	13,833	13,833	13,833	13,891	13,833	13,833	13,833	13,891	13,833	13,833
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Wenatchee District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.00%	1.34%	1.33%	1.67%	0.97%	1.31%	1.30%	1.64%	0.95%	1.29%
Residential Therms	1,531,837	1,546,147	1,560,446	1,578,382	1,589,006	1,603,273	1,617,559	1,635,678	1,646,188	1,660,538
Commercial Therms	5,729,008	5,790,376	5,851,800	5,932,176	5,974,656	6,036,051	6,097,659	6,179,089	6,221,136	6,283,040
Industrial Therms	5,518,281	5,615,473	5,714,121	5,837,290	5,915,839	6,018,953	6,123,617	6,254,605	6,337,642	6,447,053
Ind., Inst., & Cmcl. Interrup. Therms	612,255	618,195	624,135	631,782	636,004	641,936	647,879	655,614	659,791	665,763
Total Core Therms	**13,391,380**	**13,570,191**	**13,750,502**	**13,979,630**	**14,115,505**	**14,300,212**	**14,486,715**	**14,724,986**	**14,864,757**	**15,056,395**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	138,918	140,780	142,657	144,551	146,460	148,385	150,328	152,290	154,270	156,269
Therms Per Residential Customer	544	544	544	545	544	544	544	545	544	544
Therms Per Commercial Customer	4,943	4,947	4,950	4,969	4,956	4,960	4,963	4,982	4,969	4,973
Therms Per Industrial Customer	124,072	124,791	125,516	126,750	126,990	127,738	128,491	129,764	130,015	130,785
Residential Customers	2,814	2,841	2,867	2,894	2,920	2,946	2,973	2,999	3,026	3,052
Commercial Customers	1,159	1,171	1,182	1,194	1,205	1,217	1,229	1,240	1,252	1,264
Industrial Customers	44	45	46	46	47	47	48	48	49	49
Interruptible Customers	7	7	7	8	8	8	8	8	8	8
Total Core Customers	**4,025**	**4,064**	**4,102**	**4,141**	**4,180**	**4,218**	**4,257**	**4,296**	**4,334**	**4,373**

Yakima District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.21%	0.23%	0.23%	0.67%	-0.22%	0.22%	0.23%	0.67%	-0.22%	0.23%
Residential Therms	17,651,363	17,689,248	17,726,984	17,848,870	17,801,788	17,838,652	17,876,050	17,997,964	17,950,395	17,987,889
Commercial Therms	18,934,631	18,979,452	19,024,107	19,153,548	19,112,673	19,156,368	19,200,620	19,330,075	19,288,617	19,332,942
Industrial Therms	5,655,330	5,670,085	5,684,791	5,719,095	5,713,985	5,728,408	5,742,995	5,777,269	5,772,023	5,786,633
Ind., Inst., & Cmcl. Interrup. Therms	1,460,201	1,463,986	1,467,759	1,477,792	1,475,253	1,478,957	1,482,704	1,492,748	1,490,164	1,493,920
Total Core Therms	**43,701,524**	**43,802,771**	**43,903,641**	**44,199,306**	**44,103,699**	**44,202,385**	**44,302,369**	**44,598,056**	**44,501,199**	**44,601,385**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	472,996	474,078	475,156	476,233	477,293	478,347	479,415	480,474	481,539	482,610
Therms Per Residential Customer	690	690	690	693	690	690	690	693	689	689
Therms Per Commercial Customer	3,624	3,624	3,623	3,639	3,622	3,621	3,621	3,636	3,620	3,619
Therms Per Industrial Customer	40,118	40,114	40,111	40,245	40,104	40,100	40,097	40,231	40,090	40,086
Residential Customers	25,570	25,630	25,689	25,749	25,807	25,865	25,924	25,982	26,041	26,100
Commercial Customers	5,224	5,238	5,251	5,264	5,277	5,290	5,303	5,316	5,329	5,342
Industrial Customers	141	141	142	142	142	143	143	144	144	144
Interruptible Customers	19	19	20	20	20	20	20	20	20	20
Total Core Customers	**30,955**	**31,028**	**31,101**	**31,174**	**31,246**	**31,317**	**31,390**	**31,461**	**31,534**	**31,606**

Central Oregon (Bend) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.29%	1.69%	1.66%	2.07%	1.16%	1.57%	1.55%	1.96%	1.06%	1.48%
Residential Therms	38,268,727	38,940,453	39,610,935	40,458,040	40,947,741	41,613,690	42,279,602	43,133,259	43,608,096	44,271,275
Commercial Therms	23,317,173	23,706,334	24,094,838	24,587,099	24,869,655	25,255,728	25,641,853	26,137,897	26,412,328	26,797,077
Industrial Therms	2,113,290	2,136,932	2,160,572	2,193,359	2,207,835	2,231,433	2,255,062	2,288,158	2,302,305	2,325,968
Ind., Inst., & Cmcl. Interrup. Therms	1,139,171	1,153,325	1,167,471	1,185,389	1,195,734	1,209,837	1,223,951	1,241,972	1,252,158	1,266,273
Total Core Therms	**64,838,361**	**65,937,043**	**67,033,815**	**68,423,888**	**69,220,965**	**70,310,688**	**71,400,468**	**72,801,286**	**73,574,887**	**74,660,593**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	770	770	770	774	771	771	771	775	772	772
Therms Per Commercial Customer	2,971	2,971	2,972	2,984	2,972	2,972	2,972	2,985	2,972	2,972
Therms Per Industrial Customer	30,212	30,189	30,167	30,272	30,125	30,105	30,085	30,191	30,047	30,029
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Pendleton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	6,864,022	6,904,942	6,945,857	7,020,718	7,027,041	7,067,306	7,107,650	7,182,807	7,188,094	7,228,195
Commercial Therms	6,870,756	6,911,732	6,952,701	7,023,678	7,033,990	7,074,305	7,114,698	7,185,878	7,195,238	7,235,384
Industrial Therms	604,090	607,688	611,284	617,399	618,421	621,960	625,506	631,635	632,576	636,101
Ind., Inst., & Cmcl. Interrup. Therms	2,601,153	2,616,608	2,632,052	2,658,032	2,662,707	2,677,906	2,693,135	2,719,173	2,723,505	2,738,646
Total Core Therms	**16,940,021**	**17,040,970**	**17,141,894**	**17,319,827**	**17,342,159**	**17,441,477**	**17,540,989**	**17,719,493**	**17,739,413**	**17,838,325**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	199,071	200,258	201,444	202,626	203,798	204,966	206,136	207,304	208,469	209,632
Therms Per Residential Customer	624	624	624	627	624	624	624	627	624	624
Therms Per Commercial Customer	3,577	3,577	3,577	3,592	3,577	3,577	3,577	3,592	3,577	3,577
Therms Per Industrial Customer	22,377	22,377	22,376	22,468	22,376	22,375	22,375	22,467	22,375	22,375
Residential Customers	10,998	11,064	11,130	11,195	11,260	11,324	11,389	11,453	11,518	11,582
Commercial Customers	1,921	1,933	1,944	1,955	1,967	1,978	1,989	2,001	2,012	2,023
Industrial Customers	27	27	27	27	28	28	28	28	28	28
Interruptible Customers	10	10	10	10	10	10	10	10	10	10
Total Core Customers	**12,956**	**13,033**	**13,111**	**13,188**	**13,264**	**13,340**	**13,416**	**13,492**	**13,568**	**13,643**

Eastern Oregon (Ontario) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.24%	0.23%	0.23%	0.70%	-0.25%	0.22%	0.22%	0.69%	-0.26%	0.21%
Residential Therms	4,311,367	4,320,640	4,329,903	4,360,462	4,347,832	4,356,558	4,365,336	4,395,725	4,382,631	4,391,327
Commercial Therms	4,061,813	4,071,258	4,080,691	4,109,781	4,098,979	4,107,904	4,116,890	4,145,809	4,134,555	4,143,444
Industrial Therms	276,713	277,403	278,093	279,288	279,430	280,085	280,744	281,919	282,038	282,689
Ind., Inst., & Cmcl. Interrup. Therms	1,245,411	1,248,998	1,252,579	1,261,178	1,259,547	1,262,971	1,266,425	1,274,954	1,273,178	1,276,583
Total Core Therms	**9,895,304**	**9,918,299**	**9,941,266**	**10,010,709**	**9,985,788**	**10,007,518**	**10,029,394**	**10,098,407**	**10,072,401**	**10,094,042**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676
Therms Per Residential Customer	609	609	609	612	609	609	609	612	609	609
Therms Per Commercial Customer	2,824	2,824	2,824	2,837	2,823	2,823	2,823	2,837	2,823	2,823
Therms Per Industrial Customer	11,683	11,681	11,678	11,698	11,674	11,671	11,669	11,688	11,664	11,662
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Oregon	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.91%	1.33%	1.31%	1.74%	0.83%	1.25%	1.24%	1.67%	0.76%	1.19%
Residential Therms	49,444,115	50,166,035	50,886,694	51,839,220	52,322,615	53,037,554	53,752,587	54,711,791	55,178,822	55,890,796
Commercial Therms	34,249,742	34,689,324	35,128,229	35,720,558	36,002,623	36,437,937	36,873,441	37,469,583	37,742,120	38,175,904
Industrial Therms	2,994,094	3,022,023	3,049,949	3,090,046	3,105,687	3,133,479	3,161,312	3,201,712	3,216,920	3,244,759
Ind., Inst., & Cmcl. Interrup. Therms	4,985,735	5,018,931	5,052,103	5,104,599	5,117,988	5,150,714	5,183,511	5,236,098	5,248,840	5,281,502
Total Core Therms	**91,673,686**	**92,896,313**	**94,116,975**	**95,754,424**	**96,548,913**	**97,759,684**	**98,970,852**	**100,619,186**	**101,386,702**	**102,592,961**
Daily Baseload Therms	49,427	50,101	50,773	51,668	52,112	52,779	53,446	54,347	54,777	55,441
Peak Day Therms	1,057,268	1,071,244	1,085,197	1,099,121	1,112,996	1,126,837	1,140,682	1,154,491	1,168,298	1,182,088
Therms Per Residential Customer	12,494	12,494	12,494	12,543	12,494	12,494	12,494	12,543	12,494	12,494
Therms Per Commercial Customer	69,176	69,176	69,176	69,427	69,176	69,176	69,176	69,427	69,176	69,176
Therms Per Industrial Customer	253,546	253,546	253,546	254,548	253,546	253,546	253,546	254,548	253,546	253,546
Residential Customers	67,775	68,713	69,650	70,585	71,516	72,445	73,374	74,301	75,228	76,154
Commercial Customers	11,207	11,353	11,498	11,643	11,787	11,931	12,075	12,219	12,362	12,506
Industrial Customers	121	122	123	124	125	126	127	128	129	130
Interruptible Customers	19	19	20	20	20	20	20	20	21	21
Total Core Customers	**79,122**	**80,207**	**81,290**	**82,371**	**83,448**	**84,522**	**85,597**	**86,668**	**87,740**	**88,810**

Washington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.61%	1.04%	1.03%	1.45%	0.56%	0.99%	0.98%	1.41%	0.53%	0.95%
Residential Therms	145,609,874	147,205,071	148,798,023	151,063,043	151,973,458	153,554,505	155,138,043	157,419,656	158,297,640	159,877,030
Commercial Therms	100,538,884	101,519,246	102,498,122	103,920,673	104,448,782	105,419,618	106,392,238	107,823,807	108,332,592	109,302,642
Industrial Therms	15,998,372	16,172,315	16,347,565	16,586,231	16,701,881	16,880,877	17,061,649	17,308,596	17,427,446	17,612,797
Ind., Inst., & Cmcl. Interrup. Therms	14,566,970	14,690,435	14,813,707	14,994,485	15,059,258	15,181,418	15,303,844	15,485,476	15,548,041	15,670,134
Total Core Therms	**276,714,101**	**279,587,068**	**282,457,417**	**286,564,431**	**288,183,380**	**291,036,418**	**293,895,774**	**298,037,534**	**299,605,719**	**302,462,602**
Daily Baseload Therms	175,120	176,893	178,666	181,210	182,200	183,961	185,726	188,291	189,250	191,013
Peak Day Therms	2,931,940	2,962,040	2,992,113	3,022,162	3,052,102	3,081,991	3,111,948	3,141,845	3,171,769	3,201,700
Therms Per Residential Customer	39,332	39,332	39,332	39,492	39,332	39,332	39,332	39,492	39,332	39,332
Therms Per Commercial Customer	167,963	167,963	167,963	168,759	167,963	167,963	167,963	168,759	167,963	167,963
Therms Per Industrial Customer	1,216,798	1,216,798	1,216,798	1,221,074	1,216,798	1,216,798	1,216,798	1,221,074	1,216,798	1,216,798
Residential Customers	199,859	201,980	204,098	206,213	208,319	210,420	212,525	214,624	216,724	218,823
Commercial Customers	27,973	28,249	28,525	28,801	29,075	29,349	29,623	29,896	30,170	30,443
Industrial Customers	460	464	468	473	477	481	486	490	494	499
Interruptible Customers	104	105	106	107	108	109	110	111	112	113
Total Core Customers	**228,396**	**230,799**	**233,198**	**235,594**	**237,979**	**240,360**	**242,744**	**245,122**	**247,501**	**249,879**

System	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.68%	1.11%	1.10%	1.53%	0.63%	1.06%	1.05%	1.47%	0.59%	1.01%
Residential Therms	195,053,990	197,371,106	199,684,717	202,902,263	204,296,073	206,592,059	208,890,630	212,131,448	213,476,461	215,767,827
Commercial Therms	134,788,626	136,208,570	137,626,351	139,641,231	140,451,406	141,857,555	143,265,679	145,293,391	146,074,712	147,478,546
Industrial Therms	18,992,466	19,194,338	19,397,514	19,676,277	19,807,568	20,014,356	20,222,961	20,510,308	20,644,365	20,857,556
Ind., Inst., & Cmcl. Interrup. Therms	19,552,705	19,709,366	19,865,810	20,099,084	20,177,246	20,332,132	20,487,355	20,721,574	20,796,882	20,951,635
Total Core Therms	**368,387,787**	**372,483,380**	**376,574,392**	**382,318,855**	**384,732,293**	**388,796,101**	**392,866,625**	**398,656,720**	**400,992,420**	**405,055,563**
Daily Baseload Therms	224,547	226,994	229,438	232,878	234,313	236,740	239,172	242,638	244,027	246,454
Peak Day Therms	3,989,209	4,033,284	4,077,310	4,121,284	4,165,098	4,208,828	4,252,630	4,296,336	4,340,067	4,383,788
Therms Per Residential Customer	51,825	51,825	51,825	52,035	51,825	51,825	51,825	52,035	51,825	51,825
Therms Per Commercial Customer	237,139	237,139	237,139	238,186	237,139	237,139	237,139	238,186	237,139	237,139
Therms Per Industrial Customer	1,470,344	1,470,344	1,470,344	1,475,621	1,470,344	1,470,344	1,470,344	1,475,621	1,470,344	1,470,344
Residential Customers	267,634	270,693	273,748	276,797	279,835	282,865	285,900	288,926	291,952	294,977
Commercial Customers	39,180	39,602	40,023	40,443	40,862	41,280	41,698	42,115	42,532	42,949
Industrial Customers	580	586	591	596	602	607	613	618	623	629
Interruptible Customers	124	125	126	127	128	129	131	132	133	134
Total Core Customers	**307,518**	**311,005**	**314,487**	**317,964**	**321,427**	**324,882**	**328,341**	**331,791**	**335,241**	**338,689**

Athena	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.12%	0.10%	0.61%	0.61%	1.13%	0.10%	0.61%	0.61%	1.12%
Residential Therms	274,899	277,951	278,242	279,942	281,664	284,812	285,124	286,870	288,612	291,827
Commercial Therms	131,371	132,863	132,968	133,781	134,603	136,143	136,257	137,091	137,924	139,496
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**406,269**	**410,814**	**411,210**	**413,723**	**416,267**	**420,955**	**421,381**	**423,961**	**426,536**	**431,323**
Daily Baseload Therms	430	435	435	438	441	446	446	449	452	457
Peak Day Therms	5,924	5,959	5,996	6,032	6,069	6,106	6,144	6,181	6,219	6,257
Therms Per Residential Customer	550	553	550	550	550	553	550	550	550	553
Therms Per Commercial Customer	2,065	2,076	2,065	2,065	2,065	2,076	2,065	2,065	2,065	2,076
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	499	502	505	509	512	515	518	521	524	527
Commercial Customers	64	64	64	65	65	66	66	66	67	67
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**563**	**566**	**570**	**573**	**577**	**580**	**584**	**588**	**591**	**595**

Baker	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.60%	-0.35%	0.14%	0.14%	0.62%	-0.33%	0.15%	0.15%	0.63%
Residential Therms	1,870,969	1,882,386	1,875,627	1,878,305	1,880,983	1,892,799	1,886,456	1,889,250	1,892,044	1,904,147
Commercial Therms	1,353,738	1,361,784	1,357,108	1,359,046	1,360,983	1,369,317	1,364,943	1,366,964	1,368,986	1,377,527
Industrial Therms	64,831	65,160	64,992	65,085	65,178	65,520	65,368	65,464	65,561	65,913
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,289,538**	**3,309,329**	**3,297,728**	**3,302,436**	**3,307,145**	**3,327,637**	**3,316,766**	**3,321,679**	**3,326,591**	**3,347,587**
Daily Baseload Therms	1,499	1,508	1,503	1,505	1,507	1,516	1,511	1,514	1,516	1,526
Peak Day Therms	41,829	41,881	41,933	41,993	42,053	42,113	42,175	42,238	42,300	42,365
Therms Per Residential Customer	581	583	581	581	581	583	581	581	581	583
Therms Per Commercial Customer	2,750	2,763	2,750	2,750	2,750	2,763	2,750	2,750	2,750	2,763
Therms Per Industrial Customer	21,585	21,667	21,585	21,585	21,585	21,667	21,585	21,585	21,585	21,667
Residential Customers	3,223	3,227	3,231	3,236	3,240	3,245	3,250	3,254	3,259	3,264
Commercial Customers	492	493	494	494	495	496	496	497	498	499
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,718**	**3,723**	**3,727**	**3,733**	**3,738**	**3,743**	**3,749**	**3,755**	**3,760**	**3,766**

Umatilla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.04%	0.16%	0.60%	0.61%	1.05%	0.16%	0.61%	0.60%	1.05%
Residential Therms	409,012	413,606	413,929	416,432	418,962	423,703	424,055	426,625	429,187	434,027
Commercial Therms	436,759	441,206	442,010	444,683	447,385	451,977	452,823	455,568	458,304	462,990
Industrial Therms	110,262	111,254	111,588	112,263	112,945	113,970	114,317	115,011	115,701	116,747
Ind., Inst., & Cmcl. Interrup. Therms	888,734	897,900	899,418	904,857	910,356	919,820	921,420	927,006	932,573	942,232
Total Core Therms	**1,844,767**	**1,863,965**	**1,866,944**	**1,878,235**	**1,889,648**	**1,909,471**	**1,912,615**	**1,924,210**	**1,935,764**	**1,955,995**
Daily Baseload Therms	1,254	1,267	1,269	1,277	1,285	1,298	1,300	1,308	1,316	1,330
Peak Day Therms	17,559	17,664	17,771	17,878	17,987	18,095	18,205	18,316	18,426	18,536
Therms Per Residential Customer	395	397	395	395	395	397	395	395	395	397
Therms Per Commercial Customer	2,666	2,678	2,666	2,666	2,666	2,678	2,666	2,666	2,666	2,678
Therms Per Industrial Customer	20,236	20,297	20,236	20,236	20,236	20,297	20,236	20,236	20,236	20,297
Residential Customers	1,035	1,041	1,047	1,054	1,060	1,067	1,073	1,080	1,086	1,093
Commercial Customers	164	165	166	167	168	169	170	171	172	173
Industrial Customers	5	5	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,206**	**1,213**	**1,221**	**1,228**	**1,236**	**1,243**	**1,251**	**1,258**	**1,266**	**1,273**

Chemult	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	0.61%	0.61%	0.61%	0.60%	0.60%	0.60%	0.59%	0.59%
Residential Therms	10,417	10,480	10,544	10,608	10,672	10,737	10,802	10,867	10,931	10,996
Commercial Therms	39,394	39,633	39,874	40,116	40,360	40,604	40,850	41,094	41,339	41,584
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**49,811**	**50,113**	**50,417**	**50,724**	**51,033**	**51,341**	**51,651**	**51,961**	**52,270**	**52,579**
Daily Baseload Therms	55	56	56	56	57	57	57	58	58	58
Peak Day Therms	633	637	641	644	648	652	656	660	664	668
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	26	26	26	26	26	26	26
Commercial Customers	21	21	21	21	21	22	22	22	22	22
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**46**	**46**	**47**	**47**	**47**	**47**	**48**	**48**	**48**	**48**

Gilchrist	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.14%	0.61%	0.61%	1.07%	0.15%	0.61%	0.60%	1.07%
Residential Therms	81,309	82,165	82,289	82,789	83,294	84,180	84,313	84,825	85,338	86,242
Commercial Therms	118,042	119,304	119,465	120,191	120,924	122,229	122,404	123,147	123,892	125,223
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**199,351**	**201,470**	**201,754**	**202,980**	**204,218**	**206,409**	**206,717**	**207,972**	**209,230**	**211,465**
Daily Baseload Therms	98	99	99	100	100	101	101	102	103	104
Peak Day Therms	2,737	2,753	2,770	2,787	2,804	2,821	2,838	2,855	2,872	2,890
Therms Per Residential Customer	447	449	447	447	447	449	447	447	447	449
Therms Per Commercial Customer	2,927	2,941	2,927	2,927	2,927	2,941	2,927	2,927	2,927	2,941
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	182	183	184	185	186	187	188	190	191	192
Commercial Customers	40	41	41	41	41	42	42	42	42	43
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**222**	**223**	**225**	**226**	**227**	**229**	**230**	**232**	**233**	**234**

Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.13%	0.61%	0.61%	1.09%	0.14%	0.61%	0.61%	1.08%
Residential Therms	2,130,005	2,153,681	2,155,906	2,169,083	2,182,422	2,206,846	2,209,233	2,222,759	2,236,258	2,261,197
Commercial Therms	2,328,358	2,352,634	2,356,670	2,371,075	2,385,656	2,410,711	2,414,964	2,429,749	2,444,505	2,470,082
Industrial Therms	184,304	186,254	186,545	187,686	188,840	190,852	191,160	192,330	193,498	195,553
Ind., Inst., & Cmcl. Interrup. Therms	332,624	336,521	336,669	338,727	340,809	344,828	344,996	347,109	349,217	353,321
Total Core Therms	**4,975,292**	**5,029,090**	**5,035,790**	**5,066,571**	**5,097,727**	**5,153,238**	**5,160,352**	**5,191,946**	**5,223,478**	**5,280,152**
Daily Baseload Therms	3,824	3,865	3,870	3,894	3,918	3,960	3,966	3,990	4,014	4,058
Peak Day Therms	71,496	71,927	72,365	72,808	73,255	73,703	74,155	74,609	75,062	75,518
Therms Per Residential Customer	600	603	600	600	600	603	600	600	600	603
Therms Per Commercial Customer	3,346	3,361	3,346	3,346	3,346	3,361	3,346	3,346	3,346	3,361
Therms Per Industrial Customer	22,900	23,004	22,900	22,900	22,900	23,004	22,900	22,900	22,900	23,004
Residential Customers	3,551	3,573	3,595	3,617	3,639	3,661	3,683	3,706	3,729	3,751
Commercial Customers	696	700	704	709	713	717	722	726	731	735
Industrial Customers	8	8	8	8	8	8	8	8	8	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,259**	**4,285**	**4,311**	**4,337**	**4,364**	**4,391**	**4,418**	**4,445**	**4,472**	**4,499**

Huntington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.68%	-0.43%	0.14%	0.14%	0.70%	-0.41%	0.15%	0.15%	0.71%
Residential Therms	44,335	44,640	44,445	44,509	44,572	44,887	44,702	44,768	44,834	45,156
Commercial Therms	24,424	24,590	24,485	24,520	24,555	24,726	24,626	24,663	24,699	24,874
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**68,759**	**69,230**	**68,930**	**69,029**	**69,127**	**69,613**	**69,328**	**69,431**	**69,534**	**70,030**
Daily Baseload Therms	-48	-48	-48	-48	-48	-48	-48	-48	-48	-49
Peak Day Therms	1,229	1,230	1,232	1,234	1,236	1,237	1,239	1,241	1,243	1,245
Therms Per Residential Customer	359	361	359	359	359	361	359	359	359	361
Therms Per Commercial Customer	1,712	1,721	1,712	1,712	1,712	1,721	1,712	1,712	1,712	1,721
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	123	124	124	124	124	124	124	125	125	125
Commercial Customers	14	14	14	14	14	14	14	14	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**138**	**138**	**138**	**138**	**138**	**139**	**139**	**139**	**139**	**139**

La Pine	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.67%	1.73%	2.14%	2.10%	2.50%	1.58%	1.98%	1.95%	2.36%
Residential Therms	118,164	121,302	123,411	126,047	128,691	131,901	133,993	136,652	139,314	142,590
Commercial Therms	317,174	325,639	331,257	338,333	345,429	354,093	359,663	366,800	373,943	382,789
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**435,338**	**446,941**	**454,667**	**464,380**	**474,119**	**485,993**	**493,656**	**503,452**	**513,257**	**525,379**
Daily Baseload Therms	277	284	289	296	302	309	314	320	327	334
Peak Day Therms	5,537	5,660	5,783	5,907	6,031	6,155	6,279	6,404	6,529	6,654
Therms Per Residential Customer	575	578	575	575	575	578	575	575	575	578
Therms Per Commercial Customer	2,478	2,489	2,478	2,478	2,478	2,489	2,478	2,478	2,478	2,489
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	205	210	215	219	224	228	233	238	242	247
Commercial Customers	128	131	134	137	139	142	145	148	151	154
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**341**	**348**	**356**	**363**	**371**	**378**	**386**	**393**	**401**

Madras	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.90%	-0.01%	0.47%	0.48%	0.94%	0.03%	0.50%	0.50%	0.97%
Residential Therms	579,458	584,842	584,639	587,360	590,155	595,881	595,912	598,877	601,867	607,870
Commercial Therms	1,037,841	1,047,123	1,047,120	1,051,995	1,056,999	1,066,887	1,067,311	1,072,622	1,077,976	1,088,353
Industrial Therms	643,683	649,631	649,438	652,461	655,565	661,893	661,961	665,255	668,575	675,210
Ind., Inst., & Cmcl. Interrup. Therms	295,358	297,785	297,998	299,386	300,810	303,405	303,745	305,256	306,780	309,510
Total Core Therms	**2,556,339**	**2,579,379**	**2,579,195**	**2,591,201**	**2,603,529**	**2,628,065**	**2,628,929**	**2,642,010**	**2,655,198**	**2,680,943**
Daily Baseload Therms	1,203	1,214	1,214	1,220	1,225	1,237	1,237	1,244	1,250	1,262
Peak Day Therms	35,792	35,950	36,112	36,281	36,453	36,629	36,809	36,992	37,177	37,366
Therms Per Residential Customer	513	515	513	513	513	515	513	513	513	515
Therms Per Commercial Customer	2,793	2,805	2,793	2,793	2,793	2,805	2,793	2,793	2,793	2,805
Therms Per Industrial Customer	37,705	37,886	37,705	37,705	37,705	37,886	37,705	37,705	37,705	37,886
Residential Customers	1,130	1,135	1,140	1,146	1,151	1,157	1,162	1,168	1,174	1,180
Commercial Customers	372	373	375	377	379	380	382	384	386	388
Industrial Customers	17	17	17	17	17	17	18	18	18	18
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,520**	**1,527**	**1,534**	**1,541**	**1,548**	**1,556**	**1,563**	**1,571**	**1,579**	**1,587**

Milton-Freewater	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.10%	0.15%	0.63%	0.63%	1.10%	0.15%	0.62%	0.62%	1.10%
Residential Therms	92,931	94,010	94,091	94,680	95,275	96,384	96,468	97,068	97,667	98,797
Commercial Therms	269,723	272,639	273,091	274,799	276,525	279,523	279,988	281,731	283,470	286,522
Industrial Therms	26,060	26,341	26,385	26,550	26,717	27,006	27,052	27,220	27,388	27,682

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**388,715**	**392,990**	**393,567**	**396,029**	**398,516**	**402,912**	**403,507**	**406,020**	**408,525**	**413,001**
Daily Baseload Therms	434	439	440	442	445	450	451	454	456	461
Peak Day Therms	5,493	5,527	5,561	5,596	5,631	5,667	5,702	5,737	5,773	5,808
Therms Per Residential Customer	408	410	408	408	408	410	408	408	408	410
Therms Per Commercial Customer	2,733	2,746	2,733	2,733	2,733	2,746	2,733	2,733	2,733	2,746
Therms Per Industrial Customer	4,440	4,460	4,440	4,440	4,440	4,460	4,440	4,440	4,440	4,460
Residential Customers	228	229	231	232	234	235	237	238	240	241
Commercial Customers	99	99	100	101	101	102	102	103	104	104
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**335**	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**352**

Mission Tap	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.15%	0.61%	0.61%	1.07%	0.16%	0.61%	0.61%	1.06%
Residential Therms	115,826	117,082	117,234	117,951	118,676	119,972	120,134	120,869	121,603	122,927
Commercial Therms	311,958	315,240	315,752	317,682	319,635	323,022	323,562	325,543	327,520	330,978
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**427,784**	**432,322**	**432,986**	**435,632**	**438,311**	**442,995**	**443,696**	**446,412**	**449,124**	**453,905**
Daily Baseload Therms	398	402	403	405	408	412	413	415	418	422
Peak Day Therms	5,304	5,336	5,368	5,401	5,434	5,467	5,501	5,535	5,568	5,602
Therms Per Residential Customer	542	545	542	542	542	545	542	542	542	545
Therms Per Commercial Customer	7,383	7,416	7,383	7,383	7,383	7,416	7,383	7,383	7,383	7,416
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	214	215	216	218	219	220	222	223	224	226
Commercial Customers	42	43	43	43	43	44	44	44	44	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**256**	**257**	**259**	**261**	**262**	**264**	**265**	**267**	**269**	**270**

Nyssa-Ontario	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.75%	-0.19%	0.29%	0.29%	0.77%	-0.18%	0.29%	0.29%	0.77%
Residential Therms	1,761,040	1,775,049	1,770,861	1,775,920	1,781,078	1,795,480	1,791,479	1,796,724	1,801,961	1,816,605
Commercial Therms	2,087,209	2,103,499	2,098,849	2,104,846	2,110,959	2,127,710	2,123,286	2,129,502	2,135,709	2,152,745
Industrial Therms	167,516	168,179	168,450	168,931	169,422	170,115	170,411	170,910	171,408	172,117
Ind., Inst., & Cmcl. Interrup. Therms	1,046,680	1,053,892	1,052,517	1,055,524	1,058,589	1,066,022	1,064,771	1,067,888	1,071,001	1,078,565
Total Core Therms	**5,062,444**	**5,100,618**	**5,090,677**	**5,105,221**	**5,120,048**	**5,159,327**	**5,149,948**	**5,165,025**	**5,180,079**	**5,220,032**
Daily Baseload Therms	1,495	1,506	1,503	1,508	1,512	1,524	1,521	1,525	1,530	1,541
Peak Day Therms	68,683	68,872	69,066	69,263	69,464	69,665	69,870	70,074	70,278	70,485
Therms Per Residential Customer	492	495	492	492	492	495	492	492	492	495
Therms Per Commercial Customer	2,324	2,335	2,324	2,324	2,324	2,335	2,324	2,324	2,324	2,335
Therms Per Industrial Customer	8,353	8,363	8,353	8,353	8,353	8,363	8,353	8,353	8,353	8,363
Residential Customers	3,578	3,588	3,598	3,608	3,619	3,629	3,640	3,650	3,661	3,672
Commercial Customers	898	901	903	906	908	911	914	916	919	922
Industrial Customers	20	20	20	20	20	20	20	20	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,498**	**4,511**	**4,523**	**4,536**	**4,549**	**4,563**	**4,576**	**4,589**	**4,603**	**4,616**

Pendleton	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.13%	0.61%	0.61%	1.09%	0.14%	0.61%	0.61%	1.09%
Residential Therms	2,585,090	2,614,321	2,616,524	2,632,517	2,648,705	2,678,858	2,681,244	2,697,660	2,714,044	2,744,833
Commercial Therms	2,166,096	2,189,436	2,192,435	2,205,836	2,219,400	2,243,485	2,246,666	2,260,421	2,274,149	2,298,737
Industrial Therms	168,800	170,682	170,853	171,897	172,954	174,895	175,079	176,151	177,220	179,203
Ind., Inst., & Cmcl. Interrup. Therms	934,167	943,105	945,526	951,305	957,155	966,386	968,914	974,846	980,766	990,186
Total Core Therms	**5,854,152**	**5,917,543**	**5,925,337**	**5,961,555**	**5,998,215**	**6,063,624**	**6,071,903**	**6,109,078**	**6,146,179**	**6,212,959**
Daily Baseload Therms	5,073	5,128	5,135	5,166	5,198	5,255	5,262	5,294	5,326	5,384
Peak Day Therms	81,573	82,066	82,565	83,070	83,581	84,092	84,608	85,126	85,643	86,163
Therms Per Residential Customer	536	539	536	536	536	539	536	536	536	539
Therms Per Commercial Customer	2,913	2,926	2,913	2,913	2,913	2,926	2,913	2,913	2,913	2,926
Therms Per Industrial Customer	27,965	28,107	27,965	27,965	27,965	28,107	27,965	27,965	27,965	28,107
Residential Customers	4,823	4,853	4,882	4,912	4,942	4,972	5,003	5,034	5,064	5,095
Commercial Customers	744	748	753	757	762	767	771	776	781	786
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,576**	**5,610**	**5,644**	**5,679**	**5,713**	**5,748**	**5,784**	**5,819**	**5,854**	**5,890**

Prineville	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.95%	0.03%	0.51%	0.52%	1.00%	0.07%	0.54%	0.54%	1.02%
Residential Therms	1,049,820	1,059,947	1,060,067	1,065,435	1,070,951	1,081,771	1,082,325	1,088,134	1,093,992	1,105,269
Commercial Therms	1,162,947	1,173,844	1,174,298	1,180,245	1,186,355	1,198,013	1,198,954	1,205,390	1,211,879	1,224,036
Industrial Therms	306,381	309,250	309,372	310,938	312,548	315,617	315,868	317,563	319,273	322,473
Ind., Inst., & Cmcl. Interrup. Therms	124,867	126,093	126,085	126,724	127,380	128,689	128,733	129,424	130,120	131,484
Total Core Therms	**2,644,014**	**2,669,133**	**2,669,821**	**2,683,342**	**2,697,233**	**2,724,090**	**2,725,879**	**2,740,510**	**2,755,265**	**2,783,262**
Daily Baseload Therms	1,006	1,016	1,016	1,021	1,026	1,037	1,037	1,043	1,049	1,059
Peak Day Therms	38,838	39,024	39,217	39,415	39,619	39,827	40,040	40,255	40,472	40,692
Therms Per Residential Customer	459	461	459	459	459	461	459	459	459	461
Therms Per Commercial Customer	2,294	2,305	2,294	2,294	2,294	2,305	2,294	2,294	2,294	2,305
Therms Per Industrial Customer	19,889	19,979	19,889	19,889	19,889	19,979	19,889	19,889	19,889	19,979
Residential Customers	2,288	2,299	2,310	2,322	2,334	2,346	2,359	2,371	2,384	2,397
Commercial Customers	507	509	512	514	517	520	523	525	528	531
Industrial Customers	15	15	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,812**	**2,825**	**2,839**	**2,854**	**2,869**	**2,884**	**2,899**	**2,915**	**2,930**	**2,946**

Redmond	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.70%	1.73%	2.15%	2.11%	2.53%	1.56%	1.98%	1.94%	2.37%
Residential Therms	3,682,523	3,782,608	3,847,571	3,930,315	4,013,158	4,115,112	4,178,905	4,261,789	4,344,593	4,448,157
Commercial Therms	2,741,467	2,816,036	2,864,338	2,925,937	2,987,610	3,063,575	3,111,001	3,172,704	3,234,347	3,311,517
Industrial Therms	365,380	374,844	381,756	389,966	398,185	407,794	414,631	422,855	431,070	440,798
Ind., Inst., & Cmcl. Interrup. Therms	259,245	265,654	270,865	276,690	282,522	289,005	294,190	300,025	305,854	312,395
Total Core Therms	**7,048,615**	**7,239,142**	**7,364,530**	**7,522,907**	**7,681,476**	**7,875,486**	**7,998,728**	**8,157,373**	**8,315,865**	**8,512,868**
Daily Baseload Therms	3,673	3,772	3,838	3,920	4,003	4,104	4,168	4,251	4,333	4,436
Peak Day Therms	96,107	98,259	100,414	102,573	104,736	106,896	109,061	111,224	113,385	115,547
Therms Per Residential Customer	563	566	563	563	563	566	563	563	563	566
Therms Per Commercial Customer	2,409	2,421	2,409	2,409	2,409	2,421	2,409	2,409	2,409	2,421
Therms Per Industrial Customer	29,975	30,078	29,975	29,975	29,975	30,078	29,975	29,975	29,975	30,078
Residential Customers	6,537	6,683	6,830	6,977	7,124	7,271	7,418	7,565	7,712	7,859
Commercial Customers	1,138	1,163	1,189	1,214	1,240	1,266	1,291	1,317	1,342	1,368
Industrial Customers	12	12	13	13	13	14	14	14	14	15
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7,688**	**7,860**	**8,033**	**8,205**	**8,378**	**8,551**	**8,724**	**8,897**	**9,070**	**9,243**

Stanfield	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.11%	0.10%	0.61%	0.61%	1.12%	0.11%	0.61%	0.61%	1.11%
Residential Therms	144,033	145,651	145,785	146,676	147,578	149,246	149,391	150,306	151,218	152,922
Commercial Therms	59,431	60,074	60,154	60,521	60,893	61,557	61,641	62,019	62,396	63,073
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**203,464**	**205,724**	**205,938**	**207,197**	**208,471**	**210,803**	**211,032**	**212,324**	**213,614**	**215,994**
Daily Baseload Therms	100	102	102	102	103	104	104	105	105	107
Peak Day Therms	3,037	3,055	3,074	3,093	3,112	3,131	3,150	3,169	3,189	3,208
Therms Per Residential Customer	474	477	474	474	474	477	474	474	474	477
Therms Per Commercial Customer	1,808	1,817	1,808	1,808	1,808	1,817	1,808	1,808	1,808	1,817
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	304	306	307	309	311	313	315	317	319	321
Commercial Customers	33	33	33	33	34	34	34	34	35	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**351**	**353**	**356**

Stearns (Sunriver)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.68%	1.75%	2.15%	2.11%	2.50%	1.59%	1.98%	1.94%	2.35%
Residential Therms	3,189,075	3,275,269	3,332,007	3,403,663	3,475,406	3,563,176	3,618,943	3,690,721	3,762,429	3,851,552
Commercial Therms	999,325	1,025,458	1,044,114	1,066,568	1,089,050	1,115,599	1,134,028	1,156,521	1,178,991	1,205,887
Industrial Therms	13,706	14,057	14,321	14,629	14,937	15,293	15,554	15,862	16,171	16,530
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,202,106**	**4,314,784**	**4,390,442**	**4,484,860**	**4,579,393**	**4,694,068**	**4,768,526**	**4,863,104**	**4,957,590**	**5,073,969**
Daily Baseload Therms	3,430	3,522	3,584	3,661	3,738	3,832	3,893	3,970	4,047	4,142
Peak Day Therms	52,123	53,291	54,460	55,631	56,803	57,975	59,149	60,323	61,495	62,667
Therms Per Residential Customer	899	903	899	899	899	903	899	899	899	903
Therms Per Commercial Customer	4,470	4,486	4,470	4,470	4,470	4,486	4,470	4,470	4,470	4,486
Therms Per Industrial Customer	5,545	5,562	5,545	5,545	5,545	5,562	5,545	5,545	5,545	5,562
Residential Customers	3,548	3,628	3,708	3,787	3,867	3,947	4,027	4,107	4,186	4,266
Commercial Customers	224	229	234	239	244	249	254	259	264	269
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,775**	**3,859**	**3,944**	**4,029**	**4,113**	**4,198**	**4,283**	**4,368**	**4,453**	**4,538**

Dave Rasmussen	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.24%	2.19%	2.15%	2.11%	2.06%	2.03%	1.98%	1.94%	1.91%
Residential Therms	299,521	306,228	312,945	319,675	326,413	333,146	339,894	346,636	353,370	360,109
Commercial Therms	254,968	260,678	266,396	272,125	277,861	283,593	289,337	295,075	300,808	306,544
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**554,489**	**566,906**	**579,341**	**591,800**	**604,274**	**616,739**	**629,231**	**641,711**	**654,179**	**666,653**
Daily Baseload Therms	591	604	618	631	644	658	671	684	697	711
Peak Day Therms	6,515	6,661	6,807	6,954	7,100	7,247	7,394	7,540	7,687	7,833
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	185	189	193	198	202	206	210	214	218	222
Commercial Customers	25	25	26	26	27	27	28	28	29	30
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**210**	**214**	**219**	**224**	**228**	**233**	**238**	**243**	**247**	**252**

South Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.69%	1.74%	2.15%	2.11%	2.52%	1.57%	1.98%	1.94%	2.36%
Residential Therms	18,468,190	18,966,598	19,295,922	19,710,889	20,126,357	20,633,825	20,957,594	21,373,262	21,788,530	22,303,768
Commercial Therms	10,296,226	10,572,785	10,757,695	10,989,044	11,220,672	11,502,168	11,684,097	11,915,836	12,147,353	12,433,065
Industrial Therms	306,457	314,615	320,192	327,078	333,972	342,271	347,766	354,663	361,554	369,971
Ind., Inst., & Cmcl. Interrup. Therms	184,424	189,125	192,689	196,833	200,982	205,749	209,283	213,434	217,581	222,401
Total Core Therms	**29,255,296**	**30,043,123**	**30,566,499**	**31,223,844**	**31,881,984**	**32,684,013**	**33,198,739**	**33,857,196**	**34,515,017**	**35,329,206**
Daily Baseload Therms	17,910	18,392	18,713	19,115	19,518	20,009	20,324	20,727	21,130	21,628
Peak Day Therms	377,442	385,894	394,358	402,839	411,330	419,815	428,318	436,814	445,301	453,792
Therms Per Residential Customer	691	694	691	691	691	694	691	691	691	694
Therms Per Commercial Customer	2,537	2,548	2,537	2,537	2,537	2,548	2,537	2,537	2,537	2,548
Therms Per Industrial Customer	21,025	21,111	21,025	21,025	21,025	21,111	21,025	21,025	21,025	21,111
Residential Customers	26,725	27,324	27,923	28,524	29,125	29,726	30,328	30,929	31,530	32,132
Commercial Customers	4,058	4,149	4,240	4,331	4,422	4,513	4,605	4,696	4,787	4,879
Industrial Customers	15	15	15	16	16	16	17	17	17	18
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**30,800**	**31,490**	**32,181**	**32,873**	**33,566**	**34,258**	**34,952**	**35,645**	**36,338**	**37,031**

McCleary (Aberdeen/Hoquiam)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.91%	0.04%	0.47%	0.48%	0.91%	0.03%	0.46%	0.46%	0.89%
Residential Therms	2,234,710	2,255,656	2,255,925	2,266,638	2,277,410	2,298,644	2,298,835	2,309,518	2,320,111	2,341,451
Commercial Therms	2,168,645	2,188,343	2,189,234	2,199,629	2,210,083	2,230,048	2,230,875	2,241,242	2,251,521	2,271,578
Industrial Therms	106,286	107,396	107,295	107,805	108,317	109,443	109,336	109,844	110,348	111,481
Ind., Inst., & Cmcl. Interrup. Therms	992,461	1,000,817	1,001,883	1,006,641	1,011,425	1,019,890	1,020,940	1,025,684	1,030,389	1,038,884
Total Core Therms	**5,502,102**	**5,552,213**	**5,554,337**	**5,580,713**	**5,607,236**	**5,658,026**	**5,659,987**	**5,686,288**	**5,712,369**	**5,763,394**
Daily Baseload Therms	6,363	6,421	6,423	6,454	6,484	6,543	6,545	6,576	6,606	6,665
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	640	642	640	640	640	642	640	640	640	642
Therms Per Commercial Customer	2,915	2,927	2,915	2,915	2,915	2,927	2,915	2,915	2,915	2,927
Therms Per Industrial Customer	9,067	9,119	9,067	9,067	9,067	9,119	9,067	9,067	9,067	9,119
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Acme	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.38%	1.38%	1.84%	1.81%	2.27%	1.27%	1.73%	1.70%	2.17%
Residential Therms	45,422	46,504	47,143	48,011	48,881	49,994	50,630	51,508	52,386	53,523

Commercial Therms	31,089	31,828	32,267	32,861	33,457	34,217	34,654	35,254	35,855	36,633
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**76,510**	**78,332**	**79,411**	**80,872**	**82,338**	**84,211**	**85,284**	**86,762**	**88,241**	**90,156**
Daily Baseload Therms	30	31	32	32	33	33	34	34	35	36
Peak Day Therms	1,017	1,037	1,056	1,075	1,095	1,114	1,134	1,154	1,173	1,193
Therms Per Residential Customer	680	684	680	680	680	684	680	680	680	684
Therms Per Commercial Customer	3,389	3,406	3,389	3,389	3,389	3,406	3,389	3,389	3,389	3,406
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	67	68	69	71	72	73	74	76	77	78
Commercial Customers	9	9	10	10	10	10	10	10	11	11
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**76**	**77**	**79**	**80**	**82**	**83**	**85**	**86**	**88**	**89**

Arlington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.01%	1.08%	1.52%	1.50%	1.94%	1.01%	1.45%	1.43%	1.87%
Residential Therms	3,330,531	3,397,823	3,434,218	3,486,449	3,538,898	3,607,950	3,644,166	3,696,963	3,749,768	3,820,234
Commercial Therms	1,750,842	1,785,821	1,805,350	1,832,807	1,860,380	1,896,259	1,915,718	1,943,473	1,971,233	2,007,831
Industrial Therms	206,664	210,740	213,098	216,339	219,593	223,773	226,125	229,401	232,678	236,939
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**5,288,037**	**5,394,384**	**5,452,665**	**5,535,595**	**5,618,871**	**5,727,982**	**5,786,009**	**5,869,837**	**5,953,679**	**6,065,004**
Daily Baseload Therms	5,989	6,110	6,176	6,269	6,364	6,487	6,553	6,648	6,743	6,869
Peak Day Therms	59,326	60,247	61,173	62,103	63,037	63,973	64,913	65,853	66,794	67,737
Therms Per Residential Customer	708	711	708	708	708	711	708	708	708	711
Therms Per Commercial Customer	3,162	3,176	3,162	3,162	3,162	3,176	3,162	3,162	3,162	3,176
Therms Per Industrial Customer	8,597	8,633	8,597	8,597	8,597	8,633	8,597	8,597	8,597	8,633
Residential Customers	4,706	4,779	4,853	4,927	5,001	5,075	5,150	5,224	5,299	5,374
Commercial Customers	554	562	571	580	588	597	606	615	623	632
Industrial Customers	24	24	25	25	26	26	26	27	27	27
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**5,284**	**5,366**	**5,449**	**5,531**	**5,615**	**5,698**	**5,782**	**5,865**	**5,949**	**6,033**

Bremerton (Shelton)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.54%	0.62%	1.07%	1.06%	1.51%	0.59%	1.04%	1.02%	1.48%
Residential Therms	18,870,035	19,162,701	19,279,425	19,485,822	19,693,129	19,992,807	20,108,922	20,317,228	20,525,352	20,830,169
Commercial Therms	9,485,030	9,629,599	9,690,810	9,794,556	9,898,758	10,046,742	10,107,757	10,212,462	10,317,076	10,467,532
Industrial Therms	305,714	311,683	312,347	315,691	319,049	325,185	325,786	329,160	332,532	338,804
Ind., Inst., & Cmcl. Interrup. Therms	2,300,159	2,334,070	2,350,062	2,375,220	2,400,490	2,435,179	2,451,173	2,476,564	2,501,934	2,537,172
Total Core Therms	**30,960,939**	**31,438,053**	**31,632,643**	**31,971,290**	**32,311,426**	**32,799,913**	**32,993,638**	**33,335,415**	**33,676,893**	**34,173,677**
Daily Baseload Therms	24,579	24,958	25,112	25,381	25,651	26,039	26,193	26,464	26,735	27,130
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	607	610	607	607	607	610	607	607	607	610
Therms Per Commercial Customer	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229
Therms Per Industrial Customer	23,413	23,615	23,413	23,413	23,413	23,615	23,413	23,413	23,413	23,615
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Castle Rock	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.91%	0.07%	0.50%	0.51%	0.93%	0.09%	0.51%	0.51%	0.93%
Residential Therms	32,786	33,108	33,110	33,276	33,444	33,778	33,785	33,957	34,129	34,471
Commercial Therms	111,610	112,606	112,712	113,277	113,850	114,885	115,009	115,595	116,182	117,241
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**144,396**	**145,714**	**145,822**	**146,553**	**147,294**	**148,663**	**148,794**	**149,552**	**150,312**	**151,712**
Daily Baseload Therms	163	164	164	165	166	167	168	168	169	171
Peak Day Therms	1,356	1,363	1,369	1,376	1,383	1,390	1,397	1,404	1,412	1,419
Therms Per Residential Customer	508	511	508	508	508	511	508	508	508	511
Therms Per Commercial Customer	2,290	2,299	2,290	2,290	2,290	2,299	2,290	2,290	2,290	2,299
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	64	65	65	65	66	66	66	67	67	67
Commercial Customers	49	49	49	49	50	50	50	50	51	51
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**113**	**114**	**114**	**115**	**115**	**116**	**117**	**117**	**118**	**118**

Walla Walla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.43%	-0.52%	-0.03%	-0.03%	0.46%	-0.49%	-0.01%	-0.01%	0.48%
Residential Therms	6,021,622	6,048,503	6,015,737	6,013,708	6,012,187	6,040,958	6,010,158	6,009,549	6,009,042	6,039,022
Commercial Therms	3,952,743	3,969,593	3,948,880	3,947,548	3,946,549	3,964,642	3,945,217	3,944,818	3,944,485	3,963,371
Industrial Therms	90,871	91,210	90,782	90,752	90,729	91,096	90,698	90,689	90,681	91,067
Ind., Inst., & Cmcl. Interrup. Therms	1,807,460	1,813,988	1,805,694	1,805,085	1,804,628	1,811,725	1,804,019	1,803,837	1,803,684	1,811,144
Total Core Therms	**11,872,696**	**11,923,294**	**11,861,093**	**11,857,093**	**11,854,092**	**11,908,421**	**11,850,093**	**11,848,893**	**11,847,893**	**11,904,604**
Daily Baseload Therms	11,078	11,125	11,067	11,063	11,060	11,111	11,057	11,056	11,055	11,108
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	565	568	565	565	565	568	565	565	565	568
Therms Per Commercial Customer	3,132	3,147	3,132	3,132	3,132	3,147	3,132	3,132	3,132	3,147
Therms Per Industrial Customer	11,860	11,911	11,860	11,860	11,860	11,911	11,860	11,860	11,860	11,911
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Deming	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.36%	1.36%	1.82%	1.79%	2.25%	1.26%	1.72%	1.69%	2.15%
Residential Therms	11,947	12,231	12,395	12,620	12,847	13,139	13,302	13,530	13,759	14,058
Commercial Therms	57,056	58,371	59,194	60,271	61,353	62,704	63,525	64,616	65,708	67,089
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	61,629	63,107	63,939	65,102	66,271	67,792	68,618	69,796	70,975	72,533
Total Core Therms	**130,632**	**133,710**	**135,528**	**137,994**	**140,470**	**143,635**	**145,445**	**147,942**	**150,442**	**153,680**
Daily Baseload Therms	93	95	96	98	100	102	103	105	107	109
Peak Day Therms	1,686	1,718	1,749	1,781	1,813	1,845	1,877	1,910	1,942	1,974
Therms Per Residential Customer	490	493	490	490	490	493	490	490	490	493
Therms Per Commercial Customer	4,799	4,820	4,799	4,799	4,799	4,820	4,799	4,799	4,799	4,820
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	24	25	25	26	26	27	27	28	28	29
Commercial Customers	12	12	12	13	13	13	13	13	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**37**	**38**	**39**	**39**	**40**	**41**	**42**	**42**	**43**	**44**

Wenatchee	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.62%	0.73%	1.16%	1.15%	1.58%	0.70%	1.12%	1.11%	1.55%
Residential Therms	624,583	634,788	639,296	646,724	654,187	664,660	669,172	676,690	684,206	694,891
Commercial Therms	3,183,773	3,234,873	3,258,770	3,296,637	3,334,676	3,387,102	3,411,061	3,449,383	3,487,699	3,541,158
Industrial Therms	372,449	378,534	381,222	385,652	390,102	396,347	399,038	403,521	408,003	414,374
Ind., Inst., & Cmcl. Interrup. Therms	251,695	255,994	257,624	260,617	263,625	268,041	269,663	272,693	275,722	280,232
Total Core Therms	**4,432,500**	**4,504,189**	**4,536,912**	**4,589,631**	**4,642,589**	**4,716,150**	**4,748,934**	**4,802,287**	**4,855,631**	**4,930,656**
Daily Baseload Therms	4,381	4,452	4,484	4,537	4,589	4,662	4,694	4,747	4,799	4,874
Peak Day Therms	49,673	50,257	50,843	51,434	52,028	52,622	53,220	53,817	54,415	55,015
Therms Per Residential Customer	445	447	445	445	445	447	445	445	445	447
Therms Per Commercial Customer	4,599	4,619	4,599	4,599	4,599	4,619	4,599	4,599	4,599	4,619
Therms Per Industrial Customer	24,540	24,651	24,540	24,540	24,540	24,651	24,540	24,540	24,540	24,651
Residential Customers	1,405	1,422	1,438	1,455	1,472	1,488	1,505	1,522	1,539	1,556
Commercial Customers	692	700	709	717	725	733	742	750	758	767
Industrial Customers	15	15	16	16	16	16	16	16	17	17
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,116**	**2,141**	**2,166**	**2,191**	**2,216**	**2,242**	**2,267**	**2,293**	**2,318**	**2,344**

Finley	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.82%	0.70%	1.25%	1.24%	1.78%	0.66%	1.20%	1.18%	1.72%
Residential Therms	13,314	13,559	13,652	13,822	13,993	14,244	14,335	14,507	14,678	14,934
Commercial Therms	79,082	80,519	81,089	82,100	83,114	84,587	85,148	86,167	87,184	88,685
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**92,396**	**94,078**	**94,741**	**95,922**	**97,107**	**98,831**	**99,483**	**100,673**	**101,862**	**103,619**
Daily Baseload Therms	28	29	29	29	30	30	30	31	31	32
Peak Day Therms	1,659	1,680	1,701	1,722	1,744	1,765	1,786	1,808	1,829	1,850
Therms Per Residential Customer	506	508	506	506	506	508	506	506	506	508
Therms Per Commercial Customer	6,006	6,039	6,006	6,006	6,006	6,039	6,006	6,006	6,006	6,039
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	27	27	27	28	28	28	29	29	29
Commercial Customers	13	13	14	14	14	14	14	14	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**39**	**40**	**41**	**41**	**42**	**42**	**43**	**43**	**44**	**44**

Grandview	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.57%	-0.28%	0.16%	0.16%	0.60%	-0.25%	0.18%	0.18%	0.61%
Residential Therms	552,540	556,033	554,105	554,967	555,872	559,549	557,761	558,741	559,730	563,520
Commercial Therms	629,988	633,929	631,773	632,756	633,788	637,938	635,942	637,059	638,187	642,465
Industrial Therms	541,472	543,804	543,005	543,851	544,737	547,243	546,589	547,549	548,518	551,126
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,724,000**	**1,733,766**	**1,728,883**	**1,731,574**	**1,734,397**	**1,744,730**	**1,740,292**	**1,743,350**	**1,746,435**	**1,757,112**
Daily Baseload Therms	1,114	1,121	1,117	1,119	1,121	1,128	1,125	1,127	1,129	1,136
Peak Day Therms	18,759	18,784	18,812	18,841	18,872	18,903	18,936	18,969	19,003	19,037
Therms Per Residential Customer	581	584	581	581	581	584	581	581	581	584
Therms Per Commercial Customer	3,416	3,433	3,416	3,416	3,416	3,433	3,416	3,416	3,416	3,433
Therms Per Industrial Customer	68,309	68,509	68,309	68,309	68,309	68,509	68,309	68,309	68,309	68,509
Residential Customers	952	953	954	956	957	959	961	962	964	966
Commercial Customers	184	185	185	185	186	186	186	186	187	187
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,144**	**1,145**	**1,147**	**1,149**	**1,151**	**1,153**	**1,155**	**1,157**	**1,159**	**1,161**

Zillah (Toppenish)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.62%	-0.26%	0.19%	0.20%	0.65%	-0.24%	0.21%	0.21%	0.67%
Residential Therms	1,074,190	1,081,514	1,078,067	1,080,153	1,082,316	1,089,987	1,086,786	1,089,085	1,091,399	1,099,285
Commercial Therms	1,972,927	1,985,376	1,980,048	1,983,879	1,987,851	2,000,931	1,996,062	2,000,285	2,004,535	2,018,000
Industrial Therms	543,007	545,849	544,967	546,021	547,115	550,125	549,375	550,537	551,707	554,818
Ind., Inst., & Cmcl. Interrup. Therms	83,604	83,928	83,906	84,068	84,237	84,585	84,585	84,763	84,944	85,307
Total Core Therms	**3,673,728**	**3,696,667**	**3,686,988**	**3,694,121**	**3,701,519**	**3,725,629**	**3,716,808**	**3,724,671**	**3,732,584**	**3,757,410**
Daily Baseload Therms	2,905	2,923	2,916	2,921	2,927	2,946	2,939	2,946	2,952	2,971

Peak Day Therms	44,576	44,654	44,737	44,823	44,913	45,004	45,099	45,194	45,290	45,388
Therms Per Residential Customer	563	566	563	563	563	566	563	563	563	566
Therms Per Commercial Customer	3,952	3,970	3,952	3,952	3,952	3,970	3,952	3,952	3,952	3,970
Therms Per Industrial Customer	25,214	25,301	25,214	25,214	25,214	25,301	25,214	25,214	25,214	25,301
Residential Customers	1,909	1,912	1,916	1,919	1,923	1,927	1,931	1,935	1,939	1,943
Commercial Customers	499	500	501	502	503	504	505	506	507	508
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,431**	**2,435**	**2,439**	**2,444**	**2,449**	**2,454**	**2,459**	**2,464**	**2,469**	**2,475**

Kalama #2	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.53%	0.53%
Residential Therms	189,556	190,578	191,609	192,648	193,692	194,736	195,785	196,833	197,878	198,923
Commercial Therms	180,714	181,689	182,672	183,662	184,657	185,653	186,653	187,652	188,649	189,645
Industrial Therms	224,114	225,323	226,541	227,769	229,004	230,239	231,479	232,718	233,953	235,189
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**594,384**	**597,591**	**600,822**	**604,079**	**607,353**	**610,628**	**613,917**	**617,204**	**620,480**	**623,757**
Daily Baseload Therms	896	901	906	911	916	921	926	931	936	940
Peak Day Therms	6,464	6,499	6,534	6,569	6,605	6,640	6,676	6,712	6,748	6,783
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	169	170	171	172	173	174	175	176	177	178
Commercial Customers	48	48	48	48	49	49	49	49	50	50
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**220**	**221**	**222**	**223**	**224**	**226**	**227**	**228**	**229**	**230**

Lawrence	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.38%	1.34%	1.82%	1.80%	2.28%	1.24%	1.72%	1.69%	2.18%
Residential Therms	39,816	40,761	41,311	42,065	42,821	43,793	44,341	45,104	45,868	46,862
Commercial Therms	18,568	19,015	19,265	19,617	19,970	20,430	20,678	21,034	21,390	21,862
Industrial Therms	751	766	779	793	807	823	836	850	865	880
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**59,134**	**60,542**	**61,356**	**62,475**	**63,598**	**65,046**	**65,855**	**66,989**	**68,123**	**69,604**
Daily Baseload Therms	29	29	30	30	31	32	32	33	33	34
Peak Day Therms	824	839	855	870	886	902	918	933	949	965
Therms Per Residential Customer	653	656	653	653	653	656	653	653	653	656
Therms Per Commercial Customer	1,169	1,175	1,169	1,169	1,169	1,175	1,169	1,169	1,169	1,175
Therms Per Industrial Customer	737	738	737	737	737	738	737	737	737	738
Residential Customers	61	62	63	64	66	67	68	69	70	71
Commercial Customers	16	16	16	17	17	17	18	18	18	19
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**78**	**79**	**81**	**82**	**84**	**85**	**87**	**88**	**90**	**91**

Moxee (Beauchene)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.83%	0.17%	0.51%	0.51%	0.85%	0.18%	0.52%	0.52%	0.85%
Residential Therms	248,896	251,243	251,389	252,668	253,964	256,401	256,589	257,916	259,246	261,746
Commercial Therms	506,726	511,008	511,802	514,405	517,043	521,498	522,387	525,089	527,798	532,370
Industrial Therms	504,089	507,659	509,138	511,728	514,352	518,081	519,668	522,356	525,052	528,881
Ind., Inst., & Cmcl. Interrup. Therms	226,871	229,048	229,144	230,309	231,490	233,750	233,883	235,092	236,305	238,623
Total Core Therms	**1,486,581**	**1,498,958**	**1,501,473**	**1,509,109**	**1,516,849**	**1,529,729**	**1,532,527**	**1,540,453**	**1,548,402**	**1,561,620**
Daily Baseload Therms	584	589	590	593	596	601	602	605	608	613
Peak Day Therms	13,922	13,991	14,062	14,133	14,206	14,279	14,353	14,427	14,501	14,576
Therms Per Residential Customer	154	155	154	154	154	155	154	154	154	155
Therms Per Commercial Customer	1,253	1,257	1,253	1,253	1,253	1,257	1,253	1,253	1,253	1,257
Therms Per Industrial Customer	38,098	38,178	38,098	38,098	38,098	38,178	38,098	38,098	38,098	38,178
Residential Customers	1,618	1,626	1,634	1,643	1,651	1,660	1,668	1,677	1,685	1,694
Commercial Customers	405	407	409	411	413	415	417	419	421	424
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**2,041**	**2,051**	**2,061**	**2,072**	**2,082**	**2,093**	**2,104**	**2,115**	**2,126**	**2,137**

Othello	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.74%	0.74%	0.74%	0.75%	0.75%	0.75%	0.75%	0.74%	0.75%
Residential Therms	630,697	635,346	640,079	644,839	649,682	654,527	659,457	664,388	669,333	674,345
Commercial Therms	817,556	823,583	829,717	835,888	842,166	848,447	854,838	861,229	867,639	874,135
Industrial Therms	228,503	230,188	231,902	233,627	235,382	237,137	238,923	240,710	242,501	244,317
Ind., Inst., & Cmcl. Interrup. Therms	209,124	210,665	212,235	213,813	215,419	217,026	218,660	220,295	221,935	223,596
Total Core Therms	**1,885,879**	**1,899,782**	**1,913,933**	**1,928,166**	**1,942,649**	**1,957,137**	**1,971,878**	**1,986,623**	**2,001,408**	**2,016,393**
Daily Baseload Therms	2,031	2,046	2,061	2,076	2,092	2,108	2,123	2,139	2,155	2,171
Peak Day Therms	20,743	20,896	21,052	21,208	21,367	21,527	21,689	21,851	22,014	22,178
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,087	1,095	1,104	1,112	1,120	1,128	1,137	1,145	1,154	1,163
Commercial Customers	283	285	287	289	292	294	296	298	300	303
Industrial Customers	11	11	11	11	11	11	12	12	12	12
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,383**	**1,394**	**1,404**	**1,414**	**1,425**	**1,436**	**1,447**	**1,457**	**1,468**	**1,479**

North Pasco	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Total Therms Pct. Growth		2.00%	0.92%	1.44%	1.42%	1.93%	0.85%	1.36%	1.34%	1.86%
Residential Therms	2,318,524	2,365,168	2,386,806	2,421,112	2,455,468	2,503,072	2,524,232	2,558,614	2,592,920	2,641,282
Commercial Therms	1,593,093	1,625,076	1,640,011	1,663,583	1,687,190	1,719,828	1,734,439	1,758,063	1,781,635	1,814,790
Industrial Therms	86,934	88,477	89,494	90,780	92,068	93,636	94,647	95,936	97,222	98,806
Ind., Inst., & Cmcl. Interrup. Therms	172,840	176,293	177,930	180,487	183,048	186,572	188,175	190,738	193,295	196,874
Total Core Therms	**4,171,391**	**4,255,015**	**4,294,240**	**4,355,962**	**4,417,775**	**4,503,108**	**4,541,492**	**4,603,351**	**4,665,072**	**4,751,753**
Daily Baseload Therms	1,732	1,766	1,783	1,808	1,834	1,869	1,885	1,911	1,937	1,973
Peak Day Therms	72,894	73,966	75,041	76,120	77,200	78,279	79,362	80,443	81,521	82,601
Therms Per Residential Customer	1,244	1,250	1,244	1,244	1,244	1,250	1,244	1,244	1,244	1,250
Therms Per Commercial Customer	8,060	8,103	8,060	8,060	8,060	8,103	8,060	8,060	8,060	8,103
Therms Per Industrial Customer	42,829	42,958	42,829	42,829	42,829	42,958	42,829	42,829	42,829	42,958
Residential Customers	1,864	1,892	1,919	1,947	1,974	2,002	2,030	2,057	2,085	2,113
Commercial Customers	198	201	203	206	209	212	215	218	221	224
Industrial Customers	2	2	2	2	2	2	2	2	2	2
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,065**	**2,095**	**2,126**	**2,156**	**2,187**	**2,218**	**2,248**	**2,279**	**2,309**	**2,340**

Patterson	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.84%	1.83%	1.81%	1.80%	1.79%	1.78%	1.76%	1.75%	1.74%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	10,267	10,455	10,646	10,840	11,035	11,232	11,432	11,634	11,837	12,043
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	221,302	225,373	229,491	233,655	237,865	242,121	246,422	250,769	255,161	259,598
Total Core Therms	**231,568**	**235,828**	**240,138**	**244,494**	**248,900**	**253,353**	**257,854**	**262,402**	**266,998**	**271,641**
Daily Baseload Therms	316	322	328	334	340	346	352	358	365	371
Peak Day Therms	2,510	2,557	2,603	2,651	2,698	2,747	2,795	2,845	2,895	2,945
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	4	4	4	4	4	4	5	5	5	5
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**6**	**6**	**6**	**6**	**7**	**7**	**7**	**7**	**7**	**7**

Prosser	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.74%	0.78%	1.24%	1.23%	1.69%	0.73%	1.19%	1.18%	1.64%
Residential Therms	250,527	254,997	256,861	260,051	263,249	267,826	269,665	272,878	276,087	280,748
Commercial Therms	433,925	441,402	444,896	450,420	455,961	463,609	467,073	472,637	478,197	485,976
Industrial Therms	139,449	141,809	142,975	144,751	146,531	148,943	150,102	151,890	153,677	156,129
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**823,901**	**838,208**	**844,732**	**855,221**	**865,741**	**880,379**	**886,839**	**897,405**	**907,961**	**922,853**
Daily Baseload Therms	418	426	429	434	440	447	450	456	461	469
Peak Day Therms	10,681	10,816	10,952	11,088	11,224	11,360	11,497	11,634	11,771	11,908
Therms Per Residential Customer	552	555	552	552	552	555	552	552	552	555
Therms Per Commercial Customer	3,124	3,138	3,124	3,124	3,124	3,138	3,124	3,124	3,124	3,138
Therms Per Industrial Customer	27,539	27,657	27,539	27,539	27,539	27,657	27,539	27,539	27,539	27,657
Residential Customers	454	460	465	471	477	483	489	494	500	506
Commercial Customers	139	141	142	144	146	148	150	151	153	155
Industrial Customers	5	5	5	5	5	5	5	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**605**	**613**	**621**	**628**	**636**	**644**	**651**	**659**	**667**

Quincy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.29%	1.28%	1.28%	1.28%	1.27%	1.27%	1.26%	1.25%	1.25%
Residential Therms	43,694	44,257	44,826	45,400	45,980	46,564	47,154	47,748	48,345	48,948
Commercial Therms	499,882	506,319	512,822	519,394	526,029	532,711	539,460	546,253	553,089	559,980
Industrial Therms	241,072	244,176	247,313	250,482	253,682	256,904	260,159	263,435	266,732	270,055
Ind., Inst., & Cmcl. Interrup. Therms	55,965	56,686	57,414	58,150	58,893	59,641	60,397	61,157	61,922	62,694
Total Core Therms	**840,614**	**851,438**	**862,375**	**873,425**	**884,583**	**895,819**	**907,170**	**918,593**	**930,089**	**941,676**
Daily Baseload Therms	633	641	649	657	666	674	683	691	700	709
Peak Day Therms	9,534	9,656	9,780	9,906	10,032	10,160	10,288	10,418	10,548	10,680
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	62	62	63	64	65	66	66	67	68	69
Commercial Customers	64	65	66	67	68	69	69	70	71	72
Industrial Customers	6	6	6	6	6	6	7	7	7	7
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**133**	**135**	**136**	**138**	**140**	**142**	**143**	**145**	**147**	**149**

Sunnyside	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.17%	0.27%	0.27%	0.71%	-0.15%	0.28%	0.28%	0.72%
Residential Therms	1,019,496	1,026,960	1,024,733	1,027,477	1,030,286	1,038,060	1,036,024	1,038,945	1,041,877	1,049,844
Commercial Therms	1,439,707	1,449,764	1,447,101	1,450,976	1,454,943	1,465,434	1,463,046	1,467,171	1,471,311	1,482,069
Industrial Therms	499,152	502,022	501,716	503,059	504,434	507,448	507,244	508,674	510,109	513,208
Ind., Inst., & Cmcl. Interrup. Therms	154,863	155,887	155,659	156,075	156,502	157,572	157,374	157,818	158,263	159,361
Total Core Therms	**3,113,218**	**3,134,632**	**3,129,208**	**3,137,587**	**3,146,166**	**3,168,514**	**3,163,687**	**3,172,608**	**3,181,560**	**3,204,483**
Daily Baseload Therms	2,831	2,850	2,845	2,853	2,860	2,881	2,876	2,885	2,893	2,913
Peak Day Therms	36,959	37,052	37,148	37,248	37,350	37,452	37,558	37,664	37,770	37,878
Therms Per Residential Customer	560	562	560	560	560	562	560	560	560	562
Therms Per Commercial Customer	2,823	2,836	2,823	2,823	2,823	2,836	2,823	2,823	2,823	2,836
Therms Per Industrial Customer	31,953	32,055	31,953	31,953	31,953	32,055	31,953	31,953	31,953	32,055
Residential Customers	1,821	1,826	1,831	1,836	1,841	1,846	1,851	1,856	1,861	1,867

Commercial Customers	510	511	513	514	515	517	518	520	521	523
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,349**	**2,355**	**2,361**	**2,367**	**2,374**	**2,380**	**2,387**	**2,394**	**2,401**	**2,408**

Moses Lake	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.44%	1.49%	1.96%	1.95%	2.42%	1.48%	1.94%	1.94%	2.40%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	145,011	148,904	150,768	153,721	156,725	160,904	162,889	166,049	169,263	173,744
Industrial Therms	3,214,325	3,292,362	3,341,935	3,407,401	3,473,991	3,557,690	3,610,606	3,680,658	3,751,901	3,841,590
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,359,336**	**3,441,265**	**3,492,703**	**3,561,123**	**3,630,716**	**3,718,594**	**3,773,495**	**3,846,707**	**3,921,164**	**4,015,334**
Daily Baseload Therms	2,349	2,406	2,442	2,490	2,539	2,600	2,638	2,690	2,742	2,808
Peak Day Therms	41,354	42,168	42,996	43,838	44,695	45,566	46,452	47,354	48,270	49,202
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	28,441	28,641	28,441	28,441	28,441	28,641	28,441	28,441	28,441	28,641
Therms Per Industrial Customer	450,306	452,337	450,306	450,306	450,306	452,337	450,306	450,306	450,306	452,337
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	6	6	6	6	6	6
Industrial Customers	7	7	7	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**12**	**12**	**13**	**13**	**13**	**13**	**14**	**14**	**14**	**15**

Woodland	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.24%	2.26%	2.64%	2.57%	2.96%	2.00%	2.39%	2.33%	2.73%
Residential Therms	329,543	340,302	347,896	357,081	366,270	377,207	384,644	393,831	403,009	414,121
Commercial Therms	615,533	635,528	649,815	666,970	684,133	704,450	718,454	735,613	752,757	773,389
Industrial Therms	322,386	332,636	340,341	349,326	358,315	368,710	376,291	385,278	394,257	404,793
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,267,462**	**1,308,467**	**1,338,052**	**1,373,377**	**1,408,718**	**1,450,368**	**1,479,389**	**1,514,722**	**1,550,022**	**1,592,302**
Daily Baseload Therms	880	908	929	953	978	1,007	1,027	1,051	1,076	1,105
Peak Day Therms	13,098	13,463	13,828	14,193	14,558	14,923	15,288	15,653	16,018	16,383
Therms Per Residential Customer	552	555	552	552	552	555	552	552	552	555
Therms Per Commercial Customer	3,082	3,096	3,082	3,082	3,082	3,096	3,082	3,082	3,082	3,096
Therms Per Industrial Customer	22,386	22,472	22,386	22,386	22,386	22,472	22,386	22,386	22,386	22,472
Residential Customers	597	613	630	647	663	680	697	713	730	746
Commercial Customers	200	205	211	216	222	228	233	239	244	250
Industrial Customers	14	15	15	16	16	16	17	17	18	18
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**811**	**833**	**856**	**879**	**901**	**924**	**947**	**969**	**992**	**1,014**

Bellingham II	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.28%	1.48%	1.84%	1.81%	2.17%	1.38%	1.73%	1.70%	2.07%
Residential Therms	440,725	450,759	457,432	465,847	474,294	484,587	491,261	499,777	508,298	518,800
Commercial Therms	3,942	4,031	4,091	4,167	4,242	4,333	4,394	4,470	4,546	4,639
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**444,667**	**454,789**	**461,523**	**470,013**	**478,537**	**488,920**	**495,655**	**504,247**	**512,844**	**523,439**
Daily Baseload Therms	687	703	713	726	740	756	766	779	793	809
Peak Day Therms	3,567	3,635	3,703	3,771	3,839	3,908	3,976	4,045	4,114	4,183
Therms Per Residential Customer	14,414	14,469	14,414	14,414	14,414	14,469	14,414	14,414	14,414	14,469
Therms Per Commercial Customer	3,868	3,881	3,868	3,868	3,868	3,881	3,868	3,868	3,868	3,881
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	31	31	32	32	33	33	34	35	35	36
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**32**	**32**	**33**	**33**	**34**	**35**	**35**	**36**	**36**	**37**

LDS Church	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.13%	0.49%	1.76%	1.74%	3.03%	0.40%	1.67%	1.65%	2.94%
Residential Therms	2,752	2,839	2,852	2,903	2,953	3,043	3,055	3,106	3,157	3,250
Commercial Therms	7,585	7,821	7,860	7,999	8,138	8,384	8,418	8,559	8,700	8,955
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**10,337**	**10,660**	**10,712**	**10,901**	**11,091**	**11,427**	**11,473**	**11,664**	**11,857**	**12,205**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	128	130	133	135	137	140	142	144	147	149
Therms Per Residential Customer	1,351	1,369	1,351	1,351	1,351	1,369	1,351	1,351	1,351	1,369
Therms Per Commercial Customer	7,448	7,544	7,448	7,448	7,448	7,544	7,448	7,448	7,448	7,544
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	**4**

Kalama #1	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.45%	0.46%	0.47%	0.48%	0.48%	0.49%	0.49%	0.49%	0.49%
Residential Therms	874	878	882	886	890	895	899	903	908	912
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**874**	**878**	**882**	**886**	**890**	**895**	**899**	**903**	**908**	**912**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	17	17	17	17	17	17	17	17	18	18
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.62%	-0.33%	0.16%	0.16%	0.65%	-0.31%	0.18%	0.18%	0.66%
Residential Therms	1,373	1,382	1,377	1,379	1,382	1,391	1,386	1,389	1,391	1,400
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,373**	**1,382**	**1,377**	**1,379**	**1,382**	**1,391**	**1,386**	**1,389**	**1,391**	**1,400**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	19	19	19
Therms Per Residential Customer	686	689	686	686	686	689	686	686	686	689
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	631	632	633	634	635	636	637	638	639	640
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**631**	**632**	**633**	**634**	**635**	**636**	**637**	**638**	**639**	**640**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	12,365	12,382	12,400	12,419	12,439	12,460	12,482	12,503	12,526	12,548
Commercial Therms	4,097	4,103	4,109	4,115	4,122	4,129	4,136	4,143	4,151	4,158
Industrial Therms	1,681	1,683	1,686	1,688	1,691	1,694	1,697	1,700	1,703	1,706
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,143**	**18,168**	**18,195**	**18,223**	**18,253**	**18,283**	**18,315**	**18,347**	**18,379**	**18,413**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	163	164	164	164	164	165	165	165	166	166
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.78%	-0.25%	0.27%	0.28%	0.80%	-0.23%	0.28%	0.29%	0.81%
Residential Therms	4,503	4,538	4,527	4,539	4,552	4,588	4,577	4,590	4,603	4,641
Commercial Therms	352,182	354,914	354,014	354,973	355,954	358,795	357,958	358,978	360,002	362,911
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**356,685**	**359,453**	**358,540**	**359,512**	**360,506**	**363,383**	**362,536**	**363,569**	**364,605**	**367,552**
Daily Baseload Therms	196	198	197	198	198	200	199	200	201	202
Peak Day Therms	4,831	4,843	4,856	4,869	4,882	4,896	4,910	4,924	4,938	4,952
Therms Per Residential Customer	182	182	182	182	182	182	182	182	182	182
Therms Per Commercial Customer	3,727	3,747	3,727	3,727	3,727	3,747	3,727	3,727	3,727	3,747
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	25	25	25	25	25	25	25
Commercial Customers	94	95	95	95	95	96	96	96	97	97
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**120**	**121**	**121**	**121**	**122**	**122**	**122**

Sandvik Metals	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.35%	0.38%	0.86%	0.86%	1.34%	0.37%	0.85%	0.84%	1.32%
Residential Therms	2,613,654	2,649,128	2,659,028	2,681,984	2,705,061	2,741,470	2,751,424	2,774,675	2,797,891	2,834,980
Commercial Therms	1,818,742	1,843,272	1,850,316	1,866,291	1,882,349	1,907,524	1,914,612	1,930,791	1,946,946	1,972,588
Industrial Therms	108,860	110,069	110,750	111,706	112,667	113,906	114,598	115,566	116,533	117,791
Ind., Inst., & Cmcl. Interrup. Therms	202,937	205,656	206,460	208,242	210,034	212,824	213,634	215,439	217,242	220,084
Total Core Therms	**4,744,193**	**4,808,126**	**4,826,554**	**4,868,223**	**4,910,112**	**4,975,724**	**4,994,268**	**5,036,472**	**5,078,613**	**5,145,443**
Daily Baseload Therms	3,488	3,535	3,548	3,579	3,610	3,658	3,671	3,702	3,733	3,783
Peak Day Therms	70,595	71,206	71,821	72,441	73,064	73,688	74,316	74,944	75,571	76,201
Therms Per Residential Customer	347	348	347	347	347	348	347	347	347	348
Therms Per Commercial Customer	2,265	2,276	2,265	2,265	2,265	2,276	2,265	2,265	2,265	2,276
Therms Per Industrial Customer	12,334	12,364	12,334	12,334	12,334	12,364	12,334	12,334	12,334	12,364
Residential Customers	7,542	7,607	7,673	7,739	7,806	7,873	7,940	8,007	8,074	8,141
Commercial Customers	803	810	817	824	831	838	845	852	859	867
Industrial Customers	9	9	9	9	9	9	9	9	9	10
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**8,358**	**8,430**	**8,503**	**8,577**	**8,650**	**8,724**	**8,799**	**8,873**	**8,947**	**9,022**

East Stanwood Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.95%	1.02%	1.46%	1.45%	1.89%	0.96%	1.40%	1.38%	1.82%
Residential Therms	4,959,067	5,056,579	5,107,371	5,182,082	5,257,104	5,357,151	5,407,656	5,483,158	5,558,660	5,660,732
Commercial Therms	3,183,509	3,245,460	3,278,714	3,326,676	3,374,836	3,438,376	3,471,484	3,519,954	3,568,423	3,633,223

Industrial Therms	93,794	95,533	96,599	98,012	99,431	101,212	102,279	103,707	105,135	106,948
Ind., Inst., & Cmcl. Interrup. Therms	477,069	486,016	491,336	498,524	505,741	514,906	520,224	527,488	534,751	544,085
Total Core Therms	**8,713,440**	**8,883,589**	**8,974,021**	**9,105,294**	**9,237,112**	**9,411,645**	**9,501,643**	**9,634,306**	**9,766,969**	**9,944,987**
Daily Baseload Therms	7,145	7,284	7,359	7,466	7,574	7,717	7,791	7,900	8,009	8,155
Peak Day Therms	101,621	103,136	104,660	106,191	107,728	109,267	110,813	112,360	113,907	115,459
Therms Per Residential Customer	623	626	623	623	623	626	623	623	623	626
Therms Per Commercial Customer	3,457	3,473	3,457	3,457	3,457	3,473	3,457	3,457	3,457	3,473
Therms Per Industrial Customer	37,645	37,779	37,645	37,645	37,645	37,779	37,645	37,645	37,645	37,779
Residential Customers	7,955	8,073	8,193	8,312	8,433	8,553	8,674	8,795	8,916	9,038
Commercial Customers	921	935	948	962	976	990	1,004	1,018	1,032	1,046
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	5	5	5	5	5	5	6	6	6	6
Total Core Customers	**8,883**	**9,016**	**9,149**	**9,283**	**9,417**	**9,551**	**9,687**	**9,822**	**9,957**	**10,093**

Kennewick Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.74%	1.22%	1.20%	1.68%	0.69%	1.17%	1.15%	1.63%
Residential Therms	7,909,942	8,048,395	8,105,701	8,204,231	8,303,005	8,444,561	8,500,957	8,600,015	8,698,910	8,842,810
Commercial Therms	8,709,949	8,858,615	8,925,508	9,034,003	9,142,766	9,294,663	9,360,740	9,469,816	9,578,714	9,733,002
Industrial Therms	153,705	156,128	157,509	159,424	161,343	163,813	165,190	167,114	169,036	171,538
Ind., Inst., & Cmcl. Interrup. Therms	841,208	855,391	862,027	872,505	883,010	897,496	904,062	914,596	925,114	939,822
Total Core Therms	**17,614,804**	**17,918,528**	**18,050,745**	**18,270,163**	**18,490,123**	**18,800,533**	**18,930,949**	**19,151,542**	**19,371,774**	**19,687,173**
Daily Baseload Therms	13,971	14,212	14,317	14,491	14,666	14,912	15,015	15,190	15,365	15,615
Peak Day Therms	263,963	267,223	270,496	273,784	277,080	280,376	283,686	286,992	290,292	293,599
Therms Per Residential Customer	570	572	570	570	570	572	570	570	570	572
Therms Per Commercial Customer	3,876	3,894	3,876	3,876	3,876	3,894	3,876	3,876	3,876	3,894
Therms Per Industrial Customer	18,781	18,844	18,781	18,781	18,781	18,844	18,781	18,781	18,781	18,844
Residential Customers	13,887	14,059	14,231	14,404	14,578	14,751	14,925	15,099	15,273	15,447
Commercial Customers	2,247	2,275	2,303	2,331	2,359	2,387	2,415	2,443	2,471	2,499
Industrial Customers	8	8	8	8	9	9	9	9	9	9
Interruptible Customers	12	12	12	12	12	13	13	13	13	13
Total Core Customers	**16,154**	**16,354**	**16,554**	**16,755**	**16,957**	**17,159**	**17,361**	**17,564**	**17,766**	**17,968**

Longview South Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.07%	-0.06%	0.51%	0.51%	1.08%	-0.05%	0.51%	0.51%	1.08%
Residential Therms	690,602	698,070	697,534	701,079	704,666	712,385	711,917	715,576	719,237	727,114
Commercial Therms	2,447,154	2,473,267	2,471,716	2,484,279	2,496,991	2,523,984	2,522,684	2,535,648	2,548,622	2,576,172
Industrial Therms	135,478	136,945	136,838	137,534	138,237	139,753	139,660	140,377	141,096	142,643
Ind., Inst., & Cmcl. Interrup. Therms	451,385	456,162	455,916	458,233	460,578	465,516	465,317	467,708	470,102	475,141
Total Core Therms	**3,724,620**	**3,764,444**	**3,762,004**	**3,781,125**	**3,800,472**	**3,841,637**	**3,839,578**	**3,859,309**	**3,879,057**	**3,921,070**
Daily Baseload Therms	3,157	3,190	3,188	3,205	3,221	3,256	3,254	3,271	3,288	3,323
Peak Day Therms	42,871	43,084	43,301	43,521	43,744	43,968	44,194	44,421	44,649	44,877
Therms Per Residential Customer	377	379	377	377	377	379	377	377	377	379
Therms Per Commercial Customer	2,834	2,850	2,834	2,834	2,834	2,850	2,834	2,834	2,834	2,850
Therms Per Industrial Customer	10,048	10,107	10,048	10,048	10,048	10,107	10,048	10,048	10,048	10,107
Residential Customers	1,834	1,843	1,852	1,862	1,871	1,881	1,890	1,900	1,910	1,920
Commercial Customers	864	868	872	877	881	886	890	895	899	904
Industrial Customers	13	14	14	14	14	14	14	14	14	14
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**2,717**	**2,730**	**2,744**	**2,758**	**2,772**	**2,786**	**2,801**	**2,815**	**2,829**	**2,844**

Sedro-Woolley Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.90%	0.92%	1.39%	1.37%	1.84%	0.86%	1.33%	1.31%	1.78%
Residential Therms	15,256,995	15,547,878	15,688,686	15,906,309	16,124,643	16,423,095	16,562,971	16,782,728	17,002,366	17,306,769
Commercial Therms	7,546,265	7,689,265	7,759,783	7,867,422	7,975,412	8,122,107	8,192,214	8,300,908	8,409,543	8,559,131
Industrial Therms	1,016,319	1,034,877	1,045,076	1,059,572	1,074,116	1,093,132	1,103,315	1,117,954	1,132,584	1,151,950
Ind., Inst., & Cmcl. Interrup. Therms	1,092,669	1,112,675	1,123,585	1,139,171	1,154,808	1,175,309	1,186,200	1,201,938	1,217,668	1,238,549
Total Core Therms	**24,912,249**	**25,384,695**	**25,617,131**	**25,972,475**	**26,328,980**	**26,813,644**	**27,044,699**	**27,403,527**	**27,762,161**	**28,256,400**
Daily Baseload Therms	15,073	15,359	15,499	15,714	15,930	16,223	16,363	16,580	16,797	17,096
Peak Day Therms	321,421	325,958	330,516	335,100	339,700	344,307	348,934	353,564	358,191	362,833
Therms Per Residential Customer	619	622	619	619	619	622	619	619	619	622
Therms Per Commercial Customer	2,351	2,362	2,351	2,351	2,351	2,362	2,351	2,351	2,351	2,362
Therms Per Industrial Customer	12,461	12,511	12,461	12,461	12,461	12,511	12,461	12,461	12,461	12,511
Residential Customers	24,642	24,990	25,339	25,691	26,043	26,397	26,751	27,106	27,461	27,817
Commercial Customers	3,210	3,255	3,300	3,346	3,392	3,438	3,484	3,531	3,577	3,623
Industrial Customers	82	83	84	85	86	87	89	90	91	92
Interruptible Customers	9	9	10	10	10	10	10	10	10	10
Total Core Customers	**27,942**	**28,337**	**28,733**	**29,132**	**29,532**	**29,932**	**30,334**	**30,737**	**31,139**	**31,543**

Sumas SPE Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.37%	1.39%	1.84%	1.81%	2.26%	1.29%	1.73%	1.70%	2.16%
Residential Therms	27,706,209	28,365,069	28,756,489	29,285,502	29,816,573	30,493,791	30,883,197	31,418,508	31,954,183	32,646,731
Commercial Therms	12,793,835	13,095,462	13,278,820	13,523,101	13,768,333	14,078,241	14,260,865	14,508,055	14,755,412	15,072,201
Industrial Therms	697,438	713,348	723,877	737,193	750,562	766,883	777,412	790,887	804,371	821,027
Ind., Inst., & Cmcl. Interrup. Therms	1,026,789	1,051,055	1,065,712	1,085,317	1,104,999	1,129,934	1,144,528	1,164,366	1,184,218	1,209,710
Total Core Therms	**42,224,271**	**43,224,934**	**43,824,897**	**44,631,113**	**45,440,466**	**46,468,849**	**47,066,002**	**47,881,816**	**48,698,184**	**49,749,669**
Daily Baseload Therms	29,106	29,796	30,209	30,765	31,323	32,032	32,444	33,006	33,569	34,293
Peak Day Therms	531,961	542,021	552,127	562,284	572,481	582,698	592,960	603,238	613,523	623,838
Therms Per Residential Customer	651	654	651	651	651	654	651	651	651	654
Therms Per Commercial Customer	2,565	2,576	2,565	2,565	2,565	2,576	2,565	2,565	2,565	2,576
Therms Per Industrial Customer	14,690	14,746	14,690	14,690	14,690	14,746	14,690	14,690	14,690	14,746
Residential Customers	42,562	43,367	44,175	44,988	45,804	46,621	47,442	48,265	49,088	49,913
Commercial Customers	4,988	5,083	5,178	5,273	5,368	5,464	5,560	5,657	5,753	5,850
Industrial Customers	47	48	49	50	51	52	53	54	55	56
Interruptible Customers	13	13	13	14	14	14	14	15	15	15

Total Core Customers	**47,611**	**48,511**	**49,416**	**50,325**	**51,237**	**52,152**	**53,070**	**53,990**	**54,910**	**55,834**

Yakima Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	-0.32%	0.16%	0.16%	0.64%	-0.30%	0.18%	0.18%	0.65%
Residential Therms	11,624,209	11,697,526	11,657,136	11,675,281	11,694,313	11,771,496	11,734,058	11,754,677	11,775,483	11,855,036
Commercial Therms	10,560,090	10,623,807	10,590,003	10,606,487	10,623,777	10,690,987	10,659,883	10,678,615	10,697,516	10,766,859
Industrial Therms	2,556,674	2,570,339	2,563,916	2,567,907	2,572,093	2,586,592	2,580,834	2,585,369	2,589,946	2,604,949
Ind., Inst., & Cmcl. Interrup. Therms	760,024	764,600	762,177	763,363	764,608	769,435	767,206	768,555	769,915	774,896
Total Core Therms	**25,500,997**	**25,656,272**	**25,573,233**	**25,613,039**	**25,654,791**	**25,818,510**	**25,741,982**	**25,787,216**	**25,832,859**	**26,001,739**
Daily Baseload Therms	15,353	15,446	15,396	15,420	15,446	15,544	15,498	15,525	15,553	15,654
Peak Day Therms	333,048	333,504	333,991	334,511	335,057	335,613	336,195	336,786	337,382	337,994
Therms Per Residential Customer	638	641	638	638	638	641	638	638	638	641
Therms Per Commercial Customer	3,231	3,246	3,231	3,231	3,231	3,246	3,231	3,231	3,231	3,246
Therms Per Industrial Customer	35,018	35,157	35,018	35,018	35,018	35,157	35,018	35,018	35,018	35,157
Residential Customers	18,224	18,249	18,276	18,304	18,334	18,364	18,396	18,429	18,461	18,495
Commercial Customers	3,268	3,273	3,278	3,283	3,288	3,294	3,299	3,305	3,311	3,317
Industrial Customers	73	73	73	73	73	74	74	74	74	74
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,576**	**21,606**	**21,637**	**21,671**	**21,706**	**21,743**	**21,780**	**21,819**	**21,857**	**21,897**

Zone 10	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.73%	-0.14%	0.31%	0.31%	0.75%	-0.12%	0.32%	0.32%	0.77%
Residential Therms	2,910,491	2,933,268	2,927,543	2,936,446	2,945,544	2,969,273	2,964,104	2,973,542	2,983,010	3,007,346
Commercial Therms	4,480,644	4,514,574	4,507,927	4,522,146	4,536,665	4,572,041	4,566,259	4,581,296	4,596,380	4,632,669
Industrial Therms	1,724,761	1,735,167	1,734,349	1,739,370	1,744,509	1,755,453	1,755,006	1,760,350	1,765,714	1,776,988
Ind., Inst., & Cmcl. Interrup. Therms	238,467	239,815	239,565	240,144	240,739	242,157	241,958	242,581	243,206	244,668
Total Core Therms	**9,354,364**	**9,422,823**	**9,409,383**	**9,438,106**	**9,467,457**	**9,538,924**	**9,527,327**	**9,557,769**	**9,588,311**	**9,661,670**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	111,157	111,489	111,831	112,183	112,542	112,904	113,274	113,646	114,019	114,397
Therms Per Residential Customer	565	568	565	565	565	568	565	565	565	568
Therms Per Commercial Customer	3,360	3,375	3,359	3,359	3,358	3,373	3,357	3,357	3,357	3,372
Therms Per Industrial Customer	33,720	33,822	33,702	33,694	33,685	33,787	33,668	33,660	33,652	33,754
Residential Customers	5,149	5,164	5,179	5,195	5,211	5,228	5,244	5,261	5,278	5,295
Commercial Customers	1,334	1,338	1,342	1,346	1,351	1,355	1,360	1,365	1,369	1,374
Industrial Customers	51	51	51	52	52	52	52	52	52	53
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,536**	**6,556**	**6,576**	**6,596**	**6,617**	**6,638**	**6,660**	**6,681**	**6,703**	**6,725**

Zone 11	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.78%	-0.11%	0.34%	0.35%	0.80%	-0.09%	0.36%	0.36%	0.81%
Residential Therms	12,546,516	12,632,984	12,597,806	12,625,246	12,653,630	12,744,344	12,712,186	12,742,258	12,772,523	12,865,901
Commercial Therms	15,102,653	15,230,920	15,227,411	15,291,895	15,357,479	15,491,092	15,490,750	15,558,318	15,626,105	15,763,277
Industrial Therms	3,674,283	3,700,708	3,701,589	3,715,768	3,730,229	3,757,924	3,759,700	3,774,681	3,789,732	3,818,259
Ind., Inst., & Cmcl. Interrup. Therms	1,294,555	1,306,328	1,306,359	1,312,440	1,318,615	1,330,867	1,331,149	1,337,497	1,343,865	1,356,445
Total Core Therms	**32,618,008**	**32,870,941**	**32,833,165**	**32,945,349**	**33,059,953**	**33,324,227**	**33,293,785**	**33,412,754**	**33,532,224**	**33,803,882**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	411,019	412,262	413,544	414,865	416,216	417,580	418,977	420,383	421,796	423,229
Therms Per Residential Customer	588	591	588	587	587	590	587	587	586	589
Therms Per Commercial Customer	3,338	3,355	3,342	3,344	3,347	3,363	3,350	3,352	3,354	3,371
Therms Per Industrial Customer	34,181	34,292	34,163	34,155	34,146	34,257	34,130	34,121	34,113	34,225
Residential Customers	21,336	21,386	21,438	21,493	21,549	21,605	21,664	21,722	21,781	21,842
Commercial Customers	4,524	4,540	4,556	4,572	4,589	4,606	4,623	4,641	4,658	4,676
Industrial Customers	107	108	108	109	109	110	110	111	111	112
Interruptible Customers	20	21	21	21	21	21	21	21	21	21
Total Core Customers	**25,988**	**26,054**	**26,123**	**26,194**	**26,268**	**26,342**	**26,418**	**26,495**	**26,572**	**26,650**

Zone 20	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.79%	1.24%	1.24%	1.69%	0.76%	1.21%	1.19%	1.65%
Residential Therms	13,486,130	13,711,596	13,805,266	13,965,988	14,127,209	14,357,875	14,450,407	14,612,200	14,773,733	15,008,350
Commercial Therms	13,163,433	13,379,969	13,477,410	13,635,585	13,794,311	14,015,952	14,112,664	14,272,115	14,431,381	14,656,945
Industrial Therms	3,792,326	3,877,223	3,931,589	4,002,937	4,075,450	4,166,182	4,223,963	4,299,984	4,377,194	4,474,043
Ind., Inst., & Cmcl. Interrup. Therms	1,426,109	1,448,006	1,458,651	1,475,048	1,491,511	1,513,918	1,524,531	1,541,069	1,557,585	1,580,377
Total Core Therms	**31,867,998**	**32,416,794**	**32,672,916**	**33,079,559**	**33,488,482**	**34,053,928**	**34,311,565**	**34,725,368**	**35,139,893**	**35,719,714**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	471,209	477,139	483,106	489,113	495,150	501,201	507,292	513,391	519,497	525,633
Therms Per Residential Customer	553	556	553	554	554	557	555	555	555	558
Therms Per Commercial Customer	3,709	3,728	3,714	3,716	3,718	3,737	3,723	3,725	3,727	3,746
Therms Per Industrial Customer	101,784	102,877	103,131	103,808	104,488	105,607	105,862	106,556	107,258	108,409
Residential Customers	24,408	24,680	24,954	25,229	25,506	25,782	26,060	26,337	26,614	26,892
Commercial Customers	3,549	3,589	3,629	3,669	3,710	3,750	3,791	3,832	3,872	3,913
Industrial Customers	37	38	38	39	39	39	40	40	41	41
Interruptible Customers	19	19	19	20	20	20	20	20	21	21
Total Core Customers	**28,013**	**28,326**	**28,640**	**28,957**	**29,274**	**29,592**	**29,911**	**30,230**	**30,548**	**30,868**

Zone 24	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.26%	0.23%	0.23%	0.71%	-0.24%	0.24%	0.23%	0.72%
Residential Therms	3,676,344	3,702,074	3,690,933	3,698,734	3,706,634	3,733,166	3,722,636	3,730,742	3,738,839	3,765,909
Commercial Therms	3,465,371	3,489,872	3,480,442	3,488,411	3,496,497	3,521,753	3,512,856	3,521,130	3,529,395	3,555,146
Industrial Therms	232,347	233,339	233,442	234,016	234,600	235,635	235,779	236,374	236,969	238,030
Ind., Inst., & Cmcl. Interrup. Therms	1,046,680	1,053,892	1,052,517	1,055,524	1,058,589	1,066,022	1,064,771	1,067,888	1,071,001	1,078,565
Total Core Therms	**8,420,741**	**8,479,177**	**8,457,335**	**8,476,686**	**8,496,320**	**8,556,576**	**8,536,042**	**8,556,134**	**8,576,204**	**8,637,649**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095

Therms Per Residential Customer	531	534	531	531	531	533	531	531	531	533
Therms Per Commercial Customer	2,467	2,479	2,466	2,466	2,466	2,478	2,466	2,466	2,466	2,478
Therms Per Industrial Customer	10,077	10,094	10,072	10,070	10,068	10,085	10,064	10,062	10,059	10,077
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Zone 26	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.50%	0.57%	1.03%	1.03%	1.48%	0.55%	1.00%	0.99%	1.45%
Residential Therms	1,243,361	1,262,936	1,271,031	1,284,970	1,298,962	1,319,000	1,327,030	1,341,100	1,355,161	1,375,541
Commercial Therms	3,365,278	3,413,546	3,427,561	3,459,028	3,490,666	3,540,205	3,554,232	3,586,142	3,618,047	3,668,490
Industrial Therms	681,978	694,904	703,720	714,629	725,556	738,702	747,429	758,373	769,306	782,624
Ind., Inst., & Cmcl. Interrup. Therms	672,687	681,535	685,407	691,888	698,443	707,637	711,739	718,477	725,262	734,739
Total Core Therms	**5,963,304**	**6,052,921**	**6,087,719**	**6,150,514**	**6,213,627**	**6,305,544**	**6,340,431**	**6,404,092**	**6,467,777**	**6,561,395**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	66,316	66,982	67,652	68,327	69,006	69,685	70,369	71,053	71,738	72,425
Therms Per Residential Customer	466	469	467	467	468	470	469	469	469	472
Therms Per Commercial Customer	2,892	2,908	2,894	2,894	2,895	2,910	2,896	2,897	2,898	2,913
Therms Per Industrial Customer	21,479	21,545	21,483	21,485	21,486	21,552	21,488	21,488	21,488	21,554
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,164	1,174	1,185	1,195	1,206	1,216	1,227	1,238	1,249	1,259
Industrial Customers	32	32	33	33	34	34	35	35	36	36
Interruptible Customers	7	7	7	7	7	7	7	7	7	8
Total Core Customers	**3,870**	**3,908**	**3,946**	**3,984**	**4,023**	**4,062**	**4,101**	**4,139**	**4,178**	**4,217**

Zone 30-S	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.45%	0.53%	0.98%	0.98%	1.42%	0.51%	0.95%	0.94%	1.39%
Residential Therms	21,104,745	21,418,357	21,535,350	21,752,460	21,970,539	22,291,451	22,407,758	22,626,746	22,845,462	23,171,620
Commercial Therms	11,653,676	11,817,943	11,880,044	11,994,185	12,108,842	12,276,791	12,338,632	12,453,704	12,568,597	12,739,109
Industrial Therms	412,001	419,079	419,642	423,496	427,367	434,628	435,122	439,005	442,880	450,286
Ind., Inst., & Cmcl. Interrup. Therms	3,292,620	3,334,887	3,351,945	3,381,861	3,411,915	3,455,070	3,472,113	3,502,249	3,532,322	3,576,056
Total Core Therms	**36,463,041**	**36,990,266**	**37,186,980**	**37,552,002**	**37,918,662**	**38,457,939**	**38,653,625**	**39,021,703**	**39,389,262**	**39,937,071**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	382,514	386,328	390,160	394,015	397,887	401,757	405,649	409,536	413,418	417,309
Therms Per Residential Customer	610	613	610	610	610	613	610	610	610	613
Therms Per Commercial Customer	3,155	3,169	3,155	3,156	3,156	3,170	3,156	3,157	3,157	3,171
Therms Per Industrial Customer	16,627	16,779	16,670	16,691	16,712	16,864	16,753	16,773	16,793	16,946
Residential Customers	34,585	34,938	35,293	35,650	36,008	36,367	36,727	37,087	37,446	37,807
Commercial Customers	3,694	3,730	3,765	3,801	3,837	3,873	3,909	3,945	3,981	4,017
Industrial Customers	25	25	25	25	26	26	26	26	26	27
Interruptible Customers	14	14	14	14	14	15	15	15	15	15
Total Core Customers	**38,318**	**38,707**	**39,098**	**39,491**	**39,885**	**40,280**	**40,677**	**41,073**	**41,469**	**41,866**

Zone 30-W	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.16%	1.19%	1.64%	1.62%	2.08%	1.11%	1.56%	1.53%	1.99%
Residential Therms	51,793,464	52,920,443	53,547,897	54,431,787	55,319,016	56,476,544	57,100,579	57,994,381	58,888,444	60,070,960
Commercial Therms	25,392,690	25,937,074	26,245,345	26,674,920	27,106,120	27,665,051	27,971,951	28,406,322	28,840,810	29,411,564
Industrial Therms	2,014,966	2,055,265	2,079,428	2,111,910	2,144,510	2,185,823	2,209,966	2,242,799	2,275,633	2,317,744
Ind., Inst., & Cmcl. Interrup. Therms	2,658,157	2,712,853	2,744,573	2,788,115	2,831,818	2,887,941	2,919,569	2,963,588	3,007,613	3,064,876
Total Core Therms	**81,859,277**	**83,625,636**	**84,617,243**	**86,006,731**	**87,401,464**	**89,215,359**	**90,202,066**	**91,607,091**	**93,012,500**	**94,865,145**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,021,551	1,038,721	1,055,970	1,073,310	1,090,716	1,108,153	1,125,667	1,143,201	1,160,740	1,178,332
Therms Per Residential Customer	647	650	647	647	647	650	647	647	647	650
Therms Per Commercial Customer	2,615	2,627	2,615	2,615	2,615	2,627	2,615	2,615	2,615	2,627
Therms Per Industrial Customer	12,868	12,921	12,871	12,873	12,874	12,927	12,877	12,879	12,880	12,932
Residential Customers	80,050	81,398	82,752	84,113	85,479	86,848	88,223	89,600	90,977	92,358
Commercial Customers	9,711	9,874	10,038	10,202	10,367	10,532	10,698	10,864	11,030	11,197
Industrial Customers	157	159	162	164	167	169	172	174	177	179
Interruptible Customers	28	29	29	30	30	31	31	32	32	33
Total Core Customers	**89,946**	**91,460**	**92,980**	**94,509**	**96,043**	**97,580**	**99,124**	**100,670**	**102,216**	**103,767**

Zone GTN	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.48%	1.54%	1.96%	1.92%	2.34%	1.41%	1.82%	1.79%	2.21%
Residential Therms	27,622,509	28,335,089	28,795,178	29,383,457	29,972,674	30,698,974	31,152,073	31,742,069	32,331,582	33,069,474
Commercial Therms	17,026,815	17,440,574	17,704,710	18,045,075	18,386,153	18,808,317	19,069,286	19,411,208	19,752,924	20,182,071
Industrial Therms	1,635,607	1,662,397	1,675,079	1,695,072	1,715,208	1,742,868	1,755,779	1,776,198	1,796,643	1,824,983
Ind., Inst., & Cmcl. Interrup. Therms	863,893	878,655	887,637	899,632	911,693	926,849	935,950	948,138	960,335	975,790
Total Core Therms	**47,148,825**	**48,316,716**	**49,062,604**	**50,023,236**	**50,985,729**	**52,177,007**	**52,913,088**	**53,877,613**	**54,841,484**	**56,052,318**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	672	675	672	673	673	676	673	674	674	677
Therms Per Commercial Customer	2,602	2,613	2,602	2,603	2,603	2,614	2,603	2,603	2,604	2,615
Therms Per Industrial Customer	26,503	26,591	26,451	26,426	26,402	26,492	26,356	26,334	26,313	26,405
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Zone ME-OR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.13%	0.61%	0.62%	1.09%	0.14%	0.61%	0.61%	1.09%

Residential Therms	5,198,751	5,257,044	5,261,996	5,294,173	5,326,741	5,386,872	5,392,203	5,425,227	5,458,184	5,519,580
Commercial Therms	5,207,506	5,262,813	5,270,916	5,303,173	5,335,820	5,392,884	5,401,436	5,434,535	5,467,568	5,525,815
Industrial Therms	379,164	383,277	383,783	386,133	388,511	392,753	393,290	395,701	398,107	402,437
Ind., Inst., & Cmcl. Interrup. Therms	1,266,791	1,279,625	1,282,195	1,290,032	1,297,965	1,311,214	1,313,910	1,321,955	1,329,983	1,343,507
Total Core Therms	**12,052,212**	**12,182,760**	**12,198,890**	**12,273,511**	**12,349,037**	**12,483,724**	**12,500,839**	**12,577,417**	**12,653,842**	**12,791,339**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	169,789	170,815	171,856	172,907	173,971	175,035	176,109	177,188	178,265	179,348
Therms Per Residential Customer	558	561	558	558	558	561	558	558	558	561
Therms Per Commercial Customer	3,167	3,182	3,167	3,167	3,167	3,182	3,167	3,167	3,167	3,182
Therms Per Industrial Customer	19,002	19,092	19,001	19,000	19,000	19,090	18,999	18,998	18,998	19,088
Residential Customers	9,316	9,372	9,429	9,487	9,545	9,604	9,663	9,722	9,781	9,840
Commercial Customers	1,644	1,654	1,664	1,674	1,685	1,695	1,705	1,716	1,726	1,737
Industrial Customers	20	20	20	20	20	21	21	21	21	21
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**10,987**	**11,053**	**11,121**	**11,189**	**11,258**	**11,326**	**11,396**	**11,466**	**11,535**	**11,606**

Zone ME-WA	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.51%	-0.43%	0.05%	0.06%	0.54%	-0.40%	0.08%	0.08%	0.56%
Residential Therms	6,430,634	6,462,109	6,429,666	6,430,140	6,431,149	6,464,662	6,434,212	6,436,175	6,438,229	6,473,048
Commercial Therms	4,389,502	4,410,799	4,390,890	4,392,231	4,393,934	4,416,619	4,398,040	4,400,386	4,402,789	4,426,360
Industrial Therms	201,133	202,464	202,370	203,014	203,673	205,067	205,016	205,699	206,382	207,814
Ind., Inst., & Cmcl. Interrup. Therms	2,696,194	2,711,887	2,705,112	2,709,942	2,714,984	2,731,546	2,725,439	2,730,843	2,736,257	2,753,376
Total Core Therms	**13,717,464**	**13,787,260**	**13,728,037**	**13,735,328**	**13,743,740**	**13,817,893**	**13,762,708**	**13,773,103**	**13,783,657**	**13,860,598**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	188,513	188,526	188,557	188,607	188,672	188,744	188,833	188,926	189,022	189,130
Therms Per Residential Customer	550	553	550	550	550	552	549	549	549	552
Therms Per Commercial Customer	3,078	3,093	3,078	3,077	3,077	3,091	3,076	3,076	3,076	3,090
Therms Per Industrial Customer	15,341	15,409	15,368	15,381	15,393	15,461	15,419	15,431	15,444	15,511
Residential Customers	11,693	11,693	11,695	11,697	11,701	11,705	11,710	11,716	11,721	11,728
Commercial Customers	1,426	1,426	1,427	1,427	1,428	1,429	1,430	1,431	1,431	1,432
Industrial Customers	13	13	13	13	13	13	13	13	13	13
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,137**	**13,138**	**13,140**	**13,143**	**13,147**	**13,152**	**13,158**	**13,165**	**13,171**	**13,179**

Bellingham Disctrict	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.37%	1.39%	1.84%	1.81%	2.26%	1.29%	1.73%	1.70%	2.16%
Residential Therms	28,246,871	28,918,163	29,317,622	29,856,947	30,398,370	31,088,348	31,485,786	32,031,532	32,577,650	33,283,226
Commercial Therms	12,912,073	13,216,528	13,401,497	13,648,015	13,895,492	14,208,309	14,392,534	14,641,988	14,891,611	15,211,379
Industrial Therms	698,189	714,114	724,656	737,986	751,369	767,706	778,248	791,737	805,236	821,907
Ind., Inst., & Cmcl. Interrup. Therms	1,088,418	1,114,162	1,129,651	1,150,420	1,171,270	1,197,725	1,213,146	1,234,162	1,255,194	1,282,243
Total Core Therms	**42,945,552**	**43,962,967**	**44,573,426**	**45,393,368**	**46,216,501**	**47,262,088**	**47,869,714**	**48,699,420**	**49,529,690**	**50,598,754**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	539,184	549,379	559,622	569,916	580,251	590,607	601,007	611,424	621,848	632,303
Therms Per Residential Customer	661	664	661	661	661	664	661	661	661	664
Therms Per Commercial Customer	2,568	2,580	2,568	2,568	2,568	2,580	2,568	2,568	2,568	2,580
Therms Per Industrial Customer	14,397	14,452	14,397	14,397	14,397	14,452	14,397	14,397	14,397	14,452
Residential Customers	42,747	43,555	44,367	45,183	46,003	46,824	47,648	48,474	49,300	50,129
Commercial Customers	5,027	5,122	5,218	5,314	5,410	5,507	5,604	5,701	5,798	5,896
Industrial Customers	48	49	50	51	52	53	54	55	56	57
Interruptible Customers	14	14	14	15	15	15	16	16	16	16
Total Core Customers	**47,836**	**48,741**	**49,650**	**50,563**	**51,480**	**52,399**	**53,322**	**54,246**	**55,171**	**56,098**

Mount Vernon District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.92%	0.96%	1.42%	1.41%	1.87%	0.90%	1.36%	1.34%	1.80%
Residential Therms	23,546,593	24,002,280	24,230,275	24,574,840	24,920,645	25,388,196	25,614,793	25,962,849	26,310,795	26,787,734
Commercial Therms	12,480,616	12,720,546	12,843,847	13,026,905	13,210,628	13,456,742	13,579,416	13,764,334	13,949,198	14,200,185
Industrial Therms	1,316,777	1,341,151	1,354,773	1,373,923	1,393,141	1,418,117	1,431,719	1,451,062	1,470,397	1,495,837
Ind., Inst., & Cmcl. Interrup. Therms	1,569,738	1,598,691	1,614,922	1,637,695	1,660,549	1,690,215	1,706,424	1,729,426	1,752,419	1,782,634
Total Core Therms	**38,913,725**	**39,662,668**	**40,043,817**	**40,613,363**	**41,184,963**	**41,953,270**	**42,332,352**	**42,907,671**	**43,482,809**	**44,266,390**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	482,367	489,342	496,348	503,394	510,465	517,547	524,660	531,777	538,892	546,029
Therms Per Residential Customer	631	634	631	631	631	634	631	631	631	634
Therms Per Commercial Customer	2,664	2,677	2,665	2,665	2,665	2,678	2,666	2,666	2,666	2,679
Therms Per Industrial Customer	12,182	12,231	12,181	12,180	12,179	12,228	12,178	12,178	12,177	12,226
Residential Customers	37,303	37,843	38,385	38,930	39,477	40,025	40,575	41,126	41,676	42,228
Commercial Customers	4,684	4,752	4,820	4,888	4,957	5,025	5,094	5,163	5,232	5,302
Industrial Customers	108	110	111	113	114	116	118	119	121	122
Interruptible Customers	14	15	15	15	15	15	16	16	16	16
Total Core Customers	**42,110**	**42,719**	**43,330**	**43,946**	**44,563**	**45,181**	**45,803**	**46,424**	**47,045**	**47,668**

Bremerton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.54%	0.62%	1.07%	1.06%	1.51%	0.59%	1.04%	1.02%	1.48%
Residential Therms	18,870,035	19,162,701	19,279,425	19,485,822	19,693,129	19,992,807	20,108,922	20,317,228	20,525,352	20,830,169
Commercial Therms	9,485,030	9,629,599	9,690,810	9,794,556	9,898,758	10,046,742	10,107,757	10,212,462	10,317,076	10,467,532
Industrial Therms	305,714	311,683	312,347	315,691	319,049	325,185	325,786	329,160	332,532	338,804
Ind., Inst., & Cmcl. Interrup. Therms	2,300,159	2,334,070	2,350,062	2,375,220	2,400,490	2,435,179	2,451,173	2,476,564	2,501,934	2,537,172
Total Core Therms	**30,960,939**	**31,438,053**	**31,632,643**	**31,971,290**	**32,311,426**	**32,799,913**	**32,993,638**	**33,335,415**	**33,676,893**	**34,173,677**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	607	610	607	607	607	610	607	607	607	610
Therms Per Commercial Customer	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229
Therms Per Industrial Customer	23,413	23,615	23,413	23,413	23,413	23,615	23,413	23,413	23,413	23,615
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241

Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Longview District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.49%	0.52%	1.00%	0.99%	1.47%	0.50%	0.97%	0.96%	1.43%
Residential Therms	1,243,361	1,262,936	1,271,031	1,284,970	1,298,962	1,319,000	1,327,030	1,341,100	1,355,161	1,375,541
Commercial Therms	3,355,011	3,403,091	3,416,915	3,448,188	3,479,631	3,528,973	3,542,800	3,574,508	3,606,210	3,656,447
Industrial Therms	681,978	694,904	703,720	714,629	725,556	738,702	747,429	758,373	769,306	782,624
Ind., Inst., & Cmcl. Interrup. Therms	451,385	456,162	455,916	458,233	460,578	465,516	465,317	467,708	470,102	475,141
Total Core Therms	**5,731,735**	**5,817,092**	**5,847,582**	**5,906,020**	**5,964,727**	**6,052,190**	**6,082,577**	**6,141,690**	**6,200,779**	**6,289,754**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	63,806	64,426	65,049	65,677	66,307	66,939	67,573	68,208	68,843	69,480
Therms Per Residential Customer	466	469	467	467	468	470	469	469	469	472
Therms Per Commercial Customer	2,893	2,909	2,895	2,896	2,896	2,912	2,898	2,898	2,899	2,914
Therms Per Industrial Customer	22,191	22,261	22,199	22,203	22,206	22,276	22,212	22,214	22,217	22,287
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,160	1,170	1,180	1,191	1,201	1,212	1,223	1,233	1,244	1,255
Industrial Customers	31	31	32	32	33	33	34	34	35	35
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**3,864**	**3,901**	**3,940**	**3,978**	**4,016**	**4,055**	**4,094**	**4,133**	**4,171**	**4,210**

Aberdeen District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.91%	0.04%	0.47%	0.48%	0.91%	0.03%	0.46%	0.46%	0.89%
Residential Therms	2,234,710	2,255,656	2,255,925	2,266,638	2,277,410	2,298,644	2,298,835	2,309,518	2,320,111	2,341,451
Commercial Therms	2,168,645	2,188,343	2,189,234	2,199,629	2,210,083	2,230,048	2,230,875	2,241,242	2,251,521	2,271,578
Industrial Therms	106,286	107,396	107,295	107,805	108,317	109,443	109,336	109,844	110,348	111,481
Ind., Inst., & Cmcl. Interrup. Therms	992,461	1,000,817	1,001,883	1,006,641	1,011,425	1,019,890	1,020,940	1,025,684	1,030,389	1,038,884
Total Core Therms	**5,502,102**	**5,552,213**	**5,554,337**	**5,580,713**	**5,607,236**	**5,658,026**	**5,659,987**	**5,686,288**	**5,712,369**	**5,763,394**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	640	642	640	640	640	642	640	640	640	642
Therms Per Commercial Customer	2,915	2,927	2,915	2,915	2,915	2,927	2,915	2,915	2,915	2,927
Therms Per Industrial Customer	9,067	9,119	9,067	9,067	9,067	9,119	9,067	9,067	9,067	9,119
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Kennewick District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.70%	0.71%	1.19%	1.18%	1.66%	0.67%	1.15%	1.13%	1.61%
Residential Therms	12,855,433	13,076,250	13,165,187	13,321,149	13,477,527	13,703,347	13,790,949	13,947,811	14,104,400	14,334,005
Commercial Therms	12,211,133	12,417,938	12,507,571	12,656,816	12,806,454	13,017,834	13,106,370	13,256,470	13,406,317	13,621,109
Industrial Therms	349,498	354,674	357,752	361,909	366,078	371,355	374,434	378,617	382,792	388,136
Ind., Inst., & Cmcl. Interrup. Therms	1,438,286	1,462,713	1,475,908	1,494,890	1,513,957	1,539,013	1,552,292	1,571,542	1,590,812	1,616,378
Total Core Therms	**26,854,351**	**27,311,575**	**27,506,418**	**27,834,764**	**28,164,017**	**28,631,550**	**28,824,045**	**29,154,440**	**29,484,320**	**29,959,628**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	411,622	416,632	421,662	426,717	431,786	436,855	441,946	447,031	452,108	457,197
Therms Per Residential Customer	551	554	552	552	553	556	553	554	554	557
Therms Per Commercial Customer	3,740	3,760	3,744	3,746	3,748	3,767	3,751	3,753	3,754	3,774
Therms Per Industrial Customer	17,424	17,485	17,442	17,450	17,458	17,517	17,472	17,479	17,485	17,543
Residential Customers	23,320	23,585	23,851	24,118	24,386	24,654	24,923	25,192	25,461	25,730
Commercial Customers	3,265	3,303	3,341	3,379	3,417	3,455	3,494	3,532	3,571	3,609
Industrial Customers	20	20	21	21	21	21	21	22	22	22
Interruptible Customers	18	18	18	19	19	19	19	19	20	20
Total Core Customers	**26,623**	**26,926**	**27,230**	**27,536**	**27,843**	**28,149**	**28,458**	**28,765**	**29,073**	**29,381**

Walla Walla District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.43%	-0.52%	-0.03%	-0.03%	0.46%	-0.49%	-0.01%	-0.01%	0.48%
Residential Therms	6,021,622	6,048,503	6,015,737	6,013,708	6,012,187	6,040,958	6,010,158	6,009,549	6,009,042	6,039,022
Commercial Therms	3,952,743	3,969,593	3,948,880	3,947,548	3,946,549	3,964,642	3,945,217	3,944,818	3,944,485	3,963,371
Industrial Therms	90,871	91,210	90,782	90,752	90,729	91,096	90,698	90,689	90,681	91,067
Ind., Inst., & Cmcl. Interrup. Therms	1,807,460	1,813,988	1,805,694	1,805,085	1,804,628	1,811,725	1,804,019	1,803,837	1,803,684	1,811,144
Total Core Therms	**11,872,696**	**11,923,294**	**11,861,093**	**11,857,093**	**11,854,092**	**11,908,421**	**11,850,093**	**11,848,893**	**11,847,893**	**11,904,604**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	565	568	565	565	565	568	565	565	565	568
Therms Per Commercial Customer	3,132	3,147	3,132	3,132	3,132	3,147	3,132	3,132	3,132	3,147
Therms Per Industrial Customer	11,860	11,911	11,860	11,860	11,860	11,911	11,860	11,860	11,860	11,911
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Wenatchee District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.70%	1.02%	1.36%	1.35%	1.69%	1.01%	1.34%	1.33%	1.67%
Residential Therms	1,298,974	1,314,391	1,324,200	1,336,963	1,349,849	1,365,751	1,375,783	1,388,826	1,401,884	1,418,183
Commercial Therms	4,646,222	4,713,678	4,752,078	4,805,640	4,859,597	4,929,163	4,968,248	5,022,915	5,077,690	5,149,017
Industrial Therms	4,056,349	4,145,259	4,202,372	4,277,162	4,353,156	4,448,078	4,508,726	4,588,323	4,669,137	4,770,336
Ind., Inst., & Cmcl. Interrup. Therms	516,784	523,346	527,273	532,580	537,937	544,708	548,720	554,145	559,579	566,523
Total Core Therms	**10,518,329**	**10,696,673**	**10,805,922**	**10,952,345**	**11,100,538**	**11,287,700**	**11,401,477**	**11,554,209**	**11,708,291**	**11,904,059**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	121,304	122,977	124,671	126,386	128,122	129,874	131,649	133,440	135,248	137,076
Therms Per Residential Customer	509	510	508	508	508	509	508	508	508	509
Therms Per Commercial Customer	4,448	4,465	4,454	4,456	4,459	4,476	4,465	4,468	4,471	4,488
Therms Per Industrial Customer	102,761	103,755	103,924	104,509	105,095	106,110	106,278	106,876	107,480	108,520
Residential Customers	2,554	2,579	2,605	2,631	2,657	2,682	2,709	2,735	2,761	2,788
Commercial Customers	1,045	1,056	1,067	1,078	1,090	1,101	1,113	1,124	1,136	1,147
Industrial Customers	39	40	40	41	41	42	42	43	43	44
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**3,645**	**3,682**	**3,719**	**3,757**	**3,795**	**3,833**	**3,871**	**3,909**	**3,948**	**3,986**

Yakima District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.65%	-0.26%	0.21%	0.22%	0.68%	-0.23%	0.23%	0.23%	0.69%
Residential Therms	14,788,730	14,887,207	14,841,228	14,869,567	14,899,007	15,002,393	14,959,964	14,991,362	15,022,982	15,129,408
Commercial Therms	15,899,642	16,004,303	15,963,745	15,998,011	16,033,440	16,143,321	16,106,487	16,143,978	16,181,696	16,294,808
Industrial Therms	4,785,524	4,813,165	4,807,403	4,819,005	4,830,954	4,860,126	4,855,509	4,868,076	4,880,711	4,910,818
Ind., Inst., & Cmcl. Interrup. Therms	1,225,362	1,233,463	1,230,885	1,233,816	1,236,837	1,245,342	1,243,048	1,246,228	1,249,427	1,258,186
Total Core Therms	**36,699,258**	**36,938,137**	**36,843,262**	**36,920,399**	**37,000,237**	**37,251,182**	**37,165,008**	**37,249,644**	**37,334,816**	**37,593,221**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	462,969	463,839	464,751	465,708	466,698	467,702	468,743	469,794	470,851	471,931
Therms Per Residential Customer	591	594	591	591	591	593	590	590	590	593
Therms Per Commercial Customer	3,117	3,131	3,116	3,115	3,115	3,129	3,114	3,113	3,113	3,127
Therms Per Industrial Customer	34,831	34,951	34,826	34,823	34,820	34,940	34,815	34,812	34,809	34,930
Residential Customers	25,018	25,066	25,116	25,169	25,223	25,279	25,336	25,394	25,452	25,512
Commercial Customers	5,101	5,112	5,123	5,135	5,147	5,160	5,172	5,185	5,198	5,211
Industrial Customers	137	138	138	138	139	139	139	140	140	141
Interruptible Customers	19	19	19	19	19	19	19	19	19	19
Total Core Customers	**30,275**	**30,334**	**30,396**	**30,461**	**30,529**	**30,597**	**30,667**	**30,738**	**30,810**	**30,883**

Central Oregon (Bend) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.48%	1.54%	1.96%	1.92%	2.34%	1.41%	1.82%	1.79%	2.21%
Residential Therms	27,622,509	28,335,089	28,795,178	29,383,457	29,972,674	30,698,974	31,152,073	31,742,069	32,331,582	33,069,474
Commercial Therms	17,026,815	17,440,574	17,704,710	18,045,075	18,386,153	18,808,317	19,069,286	19,411,208	19,752,924	20,182,071
Industrial Therms	1,635,607	1,662,397	1,675,079	1,695,072	1,715,208	1,742,868	1,755,779	1,776,198	1,796,643	1,824,983
Ind., Inst., & Cmcl. Interrup. Therms	863,893	878,655	887,637	899,632	911,693	926,849	935,950	948,138	960,335	975,790
Total Core Therms	**47,148,825**	**48,316,716**	**49,062,604**	**50,023,236**	**50,985,729**	**52,177,007**	**52,913,088**	**53,877,613**	**54,841,484**	**56,052,318**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	672	675	672	673	673	676	673	674	674	677
Therms Per Commercial Customer	2,602	2,613	2,602	2,603	2,603	2,614	2,603	2,603	2,604	2,615
Therms Per Industrial Customer	26,503	26,591	26,451	26,426	26,402	26,492	26,356	26,334	26,313	26,405
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Pendleton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.14%	0.61%	0.61%	1.09%	0.14%	0.61%	0.61%	1.08%
Residential Therms	5,607,763	5,670,650	5,675,925	5,710,605	5,745,704	5,810,576	5,816,257	5,851,852	5,887,372	5,953,606
Commercial Therms	5,644,266	5,704,019	5,712,926	5,747,856	5,783,205	5,844,861	5,854,259	5,890,103	5,925,871	5,988,805
Industrial Therms	489,427	494,531	495,371	498,396	501,456	506,724	507,608	510,711	513,808	519,184
Ind., Inst., & Cmcl. Interrup. Therms	2,155,525	2,177,525	2,181,612	2,194,889	2,208,320	2,231,035	2,235,330	2,248,961	2,262,556	2,285,738
Total Core Therms	**13,896,979**	**14,046,725**	**14,065,834**	**14,151,746**	**14,238,685**	**14,393,196**	**14,413,454**	**14,501,627**	**14,589,606**	**14,747,334**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	187,349	188,479	189,626	190,785	191,958	193,130	194,315	195,504	196,691	197,884
Therms Per Residential Customer	542	545	542	542	542	545	542	542	542	545
Therms Per Commercial Customer	3,122	3,136	3,122	3,122	3,122	3,136	3,122	3,122	3,122	3,136
Therms Per Industrial Customer	19,267	19,351	19,266	19,265	19,265	19,349	19,264	19,264	19,263	19,347
Residential Customers	10,351	10,413	10,477	10,541	10,606	10,670	10,736	10,801	10,867	10,933
Commercial Customers	1,808	1,819	1,830	1,841	1,852	1,864	1,875	1,887	1,898	1,910
Industrial Customers	25	26	26	26	26	26	26	27	27	27
Interruptible Customers	9	9	9	9	9	9	9	9	10	10
Total Core Customers	**12,193**	**12,267**	**12,342**	**12,417**	**12,493**	**12,570**	**12,647**	**12,724**	**12,801**	**12,879**

Eastern Oregon (Ontario) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.26%	0.23%	0.23%	0.71%	-0.24%	0.24%	0.23%	0.72%
Residential Therms	3,676,344	3,702,074	3,690,933	3,698,734	3,706,634	3,733,166	3,722,636	3,730,742	3,738,839	3,765,909
Commercial Therms	3,465,371	3,489,872	3,480,442	3,488,411	3,496,497	3,521,753	3,512,856	3,521,130	3,529,395	3,555,146
Industrial Therms	232,347	233,339	233,442	234,016	234,600	235,635	235,779	236,374	236,969	238,030
Ind., Inst., & Cmcl. Interrup. Therms	1,046,680	1,053,892	1,052,517	1,055,524	1,058,589	1,066,022	1,064,771	1,067,888	1,071,001	1,078,565
Total Core Therms	**8,420,741**	**8,479,177**	**8,457,335**	**8,476,686**	**8,496,320**	**8,556,576**	**8,536,042**	**8,556,134**	**8,576,204**	**8,637,649**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095
Therms Per Residential Customer	531	534	531	531	531	533	531	531	531	533
Therms Per Commercial Customer	2,467	2,479	2,466	2,466	2,466	2,478	2,466	2,466	2,466	2,478
Therms Per Industrial Customer	10,077	10,094	10,072	10,070	10,068	10,085	10,064	10,062	10,059	10,077
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Oregon	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.98%	1.05%	1.49%	1.47%	1.91%	0.98%	1.41%	1.39%	1.83%
Residential Therms	36,906,615	37,707,814	38,162,036	38,792,796	39,425,012	40,242,715	40,690,967	41,324,662	41,957,792	42,788,989
Commercial Therms	26,136,452	26,634,465	26,898,078	27,281,343	27,665,856	28,174,931	28,436,400	28,822,441	29,208,190	29,726,021
Industrial Therms	2,357,381	2,390,268	2,403,892	2,427,484	2,451,264	2,485,227	2,499,165	2,523,284	2,547,420	2,582,198
Ind., Inst., & Cmcl. Interrup. Therms	4,066,097	4,110,072	4,121,767	4,150,045	4,178,603	4,223,905	4,236,052	4,264,987	4,293,892	4,340,094
Total Core Therms	**69,466,545**	**70,842,618**	**71,585,773**	**72,651,668**	**73,720,734**	**75,126,779**	**75,862,584**	**76,935,374**	**78,007,294**	**79,437,301**
Daily Baseload Therms	42,704	43,564	44,038	44,709	45,382	46,260	46,729	47,404	48,078	48,971
Peak Day Therms	917,850	931,647	945,493	959,398	973,346	987,293	1,001,294	1,015,293	1,029,281	1,043,295
Therms Per Residential Customer	11,118	11,163	11,118	11,118	11,118	11,163	11,118	11,118	11,118	11,163
Therms Per Commercial Customer	61,881	62,106	61,881	61,881	61,881	62,106	61,881	61,881	61,881	62,106
Therms Per Industrial Customer	219,617	220,516	219,617	219,617	219,617	220,516	219,617	219,617	219,617	220,516
Residential Customers	58,405	59,334	60,265	61,200	62,138	63,075	64,016	64,956	65,896	66,837
Commercial Customers	9,757	9,901	10,045	10,189	10,334	10,479	10,625	10,770	10,916	11,062
Industrial Customers	110	111	112	113	114	115	116	117	119	120
Interruptible Customers	18	18	18	18	18	18	19	19	19	19
Total Core Customers	**68,290**	**69,363**	**70,440**	**71,521**	**72,605**	**73,688**	**74,776**	**75,863**	**76,949**	**78,037**

Washington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.57%	0.64%	1.10%	1.09%	1.55%	0.62%	1.07%	1.06%	1.52%
Residential Therms	109,106,330	110,928,086	111,700,629	113,010,604	114,327,087	116,199,445	116,972,222	118,299,776	119,627,376	121,538,740
Commercial Therms	77,111,116	78,263,620	78,714,576	79,525,308	80,340,632	81,525,774	81,979,706	82,802,716	83,625,805	84,835,425
Industrial Therms	12,391,187	12,573,556	12,661,100	12,798,862	12,938,349	13,129,808	13,221,884	13,365,881	13,511,140	13,711,011
Ind., Inst., & Cmcl. Interrup. Therms	11,390,056	11,537,412	11,592,193	11,694,580	11,797,669	11,949,315	12,005,079	12,109,297	12,213,538	12,368,305
Total Core Therms	**209,998,688**	**213,302,674**	**214,668,500**	**217,029,354**	**219,403,738**	**222,804,342**	**224,178,890**	**226,577,670**	**228,977,859**	**232,453,481**
Daily Baseload Therms	157,600	160,039	161,039	162,777	164,526	167,035	168,042	169,808	171,575	174,140
Peak Day Therms	2,634,720	2,663,783	2,693,050	2,722,541	2,752,202	2,781,929	2,811,854	2,841,821	2,871,805	2,901,917
Therms Per Residential Customer	34,601	34,746	34,601	34,601	34,601	34,746	34,601	34,601	34,601	34,746
Therms Per Commercial Customer	145,528	146,238	145,528	145,528	145,528	146,238	145,528	145,528	145,528	146,238
Therms Per Industrial Customer	1,066,469	1,070,286	1,066,469	1,066,469	1,066,469	1,070,286	1,066,469	1,066,469	1,066,469	1,070,286
Residential Customers	178,852	180,912	182,985	185,072	187,170	189,272	191,386	193,503	195,619	197,743
Commercial Customers	25,238	25,505	25,775	26,046	26,320	26,593	26,869	27,144	27,420	27,697
Industrial Customers	417	421	425	429	434	438	442	447	451	455
Interruptible Customers	95	96	97	98	99	100	101	102	103	103
Total Core Customers	**204,601**	**206,934**	**209,281**	**211,646**	**214,022**	**216,403**	**218,798**	**221,195**	**223,592**	**225,998**

System	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.67%	0.74%	1.20%	1.19%	1.64%	0.71%	1.16%	1.14%	1.60%
Residential Therms	146,012,945	148,635,900	149,862,666	151,803,401	153,752,098	156,442,160	157,663,189	159,624,438	161,585,169	164,327,729
Commercial Therms	103,247,568	104,898,084	105,612,655	106,806,650	108,006,488	109,700,705	110,416,106	111,625,157	112,833,995	114,561,446
Industrial Therms	14,748,568	14,963,824	15,064,992	15,226,346	15,389,613	15,615,035	15,721,050	15,889,165	16,058,560	16,293,209
Ind., Inst., & Cmcl. Interrup. Therms	15,456,153	15,647,484	15,713,960	15,844,625	15,976,273	16,173,220	16,241,130	16,374,284	16,507,430	16,708,398
Total Core Therms	**279,465,233**	**284,145,292**	**286,254,273**	**289,681,022**	**293,124,471**	**297,931,121**	**300,041,475**	**303,513,044**	**306,985,154**	**311,890,782**
Daily Baseload Therms	200,304	203,603	205,077	207,486	209,907	213,295	214,771	217,212	219,654	223,111
Peak Day Therms	3,552,570	3,595,429	3,638,543	3,681,940	3,725,548	3,769,222	3,813,148	3,857,114	3,901,086	3,945,213
Therms Per Residential Customer	45,719	45,908	45,719	45,719	45,719	45,908	45,719	45,719	45,719	45,908
Therms Per Commercial Customer	207,410	208,344	207,410	207,410	207,410	208,344	207,410	207,410	207,410	208,344
Therms Per Industrial Customer	1,286,086	1,290,802	1,286,086	1,286,086	1,286,086	1,290,802	1,286,086	1,286,086	1,286,086	1,290,802
Residential Customers	237,257	240,246	243,250	246,273	249,308	252,347	255,402	258,459	261,514	264,579
Commercial Customers	34,995	35,406	35,819	36,236	36,654	37,072	37,493	37,915	38,336	38,759
Industrial Customers	527	532	537	543	548	553	559	564	569	575
Interruptible Customers	112	113	115	116	117	118	119	120	121	123
Total Core Customers	**272,891**	**276,297**	**279,721**	**283,166**	**286,627**	**290,091**	**293,573**	**297,058**	**300,541**	**304,035**

Athena	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.09%	0.60%	0.59%	1.10%	0.07%	0.57%	0.57%	1.08%	0.05%	0.56%
Residential Therms	292,107	293,849	295,591	298,823	299,048	300,762	302,480	305,727	305,906	307,614
Commercial Therms	139,594	140,427	141,259	142,841	142,911	143,730	144,551	146,141	146,188	147,005
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**431,701**	**434,275**	**436,850**	**441,664**	**441,959**	**444,493**	**447,032**	**451,867**	**452,094**	**454,618**
Daily Baseload Therms	457	460	463	468	468	471	473	478	479	481
Peak Day Therms	6,294	6,332	6,369	6,407	6,444	6,481	6,518	6,555	6,592	6,628
Therms Per Residential Customer	550	550	550	553	550	550	550	553	550	550
Therms Per Commercial Customer	2,065	2,065	2,065	2,076	2,065	2,065	2,065	2,076	2,065	2,065
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	531	534	537	540	543	546	550	553	556	559
Commercial Customers	68	68	68	69	69	70	70	70	71	71
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**602**	**605**	**609**	**612**	**616**	**620**	**623**	**627**	**630**

Baker	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.33%	0.15%	0.15%	0.62%	-0.33%	0.13%	0.13%	0.61%	-0.34%	0.13%
Residential Therms	1,897,749	1,900,543	1,903,337	1,915,261	1,908,693	1,911,255	1,913,816	1,925,675	1,918,940	1,921,502
Commercial Therms	1,373,114	1,375,136	1,377,157	1,385,567	1,381,033	1,382,886	1,384,740	1,393,100	1,388,447	1,390,300
Industrial Therms	65,759	65,856	65,953	66,298	66,138	66,227	66,316	66,658	66,493	66,582
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,336,622**	**3,341,534**	**3,346,447**	**3,367,126**	**3,355,864**	**3,360,368**	**3,364,872**	**3,385,433**	**3,373,880**	**3,378,384**
Daily Baseload Therms	1,521	1,523	1,525	1,534	1,529	1,531	1,533	1,543	1,538	1,540
Peak Day Therms	42,428	42,490	42,553	42,613	42,672	42,730	42,787	42,844	42,902	42,959
Therms Per Residential Customer	581	581	581	583	581	581	581	583	581	581
Therms Per Commercial Customer	2,750	2,750	2,750	2,763	2,750	2,750	2,750	2,763	2,750	2,750
Therms Per Industrial Customer	21,585	21,585	21,585	21,667	21,585	21,585	21,585	21,667	21,585	21,585
Residential Customers	3,269	3,274	3,279	3,283	3,288	3,292	3,297	3,301	3,306	3,310
Commercial Customers	499	500	501	502	502	503	504	504	505	506
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,771**	**3,777**	**3,783**	**3,788**	**3,793**	**3,798**	**3,803**	**3,808**	**3,814**	**3,819**

Umatilla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.59%	0.59%	1.02%	0.13%	0.57%	0.56%	1.00%	0.11%	0.55%
Residential Therms	434,329	436,895	439,457	444,323	444,544	447,066	449,592	454,479	454,630	457,142
Commercial Therms	463,794	466,534	469,270	473,973	474,703	477,395	480,092	484,807	485,472	488,155
Industrial Therms	117,087	117,779	118,470	119,517	119,841	120,521	121,202	122,249	122,560	123,237
Ind., Inst., & Cmcl. Interrup. Therms	943,745	949,321	954,887	964,584	965,942	971,421	976,909	986,632	987,856	993,315
Total Core Therms	**1,958,954**	**1,970,529**	**1,982,083**	**2,002,396**	**2,005,030**	**2,016,402**	**2,027,795**	**2,048,167**	**2,050,518**	**2,061,850**
Daily Baseload Therms	1,332	1,340	1,348	1,361	1,363	1,371	1,379	1,393	1,394	1,402
Peak Day Therms	18,646	18,756	18,866	18,976	19,085	19,193	19,302	19,410	19,518	19,626
Therms Per Residential Customer	395	395	395	397	395	395	395	397	395	395
Therms Per Commercial Customer	2,666	2,666	2,666	2,678	2,666	2,666	2,666	2,678	2,666	2,666
Therms Per Industrial Customer	20,236	20,236	20,236	20,297	20,236	20,236	20,236	20,297	20,236	20,236
Residential Customers	1,099	1,106	1,112	1,119	1,125	1,131	1,138	1,144	1,150	1,157
Commercial Customers	174	175	176	177	178	179	180	181	182	183
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,281**	**1,289**	**1,296**	**1,304**	**1,311**	**1,319**	**1,326**	**1,333**	**1,341**	**1,348**

Chemult	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.58%	0.58%	0.57%	0.57%	0.56%	0.55%	0.55%	0.54%	0.54%	0.53%
Residential Therms	11,060	11,124	11,188	11,252	11,314	11,377	11,439	11,501	11,563	11,625
Commercial Therms	41,826	42,069	42,310	42,550	42,788	43,025	43,261	43,495	43,729	43,961
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**52,886**	**53,193**	**53,499**	**53,802**	**54,103**	**54,402**	**54,700**	**54,997**	**55,292**	**55,586**
Daily Baseload Therms	59	59	59	60	60	60	61	61	61	62
Peak Day Therms	672	676	680	684	687	691	695	699	702	706
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	27	27	27	27	27	27	28	28	28	28
Commercial Customers	22	22	22	23	23	23	23	23	23	23
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**49**	**49**	**49**	**50**	**50**	**50**	**50**	**51**	**51**	**51**

Gilchrist	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.05%	0.12%	0.57%	0.57%	1.03%	0.10%	0.56%
Residential Therms	86,366	86,880	87,393	88,301	88,411	88,917	89,423	90,334	90,433	90,937
Commercial Therms	125,384	126,130	126,875	128,213	128,353	129,088	129,823	131,166	131,288	132,020
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**211,749**	**213,010**	**214,269**	**216,515**	**216,764**	**218,005**	**219,246**	**221,500**	**221,722**	**222,956**
Daily Baseload Therms	104	105	105	106	106	107	108	109	109	109
Peak Day Therms	2,907	2,924	2,941	2,959	2,976	2,993	3,010	3,027	3,044	3,061
Therms Per Residential Customer	447	447	447	449	447	447	447	449	447	447
Therms Per Commercial Customer	2,927	2,927	2,927	2,941	2,927	2,927	2,927	2,941	2,927	2,927
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	193	194	195	196	198	199	200	201	202	203
Commercial Customers	43	43	43	44	44	44	44	45	45	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**236**	**237**	**239**	**240**	**241**	**243**	**244**	**246**	**247**	**248**

Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.12%	0.60%	0.59%	1.06%	0.10%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	2,263,337	2,276,836	2,290,335	2,315,412	2,317,119	2,330,404	2,343,716	2,368,901	2,370,259	2,383,490
Commercial Therms	2,474,106	2,488,862	2,503,618	2,529,306	2,532,897	2,547,419	2,561,970	2,587,736	2,590,985	2,605,448
Industrial Therms	195,841	197,009	198,177	200,241	200,495	201,644	202,796	204,867	205,093	206,238
Ind., Inst., & Cmcl. Interrup. Therms	353,445	355,553	357,661	361,792	361,844	363,919	365,997	370,150	370,142	372,208
Total Core Therms	**5,286,729**	**5,318,260**	**5,349,792**	**5,406,751**	**5,412,355**	**5,443,386**	**5,474,479**	**5,531,653**	**5,536,478**	**5,567,384**
Daily Baseload Therms	4,063	4,087	4,111	4,155	4,160	4,183	4,207	4,251	4,255	4,279
Peak Day Therms	75,971	76,424	76,878	77,329	77,777	78,222	78,669	79,115	79,560	80,004
Therms Per Residential Customer	600	600	600	603	600	600	600	603	600	600
Therms Per Commercial Customer	3,346	3,346	3,346	3,361	3,346	3,346	3,346	3,361	3,346	3,346
Therms Per Industrial Customer	22,900	22,900	22,900	23,004	22,900	22,900	22,900	23,004	22,900	22,900
Residential Customers	3,774	3,796	3,819	3,841	3,863	3,886	3,908	3,930	3,952	3,974
Commercial Customers	739	744	748	753	757	761	766	770	774	779
Industrial Customers	9	9	9	9	9	9	9	9	9	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	5
Total Core Customers	**4,526**	**4,553**	**4,580**	**4,607**	**4,633**	**4,660**	**4,687**	**4,713**	**4,740**	**4,766**

Huntington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.41%	0.15%	0.15%	0.70%	-0.42%	0.13%	0.13%	0.69%	-0.42%	0.13%
Residential Therms	44,969	45,035	45,102	45,420	45,229	45,289	45,350	45,667	45,471	45,532
Commercial Therms	24,774	24,810	24,847	25,019	24,917	24,950	24,984	25,155	25,051	25,084
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**69,743**	**69,846**	**69,949**	**70,439**	**70,145**	**70,240**	**70,334**	**70,822**	**70,522**	**70,616**
Daily Baseload Therms	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49
Peak Day Therms	1,247	1,248	1,250	1,252	1,254	1,255	1,257	1,259	1,260	1,262
Therms Per Residential Customer	359	359	359	361	359	359	359	361	359	359
Therms Per Commercial Customer	1,712	1,712	1,712	1,721	1,712	1,712	1,712	1,721	1,712	1,712
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	125	125	126	126	126	126	126	126	127	127
Commercial Customers	14	14	15	15	15	15	15	15	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**140**	**140**	**140**	**140**	**140**	**141**	**141**	**141**	**141**	**141**

La Pine	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.43%	1.85%	1.81%	2.23%	1.30%	1.72%	1.69%	2.11%	1.20%	1.61%
Residential Therms	144,647	147,318	149,989	153,317	155,331	158,001	160,675	164,050	166,026	168,705
Commercial Therms	388,260	395,429	402,599	411,585	416,938	424,103	431,281	440,397	445,645	452,836
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**532,907**	**542,747**	**552,588**	**564,902**	**572,269**	**582,104**	**591,956**	**604,447**	**611,672**	**621,542**
Daily Baseload Therms	339	345	352	360	364	371	377	385	389	396
Peak Day Therms	6,778	6,904	7,029	7,154	7,279	7,404	7,530	7,655	7,780	7,906
Therms Per Residential Customer	575	575	575	578	575	575	575	578	575	575
Therms Per Commercial Customer	2,478	2,478	2,478	2,489	2,478	2,478	2,478	2,489	2,478	2,478
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	252	256	261	265	270	275	279	284	289	293
Commercial Customers	157	160	162	165	168	171	174	177	180	183
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**408**	**416**	**423**	**431**	**438**	**446**	**453**	**461**	**469**	**476**

Madras	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.05%	0.51%	0.51%	0.97%	0.05%	0.51%	0.51%	0.97%	0.05%	0.51%
Residential Therms	607,992	611,081	614,195	620,336	620,474	623,640	626,807	633,060	633,213	636,454
Commercial Therms	1,088,948	1,094,479	1,100,057	1,110,674	1,111,304	1,116,973	1,122,645	1,133,455	1,134,119	1,139,925
Industrial Therms	675,380	678,810	682,270	689,058	689,245	692,762	696,279	703,191	703,396	706,997
Ind., Inst., & Cmcl. Interrup. Therms	309,902	311,476	313,063	315,857	316,264	317,878	319,492	322,336	322,757	324,409
Total Core Therms	**2,682,223**	**2,695,846**	**2,709,584**	**2,735,925**	**2,737,287**	**2,751,252**	**2,765,223**	**2,792,043**	**2,793,486**	**2,807,785**
Daily Baseload Therms	1,262	1,269	1,275	1,288	1,288	1,295	1,302	1,314	1,315	1,322
Peak Day Therms	37,555	37,746	37,938	38,132	38,326	38,522	38,717	38,914	39,113	39,313
Therms Per Residential Customer	513	513	513	515	513	513	513	515	513	513
Therms Per Commercial Customer	2,793	2,793	2,793	2,805	2,793	2,793	2,793	2,805	2,793	2,793
Therms Per Industrial Customer	37,705	37,705	37,705	37,886	37,705	37,705	37,705	37,886	37,705	37,705
Residential Customers	1,186	1,192	1,198	1,204	1,210	1,217	1,223	1,229	1,235	1,242
Commercial Customers	390	392	394	396	398	400	402	404	406	408
Industrial Customers	18	18	18	18	18	18	18	19	19	19
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,595**	**1,603**	**1,611**	**1,619**	**1,628**	**1,636**	**1,644**	**1,653**	**1,661**	**1,670**

Milton-Freewater	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.60%	1.07%	0.11%	0.58%	0.58%	1.05%	0.09%	0.56%
Residential Therms	98,867	99,465	100,061	101,196	101,245	101,831	102,418	103,557	103,586	104,168
Commercial Therms	286,952	288,686	290,418	293,480	293,852	295,554	297,258	300,324	300,649	302,337
Industrial Therms	27,725	27,892	28,059	28,354	28,391	28,556	28,720	29,016	29,048	29,211

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**413,544**	**416,042**	**418,539**	**423,030**	**423,488**	**425,941**	**428,396**	**432,896**	**433,283**	**435,717**
Daily Baseload Therms	462	465	468	473	473	476	479	484	484	487
Peak Day Therms	5,844	5,879	5,914	5,949	5,984	6,019	6,054	6,088	6,123	6,157
Therms Per Residential Customer	408	408	408	410	408	408	408	410	408	408
Therms Per Commercial Customer	2,733	2,733	2,733	2,746	2,733	2,733	2,733	2,746	2,733	2,733
Therms Per Industrial Customer	4,440	4,440	4,440	4,460	4,440	4,440	4,440	4,460	4,440	4,440
Residential Customers	243	244	245	247	248	250	251	253	254	256
Commercial Customers	105	106	106	107	108	108	109	109	110	111
Industrial Customers	6	6	6	6	6	6	6	7	7	7
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**354**	**356**	**358**	**360**	**362**	**364**	**366**	**369**	**371**	**373**

Mission Tap	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.14%	0.60%	0.59%	1.04%	0.12%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	123,076	123,810	124,544	125,874	126,001	126,723	127,447	128,782	128,890	129,610
Commercial Therms	331,486	333,463	335,440	338,914	339,363	341,309	343,258	346,743	347,146	349,084
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**454,562**	**457,273**	**459,984**	**464,788**	**465,364**	**468,032**	**470,705**	**475,525**	**476,036**	**478,693**
Daily Baseload Therms	423	425	428	432	433	435	438	442	443	445
Peak Day Therms	5,636	5,669	5,703	5,736	5,769	5,803	5,836	5,869	5,902	5,935
Therms Per Residential Customer	542	542	542	545	542	542	542	545	542	542
Therms Per Commercial Customer	7,383	7,383	7,383	7,416	7,383	7,383	7,383	7,416	7,383	7,383
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	228	230	231	232	234	235	236	238	239
Commercial Customers	45	45	45	46	46	46	46	47	47	47
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**272**	**274**	**275**	**277**	**278**	**280**	**282**	**283**	**285**	**286**

Nyssa-Ontario	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.19%	0.29%	0.29%	0.76%	-0.20%	0.27%	0.27%	0.74%	-0.21%	0.27%
Residential Therms	1,812,417	1,817,637	1,822,848	1,837,416	1,832,990	1,837,972	1,842,998	1,857,486	1,852,825	1,857,781
Commercial Therms	2,148,102	2,154,289	2,160,466	2,177,406	2,172,485	2,178,390	2,184,347	2,201,190	2,195,994	2,201,868
Industrial Therms	172,403	172,899	173,395	174,088	174,360	174,834	175,312	175,990	176,247	176,718
Ind., Inst., & Cmcl. Interrup. Therms	1,077,216	1,080,318	1,083,416	1,090,921	1,089,443	1,092,404	1,095,392	1,102,837	1,101,232	1,104,178
Total Core Therms	**5,210,137**	**5,225,143**	**5,240,125**	**5,279,831**	**5,269,277**	**5,283,600**	**5,298,049**	**5,337,504**	**5,326,299**	**5,340,544**
Daily Baseload Therms	1,539	1,543	1,547	1,559	1,556	1,560	1,564	1,576	1,573	1,577
Peak Day Therms	70,686	70,890	71,093	71,292	71,489	71,683	71,879	72,071	72,262	72,456
Therms Per Residential Customer	492	492	492	495	492	492	492	495	492	492
Therms Per Commercial Customer	2,324	2,324	2,324	2,335	2,324	2,324	2,324	2,335	2,324	2,324
Therms Per Industrial Customer	8,353	8,353	8,353	8,363	8,353	8,353	8,353	8,363	8,353	8,353
Residential Customers	3,682	3,693	3,704	3,714	3,724	3,734	3,745	3,754	3,764	3,775
Commercial Customers	924	927	930	932	935	937	940	943	945	948
Industrial Customers	21	21	21	21	21	21	21	21	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,630**	**4,643**	**4,656**	**4,669**	**4,682**	**4,695**	**4,708**	**4,720**	**4,733**	**4,745**

Pendleton	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.12%	0.60%	0.59%	1.07%	0.10%	0.57%	0.57%	1.05%	0.09%	0.56%
Residential Therms	2,746,908	2,763,291	2,779,675	2,810,644	2,812,181	2,828,304	2,844,460	2,875,573	2,876,674	2,892,732
Commercial Therms	2,301,686	2,315,414	2,329,142	2,353,853	2,356,380	2,369,890	2,383,427	2,408,229	2,410,420	2,423,875
Industrial Therms	179,366	180,436	181,506	183,499	183,629	184,681	185,736	187,738	187,840	188,888
Ind., Inst., & Cmcl. Interrup. Therms	992,642	998,563	1,004,483	1,013,927	1,016,230	1,022,057	1,027,895	1,037,350	1,039,536	1,045,339
Total Core Therms	**6,220,603**	**6,257,704**	**6,294,806**	**6,361,923**	**6,368,420**	**6,404,932**	**6,441,518**	**6,508,891**	**6,514,469**	**6,550,835**
Daily Baseload Therms	5,391	5,423	5,455	5,513	5,519	5,550	5,582	5,640	5,645	5,677
Peak Day Therms	86,680	87,197	87,714	88,228	88,739	89,248	89,758	90,267	90,774	91,281
Therms Per Residential Customer	536	536	536	539	536	536	536	539	536	536
Therms Per Commercial Customer	2,913	2,913	2,913	2,926	2,913	2,913	2,913	2,926	2,913	2,913
Therms Per Industrial Customer	27,965	27,965	27,965	28,107	27,965	27,965	27,965	28,107	27,965	27,965
Residential Customers	5,125	5,156	5,187	5,217	5,247	5,277	5,307	5,338	5,368	5,398
Commercial Customers	790	795	800	804	809	814	818	823	828	832
Industrial Customers	6	6	6	7	7	7	7	7	7	7
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,925**	**5,961**	**5,996**	**6,031**	**6,066**	**6,101**	**6,136**	**6,170**	**6,205**	**6,240**

Prineville	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.08%	0.55%	0.54%	1.02%	0.07%	0.54%	0.55%	1.01%	0.07%	0.54%
Residential Therms	1,105,954	1,112,008	1,118,063	1,129,603	1,130,269	1,136,372	1,142,573	1,154,281	1,154,926	1,161,176
Commercial Therms	1,225,130	1,231,837	1,238,543	1,250,985	1,252,065	1,258,826	1,265,695	1,278,315	1,279,379	1,286,303
Industrial Therms	322,764	324,530	326,297	329,573	329,860	331,641	333,451	336,773	337,056	338,880
Ind., Inst., & Cmcl. Interrup. Therms	131,543	132,263	132,983	134,379	134,435	135,161	135,899	137,315	137,368	138,111
Total Core Therms	**2,785,391**	**2,800,639**	**2,815,886**	**2,844,539**	**2,846,629**	**2,862,000**	**2,877,617**	**2,906,684**	**2,908,729**	**2,924,470**
Daily Baseload Therms	1,060	1,066	1,072	1,083	1,083	1,089	1,095	1,106	1,107	1,113
Peak Day Therms	40,914	41,138	41,362	41,588	41,814	42,040	42,269	42,497	42,726	42,957
Therms Per Residential Customer	459	459	459	461	459	459	459	461	459	459
Therms Per Commercial Customer	2,294	2,294	2,294	2,305	2,294	2,294	2,294	2,305	2,294	2,294
Therms Per Industrial Customer	19,889	19,889	19,889	19,979	19,889	19,889	19,889	19,979	19,889	19,889
Residential Customers	2,410	2,423	2,436	2,450	2,463	2,476	2,490	2,503	2,517	2,530
Commercial Customers	534	537	540	543	546	549	552	555	558	561
Industrial Customers	16	16	16	16	17	17	17	17	17	17
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,962**	**2,979**	**2,995**	**3,011**	**3,027**	**3,044**	**3,060**	**3,077**	**3,094**	**3,110**

Redmond	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.41%	1.83%	1.80%	2.22%	1.27%	1.69%	1.66%	2.09%	1.15%	1.58%
Residential Therms	4,510,079	4,592,703	4,675,166	4,779,754	4,839,550	4,921,431	5,003,293	5,108,751	5,166,594	5,248,093
Commercial Therms	3,357,545	3,419,054	3,480,444	3,558,381	3,602,820	3,663,777	3,724,719	3,803,309	3,846,289	3,906,962
Industrial Therms	447,490	455,688	463,870	473,658	480,180	488,304	496,427	506,261	512,629	520,716
Ind., Inst., & Cmcl. Interrup. Therms	317,504	323,321	329,126	335,683	340,699	346,463	352,226	358,789	363,722	369,460
Total Core Therms	**8,632,618**	**8,790,765**	**8,948,605**	**9,147,476**	**9,263,249**	**9,419,976**	**9,576,664**	**9,777,111**	**9,889,234**	**10,045,231**
Daily Baseload Therms	4,498	4,581	4,663	4,767	4,827	4,909	4,990	5,095	5,153	5,234
Peak Day Therms	117,704	119,860	122,013	124,161	126,303	128,440	130,576	132,707	134,838	136,965
Therms Per Residential Customer	563	563	563	566	563	563	563	566	563	563
Therms Per Commercial Customer	2,409	2,409	2,409	2,421	2,409	2,409	2,409	2,421	2,409	2,409
Therms Per Industrial Customer	29,975	29,975	29,975	30,078	29,975	29,975	29,975	30,078	29,975	29,975
Residential Customers	8,006	8,153	8,299	8,445	8,591	8,736	8,881	9,026	9,171	9,316
Commercial Customers	1,394	1,419	1,445	1,470	1,495	1,521	1,546	1,571	1,596	1,622
Industrial Customers	15	15	15	16	16	16	17	17	17	17
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**9,416**	**9,588**	**9,760**	**9,932**	**10,103**	**10,274**	**10,445**	**10,616**	**10,786**	**10,956**

Stanfield	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.10%	0.60%	0.59%	1.09%	0.07%	0.57%	0.57%	1.07%	0.06%	0.56%
Residential Therms	153,049	153,962	154,875	156,588	156,686	157,585	158,485	160,206	160,280	161,174
Commercial Therms	63,151	63,528	63,904	64,585	64,652	65,022	65,394	66,077	66,134	66,504
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**216,201**	**217,490**	**218,779**	**221,173**	**221,338**	**222,607**	**223,879**	**226,282**	**226,414**	**227,678**
Daily Baseload Therms	107	107	108	109	109	110	111	112	112	112
Peak Day Therms	3,227	3,247	3,266	3,285	3,304	3,323	3,342	3,361	3,380	3,399
Therms Per Residential Customer	474	474	474	477	474	474	474	477	474	474
Therms Per Commercial Customer	1,808	1,808	1,808	1,817	1,808	1,808	1,808	1,817	1,808	1,808
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	323	325	327	329	330	332	334	336	338	340
Commercial Customers	35	35	35	36	36	36	36	36	37	37
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**358**	**360**	**362**	**364**	**366**	**368**	**370**	**372**	**375**	**377**

Stearns (Sunriver)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.43%	1.83%	1.80%	2.20%	1.29%	1.69%	1.66%	2.07%	1.17%	1.58%
Residential Therms	3,905,741	3,977,293	4,048,706	4,138,674	4,191,063	4,261,973	4,332,865	4,423,545	4,474,284	4,544,863
Commercial Therms	1,223,899	1,246,320	1,268,698	1,295,782	1,313,307	1,335,527	1,357,742	1,384,973	1,402,057	1,424,174
Industrial Therms	16,787	17,094	17,401	17,763	18,013	18,318	18,622	18,985	19,230	19,533
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**5,146,426**	**5,240,707**	**5,334,805**	**5,452,219**	**5,522,384**	**5,615,818**	**5,709,229**	**5,827,503**	**5,895,571**	**5,988,570**
Daily Baseload Therms	4,201	4,278	4,355	4,451	4,508	4,584	4,661	4,757	4,813	4,889
Peak Day Therms	63,837	65,006	66,174	67,339	68,500	69,659	70,818	71,974	73,129	74,283
Therms Per Residential Customer	899	899	899	903	899	899	899	903	899	899
Therms Per Commercial Customer	4,470	4,470	4,470	4,486	4,470	4,470	4,470	4,486	4,470	4,470
Therms Per Industrial Customer	5,545	5,545	5,545	5,562	5,545	5,545	5,545	5,562	5,545	5,545
Residential Customers	4,346	4,426	4,505	4,584	4,663	4,742	4,821	4,900	4,979	5,057
Commercial Customers	274	279	284	289	294	299	304	309	314	319
Industrial Customers	3	3	3	3	3	3	3	3	3	4
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4,623**	**4,707**	**4,792**	**4,876**	**4,960**	**5,044**	**5,128**	**5,212**	**5,296**	**5,379**

Dave Rasmussen	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.87%	1.83%	1.80%	1.76%	1.72%	1.69%	1.66%	1.63%	1.61%	1.58%
Residential Therms	366,830	373,551	380,258	386,954	393,628	400,288	406,946	413,588	420,228	426,857
Commercial Therms	312,266	317,987	323,696	329,396	335,078	340,747	346,415	352,069	357,722	363,365
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**679,097**	**691,538**	**703,954**	**716,350**	**728,706**	**741,035**	**753,361**	**765,657**	**777,950**	**790,222**
Daily Baseload Therms	724	737	751	764	777	790	803	816	829	843
Peak Day Therms	7,980	8,126	8,272	8,417	8,562	8,707	8,852	8,997	9,141	9,285
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	231	235	239	243	247	251	256	260	264
Commercial Customers	30	31	31	32	32	33	33	34	34	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**257**	**261**	**266**	**271**	**275**	**280**	**285**	**289**	**294**	**299**

South Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.42%	1.83%	1.80%	2.21%	1.28%	1.69%	1.66%	2.08%	1.16%	1.58%
Residential Therms	22,618,461	23,032,824	23,446,384	23,966,448	24,270,787	24,681,429	25,091,971	25,616,094	25,910,940	26,319,669
Commercial Therms	12,610,049	12,841,061	13,071,625	13,359,913	13,531,239	13,760,177	13,989,059	14,279,495	14,445,643	14,673,514
Industrial Therms	375,326	382,202	389,064	397,552	402,744	409,558	416,371	424,916	429,961	436,743
Ind., Inst., & Cmcl. Interrup. Therms	225,868	230,006	234,136	238,980	242,368	246,469	250,569	255,430	258,747	262,829
Total Core Therms	**35,829,704**	**36,486,093**	**37,141,209**	**37,962,893**	**38,447,139**	**39,097,634**	**39,747,970**	**40,575,935**	**41,045,291**	**41,692,755**
Daily Baseload Therms	21,935	22,336	22,738	23,241	23,537	23,935	24,333	24,840	25,128	25,524
Peak Day Therms	462,262	470,731	479,183	487,620	496,031	504,424	512,814	521,184	529,552	537,905
Therms Per Residential Customer	691	691	691	694	691	691	691	694	691	691
Therms Per Commercial Customer	2,537	2,537	2,537	2,548	2,537	2,537	2,537	2,548	2,537	2,537
Therms Per Industrial Customer	21,025	21,025	21,025	21,111	21,025	21,025	21,025	21,111	21,025	21,025
Residential Customers	32,731	33,331	33,929	34,527	35,122	35,717	36,311	36,903	37,496	38,087
Commercial Customers	4,970	5,061	5,152	5,242	5,333	5,423	5,513	5,603	5,693	5,783
Industrial Customers	18	18	19	19	19	19	20	20	20	21
Interruptible Customers	3	3	3	3	3	3	3	4	4	4
Total Core Customers	**37,722**	**38,413**	**39,103**	**39,791**	**40,478**	**41,163**	**41,847**	**42,530**	**43,213**	**43,895**

McCleary (Aberdeen/Hoquiam)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.01%	0.44%	0.44%	0.87%	-0.01%	0.41%	0.41%	0.84%	-0.04%	0.40%
Residential Therms	2,341,116	2,351,529	2,361,793	2,382,873	2,381,929	2,391,773	2,401,616	2,422,429	2,420,944	2,430,517
Commercial Therms	2,271,906	2,282,011	2,291,971	2,311,764	2,311,513	2,321,065	2,330,618	2,350,140	2,349,374	2,358,664
Industrial Therms	111,347	111,842	112,331	113,454	113,288	113,756	114,225	115,337	115,144	115,599
Ind., Inst., & Cmcl. Interrup. Therms	1,039,717	1,044,342	1,048,900	1,057,262	1,057,843	1,062,215	1,066,586	1,074,813	1,075,170	1,079,421
Total Core Therms	**5,764,087**	**5,789,725**	**5,814,994**	**5,865,354**	**5,864,573**	**5,888,809**	**5,913,045**	**5,962,719**	**5,960,631**	**5,984,203**
Daily Baseload Therms	6,666	6,695	6,724	6,783	6,782	6,810	6,838	6,895	6,893	6,920
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	640	640	640	642	640	640	640	642	640	640
Therms Per Commercial Customer	2,915	2,915	2,915	2,927	2,915	2,915	2,915	2,927	2,915	2,915
Therms Per Industrial Customer	9,067	9,067	9,067	9,119	9,067	9,067	9,067	9,119	9,067	9,067
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Acme	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.16%	1.63%	1.60%	2.06%	1.06%	1.52%	1.50%	1.97%	0.97%	1.44%
Residential Therms	54,146	55,027	55,908	57,063	57,668	58,546	59,425	60,594	61,182	62,061

Commercial Therms	37,060	37,663	38,266	39,055	39,471	40,072	40,673	41,472	41,876	42,478
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**91,206**	**92,691**	**94,175**	**96,118**	**97,138**	**98,617**	**100,099**	**102,067**	**103,058**	**104,539**
Daily Baseload Therms	36	37	37	38	39	39	40	41	41	42
Peak Day Therms	1,213	1,232	1,252	1,272	1,292	1,311	1,331	1,351	1,370	1,390
Therms Per Residential Customer	680	680	680	684	680	680	680	684	680	680
Therms Per Commercial Customer	3,389	3,389	3,389	3,406	3,389	3,389	3,389	3,406	3,389	3,389
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	80	81	82	83	85	86	87	89	90	91
Commercial Customers	11	11	11	11	12	12	12	12	12	13
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**91**	**92**	**93**	**95**	**96**	**98**	**99**	**101**	**102**	**104**

Arlington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.93%	1.37%	1.35%	1.79%	0.86%	1.29%	1.28%	1.72%	0.79%	1.23%
Residential Therms	3,855,543	3,908,446	3,961,293	4,032,572	4,066,715	4,119,256	4,171,852	4,243,801	4,276,858	4,329,349
Commercial Therms	2,026,838	2,054,649	2,082,430	2,119,432	2,137,850	2,165,471	2,193,120	2,230,449	2,248,321	2,275,915
Industrial Therms	239,242	242,524	245,803	250,109	252,345	255,605	258,869	263,210	265,385	268,642
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**6,121,623**	**6,205,618**	**6,289,527**	**6,402,113**	**6,456,911**	**6,540,332**	**6,623,841**	**6,737,460**	**6,790,564**	**6,873,906**
Daily Baseload Therms	6,933	7,028	7,123	7,251	7,313	7,407	7,502	7,631	7,691	7,785
Peak Day Therms	68,678	69,620	70,561	71,502	72,439	73,375	74,312	75,247	76,183	77,118
Therms Per Residential Customer	708	708	708	711	708	708	708	711	708	708
Therms Per Commercial Customer	3,162	3,162	3,162	3,176	3,162	3,162	3,162	3,176	3,162	3,162
Therms Per Industrial Customer	8,597	8,597	8,597	8,633	8,597	8,597	8,597	8,633	8,597	8,597
Residential Customers	5,448	5,523	5,598	5,672	5,747	5,821	5,895	5,969	6,044	6,118
Commercial Customers	641	650	658	667	676	685	693	702	711	720
Industrial Customers	28	28	29	29	29	30	30	30	31	31
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**6,117**	**6,201**	**6,285**	**6,369**	**6,452**	**6,535**	**6,619**	**6,702**	**6,785**	**6,869**

Bremerton (Shelton)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.55%	0.99%	0.98%	1.43%	0.50%	0.94%	0.93%	1.38%	0.46%	0.90%
Residential Therms	20,941,645	21,149,450	21,356,756	21,663,558	21,769,140	21,974,035	22,179,068	22,487,218	22,587,540	22,791,390
Commercial Therms	10,526,325	10,630,779	10,734,981	10,886,325	10,942,266	11,045,257	11,148,317	11,300,228	11,353,636	11,456,101
Industrial Therms	339,277	342,643	346,002	352,359	352,683	356,002	359,324	365,756	365,942	369,244
Ind., Inst., & Cmcl. Interrup. Therms	2,552,677	2,578,008	2,603,277	2,638,682	2,653,545	2,678,521	2,703,513	2,739,006	2,753,304	2,778,152
Total Core Therms	**34,359,924**	**34,700,880**	**35,041,017**	**35,540,924**	**35,717,633**	**36,053,816**	**36,390,221**	**36,892,209**	**37,060,421**	**37,394,887**
Daily Baseload Therms	27,278	27,548	27,818	28,215	28,355	28,622	28,889	29,288	29,421	29,687
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	607	607	607	610	607	607	607	610	607	607
Therms Per Commercial Customer	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215
Therms Per Industrial Customer	23,413	23,413	23,413	23,615	23,413	23,413	23,413	23,615	23,413	23,413
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563
Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Castle Rock	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.08%	0.50%	0.50%	0.92%	0.07%	0.49%	0.49%	0.90%	0.06%	0.48%
Residential Therms	34,476	34,649	34,823	35,167	35,167	35,338	35,510	35,855	35,851	36,022
Commercial Therms	117,361	117,952	118,542	119,608	119,715	120,297	120,881	121,949	122,043	122,624
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**151,837**	**152,601**	**153,365**	**154,775**	**154,883**	**155,636**	**156,391**	**157,804**	**157,894**	**158,645**
Daily Baseload Therms	171	172	173	174	174	175	176	178	178	179
Peak Day Therms	1,426	1,433	1,440	1,447	1,454	1,462	1,469	1,476	1,483	1,490
Therms Per Residential Customer	508	508	508	511	508	508	508	511	508	508
Therms Per Commercial Customer	2,290	2,290	2,290	2,299	2,290	2,290	2,290	2,299	2,290	2,290
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	68	68	68	69	69	69	70	70	71	71
Commercial Customers	51	52	52	52	52	53	53	53	53	54
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**121**	**121**	**122**	**123**	**123**	**124**	**124**

Walla Walla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%
Residential Therms	6,008,738	6,008,637	6,008,637	6,038,716	6,008,434	6,008,231	6,008,231	6,038,308	6,008,231	6,008,332
Commercial Therms	3,944,285	3,944,219	3,944,219	3,963,170	3,944,086	3,943,952	3,943,952	3,962,902	3,943,952	3,944,019
Industrial Therms	90,677	90,675	90,675	91,062	90,672	90,669	90,669	91,056	90,669	90,671
Ind., Inst., & Cmcl. Interrup. Therms	1,803,593	1,803,563	1,803,563	1,811,053	1,803,502	1,803,441	1,803,441	1,810,930	1,803,441	1,803,471
Total Core Therms	**11,847,293**	**11,847,093**	**11,847,093**	**11,904,001**	**11,846,693**	**11,846,293**	**11,846,293**	**11,903,197**	**11,846,293**	**11,846,493**
Daily Baseload Therms	11,054	11,054	11,054	11,107	11,053	11,053	11,053	11,106	11,053	11,053
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	565	565	565	568	565	565	565	568	565	565
Therms Per Commercial Customer	3,132	3,132	3,132	3,147	3,132	3,132	3,132	3,147	3,132	3,132
Therms Per Industrial Customer	11,860	11,860	11,860	11,911	11,860	11,860	11,860	11,911	11,860	11,860
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Deming	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.15%	1.61%	1.59%	2.05%	1.05%	1.51%	1.49%	1.95%	0.97%	1.43%
Residential Therms	14,217	14,447	14,677	14,981	15,135	15,364	15,594	15,902	16,053	16,282
Commercial Therms	67,897	68,994	70,090	71,491	72,281	73,375	74,471	75,890	76,662	77,759
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	73,340	74,524	75,709	77,292	78,076	79,257	80,441	82,047	82,808	83,992
Total Core Therms	**155,455**	**157,965**	**160,476**	**163,765**	**165,492**	**167,997**	**170,506**	**173,839**	**175,523**	**178,033**
Daily Baseload Therms	110	112	114	116	117	119	121	123	124	126
Peak Day Therms	2,007	2,039	2,071	2,104	2,136	2,168	2,201	2,233	2,266	2,298
Therms Per Residential Customer	490	490	490	493	490	490	490	493	490	490
Therms Per Commercial Customer	4,799	4,799	4,799	4,820	4,799	4,799	4,799	4,820	4,799	4,799
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	29	29	30	30	31	31	32	32	33	33
Commercial Customers	14	14	15	15	15	15	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**44**	**45**	**46**	**47**	**47**	**48**	**49**	**49**	**50**	**51**

Wenatchee	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.65%	1.08%	1.06%	1.49%	0.60%	1.02%	1.02%	1.44%	0.55%	0.98%
Residential Therms	699,276	706,808	714,335	725,126	729,334	736,797	744,279	755,156	759,213	766,670
Commercial Therms	3,564,515	3,602,912	3,641,278	3,695,237	3,717,737	3,755,779	3,793,916	3,848,267	3,870,041	3,908,055
Industrial Therms	416,989	421,481	425,969	432,404	434,914	439,364	443,825	450,311	452,731	457,178
Ind., Inst., & Cmcl. Interrup. Therms	281,795	284,830	287,863	292,426	293,908	296,915	299,930	304,536	305,948	308,953
Total Core Therms	**4,962,575**	**5,016,032**	**5,069,446**	**5,145,193**	**5,175,893**	**5,228,856**	**5,281,951**	**5,358,270**	**5,387,933**	**5,440,857**
Daily Baseload Therms	4,905	4,958	5,011	5,086	5,116	5,168	5,221	5,296	5,326	5,378
Peak Day Therms	55,614	56,213	56,811	57,409	58,004	58,598	59,193	59,787	60,381	60,974
Therms Per Residential Customer	445	445	445	447	445	445	445	447	445	445
Therms Per Commercial Customer	4,599	4,599	4,599	4,619	4,599	4,599	4,599	4,619	4,599	4,599
Therms Per Industrial Customer	24,540	24,540	24,540	24,651	24,540	24,540	24,540	24,651	24,540	24,540
Residential Customers	1,573	1,590	1,607	1,624	1,641	1,658	1,674	1,691	1,708	1,725
Commercial Customers	775	783	792	800	808	817	825	833	841	850
Industrial Customers	17	17	17	18	18	18	18	18	18	19
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,369**	**2,395**	**2,420**	**2,446**	**2,471**	**2,496**	**2,522**	**2,547**	**2,572**	**2,597**

Finley	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.60%	1.14%	1.13%	1.66%	0.54%	1.08%	1.07%	1.61%	0.49%	1.03%
Residential Therms	15,021	15,192	15,363	15,622	15,703	15,872	16,042	16,303	16,380	16,548
Commercial Therms	89,221	90,238	91,253	92,769	93,274	94,280	95,286	96,814	97,292	98,293
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**104,242**	**105,430**	**106,616**	**108,390**	**108,977**	**110,152**	**111,328**	**113,117**	**113,671**	**114,842**
Daily Baseload Therms	32	32	32	33	33	34	34	34	35	35
Peak Day Therms	1,872	1,893	1,914	1,935	1,957	1,978	1,999	2,020	2,041	2,062
Therms Per Residential Customer	506	506	506	508	506	506	506	508	506	506
Therms Per Commercial Customer	6,006	6,006	6,006	6,039	6,006	6,006	6,006	6,039	6,006	6,006
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	30	30	30	31	31	31	32	32	32	33
Commercial Customers	15	15	15	15	16	16	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**45**	**45**	**46**	**46**	**47**	**47**	**48**	**48**	**49**	**49**

Grandview	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.25%	0.18%	0.18%	0.61%	-0.25%	0.17%	0.18%	0.61%	-0.25%	0.18%
Residential Therms	561,746	562,766	563,782	567,591	565,793	566,782	567,789	571,598	569,789	570,800
Commercial Therms	640,485	641,648	642,806	647,107	645,099	646,227	647,375	651,675	649,655	650,808
Industrial Therms	550,493	551,493	552,488	555,108	554,459	555,428	556,415	559,027	558,375	559,366
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,752,725**	**1,755,907**	**1,759,076**	**1,769,806**	**1,765,351**	**1,768,437**	**1,771,578**	**1,782,300**	**1,777,819**	**1,780,974**
Daily Baseload Therms	1,133	1,135	1,137	1,144	1,141	1,143	1,145	1,152	1,149	1,151
Peak Day Therms	19,071	19,106	19,140	19,175	19,208	19,242	19,276	19,310	19,344	19,378
Therms Per Residential Customer	581	581	581	584	581	581	581	584	581	581
Therms Per Commercial Customer	3,416	3,416	3,416	3,433	3,416	3,416	3,416	3,433	3,416	3,416
Therms Per Industrial Customer	68,309	68,309	68,309	68,509	68,309	68,309	68,309	68,509	68,309	68,309
Residential Customers	967	969	971	973	974	976	978	980	981	983
Commercial Customers	187	188	188	188	189	189	189	190	190	190
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,163**	**1,165**	**1,167**	**1,169**	**1,171**	**1,173**	**1,175**	**1,178**	**1,180**	**1,182**

Zillah (Toppenish)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.23%	0.22%	0.21%	0.66%	-0.24%	0.21%	0.21%	0.66%	-0.24%	0.21%
Residential Therms	1,096,093	1,098,459	1,100,816	1,108,742	1,105,485	1,107,786	1,110,118	1,118,045	1,114,750	1,117,085
Commercial Therms	2,013,155	2,017,502	2,021,830	2,035,359	2,030,406	2,034,631	2,038,914	2,052,437	2,047,423	2,051,711
Industrial Therms	554,079	555,275	556,467	559,591	558,827	559,990	561,169	564,286	563,511	564,691
Ind., Inst., & Cmcl. Interrup. Therms	85,309	85,493	85,676	86,041	86,040	86,219	86,400	86,762	86,761	86,943
Total Core Therms	**3,748,635**	**3,756,730**	**3,764,789**	**3,789,733**	**3,780,758**	**3,788,625**	**3,796,601**	**3,821,530**	**3,812,445**	**3,820,429**
Daily Baseload Therms	2,965	2,971	2,977	2,997	2,990	2,996	3,002	3,022	3,015	3,021

Peak Day Therms	45,485	45,583	45,681	45,779	45,875	45,970	46,067	46,163	46,259	46,356
Therms Per Residential Customer	563	563	563	566	563	563	563	566	563	563
Therms Per Commercial Customer	3,952	3,952	3,952	3,970	3,952	3,952	3,952	3,970	3,952	3,952
Therms Per Industrial Customer	25,214	25,214	25,214	25,301	25,214	25,214	25,214	25,301	25,214	25,214
Residential Customers	1,948	1,952	1,956	1,960	1,964	1,968	1,973	1,977	1,981	1,985
Commercial Customers	509	511	512	513	514	515	516	517	518	519
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,480**	**2,485**	**2,491**	**2,496**	**2,501**	**2,507**	**2,512**	**2,517**	**2,522**	**2,528**

Kalama #2	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.52%	0.52%	0.51%	0.51%	0.50%	0.49%	0.49%	0.48%	0.48%	0.47%
Residential Therms	199,960	200,996	202,026	203,049	204,062	205,066	206,067	207,060	208,047	209,028
Commercial Therms	190,634	191,621	192,603	193,578	194,544	195,501	196,456	197,402	198,343	199,279
Industrial Therms	236,415	237,640	238,858	240,067	241,264	242,452	243,636	244,809	245,976	247,137
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**627,009**	**630,257**	**633,487**	**636,693**	**639,869**	**643,019**	**646,159**	**649,271**	**652,366**	**655,444**
Daily Baseload Therms	945	950	955	960	965	970	974	979	984	988
Peak Day Therms	6,819	6,854	6,889	6,924	6,958	6,993	7,027	7,061	7,094	7,128
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	179	179	180	181	182	183	184	185	186	187
Commercial Customers	50	50	51	51	51	51	52	52	52	52
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**232**	**233**	**234**	**235**	**236**	**238**	**239**	**240**	**241**	**242**

Lawrence	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.14%	1.62%	1.59%	2.07%	1.04%	1.52%	1.50%	1.98%	0.95%	1.43%
Residential Therms	47,399	48,165	48,932	49,942	50,464	51,228	51,994	53,018	53,526	54,292
Commercial Therms	22,104	22,462	22,819	23,299	23,534	23,890	24,248	24,734	24,962	25,319
Industrial Therms	894	908	923	938	952	966	980	996	1,009	1,024
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**70,397**	**71,535**	**72,674**	**74,179**	**74,949**	**76,085**	**77,222**	**78,748**	**79,497**	**80,635**
Daily Baseload Therms	34	35	35	36	36	37	38	38	39	39
Peak Day Therms	981	997	1,013	1,028	1,044	1,060	1,076	1,092	1,108	1,124
Therms Per Residential Customer	653	653	653	656	653	653	653	656	653	653
Therms Per Commercial Customer	1,169	1,169	1,169	1,175	1,169	1,169	1,169	1,175	1,169	1,169
Therms Per Industrial Customer	737	737	737	738	737	737	737	738	737	737
Residential Customers	73	74	75	76	77	78	80	81	82	83
Commercial Customers	19	19	20	20	20	20	21	21	21	22
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**93**	**94**	**96**	**97**	**99**	**100**	**102**	**103**	**105**	**106**

Moxee (Beauchene)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.51%	0.51%	0.84%	0.17%	0.50%	0.50%	0.83%	0.16%	0.49%
Residential Therms	261,925	263,270	264,613	267,138	267,292	268,625	269,965	272,506	272,641	273,984
Commercial Therms	533,252	535,989	538,723	543,337	544,178	546,892	549,619	554,255	555,068	557,801
Industrial Therms	530,477	533,200	535,920	539,777	541,346	544,046	546,759	550,623	552,179	554,899
Ind., Inst., & Cmcl. Interrup. Therms	238,747	239,973	241,197	243,538	243,639	244,854	246,075	248,432	248,515	249,738
Total Core Therms	**1,564,400**	**1,572,431**	**1,580,453**	**1,593,790**	**1,596,454**	**1,604,417**	**1,612,418**	**1,625,816**	**1,628,403**	**1,636,422**
Daily Baseload Therms	614	618	621	626	627	630	633	638	640	643
Peak Day Therms	14,651	14,726	14,801	14,877	14,951	15,026	15,101	15,176	15,251	15,326
Therms Per Residential Customer	154	154	154	155	154	154	154	155	154	154
Therms Per Commercial Customer	1,253	1,253	1,253	1,257	1,253	1,253	1,253	1,257	1,253	1,253
Therms Per Industrial Customer	38,098	38,098	38,098	38,178	38,098	38,098	38,098	38,178	38,098	38,098
Residential Customers	1,703	1,712	1,720	1,729	1,738	1,746	1,755	1,764	1,772	1,781
Commercial Customers	426	428	430	432	434	437	439	441	443	445
Industrial Customers	14	14	14	14	14	14	14	14	14	15
Interruptible Customers	5	5	5	5	5	5	5	5	6	6
Total Core Customers	**2,148**	**2,159**	**2,170**	**2,181**	**2,192**	**2,203**	**2,214**	**2,225**	**2,236**	**2,247**

Othello	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.74%	0.74%	0.74%	0.73%	0.73%	0.73%	0.72%	0.72%	0.71%	0.72%
Residential Therms	679,333	684,384	689,428	694,466	699,531	704,608	709,678	714,793	719,900	725,052
Commercial Therms	880,601	887,149	893,688	900,219	906,784	913,365	919,938	926,568	933,188	939,866
Industrial Therms	246,124	247,954	249,782	251,607	253,442	255,281	257,118	258,972	260,822	262,688
Ind., Inst., & Cmcl. Interrup. Therms	225,250	226,925	228,598	230,268	231,948	233,631	235,312	237,008	238,702	240,410
Total Core Therms	**2,031,308**	**2,046,413**	**2,061,495**	**2,076,561**	**2,091,705**	**2,106,884**	**2,122,047**	**2,137,341**	**2,152,612**	**2,168,017**
Daily Baseload Therms	2,187	2,204	2,220	2,236	2,252	2,269	2,285	2,302	2,318	2,335
Peak Day Therms	22,343	22,509	22,675	22,840	23,007	23,174	23,341	23,509	23,677	23,846
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,171	1,180	1,189	1,197	1,206	1,215	1,224	1,232	1,241	1,250
Commercial Customers	305	307	309	312	314	316	318	321	323	325
Industrial Customers	12	12	12	12	12	12	12	13	13	13
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,490**	**1,501**	**1,512**	**1,523**	**1,534**	**1,546**	**1,557**	**1,568**	**1,579**	**1,590**

North Pasco	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034

Total Therms Pct. Growth	0.77%	1.29%	1.26%	1.78%	0.69%	1.20%	1.19%	1.70%	0.63%	1.14%
Residential Therms	2,661,481	2,695,685	2,729,762	2,778,495	2,797,585	2,831,280	2,864,976	2,913,969	2,932,035	2,965,501
Commercial Therms	1,828,744	1,852,246	1,875,661	1,909,068	1,922,263	1,945,416	1,968,569	2,002,150	2,014,646	2,037,641
Industrial Therms	99,793	101,075	102,353	103,939	104,896	106,160	107,423	109,007	109,937	111,192
Ind., Inst., & Cmcl. Interrup. Therms	198,406	200,956	203,496	207,102	208,552	211,064	213,576	217,200	218,575	221,070
Total Core Therms	**4,788,424**	**4,849,962**	**4,911,272**	**4,998,604**	**5,033,297**	**5,093,920**	**5,154,543**	**5,242,326**	**5,275,194**	**5,335,405**
Daily Baseload Therms	1,988	2,013	2,039	2,075	2,089	2,115	2,140	2,176	2,190	2,215
Peak Day Therms	83,677	84,752	85,824	86,892	87,956	89,015	90,075	91,129	92,183	93,235
Therms Per Residential Customer	1,244	1,244	1,244	1,250	1,244	1,244	1,244	1,250	1,244	1,244
Therms Per Commercial Customer	8,060	8,060	8,060	8,103	8,060	8,060	8,060	8,103	8,060	8,060
Therms Per Industrial Customer	42,829	42,829	42,829	42,958	42,829	42,829	42,829	42,958	42,829	42,829
Residential Customers	2,140	2,168	2,195	2,222	2,250	2,277	2,304	2,331	2,358	2,385
Commercial Customers	227	230	233	236	238	241	244	247	250	253
Industrial Customers	2	2	2	2	2	2	3	3	3	3
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,370**	**2,401**	**2,431**	**2,462**	**2,492**	**2,522**	**2,552**	**2,582**	**2,611**	**2,641**

Patterson	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.73%	1.71%	1.70%	1.69%	1.68%	1.66%	1.65%	1.64%	1.63%	1.61%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	12,251	12,461	12,673	12,887	13,103	13,321	13,541	13,763	13,987	14,213
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	264,080	268,605	273,175	277,788	282,445	287,144	291,886	296,670	301,495	306,362
Total Core Therms	**276,331**	**281,066**	**285,848**	**290,675**	**295,548**	**300,465**	**305,427**	**310,433**	**315,482**	**320,575**
Daily Baseload Therms	377	384	390	397	404	410	417	424	431	438
Peak Day Therms	2,996	3,047	3,099	3,151	3,204	3,257	3,311	3,365	3,420	3,475
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	5	5	5	5	6	6
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7**	**7**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**

Prosser	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.67%	1.13%	1.12%	1.58%	0.62%	1.07%	1.06%	1.52%	0.56%	1.02%
Residential Therms	282,508	285,714	288,915	293,616	295,284	298,452	301,621	306,357	307,940	311,095
Commercial Therms	489,318	494,871	500,414	508,250	511,447	516,934	522,423	530,305	533,367	538,831
Industrial Therms	157,251	159,036	160,817	163,285	164,362	166,126	167,890	170,371	171,407	173,163
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**929,077**	**939,621**	**950,146**	**965,151**	**971,093**	**981,511**	**991,935**	**1,007,033**	**1,012,713**	**1,023,089**
Daily Baseload Therms	472	477	483	490	493	499	504	512	514	520
Peak Day Therms	12,045	12,182	12,318	12,454	12,590	12,725	12,860	12,995	13,129	13,264
Therms Per Residential Customer	552	552	552	555	552	552	552	555	552	552
Therms Per Commercial Customer	3,124	3,124	3,124	3,138	3,124	3,124	3,124	3,138	3,124	3,124
Therms Per Industrial Customer	27,539	27,539	27,539	27,657	27,539	27,539	27,539	27,657	27,539	27,539
Residential Customers	512	518	523	529	535	541	546	552	558	564
Commercial Customers	157	158	160	162	164	165	167	169	171	172
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**674**	**682**	**689**	**697**	**705**	**712**	**720**	**727**	**735**	**742**

Quincy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.24%	1.23%	1.22%	1.21%	1.20%	1.19%	1.19%	1.18%	1.17%	1.17%
Residential Therms	49,553	50,162	50,774	51,390	52,008	52,629	53,253	53,881	54,513	55,148
Commercial Therms	566,902	573,872	580,878	587,924	594,990	602,094	609,240	616,423	623,650	630,916
Industrial Therms	273,393	276,754	280,133	283,531	286,939	290,364	293,811	297,275	300,760	304,264
Ind., Inst., & Cmcl. Interrup. Therms	63,469	64,249	65,033	65,822	66,613	67,409	68,209	69,013	69,822	70,636
Total Core Therms	**953,316**	**965,037**	**976,819**	**988,667**	**1,000,551**	**1,012,496**	**1,024,514**	**1,036,592**	**1,048,745**	**1,060,965**
Daily Baseload Therms	718	726	735	744	753	762	771	780	789	799
Peak Day Therms	10,812	10,945	11,078	11,213	11,347	11,483	11,619	11,756	11,894	12,033
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	70	71	72	72	73	74	75	76	77	78
Commercial Customers	73	74	75	76	77	77	78	79	80	81
Industrial Customers	7	7	7	7	7	7	7	7	8	8
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**151**	**153**	**154**	**156**	**158**	**160**	**162**	**164**	**166**	**168**

Sunnyside	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.15%	0.28%	0.28%	0.72%	-0.16%	0.27%	0.28%	0.71%	-0.16%	0.27%
Residential Therms	1,047,789	1,050,758	1,053,716	1,061,721	1,059,582	1,062,480	1,065,403	1,073,411	1,071,212	1,074,128
Commercial Therms	1,479,660	1,483,854	1,488,030	1,498,836	1,496,315	1,500,407	1,504,535	1,515,338	1,512,738	1,516,856
Industrial Therms	513,004	514,458	515,906	519,014	518,778	520,197	521,628	524,729	524,472	525,900
Ind., Inst., & Cmcl. Interrup. Therms	159,161	159,612	160,061	161,164	160,952	161,393	161,837	162,938	162,719	163,162
Total Core Therms	**3,199,613**	**3,208,682**	**3,217,713**	**3,240,734**	**3,235,627**	**3,244,476**	**3,253,402**	**3,276,416**	**3,271,141**	**3,280,045**
Daily Baseload Therms	2,909	2,917	2,926	2,946	2,942	2,950	2,958	2,979	2,974	2,982
Peak Day Therms	37,984	38,092	38,199	38,306	38,412	38,517	38,623	38,728	38,833	38,939
Therms Per Residential Customer	560	560	560	562	560	560	560	562	560	560
Therms Per Commercial Customer	2,823	2,823	2,823	2,836	2,823	2,823	2,823	2,836	2,823	2,823
Therms Per Industrial Customer	31,953	31,953	31,953	32,055	31,953	31,953	31,953	32,055	31,953	31,953
Residential Customers	1,872	1,877	1,883	1,888	1,893	1,898	1,903	1,909	1,914	1,919

Commercial Customers	524	526	527	529	530	532	533	534	536	537
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,414**	**2,421**	**2,428**	**2,435**	**2,441**	**2,448**	**2,455**	**2,462**	**2,468**	**2,475**

Moses Lake	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.46%	1.92%	1.92%	2.38%	1.44%	1.90%	1.90%	2.36%	1.42%	1.88%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	175,854	179,233	182,668	187,468	189,709	193,317	196,984	202,121	204,499	208,348
Industrial Therms	3,897,995	3,972,888	4,049,028	4,145,037	4,205,105	4,285,083	4,366,371	4,469,041	4,532,940	4,618,260
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,073,849**	**4,152,121**	**4,231,695**	**4,332,505**	**4,394,814**	**4,478,400**	**4,563,355**	**4,671,163**	**4,737,438**	**4,826,607**
Daily Baseload Therms	2,848	2,903	2,959	3,029	3,073	3,131	3,191	3,266	3,312	3,375
Peak Day Therms	50,150	51,113	52,093	53,089	54,101	55,130	56,176	57,239	58,319	59,417
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	28,441	28,441	28,441	28,641	28,441	28,441	28,441	28,641	28,441	28,441
Therms Per Industrial Customer	450,306	450,306	450,306	452,337	450,306	450,306	450,306	452,337	450,306	450,306
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	6	6	6	7	7	7	7	7	7	7
Industrial Customers	9	9	9	9	9	10	10	10	10	10
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**15**	**15**	**15**	**16**	**16**	**16**	**17**	**17**	**17**	**18**

Woodland	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.78%	2.18%	2.13%	2.53%	1.59%	1.99%	1.95%	2.36%	1.43%	1.84%
Residential Therms	421,360	430,528	439,685	450,932	457,963	467,080	476,200	487,577	494,417	503,524
Commercial Therms	787,033	804,158	821,262	842,135	855,401	872,430	889,465	910,571	923,492	940,501
Industrial Therms	412,209	421,178	430,137	440,774	448,017	456,936	465,858	476,594	483,680	492,588
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,620,602**	**1,655,864**	**1,691,084**	**1,733,841**	**1,761,380**	**1,796,445**	**1,831,523**	**1,874,743**	**1,901,589**	**1,936,613**
Daily Baseload Therms	1,125	1,149	1,174	1,204	1,223	1,247	1,271	1,301	1,320	1,344
Peak Day Therms	16,748	17,112	17,476	17,840	18,202	18,565	18,927	19,289	19,651	20,013
Therms Per Residential Customer	552	552	552	555	552	552	552	555	552	552
Therms Per Commercial Customer	3,082	3,082	3,082	3,096	3,082	3,082	3,082	3,096	3,082	3,082
Therms Per Industrial Customer	22,386	22,386	22,386	22,472	22,386	22,386	22,386	22,472	22,386	22,386
Residential Customers	763	780	796	813	829	846	862	879	895	912
Commercial Customers	255	261	266	272	278	283	289	294	300	305
Industrial Customers	18	19	19	20	20	20	21	21	22	22
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,037**	**1,059**	**1,082**	**1,104**	**1,127**	**1,149**	**1,172**	**1,194**	**1,217**	**1,239**

Bellingham II	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.27%	1.63%	1.60%	1.96%	1.16%	1.52%	1.50%	1.86%	1.08%	1.44%
Residential Therms	525,378	533,928	542,476	553,108	559,549	568,068	576,601	587,336	593,650	602,179
Commercial Therms	4,699	4,776	4,852	4,946	5,005	5,081	5,157	5,252	5,310	5,386
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**530,077**	**538,704**	**547,328**	**558,054**	**564,554**	**573,149**	**581,758**	**592,588**	**598,960**	**607,565**
Daily Baseload Therms	819	833	846	862	873	886	899	916	926	939
Peak Day Therms	4,253	4,322	4,391	4,460	4,529	4,598	4,667	4,736	4,805	4,874
Therms Per Residential Customer	14,414	14,414	14,414	14,469	14,414	14,414	14,414	14,469	14,414	14,414
Therms Per Commercial Customer	3,868	3,868	3,868	3,881	3,868	3,868	3,868	3,881	3,868	3,868
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	36	37	38	38	39	39	40	41	41	42
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**38**	**38**	**39**	**40**	**40**	**41**	**41**	**42**	**43**	**43**

LDS Church	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.30%	1.58%	1.56%	2.85%	0.21%	1.49%	1.47%	2.76%	0.14%	1.41%
Residential Therms	3,260	3,311	3,363	3,459	3,466	3,517	3,569	3,668	3,673	3,725
Commercial Therms	8,983	9,125	9,267	9,530	9,551	9,693	9,836	10,106	10,121	10,264
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**12,242**	**12,436**	**12,629**	**12,989**	**13,017**	**13,210**	**13,405**	**13,775**	**13,793**	**13,988**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	151	154	156	159	161	163	166	168	171	173
Therms Per Residential Customer	1,351	1,351	1,351	1,369	1,351	1,351	1,351	1,369	1,351	1,351
Therms Per Commercial Customer	7,448	7,448	7,448	7,544	7,448	7,448	7,448	7,544	7,448	7,448
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	3	3	3	3	3	3	3
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Kalama #1	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.49%	0.49%	0.49%	0.49%	0.49%	0.48%	0.48%	0.48%	0.48%	0.48%
Residential Therms	917	921	926	930	935	939	944	948	953	958
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**917**	**921**	**926**	**930**	**935**	**939**	**944**	**948**	**953**	**958**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	18	18	18	18	18	18	18	18	18	19
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.30%	0.18%	0.18%	0.66%	-0.30%	0.17%	0.18%	0.66%	-0.30%	0.18%
Residential Therms	1,396	1,399	1,401	1,411	1,406	1,409	1,411	1,420	1,416	1,419
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,396**	**1,399**	**1,401**	**1,411**	**1,406**	**1,409**	**1,411**	**1,420**	**1,416**	**1,419**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	20	20	20
Therms Per Residential Customer	686	686	686	689	686	686	686	689	686	686
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	641	642	644	645	646	647	648	649	650	652
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**641**	**642**	**644**	**645**	**646**	**647**	**648**	**649**	**650**	**652**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	12,571	12,594	12,616	12,639	12,661	12,683	12,706	12,728	12,751	12,773
Commercial Therms	4,166	4,173	4,181	4,188	4,196	4,203	4,211	4,218	4,225	4,233
Industrial Therms	1,709	1,712	1,715	1,718	1,721	1,724	1,727	1,730	1,734	1,737
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,446**	**18,479**	**18,512**	**18,546**	**18,578**	**18,611**	**18,644**	**18,677**	**18,710**	**18,743**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	166	166	167	167	167	168	168	168	169	169
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.23%	0.29%	0.28%	0.80%	-0.24%	0.28%	0.28%	0.79%	-0.24%	0.27%
Residential Therms	4,630	4,643	4,656	4,694	4,682	4,695	4,708	4,746	4,734	4,747
Commercial Therms	362,066	363,102	364,134	367,058	366,182	367,194	368,214	371,141	370,242	371,259
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**366,695**	**367,745**	**368,791**	**371,752**	**370,865**	**371,889**	**372,922**	**375,886**	**374,976**	**376,007**
Daily Baseload Therms	202	202	203	205	204	205	205	207	206	207
Peak Day Therms	4,966	4,980	4,995	5,009	5,023	5,037	5,051	5,064	5,078	5,092
Therms Per Residential Customer	182	182	182	182	182	182	182	182	182	182
Therms Per Commercial Customer	3,727	3,727	3,727	3,747	3,727	3,727	3,727	3,747	3,727	3,727
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	26	26	26	26	26	26	26	26	26
Commercial Customers	97	97	98	98	98	99	99	99	99	100
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**123**	**123**	**123**	**124**	**124**	**124**	**125**	**125**	**125**	**126**

Sandvik Metals	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.34%	0.82%	0.81%	1.28%	0.31%	0.78%	0.77%	1.25%	0.28%	0.75%
Residential Therms	2,844,411	2,867,627	2,890,774	2,928,089	2,936,807	2,959,658	2,982,545	3,019,994	3,028,092	3,050,839
Commercial Therms	1,979,317	1,995,472	2,011,579	2,037,373	2,043,612	2,059,514	2,075,439	2,101,321	2,107,134	2,122,963
Industrial Therms	118,471	119,438	120,402	121,660	122,319	123,271	124,224	125,479	126,121	127,069
Ind., Inst., & Cmcl. Interrup. Therms	220,854	222,657	224,454	227,312	228,028	229,802	231,579	234,446	235,116	236,882
Total Core Therms	**5,163,052**	**5,205,193**	**5,247,208**	**5,314,434**	**5,330,766**	**5,372,245**	**5,413,788**	**5,481,240**	**5,496,463**	**5,537,753**
Daily Baseload Therms	3,796	3,826	3,857	3,907	3,919	3,949	3,980	4,029	4,041	4,071
Peak Day Therms	76,828	77,455	78,080	78,704	79,323	79,941	80,559	81,174	81,789	82,403
Therms Per Residential Customer	347	347	347	348	347	347	347	348	347	347
Therms Per Commercial Customer	2,265	2,265	2,265	2,276	2,265	2,265	2,265	2,276	2,265	2,265
Therms Per Industrial Customer	12,334	12,334	12,334	12,364	12,334	12,334	12,334	12,364	12,334	12,334
Residential Customers	8,208	8,275	8,342	8,409	8,475	8,541	8,607	8,672	8,738	8,804
Commercial Customers	874	881	888	895	902	909	916	923	930	937
Industrial Customers	10	10	10	10	10	10	10	10	10	10
Interruptible Customers	4	4	4	4	5	5	5	5	5	5
Total Core Customers	**9,096**	**9,170**	**9,244**	**9,318**	**9,391**	**9,464**	**9,538**	**9,610**	**9,683**	**9,756**

East Stanwood Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.88%	1.32%	1.31%	1.75%	0.81%	1.25%	1.23%	1.68%	0.74%	1.19%
Residential Therms	5,709,879	5,785,489	5,861,013	5,964,215	6,011,621	6,086,665	6,161,777	6,265,908	6,311,700	6,386,636
Commercial Therms	3,665,499	3,714,037	3,762,521	3,828,007	3,859,204	3,907,379	3,955,598	4,021,643	4,051,842	4,099,948

Industrial Therms	107,995	109,425	110,853	112,681	113,702	115,121	116,542	118,381	119,377	120,795
Ind., Inst., & Cmcl. Interrup. Therms	549,299	556,572	563,838	573,254	578,327	585,546	592,772	602,252	607,195	614,404
Total Core Therms	**10,032,671**	**10,165,523**	**10,298,225**	**10,478,158**	**10,562,854**	**10,694,712**	**10,826,688**	**11,008,183**	**11,090,114**	**11,221,782**
Daily Baseload Therms	8,227	8,336	8,444	8,592	8,661	8,770	8,878	9,027	9,094	9,202
Peak Day Therms	117,006	118,555	120,103	121,649	123,189	124,727	126,266	127,802	129,339	130,874
Therms Per Residential Customer	623	623	623	626	623	623	623	626	623	623
Therms Per Commercial Customer	3,457	3,457	3,457	3,473	3,457	3,457	3,457	3,473	3,457	3,457
Therms Per Industrial Customer	37,645	37,645	37,645	37,779	37,645	37,645	37,645	37,779	37,645	37,645
Residential Customers	9,159	9,280	9,401	9,522	9,643	9,763	9,884	10,004	10,124	10,245
Commercial Customers	1,060	1,074	1,088	1,102	1,116	1,130	1,144	1,158	1,172	1,186
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	6	6	6	6	6	6	6	6	6	7
Total Core Customers	**10,228**	**10,363**	**10,499**	**10,634**	**10,768**	**10,903**	**11,037**	**11,172**	**11,306**	**11,440**

Kennewick Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.63%	1.11%	1.09%	1.57%	0.57%	1.05%	1.03%	1.51%	0.52%	1.00%
Residential Therms	8,896,579	8,995,189	9,093,556	9,238,402	9,289,110	9,386,257	9,483,403	9,629,008	9,676,882	9,773,418
Commercial Therms	9,796,374	9,904,958	10,013,274	10,168,419	10,228,606	10,335,578	10,442,550	10,598,347	10,655,597	10,761,897
Industrial Therms	172,877	174,793	176,705	179,212	180,505	182,393	184,280	186,790	188,040	189,916
Ind., Inst., & Cmcl. Interrup. Therms	946,135	956,622	967,084	981,866	987,880	998,212	1,008,543	1,023,380	1,029,119	1,039,386
Total Core Therms	**19,811,965**	**20,031,563**	**20,250,618**	**20,567,900**	**20,686,101**	**20,902,439**	**21,118,776**	**21,437,525**	**21,549,639**	**21,764,617**
Daily Baseload Therms	15,714	15,888	16,062	16,314	16,407	16,579	16,751	17,003	17,092	17,263
Peak Day Therms	296,888	300,179	303,462	306,734	309,988	313,230	316,471	319,702	322,928	326,150
Therms Per Residential Customer	570	570	570	572	570	570	570	572	570	570
Therms Per Commercial Customer	3,876	3,876	3,876	3,894	3,876	3,876	3,876	3,894	3,876	3,876
Therms Per Industrial Customer	18,781	18,781	18,781	18,844	18,781	18,781	18,781	18,844	18,781	18,781
Residential Customers	15,620	15,793	15,965	16,138	16,309	16,479	16,650	16,820	16,990	17,159
Commercial Customers	2,527	2,555	2,583	2,611	2,639	2,666	2,694	2,721	2,749	2,776
Industrial Customers	9	9	9	10	10	10	10	10	10	10
Interruptible Customers	13	14	14	14	14	14	14	14	15	15
Total Core Customers	**18,169**	**18,371**	**18,572**	**18,772**	**18,971**	**19,169**	**19,368**	**19,566**	**19,763**	**19,960**

Longview South Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.06%	0.51%	0.50%	1.07%	-0.08%	0.49%	0.49%	1.05%	-0.09%	0.48%
Residential Therms	726,581	730,258	733,926	741,862	741,211	744,822	748,441	756,404	755,634	759,224
Commercial Therms	2,574,646	2,587,674	2,600,674	2,628,424	2,626,489	2,639,284	2,652,105	2,679,945	2,677,594	2,690,316
Industrial Therms	142,536	143,258	143,977	145,536	145,406	146,115	146,825	148,388	148,236	148,940
Ind., Inst., & Cmcl. Interrup. Therms	474,902	477,305	479,703	484,779	484,464	486,824	489,189	494,281	493,891	496,237
Total Core Therms	**3,918,666**	**3,938,494**	**3,958,280**	**4,000,601**	**3,997,571**	**4,017,046**	**4,036,560**	**4,079,019**	**4,075,354**	**4,094,717**
Daily Baseload Therms	3,321	3,338	3,355	3,391	3,388	3,404	3,421	3,457	3,454	3,470
Peak Day Therms	45,104	45,333	45,560	45,787	46,013	46,237	46,461	46,685	46,908	47,131
Therms Per Residential Customer	377	377	377	379	377	377	377	379	377	377
Therms Per Commercial Customer	2,834	2,834	2,834	2,850	2,834	2,834	2,834	2,850	2,834	2,834
Therms Per Industrial Customer	10,048	10,048	10,048	10,107	10,048	10,048	10,048	10,107	10,048	10,048
Residential Customers	1,929	1,939	1,949	1,958	1,968	1,978	1,987	1,997	2,006	2,016
Commercial Customers	909	913	918	922	927	931	936	940	945	949
Industrial Customers	14	14	14	14	14	15	15	15	15	15
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**2,858**	**2,873**	**2,887**	**2,902**	**2,916**	**2,930**	**2,944**	**2,959**	**2,973**	**2,987**

Sedro-Woolley Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.79%	1.26%	1.24%	1.71%	0.73%	1.19%	1.18%	1.64%	0.67%	1.13%
Residential Therms	17,442,235	17,662,229	17,881,748	18,189,370	18,319,481	18,537,457	18,755,671	19,065,887	19,191,029	19,408,530
Commercial Therms	8,627,106	8,735,918	8,844,494	8,995,625	9,061,001	9,168,814	9,276,745	9,429,110	9,492,078	9,599,656
Industrial Therms	1,161,886	1,176,540	1,191,163	1,210,697	1,220,322	1,234,842	1,249,378	1,269,038	1,278,379	1,292,867
Ind., Inst., & Cmcl. Interrup. Therms	1,249,170	1,264,926	1,280,647	1,301,712	1,311,997	1,327,608	1,343,235	1,364,439	1,374,415	1,389,992
Total Core Therms	**28,480,397**	**28,839,612**	**29,198,052**	**29,697,404**	**29,912,801**	**30,268,721**	**30,625,029**	**31,128,475**	**31,335,900**	**31,691,044**
Daily Baseload Therms	17,232	17,449	17,666	17,968	18,098	18,314	18,529	18,834	18,959	19,174
Peak Day Therms	367,458	372,092	376,717	381,337	385,939	390,531	395,128	399,713	404,300	408,882
Therms Per Residential Customer	619	619	619	622	619	619	619	622	619	619
Therms Per Commercial Customer	2,351	2,351	2,351	2,362	2,351	2,351	2,351	2,362	2,351	2,351
Therms Per Industrial Customer	12,461	12,461	12,461	12,511	12,461	12,461	12,461	12,511	12,461	12,461
Residential Customers	28,171	28,527	28,881	29,235	29,588	29,940	30,293	30,644	30,996	31,347
Commercial Customers	3,669	3,716	3,762	3,808	3,854	3,900	3,946	3,991	4,037	4,083
Industrial Customers	93	94	96	97	98	99	100	101	103	104
Interruptible Customers	11	11	11	11	11	11	11	12	12	12
Total Core Customers	**31,945**	**32,348**	**32,750**	**33,151**	**33,551**	**33,950**	**34,350**	**34,749**	**35,147**	**35,546**

Sumas SPE Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.18%	1.63%	1.60%	2.05%	1.07%	1.52%	1.50%	1.95%	0.98%	1.44%
Residential Therms	33,027,956	33,565,449	34,102,820	34,805,639	35,176,107	35,711,658	36,248,059	36,959,545	37,319,890	37,856,048
Commercial Therms	15,251,245	15,499,442	15,747,583	16,068,916	16,243,193	16,490,493	16,738,185	17,063,322	17,233,122	17,480,703
Industrial Therms	831,401	844,931	858,458	875,321	885,475	898,957	912,459	929,489	939,440	952,937
Ind., Inst., & Cmcl. Interrup. Therms	1,224,012	1,243,932	1,263,847	1,289,707	1,303,623	1,323,470	1,343,349	1,369,519	1,383,071	1,402,941
Total Core Therms	**50,334,614**	**51,153,754**	**51,972,708**	**53,039,583**	**53,608,398**	**54,424,578**	**55,242,053**	**56,321,876**	**56,875,523**	**57,692,628**
Daily Baseload Therms	34,697	35,261	35,826	36,561	36,953	37,516	38,079	38,824	39,205	39,769
Peak Day Therms	634,139	644,459	654,777	665,092	675,384	685,667	695,966	706,251	716,545	726,839
Therms Per Residential Customer	651	651	651	654	651	651	651	654	651	651
Therms Per Commercial Customer	2,565	2,565	2,565	2,576	2,565	2,565	2,565	2,576	2,565	2,565
Therms Per Industrial Customer	14,690	14,690	14,690	14,746	14,690	14,690	14,690	14,746	14,690	14,690
Residential Customers	50,737	51,563	52,388	53,214	54,037	54,860	55,684	56,507	57,330	58,154
Commercial Customers	5,947	6,043	6,140	6,237	6,333	6,430	6,526	6,623	6,719	6,816
Industrial Customers	57	58	58	59	60	61	62	63	64	65
Interruptible Customers	15	16	16	16	16	17	17	17	17	18

Total Core Customers	**56,756**	**57,679**	**58,603**	**59,526**	**60,447**	**61,367**	**62,289**	**63,210**	**64,131**	**65,052**

Yakima Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.29%	0.18%	0.18%	0.65%	-0.29%	0.17%	0.18%	0.65%	-0.29%	0.18%
Residential Therms	11,817,888	11,839,347	11,860,713	11,940,686	11,903,024	11,923,830	11,945,009	12,024,977	11,987,088	12,008,360
Commercial Therms	10,736,039	10,755,534	10,774,944	10,844,647	10,813,382	10,832,283	10,851,524	10,921,201	10,889,750	10,909,075
Industrial Therms	2,599,272	2,603,992	2,608,691	2,623,769	2,617,998	2,622,574	2,627,232	2,642,291	2,636,487	2,641,166
Ind., Inst., & Cmcl. Interrup. Therms	772,687	774,090	775,487	780,494	778,254	779,614	780,999	786,004	783,750	785,141
Total Core Therms	**25,925,887**	**25,972,963**	**26,019,835**	**26,189,597**	**26,112,658**	**26,158,302**	**26,204,764**	**26,374,472**	**26,297,075**	**26,343,742**
Daily Baseload Therms	15,609	15,637	15,665	15,768	15,721	15,749	15,777	15,879	15,832	15,860
Peak Day Therms	338,597	339,212	339,824	340,436	341,036	341,633	342,239	342,839	343,445	344,054
Therms Per Residential Customer	638	638	638	641	638	638	638	641	638	638
Therms Per Commercial Customer	3,231	3,231	3,231	3,246	3,231	3,231	3,231	3,246	3,231	3,231
Therms Per Industrial Customer	35,018	35,018	35,018	35,157	35,018	35,018	35,018	35,157	35,018	35,018
Residential Customers	18,528	18,561	18,595	18,628	18,661	18,694	18,727	18,760	18,793	18,826
Commercial Customers	3,323	3,329	3,335	3,341	3,347	3,353	3,359	3,364	3,370	3,376
Industrial Customers	74	74	74	75	75	75	75	75	75	75
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,936**	**21,976**	**22,015**	**22,055**	**22,094**	**22,133**	**22,172**	**22,211**	**22,250**	**22,289**

Zone 10	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.12%	0.32%	0.32%	0.76%	-0.13%	0.31%	0.31%	0.75%	-0.13%	0.31%
Residential Therms	3,002,102	3,011,690	3,021,245	3,045,719	3,040,212	3,049,592	3,059,048	3,083,559	3,077,858	3,087,299
Commercial Therms	4,626,783	4,642,048	4,657,261	4,693,740	4,687,462	4,702,401	4,717,457	4,753,973	4,747,408	4,762,438
Industrial Therms	1,776,536	1,781,974	1,787,393	1,798,717	1,798,148	1,803,465	1,808,829	1,820,143	1,819,498	1,824,856
Ind., Inst., & Cmcl. Interrup. Therms	244,470	245,105	245,738	247,204	246,992	247,611	248,237	249,701	249,480	250,105
Total Core Therms	**9,649,892**	**9,680,817**	**9,711,637**	**9,785,380**	**9,772,815**	**9,803,070**	**9,833,571**	**9,907,376**	**9,894,244**	**9,924,698**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	114,771	115,148	115,525	115,900	116,271	116,641	117,013	117,383	117,754	118,126
Therms Per Residential Customer	565	565	565	568	565	565	565	568	565	565
Therms Per Commercial Customer	3,356	3,355	3,355	3,370	3,354	3,354	3,354	3,369	3,353	3,353
Therms Per Industrial Customer	33,636	33,628	33,620	33,723	33,604	33,596	33,589	33,692	33,574	33,566
Residential Customers	5,312	5,329	5,346	5,363	5,380	5,397	5,414	5,430	5,447	5,464
Commercial Customers	1,379	1,383	1,388	1,393	1,397	1,402	1,407	1,411	1,416	1,421
Industrial Customers	53	53	53	53	54	54	54	54	54	54
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,747**	**6,769**	**6,791**	**6,813**	**6,834**	**6,856**	**6,877**	**6,899**	**6,920**	**6,942**

Zone 11	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.09%	0.36%	0.36%	0.80%	-0.10%	0.35%	0.35%	0.80%	-0.10%	0.35%
Residential Therms	12,833,912	12,864,872	12,895,735	12,989,679	12,956,987	12,987,224	13,017,863	13,111,915	13,078,839	13,109,561
Commercial Therms	15,762,773	15,831,409	15,899,958	16,038,203	16,036,470	16,104,242	16,172,514	16,311,286	16,308,750	16,377,107
Industrial Therms	3,820,131	3,835,427	3,850,714	3,879,481	3,881,196	3,896,348	3,911,627	3,940,500	3,942,157	3,957,506
Ind., Inst., & Cmcl. Interrup. Therms	1,356,698	1,363,143	1,369,581	1,382,281	1,382,414	1,388,792	1,395,213	1,407,985	1,408,035	1,414,469
Total Core Therms	**33,773,515**	**33,894,851**	**34,015,988**	**34,289,644**	**34,257,067**	**34,376,606**	**34,497,217**	**34,771,685**	**34,737,782**	**34,858,644**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	424,651	426,087	427,521	428,955	430,373	431,787	433,214	434,634	436,060	437,490
Therms Per Residential Customer	586	586	586	588	585	585	585	587	584	584
Therms Per Commercial Customer	3,358	3,360	3,362	3,379	3,366	3,368	3,370	3,386	3,373	3,375
Therms Per Industrial Customer	34,098	34,090	34,082	34,193	34,067	34,060	34,053	34,164	34,039	34,032
Residential Customers	21,901	21,961	22,021	22,082	22,141	22,200	22,260	22,319	22,378	22,438
Commercial Customers	4,694	4,711	4,729	4,747	4,764	4,782	4,799	4,817	4,835	4,852
Industrial Customers	112	113	113	113	114	114	115	115	116	116
Interruptible Customers	21	22	22	22	22	22	22	22	22	22
Total Core Customers	**26,728**	**26,807**	**26,885**	**26,964**	**27,041**	**27,118**	**27,196**	**27,273**	**27,351**	**27,429**

Zone 20	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.71%	1.16%	1.15%	1.60%	0.66%	1.11%	1.10%	1.56%	0.62%	1.07%
Residential Therms	15,096,823	15,258,077	15,418,882	15,655,074	15,738,736	15,897,675	16,056,644	16,294,067	16,373,289	16,531,360
Commercial Therms	14,750,111	14,909,296	15,068,122	15,295,315	15,384,248	15,541,469	15,698,765	15,927,321	16,012,356	16,169,009
Industrial Therms	4,535,260	4,616,149	4,698,269	4,801,455	4,866,267	4,952,187	5,039,417	5,149,288	5,217,860	5,309,125
Ind., Inst., & Cmcl. Interrup. Therms	1,590,646	1,607,160	1,623,631	1,646,548	1,656,408	1,672,709	1,689,011	1,712,035	1,721,512	1,737,748
Total Core Therms	**35,972,840**	**36,390,683**	**36,808,905**	**37,398,393**	**37,645,660**	**38,064,040**	**38,483,837**	**39,082,711**	**39,325,017**	**39,747,241**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	531,757	537,901	544,047	550,195	556,331	562,467	568,620	574,773	580,937	587,113
Therms Per Residential Customer	556	556	556	559	557	557	557	560	558	558
Therms Per Commercial Customer	3,731	3,733	3,735	3,753	3,738	3,740	3,742	3,760	3,745	3,747
Therms Per Industrial Customer	108,677	109,395	110,121	111,314	111,597	112,346	113,101	114,336	114,631	115,404
Residential Customers	27,169	27,446	27,721	27,997	28,270	28,543	28,816	29,088	29,359	29,630
Commercial Customers	3,954	3,994	4,035	4,075	4,115	4,155	4,196	4,235	4,275	4,315
Industrial Customers	42	42	43	43	44	44	45	45	46	46
Interruptible Customers	21	21	22	22	22	22	22	23	23	23
Total Core Customers	**31,185**	**31,503**	**31,820**	**32,137**	**32,451**	**32,765**	**33,078**	**33,391**	**33,703**	**34,015**

Zone 24	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.24%	0.23%	0.23%	0.70%	-0.25%	0.22%	0.22%	0.69%	-0.26%	0.21%
Residential Therms	3,755,135	3,763,215	3,771,287	3,798,097	3,786,911	3,794,516	3,802,165	3,828,828	3,817,236	3,824,814
Commercial Therms	3,545,989	3,554,235	3,562,470	3,587,992	3,578,434	3,586,226	3,594,071	3,619,446	3,609,492	3,617,252
Industrial Therms	238,162	238,755	239,348	240,386	240,498	241,061	241,627	242,648	242,740	243,300
Ind., Inst., & Cmcl. Interrup. Therms	1,077,216	1,080,318	1,083,416	1,090,921	1,089,443	1,092,404	1,095,392	1,102,837	1,101,232	1,104,178
Total Core Therms	**8,616,501**	**8,636,523**	**8,656,521**	**8,717,396**	**8,695,287**	**8,714,207**	**8,733,254**	**8,793,759**	**8,770,700**	**8,789,544**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676

Therms Per Residential Customer	531	531	531	533	531	531	530	533	530	530
Therms Per Commercial Customer	2,465	2,465	2,465	2,477	2,465	2,465	2,465	2,477	2,464	2,464
Therms Per Industrial Customer	10,055	10,053	10,051	10,068	10,047	10,045	10,043	10,060	10,039	10,037
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Zone 26	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.52%	0.97%	0.96%	1.41%	0.48%	0.92%	0.92%	1.36%	0.44%	0.89%
Residential Therms	1,383,294	1,397,353	1,411,386	1,431,940	1,439,338	1,453,245	1,467,162	1,487,844	1,494,902	1,508,755
Commercial Therms	3,681,925	3,713,866	3,745,754	3,796,633	3,809,252	3,840,834	3,872,449	3,923,631	3,935,459	3,966,933
Industrial Therms	791,161	802,076	812,971	826,377	834,688	845,502	856,318	869,792	877,892	888,665
Ind., Inst., & Cmcl. Interrup. Therms	738,981	745,910	752,877	762,566	766,909	773,968	781,075	790,951	795,386	802,600
Total Core Therms	**6,595,361**	**6,659,204**	**6,722,989**	**6,817,516**	**6,850,186**	**6,913,550**	**6,977,004**	**7,072,218**	**7,103,639**	**7,166,952**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	73,110	73,796	74,482	75,167	75,850	76,531	77,214	77,894	78,575	79,256
Therms Per Residential Customer	470	471	471	473	472	472	472	475	473	473
Therms Per Commercial Customer	2,899	2,899	2,900	2,915	2,901	2,902	2,902	2,917	2,903	2,904
Therms Per Industrial Customer	21,488	21,487	21,487	21,552	21,485	21,483	21,482	21,547	21,479	21,477
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,270	1,281	1,292	1,302	1,313	1,324	1,334	1,345	1,356	1,366
Industrial Customers	37	37	38	38	39	39	40	40	41	41
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**4,256**	**4,295**	**4,334**	**4,373**	**4,412**	**4,450**	**4,489**	**4,527**	**4,566**	**4,604**

Zone 30-S	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.47%	0.91%	0.90%	1.35%	0.42%	0.87%	0.86%	1.30%	0.39%	0.83%
Residential Therms	23,282,761	23,500,980	23,718,549	24,046,432	24,151,069	24,365,808	24,580,684	24,909,647	25,008,484	25,221,907
Commercial Therms	12,798,232	12,912,790	13,026,952	13,198,089	13,253,779	13,366,322	13,478,934	13,650,368	13,703,009	13,814,765
Industrial Therms	450,624	454,486	458,332	465,813	465,971	469,759	473,549	481,093	481,086	484,844
Ind., Inst., & Cmcl. Interrup. Therms	3,592,395	3,622,350	3,652,177	3,695,944	3,711,388	3,740,735	3,770,099	3,813,819	3,828,473	3,857,573
Total Core Therms	**40,124,011**	**40,490,606**	**40,856,011**	**41,406,278**	**41,582,207**	**41,942,625**	**42,303,266**	**42,854,927**	**43,021,052**	**43,379,089**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	421,179	425,051	428,911	432,758	436,583	440,390	444,201	447,995	451,785	455,568
Therms Per Residential Customer	610	610	610	613	610	610	610	613	610	610
Therms Per Commercial Customer	3,157	3,158	3,158	3,172	3,158	3,159	3,159	3,173	3,159	3,160
Therms Per Industrial Customer	16,833	16,852	16,871	17,024	16,909	16,928	16,946	17,099	16,983	17,000
Residential Customers	38,165	38,524	38,881	39,238	39,592	39,945	40,298	40,650	41,002	41,353
Commercial Customers	4,053	4,089	4,125	4,161	4,196	4,232	4,267	4,302	4,337	4,372
Industrial Customers	27	27	27	27	28	28	28	28	28	29
Interruptible Customers	15	15	15	16	16	16	16	16	16	16
Total Core Customers	**42,260**	**42,655**	**43,049**	**43,442**	**43,832**	**44,221**	**44,609**	**44,997**	**45,384**	**45,770**

Zone 30-W	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.02%	1.47%	1.45%	1.90%	0.93%	1.38%	1.36%	1.82%	0.85%	1.31%
Residential Therms	60,680,013	61,576,491	62,472,231	63,670,349	64,260,207	65,151,761	66,044,542	67,255,662	67,827,560	68,719,102
Commercial Therms	29,711,433	30,147,065	30,582,323	31,160,301	31,451,090	31,884,268	32,318,033	32,901,978	33,184,294	33,617,427
Industrial Therms	2,341,416	2,374,328	2,407,200	2,449,746	2,472,796	2,505,491	2,538,228	2,581,114	2,603,590	2,636,264
Ind., Inst., & Cmcl. Interrup. Therms	3,095,821	3,139,954	3,184,041	3,241,966	3,272,021	3,315,881	3,359,797	3,418,257	3,447,488	3,491,328
Total Core Therms	**95,828,684**	**97,237,838**	**98,645,794**	**100,522,362**	**101,456,114**	**102,857,401**	**104,260,601**	**106,157,012**	**107,062,932**	**108,464,120**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,195,885	1,213,471	1,231,042	1,248,602	1,266,114	1,283,601	1,301,113	1,318,593	1,336,085	1,353,571
Therms Per Residential Customer	647	647	647	651	647	647	648	651	648	648
Therms Per Commercial Customer	2,615	2,615	2,615	2,627	2,615	2,615	2,615	2,627	2,615	2,615
Therms Per Industrial Customer	12,883	12,884	12,885	12,937	12,887	12,889	12,890	12,942	12,892	12,893
Residential Customers	93,736	95,116	96,496	97,874	99,249	100,622	101,997	103,369	104,743	106,116
Commercial Customers	11,363	11,530	11,697	11,863	12,029	12,195	12,361	12,526	12,692	12,858
Industrial Customers	182	184	187	189	192	194	197	199	202	204
Interruptible Customers	33	34	34	35	35	35	36	36	37	37
Total Core Customers	**105,314**	**106,864**	**108,413**	**109,961**	**111,505**	**113,047**	**114,590**	**116,131**	**117,674**	**119,215**

Zone GTN	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.28%	1.70%	1.66%	2.08%	1.16%	1.58%	1.55%	1.97%	1.06%	1.48%
Residential Therms	33,510,181	34,098,744	34,686,216	35,431,225	35,857,515	36,441,013	37,024,477	37,775,411	38,188,488	38,769,555
Commercial Therms	20,436,457	20,777,894	21,118,752	21,552,064	21,798,544	22,137,266	22,476,033	22,912,752	23,152,007	23,489,563
Industrial Therms	1,837,746	1,858,325	1,878,902	1,907,603	1,920,042	1,940,583	1,961,150	1,990,126	2,002,272	2,022,868
Ind., Inst., & Cmcl. Interrup. Therms	984,818	997,066	1,009,309	1,024,900	1,033,766	1,045,971	1,058,185	1,073,870	1,082,594	1,094,809
Total Core Therms	**56,769,202**	**57,732,029**	**58,693,179**	**59,915,793**	**60,609,868**	**61,564,834**	**62,519,846**	**63,752,159**	**64,425,361**	**65,376,796**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	674	674	675	678	675	675	675	679	676	676
Therms Per Commercial Customer	2,604	2,604	2,604	2,616	2,605	2,605	2,605	2,617	2,605	2,606
Therms Per Industrial Customer	26,273	26,253	26,234	26,328	26,198	26,181	26,164	26,259	26,131	26,116
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Zone ME-OR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.12%	0.60%	0.59%	1.07%	0.10%	0.57%	0.57%	1.05%	0.09%	0.56%

Residential Therms	5,524,294	5,557,251	5,590,206	5,651,950	5,655,593	5,688,025	5,720,521	5,782,539	5,785,315	5,817,614
Commercial Therms	5,533,824	5,566,851	5,599,878	5,658,393	5,665,403	5,697,902	5,730,464	5,789,173	5,795,388	5,827,749
Industrial Therms	402,932	405,338	407,743	412,095	412,515	414,881	417,253	421,621	421,981	424,337
Ind., Inst., & Cmcl. Interrup. Therms	1,346,088	1,354,116	1,362,145	1,375,719	1,378,074	1,385,975	1,393,892	1,407,500	1,409,678	1,417,547
Total Core Therms	**12,807,138**	**12,883,556**	**12,959,971**	**13,098,157**	**13,111,585**	**13,186,783**	**13,262,130**	**13,400,832**	**13,412,362**	**13,487,247**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	180,425	181,501	182,578	183,650	184,714	185,773	186,834	187,894	188,951	190,006
Therms Per Residential Customer	558	558	558	561	558	558	558	561	558	558
Therms Per Commercial Customer	3,167	3,167	3,167	3,182	3,167	3,167	3,167	3,182	3,167	3,167
Therms Per Industrial Customer	18,997	18,997	18,997	19,087	18,996	18,996	18,996	19,086	18,995	18,995
Residential Customers	9,899	9,958	10,017	10,076	10,135	10,193	10,251	10,309	10,367	10,425
Commercial Customers	1,747	1,758	1,768	1,778	1,789	1,799	1,809	1,819	1,830	1,840
Industrial Customers	21	21	21	22	22	22	22	22	22	22
Interruptible Customers	7	8	8	8	8	8	8	8	8	8
Total Core Customers	**11,675**	**11,745**	**11,815**	**11,884**	**11,953**	**12,021**	**12,090**	**12,159**	**12,227**	**12,295**

Zone ME-WA	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.39%	0.08%	0.08%	0.56%	-0.39%	0.08%	0.08%	0.56%	-0.39%	0.08%
Residential Therms	6,443,067	6,445,532	6,448,093	6,483,039	6,452,978	6,455,297	6,457,822	6,492,787	6,462,861	6,465,474
Commercial Therms	4,408,079	4,410,753	4,413,489	4,437,143	4,418,788	4,421,348	4,424,045	4,447,709	4,429,425	4,432,174
Industrial Therms	207,764	208,454	209,145	210,579	210,513	211,190	211,871	213,305	213,229	213,908
Ind., Inst., & Cmcl. Interrup. Therms	2,747,338	2,752,883	2,758,450	2,775,636	2,769,444	2,774,861	2,780,350	2,797,562	2,791,297	2,796,787
Total Core Therms	**13,806,247**	**13,817,622**	**13,829,176**	**13,906,397**	**13,851,723**	**13,862,695**	**13,874,088**	**13,951,364**	**13,896,812**	**13,908,343**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	189,234	189,341	189,451	189,561	189,664	189,766	189,875	189,983	190,091	190,202
Therms Per Residential Customer	549	549	549	552	549	549	549	551	548	548
Therms Per Commercial Customer	3,075	3,075	3,075	3,089	3,074	3,074	3,073	3,088	3,073	3,073
Therms Per Industrial Customer	15,468	15,481	15,493	15,560	15,516	15,528	15,540	15,606	15,563	15,574
Residential Customers	11,734	11,740	11,747	11,753	11,759	11,765	11,772	11,778	11,784	11,791
Commercial Customers	1,433	1,434	1,435	1,436	1,437	1,438	1,439	1,440	1,441	1,442
Industrial Customers	13	13	13	14	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,186**	**13,193**	**13,201**	**13,208**	**13,215**	**13,223**	**13,230**	**13,237**	**13,245**	**13,252**

Bellingham Disctrict	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.18%	1.63%	1.60%	2.05%	1.07%	1.52%	1.50%	1.95%	0.98%	1.44%
Residential Therms	33,672,356	34,220,327	34,768,176	35,484,192	35,862,389	36,408,382	36,955,243	37,680,065	38,047,973	38,594,587
Commercial Therms	15,391,989	15,642,461	15,892,878	16,217,237	16,393,034	16,642,604	16,892,570	17,220,776	17,392,053	17,641,908
Industrial Therms	832,294	845,839	859,381	876,259	886,427	899,923	913,440	930,485	940,449	953,960
Ind., Inst., & Cmcl. Interrup. Therms	1,297,353	1,318,456	1,339,556	1,367,000	1,381,698	1,402,727	1,423,790	1,451,567	1,465,879	1,486,933
Total Core Therms	**51,193,992**	**52,027,084**	**52,859,990**	**53,944,688**	**54,523,548**	**55,353,636**	**56,185,043**	**57,282,893**	**57,846,354**	**58,677,388**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	642,743	653,203	663,660	674,115	684,546	694,968	705,406	715,831	726,264	736,698
Therms Per Residential Customer	661	661	661	664	661	661	661	664	661	661
Therms Per Commercial Customer	2,568	2,568	2,568	2,580	2,568	2,568	2,568	2,580	2,568	2,568
Therms Per Industrial Customer	14,397	14,397	14,397	14,452	14,397	14,397	14,397	14,452	14,397	14,397
Residential Customers	50,957	51,786	52,615	53,444	54,271	55,098	55,925	56,752	57,579	58,406
Commercial Customers	5,993	6,091	6,188	6,285	6,383	6,480	6,577	6,674	6,772	6,869
Industrial Customers	58	59	60	61	62	63	63	64	65	66
Interruptible Customers	17	17	17	17	18	18	18	18	19	19
Total Core Customers	**57,025**	**57,953**	**58,880**	**59,808**	**60,733**	**61,658**	**62,584**	**63,509**	**64,435**	**65,360**

Mount Vernon District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.83%	1.29%	1.27%	1.73%	0.76%	1.22%	1.20%	1.66%	0.70%	1.16%
Residential Therms	27,007,658	27,356,163	27,704,055	28,186,158	28,397,818	28,743,379	29,089,299	29,575,596	29,779,587	30,124,515
Commercial Therms	14,319,444	14,504,603	14,689,445	14,943,064	15,058,056	15,241,664	15,425,463	15,681,202	15,792,241	15,975,519
Industrial Therms	1,509,122	1,528,489	1,547,820	1,573,487	1,586,369	1,605,568	1,624,789	1,650,629	1,663,141	1,682,303
Ind., Inst., & Cmcl. Interrup. Therms	1,798,469	1,821,498	1,844,485	1,874,966	1,890,323	1,913,153	1,936,007	1,966,691	1,981,609	2,004,395
Total Core Therms	**44,634,692**	**45,210,754**	**45,785,805**	**46,577,675**	**46,932,566**	**47,503,765**	**48,075,558**	**48,874,118**	**49,216,578**	**49,786,732**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	553,142	560,268	567,382	574,487	581,567	588,633	595,706	602,762	609,821	616,874
Therms Per Residential Customer	631	631	631	634	631	631	631	634	631	631
Therms Per Commercial Customer	2,666	2,666	2,667	2,679	2,667	2,667	2,667	2,680	2,668	2,668
Therms Per Industrial Customer	12,176	12,176	12,175	12,224	12,174	12,174	12,173	12,222	12,172	12,172
Residential Customers	42,779	43,330	43,880	44,430	44,978	45,525	46,072	46,618	47,164	47,710
Commercial Customers	5,370	5,440	5,509	5,578	5,646	5,715	5,783	5,852	5,920	5,989
Industrial Customers	124	126	127	129	130	132	133	135	137	138
Interruptible Customers	16	17	17	17	17	18	18	18	18	18
Total Core Customers	**48,290**	**48,912**	**49,533**	**50,153**	**50,772**	**51,389**	**52,006**	**52,622**	**53,239**	**53,855**

Bremerton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.55%	0.99%	0.98%	1.43%	0.50%	0.94%	0.93%	1.38%	0.46%	0.90%
Residential Therms	20,941,645	21,149,450	21,356,756	21,663,558	21,769,140	21,974,035	22,179,068	22,487,218	22,587,540	22,791,390
Commercial Therms	10,526,325	10,630,779	10,734,981	10,886,325	10,942,266	11,045,257	11,148,317	11,300,228	11,353,636	11,456,101
Industrial Therms	339,277	342,643	346,002	352,359	352,683	356,002	359,324	365,756	365,942	369,244
Ind., Inst., & Cmcl. Interrup. Therms	2,552,677	2,578,008	2,603,277	2,638,682	2,653,545	2,678,521	2,703,513	2,739,006	2,753,304	2,778,152
Total Core Therms	**34,359,924**	**34,700,880**	**35,041,017**	**35,540,924**	**35,717,633**	**36,053,816**	**36,390,221**	**36,892,209**	**37,060,421**	**37,394,887**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	607	607	607	610	607	607	607	610	607	607
Therms Per Commercial Customer	3,215	3,215	3,215	3,229	3,215	3,215	3,215	3,229	3,215	3,215
Therms Per Industrial Customer	23,413	23,413	23,413	23,615	23,413	23,413	23,413	23,615	23,413	23,413
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563

Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Longview District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.47%	0.94%	0.93%	1.39%	0.43%	0.89%	0.88%	1.35%	0.39%	0.86%
Residential Therms	1,383,294	1,397,353	1,411,386	1,431,940	1,439,338	1,453,245	1,467,162	1,487,844	1,494,902	1,508,755
Commercial Therms	3,669,674	3,701,405	3,733,081	3,783,745	3,796,149	3,827,512	3,858,908	3,909,868	3,921,472	3,952,720
Industrial Therms	791,161	802,076	812,971	826,377	834,688	845,502	856,318	869,792	877,892	888,665
Ind., Inst., & Cmcl. Interrup. Therms	474,902	477,305	479,703	484,779	484,464	486,824	489,189	494,281	493,891	496,237
Total Core Therms	**6,319,030**	**6,378,138**	**6,437,142**	**6,526,841**	**6,554,638**	**6,613,085**	**6,671,577**	**6,761,785**	**6,788,157**	**6,846,377**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	70,114	70,749	71,383	72,016	72,646	73,274	73,902	74,529	75,155	75,780
Therms Per Residential Customer	470	471	471	473	472	472	472	475	473	473
Therms Per Commercial Customer	2,900	2,901	2,901	2,917	2,903	2,903	2,904	2,919	2,905	2,905
Therms Per Industrial Customer	22,221	22,223	22,225	22,295	22,228	22,230	22,231	22,301	22,234	22,235
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,265	1,276	1,287	1,297	1,308	1,318	1,329	1,339	1,350	1,360
Industrial Customers	36	36	37	37	38	38	39	39	39	40
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**4,249**	**4,288**	**4,327**	**4,365**	**4,404**	**4,442**	**4,481**	**4,519**	**4,557**	**4,596**

Aberdeen District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.01%	0.44%	0.44%	0.87%	-0.01%	0.41%	0.41%	0.84%	-0.04%	0.40%
Residential Therms	2,341,116	2,351,529	2,361,793	2,382,873	2,381,929	2,391,773	2,401,616	2,422,429	2,420,944	2,430,517
Commercial Therms	2,271,906	2,282,011	2,291,971	2,311,764	2,311,513	2,321,065	2,330,618	2,350,140	2,349,374	2,358,664
Industrial Therms	111,347	111,842	112,331	113,454	113,288	113,756	114,225	115,337	115,144	115,599
Ind., Inst., & Cmcl. Interrup. Therms	1,039,717	1,044,342	1,048,900	1,057,262	1,057,843	1,062,215	1,066,586	1,074,813	1,075,170	1,079,421
Total Core Therms	**5,764,087**	**5,789,725**	**5,814,994**	**5,865,354**	**5,864,573**	**5,888,809**	**5,913,045**	**5,962,719**	**5,960,631**	**5,984,203**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	640	640	640	642	640	640	640	642	640	640
Therms Per Commercial Customer	2,915	2,915	2,915	2,927	2,915	2,915	2,915	2,927	2,915	2,915
Therms Per Industrial Customer	9,067	9,067	9,067	9,119	9,067	9,067	9,067	9,119	9,067	9,067
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Kennewick District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.62%	1.09%	1.08%	1.55%	0.56%	1.03%	1.02%	1.50%	0.51%	0.99%
Residential Therms	14,417,491	14,573,693	14,729,454	14,960,608	15,039,205	15,193,068	15,346,965	15,579,274	15,653,389	15,806,307
Commercial Therms	13,705,907	13,855,376	14,004,440	14,220,516	14,300,859	14,448,108	14,595,384	14,812,395	14,888,656	15,035,007
Industrial Therms	391,141	395,307	399,460	404,811	407,720	411,823	415,927	421,275	424,099	428,177
Ind., Inst., & Cmcl. Interrup. Therms	1,629,475	1,648,840	1,668,208	1,694,068	1,706,905	1,726,222	1,745,585	1,771,697	1,784,306	1,803,700
Total Core Therms	**30,144,014**	**30,473,215**	**30,801,563**	**31,280,003**	**31,454,689**	**31,779,221**	**32,103,862**	**32,584,641**	**32,750,449**	**33,073,191**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	462,260	467,326	472,379	477,417	482,428	487,421	492,415	497,391	502,361	507,326
Therms Per Residential Customer	555	555	555	558	556	556	556	559	557	557
Therms Per Commercial Customer	3,758	3,759	3,761	3,780	3,763	3,765	3,766	3,785	3,769	3,770
Therms Per Industrial Customer	17,497	17,502	17,507	17,564	17,516	17,520	17,524	17,580	17,531	17,534
Residential Customers	25,998	26,266	26,533	26,799	27,064	27,328	27,592	27,855	28,118	28,380
Commercial Customers	3,648	3,686	3,724	3,762	3,800	3,838	3,876	3,913	3,951	3,988
Industrial Customers	22	23	23	23	23	24	24	24	24	24
Interruptible Customers	20	20	21	21	21	21	21	22	22	22
Total Core Customers	**29,688**	**29,994**	**30,300**	**30,605**	**30,909**	**31,211**	**31,513**	**31,814**	**32,115**	**32,415**

Walla Walla District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%
Residential Therms	6,008,738	6,008,637	6,008,637	6,038,716	6,008,434	6,008,231	6,008,231	6,038,308	6,008,231	6,008,332
Commercial Therms	3,944,285	3,944,219	3,944,219	3,963,170	3,944,086	3,943,952	3,943,952	3,962,902	3,943,952	3,944,019
Industrial Therms	90,677	90,675	90,675	91,062	90,672	90,669	90,669	91,056	90,669	90,671
Ind., Inst., & Cmcl. Interrup. Therms	1,803,593	1,803,563	1,803,563	1,811,053	1,803,502	1,803,441	1,803,441	1,810,930	1,803,441	1,803,471
Total Core Therms	**11,847,293**	**11,847,093**	**11,847,093**	**11,904,001**	**11,846,693**	**11,846,293**	**11,846,293**	**11,903,197**	**11,846,293**	**11,846,493**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	565	565	565	568	565	565	565	568	565	565
Therms Per Commercial Customer	3,132	3,132	3,132	3,147	3,132	3,132	3,132	3,147	3,132	3,132
Therms Per Industrial Customer	11,860	11,860	11,860	11,911	11,860	11,860	11,860	11,911	11,860	11,860
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Wenatchee District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.98%	1.32%	1.31%	1.65%	0.96%	1.29%	1.29%	1.63%	0.93%	1.27%
Residential Therms	1,428,161	1,441,354	1,454,537	1,470,983	1,480,873	1,494,034	1,507,211	1,523,830	1,533,626	1,546,871
Commercial Therms	5,187,872	5,243,166	5,298,511	5,370,847	5,409,221	5,464,555	5,520,079	5,593,380	5,631,378	5,687,186
Industrial Therms	4,834,501	4,919,078	5,004,912	5,112,579	5,180,400	5,270,092	5,361,126	5,475,599	5,547,252	5,642,390
Ind., Inst., & Cmcl. Interrup. Therms	570,514	576,005	581,495	588,516	592,469	597,955	603,451	610,557	614,472	619,999
Total Core Therms	**12,021,048**	**12,179,603**	**12,339,455**	**12,542,925**	**12,662,963**	**12,826,636**	**12,991,867**	**13,203,366**	**13,326,729**	**13,496,446**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	138,918	140,780	142,657	144,551	146,460	148,385	150,328	152,290	154,270	156,269
Therms Per Residential Customer	508	507	507	508	507	507	507	508	507	507
Therms Per Commercial Customer	4,476	4,479	4,482	4,499	4,487	4,490	4,493	4,510	4,498	4,501
Therms Per Industrial Customer	108,698	109,315	109,938	111,014	111,203	111,845	112,492	113,602	113,800	114,462
Residential Customers	2,814	2,841	2,867	2,894	2,920	2,946	2,973	2,999	3,026	3,052
Commercial Customers	1,159	1,171	1,182	1,194	1,205	1,217	1,229	1,240	1,252	1,264
Industrial Customers	44	45	46	46	47	47	48	48	49	49
Interruptible Customers	7	7	7	8	8	8	8	8	8	8
Total Core Customers	**4,025**	**4,064**	**4,102**	**4,141**	**4,180**	**4,218**	**4,257**	**4,296**	**4,334**	**4,373**

Yakima District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.23%	0.23%	0.23%	0.69%	-0.23%	0.22%	0.23%	0.68%	-0.23%	0.23%
Residential Therms	15,087,186	15,119,592	15,151,871	15,258,881	15,215,857	15,247,389	15,279,379	15,386,436	15,342,971	15,375,042
Commercial Therms	16,258,140	16,296,673	16,335,063	16,448,783	16,411,204	16,448,770	16,486,814	16,600,569	16,562,467	16,600,574
Industrial Therms	4,906,285	4,919,166	4,932,004	4,962,263	4,957,492	4,970,085	4,982,820	5,013,057	5,008,164	5,020,920
Ind., Inst., & Cmcl. Interrup. Therms	1,255,904	1,259,168	1,262,422	1,271,237	1,268,885	1,272,080	1,275,311	1,284,137	1,281,745	1,284,984
Total Core Therms	**37,507,516**	**37,594,599**	**37,681,360**	**37,941,164**	**37,853,437**	**37,938,324**	**38,024,324**	**38,284,199**	**38,195,348**	**38,281,520**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	472,996	474,078	475,156	476,233	477,293	478,347	479,415	480,474	481,539	482,610
Therms Per Residential Customer	590	590	590	593	590	589	589	592	589	589
Therms Per Commercial Customer	3,112	3,111	3,111	3,125	3,110	3,110	3,109	3,123	3,108	3,108
Therms Per Industrial Customer	34,804	34,802	34,799	34,919	34,794	34,792	34,789	34,909	34,784	34,782
Residential Customers	25,570	25,630	25,689	25,749	25,807	25,865	25,924	25,982	26,041	26,100
Commercial Customers	5,224	5,238	5,251	5,264	5,277	5,290	5,303	5,316	5,329	5,342
Industrial Customers	141	141	142	142	142	143	143	144	144	144
Interruptible Customers	19	19	20	20	20	20	20	20	20	20
Total Core Customers	**30,955**	**31,028**	**31,101**	**31,174**	**31,246**	**31,317**	**31,390**	**31,461**	**31,534**	**31,606**

Central Oregon (Bend) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.28%	1.70%	1.66%	2.08%	1.16%	1.58%	1.55%	1.97%	1.06%	1.48%
Residential Therms	33,510,181	34,098,744	34,686,216	35,431,225	35,857,515	36,441,013	37,024,477	37,775,411	38,188,488	38,769,555
Commercial Therms	20,436,457	20,777,894	21,118,752	21,552,064	21,798,544	22,137,266	22,476,033	22,912,752	23,152,007	23,489,563
Industrial Therms	1,837,746	1,858,325	1,878,902	1,907,603	1,920,042	1,940,583	1,961,150	1,990,126	2,002,272	2,022,868
Ind., Inst., & Cmcl. Interrup. Therms	984,818	997,066	1,009,309	1,024,900	1,033,766	1,045,971	1,058,185	1,073,870	1,082,594	1,094,809
Total Core Therms	**56,769,202**	**57,732,029**	**58,693,179**	**59,915,793**	**60,609,868**	**61,564,834**	**62,519,846**	**63,752,159**	**64,425,361**	**65,376,796**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	674	674	675	678	675	675	675	679	676	676
Therms Per Commercial Customer	2,604	2,604	2,604	2,616	2,605	2,605	2,605	2,617	2,605	2,606
Therms Per Industrial Customer	26,273	26,253	26,234	26,328	26,198	26,181	26,164	26,259	26,131	26,116
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Pendleton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	5,958,623	5,994,145	6,029,663	6,096,273	6,100,138	6,135,091	6,170,113	6,237,018	6,239,945	6,274,756
Commercial Therms	5,997,618	6,033,386	6,069,148	6,132,365	6,140,106	6,175,297	6,210,557	6,273,979	6,280,860	6,315,904
Industrial Therms	520,019	523,117	526,212	531,612	532,356	535,402	538,455	543,870	544,541	547,574
Ind., Inst., & Cmcl. Interrup. Therms	2,289,832	2,303,437	2,317,032	2,340,303	2,344,016	2,357,396	2,370,801	2,394,132	2,397,534	2,410,863
Total Core Therms	**14,766,092**	**14,854,085**	**14,942,055**	**15,100,553**	**15,116,615**	**15,203,185**	**15,289,925**	**15,448,999**	**15,462,880**	**15,549,097**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	199,071	200,258	201,444	202,626	203,798	204,966	206,136	207,304	208,469	209,632
Therms Per Residential Customer	542	542	542	545	542	542	542	545	542	542
Therms Per Commercial Customer	3,122	3,122	3,122	3,136	3,122	3,122	3,122	3,136	3,122	3,122
Therms Per Industrial Customer	19,263	19,262	19,262	19,346	19,262	19,261	19,261	19,345	19,261	19,261
Residential Customers	10,998	11,064	11,130	11,195	11,260	11,324	11,389	11,453	11,518	11,582
Commercial Customers	1,921	1,933	1,944	1,955	1,967	1,978	1,989	2,001	2,012	2,023
Industrial Customers	27	27	27	27	28	28	28	28	28	28
Interruptible Customers	10	10	10	10	10	10	10	10	10	10
Total Core Customers	**12,956**	**13,033**	**13,111**	**13,188**	**13,264**	**13,340**	**13,416**	**13,492**	**13,568**	**13,643**

Eastern Oregon (Ontario) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.24%	0.23%	0.23%	0.70%	-0.25%	0.22%	0.22%	0.69%	-0.26%	0.21%
Residential Therms	3,755,135	3,763,215	3,771,287	3,798,097	3,786,911	3,794,516	3,802,165	3,828,828	3,817,236	3,824,814
Commercial Therms	3,545,989	3,554,235	3,562,470	3,587,992	3,578,434	3,586,226	3,594,071	3,619,446	3,609,492	3,617,252
Industrial Therms	238,162	238,755	239,348	240,386	240,498	241,061	241,627	242,648	242,740	243,300
Ind., Inst., & Cmcl. Interrup. Therms	1,077,216	1,080,318	1,083,416	1,090,921	1,089,443	1,092,404	1,095,392	1,102,837	1,101,232	1,104,178
Total Core Therms	**8,616,501**	**8,636,523**	**8,656,521**	**8,717,396**	**8,695,287**	**8,714,207**	**8,733,254**	**8,793,759**	**8,770,700**	**8,789,544**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676
Therms Per Residential Customer	531	531	531	533	531	531	530	533	530	530
Therms Per Commercial Customer	2,465	2,465	2,465	2,477	2,465	2,465	2,465	2,477	2,464	2,464
Therms Per Industrial Customer	10,055	10,053	10,051	10,068	10,047	10,045	10,043	10,060	10,039	10,037
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Oregon	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.90%	1.34%	1.32%	1.75%	0.82%	1.26%	1.24%	1.68%	0.75%	1.19%
Residential Therms	43,223,939	43,856,105	44,487,166	45,325,596	45,744,564	46,370,620	46,996,754	47,841,256	48,245,670	48,869,125
Commercial Therms	29,980,065	30,365,514	30,750,370	31,272,422	31,517,084	31,898,790	32,280,661	32,806,178	33,042,359	33,422,719
Industrial Therms	2,595,927	2,620,196	2,644,462	2,679,601	2,692,896	2,717,046	2,741,232	2,776,644	2,789,552	2,813,743
Ind., Inst., & Cmcl. Interrup. Therms	4,351,866	4,380,821	4,409,756	4,456,124	4,467,226	4,495,771	4,524,378	4,570,838	4,581,361	4,609,849
Total Core Therms	**80,151,796**	**81,222,637**	**82,291,754**	**83,733,742**	**84,421,769**	**85,482,226**	**86,543,025**	**87,994,916**	**88,658,942**	**89,715,436**
Daily Baseload Therms	49,427	50,101	50,773	51,673	52,112	52,779	53,446	54,353	54,777	55,441
Peak Day Therms	1,057,268	1,071,244	1,085,197	1,099,121	1,112,996	1,126,837	1,140,682	1,154,491	1,168,298	1,182,088
Therms Per Residential Customer	11,118	11,118	11,118	11,163	11,118	11,118	11,118	11,163	11,118	11,118
Therms Per Commercial Customer	61,881	61,881	61,881	62,106	61,881	61,881	61,881	62,106	61,881	61,881
Therms Per Industrial Customer	219,617	219,617	219,617	220,516	219,617	219,617	219,617	220,516	219,617	219,617
Residential Customers	67,775	68,713	69,650	70,585	71,516	72,445	73,374	74,301	75,228	76,154
Commercial Customers	11,207	11,353	11,498	11,643	11,787	11,931	12,075	12,219	12,362	12,506
Industrial Customers	121	122	123	124	125	126	127	128	129	130
Interruptible Customers	19	19	20	20	20	20	20	20	21	21
Total Core Customers	**79,122**	**80,207**	**81,290**	**82,371**	**83,448**	**84,522**	**85,597**	**86,668**	**87,740**	**88,810**

Washington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.58%	1.03%	1.02%	1.47%	0.53%	0.98%	0.98%	1.43%	0.49%	0.95%
Residential Therms	122,287,644	123,618,099	124,946,664	126,877,909	127,594,982	128,913,537	130,234,173	132,181,002	132,869,164	134,186,317
Commercial Therms	85,275,542	86,100,693	86,924,589	88,145,452	88,566,386	89,383,488	90,202,104	91,431,460	91,835,229	92,651,698
Industrial Therms	13,805,805	13,955,115	14,105,555	14,312,651	14,409,738	14,563,421	14,718,637	14,932,986	15,032,752	15,191,930
Ind., Inst., & Cmcl. Interrup. Therms	12,422,604	12,527,185	12,631,608	12,787,562	12,839,635	12,943,138	13,046,874	13,203,678	13,253,815	13,357,293
Total Core Therms	**233,791,596**	**236,201,091**	**238,608,417**	**242,123,574**	**243,410,741**	**245,803,584**	**248,201,789**	**251,749,126**	**252,990,960**	**255,387,237**
Daily Baseload Therms	175,120	176,893	178,666	181,258	182,200	183,961	185,726	188,341	189,250	191,013
Peak Day Therms	2,931,940	2,962,040	2,992,113	3,022,162	3,052,102	3,081,991	3,111,948	3,141,845	3,171,769	3,201,700
Therms Per Residential Customer	34,601	34,601	34,601	34,746	34,601	34,601	34,601	34,746	34,601	34,601
Therms Per Commercial Customer	145,528	145,528	145,528	146,238	145,528	145,528	145,528	146,238	145,528	145,528
Therms Per Industrial Customer	1,066,469	1,066,469	1,066,469	1,070,286	1,066,469	1,066,469	1,066,469	1,070,286	1,066,469	1,066,469
Residential Customers	199,859	201,980	204,098	206,213	208,319	210,420	212,525	214,624	216,724	218,823
Commercial Customers	27,973	28,249	28,525	28,801	29,075	29,349	29,623	29,896	30,170	30,443
Industrial Customers	460	464	468	473	477	481	486	490	494	499
Interruptible Customers	104	105	106	107	108	109	110	111	112	113
Total Core Customers	**228,396**	**230,799**	**233,198**	**235,594**	**237,979**	**240,360**	**242,744**	**245,122**	**247,501**	**249,879**

System	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.66%	1.11%	1.10%	1.54%	0.61%	1.05%	1.04%	1.49%	0.56%	1.01%
Residential Therms	165,511,583	167,474,204	169,433,831	172,203,505	173,339,546	175,284,156	177,230,928	180,022,259	181,114,834	183,055,442
Commercial Therms	115,255,607	116,466,207	117,674,959	119,417,873	120,083,470	121,282,278	122,482,765	124,237,638	124,877,588	126,074,417
Industrial Therms	16,401,732	16,575,311	16,750,017	16,992,252	17,102,634	17,280,467	17,459,869	17,709,630	17,822,304	18,005,673
Ind., Inst., & Cmcl. Interrup. Therms	16,774,470	16,908,006	17,041,365	17,243,686	17,306,860	17,438,909	17,571,252	17,774,516	17,835,177	17,967,143
Total Core Therms	**313,943,391**	**317,423,728**	**320,900,171**	**325,857,316**	**327,832,510**	**331,285,810**	**334,744,813**	**339,744,043**	**341,649,902**	**345,102,673**
Daily Baseload Therms	224,547	226,994	229,438	232,932	234,313	236,740	239,172	242,694	244,027	246,454
Peak Day Therms	3,989,209	4,033,284	4,077,310	4,121,284	4,165,098	4,208,828	4,252,630	4,296,336	4,340,067	4,383,788
Therms Per Residential Customer	45,719	45,719	45,719	45,908	45,719	45,719	45,719	45,908	45,719	45,719
Therms Per Commercial Customer	207,410	207,410	207,410	208,344	207,410	207,410	207,410	208,344	207,410	207,410
Therms Per Industrial Customer	1,286,086	1,286,086	1,286,086	1,290,802	1,286,086	1,286,086	1,286,086	1,290,802	1,286,086	1,286,086
Residential Customers	267,634	270,693	273,748	276,797	279,835	282,865	285,900	288,926	291,952	294,977
Commercial Customers	39,180	39,602	40,023	40,443	40,862	41,280	41,698	42,115	42,532	42,949
Industrial Customers	580	586	591	596	602	607	613	618	623	629
Interruptible Customers	124	125	126	127	128	129	131	132	133	134
Total Core Customers	**307,518**	**311,005**	**314,487**	**317,964**	**321,427**	**324,882**	**328,341**	**331,791**	**335,241**	**338,689**

Athena	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.11%	0.10%	0.61%	0.61%	1.12%	0.11%	0.61%	0.61%	1.12%
Residential Therms	290,737	293,945	294,272	296,071	297,892	301,201	301,551	303,397	305,240	308,619
Commercial Therms	138,663	140,230	140,349	141,207	142,075	143,692	143,821	144,701	145,580	147,231
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**429,400**	**434,175**	**434,621**	**437,278**	**439,967**	**444,893**	**445,372**	**448,099**	**450,820**	**455,850**
Daily Baseload Therms	430	435	435	438	441	446	446	449	452	457
Peak Day Therms	5,924	5,959	5,996	6,032	6,069	6,106	6,144	6,181	6,219	6,257
Therms Per Residential Customer	582	585	582	582	582	585	582	582	582	585
Therms Per Commercial Customer	2,179	2,191	2,179	2,179	2,179	2,191	2,179	2,179	2,179	2,191
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	499	502	505	509	512	515	518	521	524	527
Commercial Customers	64	64	64	65	65	66	66	66	67	67
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**563**	**566**	**570**	**573**	**577**	**580**	**584**	**588**	**591**	**595**

Baker	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	-0.36%	0.14%	0.14%	0.63%	-0.33%	0.15%	0.15%	0.64%
Residential Therms	2,014,522	2,026,966	2,019,538	2,022,422	2,025,305	2,038,179	2,031,197	2,034,206	2,037,214	2,050,398
Commercial Therms	1,456,042	1,464,809	1,459,667	1,461,751	1,463,835	1,472,912	1,468,094	1,470,268	1,472,443	1,481,742
Industrial Therms	70,658	71,017	70,834	70,935	71,036	71,410	71,243	71,348	71,454	71,838
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,541,222**	**3,562,791**	**3,550,039**	**3,555,107**	**3,560,176**	**3,582,501**	**3,570,533**	**3,575,822**	**3,581,111**	**3,603,979**
Daily Baseload Therms	1,499	1,508	1,503	1,505	1,507	1,517	1,511	1,514	1,516	1,526
Peak Day Therms	41,829	41,881	41,933	41,993	42,053	42,113	42,175	42,238	42,300	42,365
Therms Per Residential Customer	625	628	625	625	625	628	625	625	625	628
Therms Per Commercial Customer	2,957	2,972	2,957	2,957	2,957	2,972	2,957	2,957	2,957	2,972
Therms Per Industrial Customer	23,525	23,615	23,525	23,525	23,525	23,615	23,525	23,525	23,525	23,615
Residential Customers	3,223	3,227	3,231	3,236	3,240	3,245	3,250	3,254	3,259	3,264
Commercial Customers	492	493	494	494	495	496	496	497	498	499
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,718**	**3,723**	**3,727**	**3,733**	**3,738**	**3,743**	**3,749**	**3,755**	**3,760**	**3,766**

Umatilla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.04%	0.16%	0.60%	0.61%	1.04%	0.17%	0.61%	0.60%	1.04%
Residential Therms	429,713	434,519	434,879	437,509	440,167	445,127	445,517	448,218	450,909	455,972
Commercial Therms	458,470	463,121	463,981	466,788	469,624	474,428	475,332	478,213	481,085	485,987
Industrial Therms	116,954	118,000	118,360	119,076	119,799	120,880	121,255	121,990	122,723	123,826
Ind., Inst., & Cmcl. Interrup. Therms	934,585	944,183	945,820	951,540	957,322	967,234	968,957	974,832	980,685	990,800
Total Core Therms	**1,939,721**	**1,959,822**	**1,963,040**	**1,974,912**	**1,986,912**	**2,007,669**	**2,011,061**	**2,023,253**	**2,035,402**	**2,056,585**
Daily Baseload Therms	1,254	1,267	1,269	1,277	1,285	1,298	1,300	1,308	1,316	1,330
Peak Day Therms	17,559	17,664	17,771	17,878	17,987	18,095	18,205	18,316	18,426	18,536
Therms Per Residential Customer	415	417	415	415	415	417	415	415	415	417
Therms Per Commercial Customer	2,799	2,811	2,799	2,799	2,799	2,811	2,799	2,799	2,799	2,811
Therms Per Industrial Customer	21,464	21,528	21,464	21,464	21,464	21,528	21,464	21,464	21,464	21,528
Residential Customers	1,035	1,041	1,047	1,054	1,060	1,067	1,073	1,080	1,086	1,093
Commercial Customers	164	165	166	167	168	169	170	171	172	173
Industrial Customers	5	5	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,206**	**1,213**	**1,221**	**1,228**	**1,236**	**1,243**	**1,251**	**1,258**	**1,266**	**1,273**

Chemult	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	0.61%	0.61%	0.61%	0.60%	0.60%	0.60%	0.59%	0.59%
Residential Therms	10,417	10,480	10,544	10,608	10,672	10,737	10,802	10,867	10,931	10,996
Commercial Therms	39,394	39,633	39,874	40,116	40,360	40,604	40,850	41,094	41,339	41,584
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**49,811**	**50,113**	**50,417**	**50,724**	**51,033**	**51,341**	**51,651**	**51,961**	**52,270**	**52,579**
Daily Baseload Therms	55	56	56	56	57	57	57	58	58	58
Peak Day Therms	633	637	641	644	648	652	656	660	664	668
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	26	26	26	26	26	26	26
Commercial Customers	21	21	21	21	21	22	22	22	22	22
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**46**	**46**	**47**	**47**	**47**	**47**	**48**	**48**	**48**	**48**

Gilchrist	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.07%	0.14%	0.61%	0.61%	1.08%	0.15%	0.61%	0.60%	1.07%
Residential Therms	87,717	88,644	88,775	89,314	89,859	90,817	90,958	91,511	92,064	93,041
Commercial Therms	127,386	128,752	128,921	129,705	130,496	131,908	132,093	132,895	133,699	135,139
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**215,103**	**217,395**	**217,696**	**219,019**	**220,355**	**222,725**	**223,051**	**224,405**	**225,763**	**228,180**
Daily Baseload Therms	98	99	99	100	100	101	101	102	103	104
Peak Day Therms	2,737	2,753	2,770	2,787	2,804	2,821	2,838	2,855	2,872	2,890
Therms Per Residential Customer	483	485	483	483	483	485	483	483	483	485
Therms Per Commercial Customer	3,159	3,174	3,159	3,159	3,159	3,174	3,159	3,159	3,159	3,174
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	182	183	184	185	186	187	188	190	191	192
Commercial Customers	40	41	41	41	41	42	42	42	42	43
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**222**	**223**	**225**	**226**	**227**	**229**	**230**	**232**	**233**	**234**

Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.14%	0.61%	0.61%	1.08%	0.14%	0.61%	0.61%	1.08%
Residential Therms	2,248,679	2,273,553	2,276,022	2,289,934	2,304,016	2,329,678	2,332,320	2,346,600	2,360,851	2,387,053
Commercial Therms	2,456,760	2,482,267	2,486,633	2,501,833	2,517,218	2,543,544	2,548,141	2,563,742	2,579,312	2,606,187
Industrial Therms	196,223	198,282	198,609	199,823	201,051	203,177	203,521	204,767	206,011	208,181
Ind., Inst., & Cmcl. Interrup. Therms	349,846	353,931	354,100	356,264	358,455	362,668	362,859	365,080	367,298	371,600
Total Core Therms	**5,251,507**	**5,308,033**	**5,315,364**	**5,347,854**	**5,380,740**	**5,439,067**	**5,446,842**	**5,480,190**	**5,513,472**	**5,573,020**
Daily Baseload Therms	3,824	3,865	3,870	3,894	3,918	3,960	3,966	3,990	4,014	4,058
Peak Day Therms	71,496	71,927	72,365	72,808	73,255	73,703	74,155	74,609	75,062	75,518
Therms Per Residential Customer	633	636	633	633	633	636	633	633	633	636
Therms Per Commercial Customer	3,531	3,546	3,531	3,531	3,531	3,546	3,531	3,531	3,531	3,546
Therms Per Industrial Customer	24,381	24,489	24,381	24,381	24,381	24,489	24,381	24,381	24,381	24,489
Residential Customers	3,551	3,573	3,595	3,617	3,639	3,661	3,683	3,706	3,729	3,751
Commercial Customers	696	700	704	709	713	717	722	726	731	735
Industrial Customers	8	8	8	8	8	8	8	8	8	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,259**	**4,285**	**4,311**	**4,337**	**4,364**	**4,391**	**4,418**	**4,445**	**4,472**	**4,499**

Huntington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.44%	0.14%	0.14%	0.71%	-0.41%	0.15%	0.15%	0.72%
Residential Therms	49,136	49,476	49,258	49,329	49,399	49,750	49,543	49,616	49,689	50,048
Commercial Therms	27,075	27,258	27,142	27,181	27,219	27,409	27,299	27,339	27,380	27,574
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**76,210**	**76,734**	**76,400**	**76,509**	**76,618**	**77,159**	**76,841**	**76,955**	**77,069**	**77,621**
Daily Baseload Therms	-48	-48	-48	-48	-48	-48	-48	-48	-48	-49
Peak Day Therms	1,229	1,230	1,232	1,234	1,236	1,237	1,239	1,241	1,243	1,245
Therms Per Residential Customer	398	400	398	398	398	400	398	398	398	400
Therms Per Commercial Customer	1,898	1,908	1,898	1,898	1,898	1,908	1,898	1,898	1,898	1,908
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	123	124	124	124	124	124	124	125	125	125
Commercial Customers	14	14	14	14	14	14	14	14	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**138**	**138**	**138**	**138**	**138**	**139**	**139**	**139**	**139**	**139**

La Pine	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.67%	1.72%	2.14%	2.10%	2.51%	1.57%	1.98%	1.95%	2.37%
Residential Therms	126,319	129,679	131,928	134,746	137,572	141,010	143,241	146,083	148,928	152,438
Commercial Therms	339,525	348,601	354,600	362,175	369,771	379,061	385,008	392,648	400,295	409,781
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**465,844**	**478,280**	**486,528**	**496,921**	**507,343**	**520,071**	**528,249**	**538,731**	**549,223**	**562,218**
Daily Baseload Therms	277	285	289	296	302	309	314	320	327	334
Peak Day Therms	5,537	5,660	5,783	5,907	6,031	6,155	6,279	6,404	6,529	6,654
Therms Per Residential Customer	615	617	615	615	615	617	615	615	615	617
Therms Per Commercial Customer	2,653	2,664	2,653	2,653	2,653	2,664	2,653	2,653	2,653	2,664
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	205	210	215	219	224	228	233	238	242	247
Commercial Customers	128	131	134	137	139	142	145	148	151	154
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**341**	**348**	**356**	**363**	**371**	**378**	**386**	**393**	**401**

Madras	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.91%	-0.01%	0.47%	0.48%	0.95%	0.03%	0.50%	0.50%	0.97%
Residential Therms	622,875	628,691	628,444	631,370	634,374	640,557	640,563	643,750	646,963	653,446
Commercial Therms	1,115,781	1,125,806	1,125,757	1,130,998	1,136,378	1,147,056	1,147,465	1,153,175	1,158,931	1,170,135
Industrial Therms	690,819	697,239	696,996	700,240	703,572	710,399	710,436	713,971	717,534	724,693
Ind., Inst., & Cmcl. Interrup. Therms	319,412	322,041	322,268	323,768	325,309	328,119	328,482	330,117	331,765	334,721
Total Core Therms	**2,748,888**	**2,773,777**	**2,773,465**	**2,786,376**	**2,799,632**	**2,826,132**	**2,826,945**	**2,841,012**	**2,855,193**	**2,882,995**
Daily Baseload Therms	1,203	1,214	1,214	1,220	1,225	1,237	1,237	1,244	1,250	1,262
Peak Day Therms	35,792	35,950	36,112	36,281	36,453	36,629	36,809	36,992	37,177	37,366
Therms Per Residential Customer	551	554	551	551	551	554	551	551	551	554
Therms Per Commercial Customer	3,002	3,016	3,002	3,002	3,002	3,016	3,002	3,002	3,002	3,016
Therms Per Industrial Customer	40,466	40,662	40,466	40,466	40,466	40,662	40,466	40,466	40,466	40,662
Residential Customers	1,130	1,135	1,140	1,146	1,151	1,157	1,162	1,168	1,174	1,180
Commercial Customers	372	373	375	377	379	380	382	384	386	388
Industrial Customers	17	17	17	17	17	17	18	18	18	18
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,520**	**1,527**	**1,534**	**1,541**	**1,548**	**1,556**	**1,563**	**1,571**	**1,579**	**1,587**

Milton-Freewater	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.10%	0.15%	0.63%	0.63%	1.10%	0.15%	0.62%	0.62%	1.09%
Residential Therms	99,995	101,151	101,243	101,876	102,516	103,705	103,800	104,446	105,091	106,302
Commercial Therms	289,737	292,860	293,354	295,189	297,043	300,255	300,762	302,635	304,503	307,773
Industrial Therms	28,171	28,473	28,523	28,701	28,881	29,192	29,243	29,425	29,607	29,923

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**417,902**	**422,485**	**423,119**	**425,766**	**428,440**	**433,152**	**433,805**	**436,507**	**439,201**	**443,998**
Daily Baseload Therms	434	439	440	442	445	450	451	454	456	461
Peak Day Therms	5,493	5,527	5,561	5,596	5,631	5,667	5,702	5,737	5,773	5,808
Therms Per Residential Customer	439	441	439	439	439	441	439	439	439	441
Therms Per Commercial Customer	2,936	2,949	2,936	2,936	2,936	2,949	2,936	2,936	2,936	2,949
Therms Per Industrial Customer	4,800	4,821	4,800	4,800	4,800	4,821	4,800	4,800	4,800	4,821
Residential Customers	228	229	231	232	234	235	237	238	240	241
Commercial Customers	99	99	100	101	101	102	102	103	104	104
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**333**	**335**	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**352**

Mission Tap	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	0.16%	0.61%	0.61%	1.06%	0.16%	0.61%	0.61%	1.06%
Residential Therms	121,631	122,945	123,110	123,863	124,624	125,980	126,155	126,928	127,698	129,083
Commercial Therms	327,703	331,138	331,688	333,716	335,768	339,312	339,893	341,974	344,050	347,669
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**449,334**	**454,083**	**454,798**	**457,578**	**460,392**	**465,292**	**466,048**	**468,901**	**471,749**	**476,751**
Daily Baseload Therms	398	402	403	405	408	412	413	415	418	422
Peak Day Therms	5,304	5,336	5,368	5,401	5,434	5,467	5,501	5,535	5,568	5,602
Therms Per Residential Customer	569	572	569	569	569	572	569	569	569	572
Therms Per Commercial Customer	7,756	7,790	7,756	7,756	7,756	7,790	7,756	7,756	7,756	7,790
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	214	215	216	218	219	220	222	223	224	226
Commercial Customers	42	43	43	43	43	44	44	44	44	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**256**	**257**	**259**	**261**	**262**	**264**	**265**	**267**	**269**	**270**

Nyssa-Ontario	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.76%	-0.20%	0.29%	0.29%	0.78%	-0.19%	0.29%	0.29%	0.78%
Residential Therms	1,889,734	1,904,983	1,900,273	1,905,702	1,911,237	1,926,909	1,922,398	1,928,026	1,933,645	1,949,582
Commercial Therms	2,243,359	2,261,098	2,255,870	2,262,315	2,268,885	2,287,123	2,282,135	2,288,816	2,295,487	2,314,034
Industrial Therms	184,552	185,283	185,582	186,112	186,652	187,415	187,742	188,292	188,841	189,620
Ind., Inst., & Cmcl. Interrup. Therms	1,140,728	1,148,617	1,147,090	1,150,367	1,153,708	1,161,838	1,160,445	1,163,842	1,167,235	1,175,509
Total Core Therms	**5,458,373**	**5,499,981**	**5,488,814**	**5,504,496**	**5,520,483**	**5,563,286**	**5,552,721**	**5,568,977**	**5,585,209**	**5,628,744**
Daily Baseload Therms	1,495	1,506	1,503	1,508	1,512	1,524	1,521	1,525	1,530	1,542
Peak Day Therms	68,683	68,872	69,066	69,263	69,464	69,665	69,870	70,074	70,278	70,485
Therms Per Residential Customer	528	531	528	528	528	531	528	528	528	531
Therms Per Commercial Customer	2,498	2,510	2,498	2,498	2,498	2,510	2,498	2,498	2,498	2,510
Therms Per Industrial Customer	9,203	9,214	9,203	9,203	9,203	9,214	9,203	9,203	9,203	9,214
Residential Customers	3,578	3,588	3,598	3,608	3,619	3,629	3,640	3,650	3,661	3,672
Commercial Customers	898	901	903	906	908	911	914	916	919	922
Industrial Customers	20	20	20	20	20	20	20	20	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,498**	**4,511**	**4,523**	**4,536**	**4,549**	**4,563**	**4,576**	**4,589**	**4,603**	**4,616**

Pendleton	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.14%	0.61%	0.61%	1.09%	0.14%	0.61%	0.61%	1.08%
Residential Therms	2,730,038	2,760,744	2,763,235	2,780,125	2,797,221	2,828,896	2,831,585	2,848,921	2,866,223	2,898,566
Commercial Therms	2,282,809	2,307,306	2,310,567	2,324,690	2,338,986	2,364,264	2,367,720	2,382,216	2,396,684	2,422,491
Industrial Therms	178,386	180,364	180,556	181,659	182,776	184,817	185,022	186,154	187,285	189,368
Ind., Inst., & Cmcl. Interrup. Therms	989,452	998,869	1,001,484	1,007,605	1,013,802	1,023,527	1,026,256	1,032,539	1,038,810	1,048,735
Total Core Therms	**6,180,686**	**6,247,283**	**6,255,841**	**6,294,080**	**6,332,784**	**6,401,504**	**6,410,582**	**6,449,831**	**6,489,002**	**6,559,160**
Daily Baseload Therms	5,073	5,128	5,135	5,166	5,198	5,254	5,262	5,294	5,326	5,384
Peak Day Therms	81,573	82,066	82,565	83,070	83,581	84,092	84,608	85,126	85,643	86,163
Therms Per Residential Customer	566	569	566	566	566	569	566	566	566	569
Therms Per Commercial Customer	3,070	3,084	3,070	3,070	3,070	3,084	3,070	3,070	3,070	3,084
Therms Per Industrial Customer	29,553	29,702	29,553	29,553	29,553	29,702	29,553	29,553	29,553	29,702
Residential Customers	4,823	4,853	4,882	4,912	4,942	4,972	5,003	5,034	5,064	5,095
Commercial Customers	744	748	753	757	762	767	771	776	781	786
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,576**	**5,610**	**5,644**	**5,679**	**5,713**	**5,748**	**5,784**	**5,819**	**5,854**	**5,890**

Prineville	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.95%	0.02%	0.51%	0.52%	1.00%	0.06%	0.54%	0.54%	1.02%
Residential Therms	1,132,858	1,143,829	1,143,915	1,149,709	1,155,660	1,167,380	1,167,934	1,174,203	1,180,525	1,192,737
Commercial Therms	1,254,155	1,265,955	1,266,396	1,272,810	1,279,399	1,292,021	1,292,987	1,299,927	1,306,926	1,320,086
Industrial Therms	330,000	333,104	333,221	334,908	336,642	339,963	340,217	342,043	343,885	347,347
Ind., Inst., & Cmcl. Interrup. Therms	134,596	135,923	135,909	136,598	137,305	138,722	138,763	139,508	140,259	141,735
Total Core Therms	**2,851,608**	**2,878,811**	**2,879,442**	**2,894,024**	**2,909,006**	**2,938,086**	**2,939,901**	**2,955,681**	**2,971,594**	**3,001,905**
Daily Baseload Therms	1,006	1,016	1,016	1,021	1,026	1,037	1,037	1,043	1,049	1,059
Peak Day Therms	38,838	39,024	39,217	39,415	39,619	39,827	40,040	40,255	40,472	40,692
Therms Per Residential Customer	495	498	495	495	495	498	495	495	495	498
Therms Per Commercial Customer	2,474	2,486	2,474	2,474	2,474	2,486	2,474	2,474	2,474	2,486
Therms Per Industrial Customer	21,422	21,520	21,422	21,422	21,422	21,520	21,422	21,422	21,422	21,520
Residential Customers	2,288	2,299	2,310	2,322	2,334	2,346	2,359	2,371	2,384	2,397
Commercial Customers	507	509	512	514	517	520	523	525	528	531
Industrial Customers	15	15	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,812**	**2,825**	**2,839**	**2,854**	**2,869**	**2,884**	**2,899**	**2,915**	**2,930**	**2,946**

Redmond	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.71%	1.73%	2.15%	2.11%	2.53%	1.56%	1.98%	1.94%	2.37%
Residential Therms	3,950,674	4,058,232	4,127,741	4,216,510	4,305,386	4,414,964	4,483,202	4,572,121	4,660,954	4,772,277
Commercial Therms	2,938,886	3,018,973	3,070,605	3,136,640	3,202,754	3,284,351	3,335,031	3,401,177	3,467,259	3,550,161
Industrial Therms	394,170	404,386	411,837	420,693	429,561	439,933	447,302	456,174	465,037	475,538
Ind., Inst., & Cmcl. Interrup. Therms	281,581	288,539	294,201	300,528	306,863	313,903	319,536	325,874	332,205	339,308
Total Core Therms	**7,565,311**	**7,770,131**	**7,904,383**	**8,074,371**	**8,244,563**	**8,453,151**	**8,585,071**	**8,755,346**	**8,925,456**	**9,137,284**
Daily Baseload Therms	3,673	3,772	3,838	3,920	4,003	4,104	4,168	4,251	4,333	4,436
Peak Day Therms	96,107	98,259	100,414	102,573	104,736	106,896	109,061	111,224	113,385	115,547
Therms Per Residential Customer	604	607	604	604	604	607	604	604	604	607
Therms Per Commercial Customer	2,583	2,595	2,583	2,583	2,583	2,595	2,583	2,583	2,583	2,595
Therms Per Industrial Customer	32,337	32,449	32,337	32,337	32,337	32,449	32,337	32,337	32,337	32,449
Residential Customers	6,537	6,683	6,830	6,977	7,124	7,271	7,418	7,565	7,712	7,859
Commercial Customers	1,138	1,163	1,189	1,214	1,240	1,266	1,291	1,317	1,342	1,368
Industrial Customers	12	12	13	13	13	14	14	14	14	15
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7,688**	**7,860**	**8,033**	**8,205**	**8,378**	**8,551**	**8,724**	**8,897**	**9,070**	**9,243**

Stanfield	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.10%	0.11%	0.61%	0.61%	1.11%	0.12%	0.61%	0.61%	1.10%
Residential Therms	153,877	155,589	155,748	156,700	157,664	159,430	159,601	160,578	161,553	163,357
Commercial Therms	63,438	64,119	64,210	64,602	64,999	65,702	65,798	66,201	66,603	67,320
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**217,315**	**219,708**	**219,958**	**221,302**	**222,663**	**225,132**	**225,398**	**226,778**	**228,156**	**230,676**
Daily Baseload Therms	100	102	102	102	103	104	104	105	105	107
Peak Day Therms	3,037	3,055	3,074	3,093	3,112	3,131	3,150	3,169	3,189	3,208
Therms Per Residential Customer	507	509	507	507	507	509	507	507	507	509
Therms Per Commercial Customer	1,930	1,939	1,930	1,930	1,930	1,939	1,930	1,930	1,930	1,939
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	304	306	307	309	311	313	315	317	319	321
Commercial Customers	33	33	33	33	34	34	34	34	35	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**337**	**339**	**341**	**343**	**345**	**347**	**349**	**351**	**353**	**356**

Stearns (Sunriver)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.69%	1.75%	2.15%	2.11%	2.51%	1.58%	1.98%	1.94%	2.35%
Residential Therms	3,390,632	3,482,472	3,542,597	3,618,782	3,695,059	3,788,593	3,847,669	3,923,983	4,000,223	4,095,213
Commercial Therms	1,065,070	1,092,963	1,112,806	1,136,737	1,160,698	1,189,038	1,208,635	1,232,607	1,256,556	1,285,270
Industrial Therms	14,693	15,069	15,352	15,682	16,012	16,394	16,674	17,005	17,335	17,721
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,470,395**	**4,590,504**	**4,670,755**	**4,771,202**	**4,871,770**	**4,994,025**	**5,072,978**	**5,173,595**	**5,274,114**	**5,398,203**
Daily Baseload Therms	3,430	3,522	3,584	3,661	3,738	3,832	3,893	3,970	4,047	4,142
Peak Day Therms	52,123	53,291	54,460	55,631	56,803	57,975	59,149	60,323	61,495	62,667
Therms Per Residential Customer	956	960	956	956	956	960	956	956	956	960
Therms Per Commercial Customer	4,764	4,781	4,764	4,764	4,764	4,781	4,764	4,764	4,764	4,781
Therms Per Industrial Customer	5,944	5,963	5,944	5,944	5,944	5,963	5,944	5,944	5,944	5,963
Residential Customers	3,548	3,628	3,708	3,787	3,867	3,947	4,027	4,107	4,186	4,266
Commercial Customers	224	229	234	239	244	249	254	259	264	269
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,775**	**3,859**	**3,944**	**4,029**	**4,113**	**4,198**	**4,283**	**4,368**	**4,453**	**4,538**

Dave Rasmussen	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.24%	2.19%	2.15%	2.11%	2.06%	2.03%	1.98%	1.94%	1.91%
Residential Therms	299,521	306,228	312,945	319,675	326,413	333,146	339,894	346,636	353,370	360,109
Commercial Therms	254,968	260,678	266,396	272,125	277,861	283,593	289,337	295,075	300,808	306,544
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**554,489**	**566,906**	**579,341**	**591,800**	**604,274**	**616,739**	**629,231**	**641,711**	**654,179**	**666,653**
Daily Baseload Therms	591	604	618	631	644	658	671	684	697	711
Peak Day Therms	6,515	6,661	6,807	6,954	7,100	7,247	7,394	7,540	7,687	7,833
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	185	189	193	198	202	206	210	214	218	222
Commercial Customers	25	25	26	26	27	27	28	28	29	30
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**210**	**214**	**219**	**224**	**228**	**233**	**238**	**243**	**247**	**252**

South Hermiston	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.70%	1.74%	2.15%	2.11%	2.52%	1.57%	1.98%	1.94%	2.36%
Residential Therms	19,792,953	20,327,904	20,680,060	21,124,793	21,570,064	22,114,794	22,460,927	22,906,413	23,351,468	23,904,596
Commercial Therms	11,026,676	11,323,321	11,520,884	11,768,646	12,016,707	12,318,678	12,513,008	12,761,188	13,009,129	13,315,657
Industrial Therms	329,256	338,030	344,014	351,412	358,819	367,744	373,638	381,049	388,452	397,506
Ind., Inst., & Cmcl. Interrup. Therms	197,678	202,722	206,537	210,979	215,426	220,542	224,323	228,773	233,218	238,391
Total Core Therms	**31,346,564**	**32,191,977**	**32,751,495**	**33,455,830**	**34,161,015**	**35,021,758**	**35,571,897**	**36,277,422**	**36,982,267**	**37,856,150**
Daily Baseload Therms	17,910	18,393	18,713	19,115	19,518	20,010	20,324	20,727	21,130	21,629
Peak Day Therms	377,442	385,894	394,358	402,839	411,330	419,815	428,318	436,814	445,301	453,792
Therms Per Residential Customer	741	744	741	741	741	744	741	741	741	744
Therms Per Commercial Customer	2,717	2,729	2,717	2,717	2,717	2,729	2,717	2,717	2,717	2,729
Therms Per Industrial Customer	22,589	22,683	22,589	22,589	22,589	22,683	22,589	22,589	22,589	22,683
Residential Customers	26,725	27,324	27,923	28,524	29,125	29,726	30,328	30,929	31,530	32,132
Commercial Customers	4,058	4,149	4,240	4,331	4,422	4,513	4,605	4,696	4,787	4,879
Industrial Customers	15	15	15	16	16	16	17	17	17	18
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**30,800**	**31,490**	**32,181**	**32,873**	**33,566**	**34,258**	**34,952**	**35,645**	**36,338**	**37,031**

McCleary (Aberdeen/Hoquiam)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.90%	0.04%	0.47%	0.48%	0.90%	0.04%	0.46%	0.46%	0.89%
Residential Therms	2,390,584	2,412,851	2,413,279	2,424,739	2,436,263	2,458,834	2,459,183	2,470,610	2,481,942	2,504,624
Commercial Therms	2,319,554	2,340,497	2,341,575	2,352,695	2,363,876	2,385,101	2,386,115	2,397,203	2,408,198	2,429,519
Industrial Therms	113,648	114,827	114,727	115,272	115,820	117,016	116,909	117,453	117,991	119,195
Ind., Inst., & Cmcl. Interrup. Therms	1,065,835	1,074,744	1,075,954	1,081,063	1,086,201	1,095,226	1,096,420	1,101,515	1,106,567	1,115,623
Total Core Therms	**5,889,622**	**5,942,919**	**5,945,536**	**5,973,769**	**6,002,160**	**6,056,178**	**6,058,626**	**6,086,780**	**6,114,698**	**6,168,960**
Daily Baseload Therms	6,363	6,420	6,423	6,454	6,484	6,543	6,545	6,576	6,606	6,664
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	684	687	684	684	684	687	684	684	684	687
Therms Per Commercial Customer	3,117	3,131	3,117	3,117	3,117	3,131	3,117	3,117	3,117	3,131
Therms Per Industrial Customer	9,695	9,750	9,695	9,695	9,695	9,750	9,695	9,695	9,695	9,750
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Acme	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.35%	1.41%	1.84%	1.81%	2.24%	1.30%	1.73%	1.70%	2.14%
Residential Therms	51,222	52,427	53,164	54,142	55,124	56,361	57,096	58,085	59,076	60,340

Commercial Therms	35,054	35,877	36,383	37,052	37,724	38,570	39,074	39,751	40,429	41,293
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**86,276**	**88,304**	**89,547**	**91,194**	**92,848**	**94,931**	**96,169**	**97,836**	**99,504**	**101,633**
Daily Baseload Therms	30	31	32	32	33	33	34	34	35	36
Peak Day Therms	1,017	1,037	1,056	1,075	1,095	1,114	1,134	1,154	1,173	1,193
Therms Per Residential Customer	767	771	767	767	767	771	767	767	767	771
Therms Per Commercial Customer	3,822	3,839	3,822	3,822	3,822	3,839	3,822	3,822	3,822	3,839
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	67	68	69	71	72	73	74	76	77	78
Commercial Customers	9	9	10	10	10	10	10	10	11	11
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**76**	**77**	**79**	**80**	**82**	**83**	**85**	**86**	**88**	**89**

Arlington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.99%	1.10%	1.52%	1.50%	1.92%	1.03%	1.45%	1.43%	1.85%
Residential Therms	3,617,688	3,690,150	3,730,315	3,787,049	3,844,021	3,918,355	3,958,364	4,015,714	4,073,072	4,148,903
Commercial Therms	1,900,693	1,938,355	1,959,866	1,989,674	2,019,606	2,058,226	2,079,681	2,109,811	2,139,947	2,179,328
Industrial Therms	224,036	228,421	231,010	234,524	238,052	242,547	245,133	248,684	252,237	256,818
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**5,742,417**	**5,856,927**	**5,921,191**	**6,011,247**	**6,101,678**	**6,219,129**	**6,283,178**	**6,374,209**	**6,465,256**	**6,585,049**
Daily Baseload Therms	5,989	6,109	6,176	6,269	6,364	6,486	6,553	6,648	6,743	6,868
Peak Day Therms	59,326	60,247	61,173	62,103	63,037	63,973	64,913	65,853	66,794	67,737
Therms Per Residential Customer	769	772	769	769	769	772	769	769	769	772
Therms Per Commercial Customer	3,433	3,448	3,433	3,433	3,433	3,448	3,433	3,433	3,433	3,448
Therms Per Industrial Customer	9,320	9,357	9,320	9,320	9,320	9,357	9,320	9,320	9,320	9,357
Residential Customers	4,706	4,779	4,853	4,927	5,001	5,075	5,150	5,224	5,299	5,374
Commercial Customers	554	562	571	580	588	597	606	615	623	632
Industrial Customers	24	24	25	25	26	26	26	27	27	27
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**5,284**	**5,366**	**5,449**	**5,531**	**5,615**	**5,698**	**5,782**	**5,865**	**5,949**	**6,033**

Bremerton (Shelton)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.53%	0.63%	1.07%	1.06%	1.50%	0.60%	1.04%	1.02%	1.47%
Residential Therms	20,356,541	20,670,666	20,798,180	21,020,837	21,244,474	21,566,096	21,693,022	21,917,737	22,142,256	22,469,352
Commercial Therms	10,245,411	10,400,756	10,467,688	10,579,751	10,692,307	10,851,304	10,918,060	11,031,159	11,144,159	11,305,791
Industrial Therms	330,278	336,674	337,443	341,056	344,684	351,258	351,962	355,608	359,250	365,970
Ind., Inst., & Cmcl. Interrup. Therms	2,496,862	2,533,450	2,551,032	2,578,343	2,605,773	2,643,196	2,660,791	2,688,353	2,715,892	2,753,902
Total Core Therms	**33,429,092**	**33,941,546**	**34,154,343**	**34,519,986**	**34,887,238**	**35,411,855**	**35,623,835**	**35,992,857**	**36,361,557**	**36,895,015**
Daily Baseload Therms	24,579	24,956	25,112	25,381	25,651	26,037	26,193	26,464	26,735	27,128
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	655	658	655	655	655	658	655	655	655	658
Therms Per Commercial Customer	3,473	3,488	3,473	3,473	3,473	3,488	3,473	3,473	3,473	3,488
Therms Per Industrial Customer	25,295	25,508	25,295	25,295	25,295	25,508	25,295	25,295	25,295	25,508
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Castle Rock	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.91%	0.08%	0.50%	0.51%	0.92%	0.09%	0.51%	0.51%	0.93%
Residential Therms	35,024	35,365	35,370	35,547	35,727	36,081	36,091	36,275	36,459	36,821
Commercial Therms	119,384	120,443	120,563	121,167	121,780	122,881	123,020	123,647	124,275	125,401
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**154,408**	**155,809**	**155,933**	**156,715**	**157,507**	**158,962**	**159,111**	**159,922**	**160,734**	**162,223**
Daily Baseload Therms	163	164	164	165	166	167	168	168	169	171
Peak Day Therms	1,356	1,363	1,369	1,376	1,383	1,390	1,397	1,404	1,412	1,419
Therms Per Residential Customer	543	546	543	543	543	546	543	543	543	546
Therms Per Commercial Customer	2,450	2,459	2,450	2,450	2,450	2,459	2,450	2,450	2,450	2,459
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	64	65	65	65	66	66	66	67	67	67
Commercial Customers	49	49	49	49	50	50	50	50	51	51
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**113**	**114**	**114**	**115**	**115**	**116**	**117**	**117**	**118**	**118**

Walla Walla	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.42%	-0.52%	-0.03%	-0.03%	0.45%	-0.49%	-0.01%	-0.01%	0.47%
Residential Therms	6,489,808	6,518,513	6,483,465	6,481,278	6,479,638	6,510,381	6,477,452	6,476,796	6,476,249	6,508,294
Commercial Therms	4,253,868	4,271,864	4,249,711	4,248,278	4,247,203	4,266,536	4,245,770	4,245,340	4,244,981	4,265,168
Industrial Therms	97,744	98,106	97,648	97,615	97,591	97,983	97,558	97,548	97,540	97,952
Ind., Inst., & Cmcl. Interrup. Therms	1,953,540	1,960,506	1,951,631	1,950,973	1,950,479	1,958,060	1,949,821	1,949,623	1,949,459	1,957,433
Total Core Therms	**12,794,960**	**12,848,988**	**12,782,455**	**12,778,144**	**12,774,911**	**12,832,961**	**12,770,600**	**12,769,307**	**12,768,229**	**12,828,847**
Daily Baseload Therms	11,078	11,125	11,067	11,063	11,060	11,111	11,057	11,056	11,055	11,107
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	609	612	609	609	609	612	609	609	609	612
Therms Per Commercial Customer	3,370	3,386	3,370	3,370	3,370	3,386	3,370	3,370	3,370	3,386
Therms Per Industrial Customer	12,757	12,811	12,757	12,757	12,757	12,811	12,757	12,757	12,757	12,811
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Deming	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.33%	1.38%	1.82%	1.79%	2.23%	1.28%	1.72%	1.69%	2.13%
Residential Therms	13,219	13,530	13,714	13,964	14,214	14,534	14,718	14,970	15,223	15,551
Commercial Therms	63,331	64,777	65,704	66,900	68,101	69,585	70,512	71,723	72,935	74,452
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	68,279	69,899	70,838	72,127	73,422	75,087	76,022	77,327	78,634	80,339
Total Core Therms	**144,829**	**148,206**	**150,257**	**152,991**	**155,736**	**159,207**	**161,252**	**164,021**	**166,792**	**170,341**
Daily Baseload Therms	93	95	96	98	100	102	103	105	107	109
Peak Day Therms	1,686	1,718	1,749	1,781	1,813	1,845	1,877	1,910	1,942	1,974
Therms Per Residential Customer	542	545	542	542	542	545	542	542	542	545
Therms Per Commercial Customer	5,327	5,349	5,327	5,327	5,327	5,349	5,327	5,327	5,327	5,349
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	24	25	25	26	26	27	27	28	28	29
Commercial Customers	12	12	12	13	13	13	13	13	14	14
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**37**	**38**	**39**	**39**	**40**	**41**	**42**	**42**	**43**	**44**

Wenatchee	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.61%	0.73%	1.16%	1.15%	1.58%	0.70%	1.12%	1.11%	1.54%
Residential Therms	658,839	669,581	674,359	682,195	690,066	701,090	705,873	713,804	721,733	732,978
Commercial Therms	3,357,830	3,411,617	3,436,926	3,476,864	3,516,982	3,572,163	3,597,544	3,637,961	3,678,371	3,734,637
Industrial Therms	393,709	400,124	402,983	407,666	412,370	418,953	421,816	426,555	431,293	438,009
Ind., Inst., & Cmcl. Interrup. Therms	265,932	270,461	272,196	275,359	278,536	283,189	284,916	288,117	291,318	296,069
Total Core Therms	**4,676,310**	**4,751,783**	**4,786,465**	**4,842,083**	**4,897,955**	**4,975,396**	**5,010,149**	**5,066,437**	**5,122,715**	**5,201,693**
Daily Baseload Therms	4,381	4,452	4,484	4,537	4,589	4,661	4,694	4,747	4,799	4,873
Peak Day Therms	49,673	50,257	50,843	51,434	52,028	52,622	53,220	53,817	54,415	55,015
Therms Per Residential Customer	469	471	469	469	469	471	469	469	469	471
Therms Per Commercial Customer	4,851	4,871	4,851	4,851	4,851	4,871	4,851	4,851	4,851	4,871
Therms Per Industrial Customer	25,941	26,057	25,941	25,941	25,941	26,057	25,941	25,941	25,941	26,057
Residential Customers	1,405	1,422	1,438	1,455	1,472	1,488	1,505	1,522	1,539	1,556
Commercial Customers	692	700	709	717	725	733	742	750	758	767
Industrial Customers	15	15	16	16	16	16	16	16	17	17
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,116**	**2,141**	**2,166**	**2,191**	**2,216**	**2,242**	**2,267**	**2,293**	**2,318**	**2,344**

Finley	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.81%	0.72%	1.25%	1.24%	1.76%	0.67%	1.20%	1.18%	1.71%
Residential Therms	14,698	14,966	15,071	15,259	15,447	15,723	15,825	16,014	16,204	16,484
Commercial Therms	87,420	88,998	89,639	90,756	91,877	93,494	94,125	95,251	96,376	98,024
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**102,117**	**103,964**	**104,709**	**106,015**	**107,324**	**109,216**	**109,950**	**111,266**	**112,580**	**114,508**
Daily Baseload Therms	28	29	29	29	30	30	30	31	31	32
Peak Day Therms	1,659	1,680	1,701	1,722	1,744	1,765	1,786	1,808	1,829	1,850
Therms Per Residential Customer	558	561	558	558	558	561	558	558	558	561
Therms Per Commercial Customer	6,640	6,675	6,640	6,640	6,640	6,675	6,640	6,640	6,640	6,675
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	27	27	27	28	28	28	29	29	29
Commercial Customers	13	13	14	14	14	14	14	14	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**39**	**40**	**41**	**41**	**42**	**42**	**43**	**43**	**44**	**44**

Grandview	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.56%	-0.28%	0.16%	0.16%	0.59%	-0.25%	0.18%	0.18%	0.61%
Residential Therms	584,452	588,124	586,108	587,020	587,977	591,843	589,976	591,012	592,058	596,043
Commercial Therms	665,992	670,134	667,879	668,919	670,009	674,371	672,286	673,467	674,659	679,157
Industrial Therms	576,560	579,019	578,194	579,094	580,037	582,680	582,009	583,032	584,063	586,815
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,827,005**	**1,837,276**	**1,832,181**	**1,835,032**	**1,838,024**	**1,848,894**	**1,844,270**	**1,847,511**	**1,850,781**	**1,862,015**
Daily Baseload Therms	1,114	1,121	1,117	1,119	1,121	1,128	1,125	1,127	1,129	1,136
Peak Day Therms	18,759	18,784	18,812	18,841	18,872	18,903	18,936	18,969	19,003	19,037
Therms Per Residential Customer	614	617	614	614	614	617	614	614	614	617
Therms Per Commercial Customer	3,612	3,629	3,612	3,612	3,612	3,629	3,612	3,612	3,612	3,629
Therms Per Industrial Customer	72,735	72,946	72,735	72,735	72,735	72,946	72,735	72,735	72,735	72,946
Residential Customers	952	953	954	956	957	959	961	962	964	966
Commercial Customers	184	185	185	185	186	186	186	186	187	187
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,144**	**1,145**	**1,147**	**1,149**	**1,151**	**1,153**	**1,155**	**1,157**	**1,159**	**1,161**

Zillah (Toppenish)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.62%	-0.26%	0.19%	0.20%	0.65%	-0.23%	0.21%	0.21%	0.66%
Residential Therms	1,136,494	1,144,195	1,140,596	1,142,803	1,145,091	1,153,160	1,149,821	1,152,254	1,154,702	1,162,997
Commercial Therms	2,088,930	2,102,025	2,096,470	2,100,526	2,104,732	2,118,494	2,113,425	2,117,896	2,122,396	2,136,566
Industrial Therms	576,409	579,403	578,490	579,609	580,770	583,942	583,169	584,402	585,644	588,924
Ind., Inst., & Cmcl. Interrup. Therms	87,078	87,416	87,392	87,561	87,736	88,101	88,099	88,285	88,473	88,852
Total Core Therms	**3,888,911**	**3,913,040**	**3,902,948**	**3,910,499**	**3,918,329**	**3,943,697**	**3,934,514**	**3,942,838**	**3,951,215**	**3,977,338**
Daily Baseload Therms	2,905	2,923	2,916	2,921	2,927	2,946	2,939	2,946	2,952	2,971

Peak Day Therms	44,576	44,654	44,737	44,823	44,913	45,004	45,099	45,194	45,290	45,388
Therms Per Residential Customer	595	598	595	595	595	598	595	595	595	598
Therms Per Commercial Customer	4,184	4,203	4,184	4,184	4,184	4,203	4,184	4,184	4,184	4,203
Therms Per Industrial Customer	26,765	26,857	26,765	26,765	26,765	26,857	26,765	26,765	26,765	26,857
Residential Customers	1,909	1,912	1,916	1,919	1,923	1,927	1,931	1,935	1,939	1,943
Commercial Customers	499	500	501	502	503	504	505	506	507	508
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,431**	**2,435**	**2,439**	**2,444**	**2,449**	**2,454**	**2,459**	**2,464**	**2,469**	**2,475**

Kalama #2	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.53%	0.53%
Residential Therms	189,556	190,578	191,609	192,648	193,692	194,736	195,785	196,833	197,878	198,923
Commercial Therms	180,714	181,689	182,672	183,662	184,657	185,653	186,653	187,652	188,649	189,645
Industrial Therms	224,114	225,323	226,541	227,769	229,004	230,239	231,479	232,718	233,953	235,189
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**594,384**	**597,591**	**600,822**	**604,079**	**607,353**	**610,628**	**613,917**	**617,204**	**620,480**	**623,757**
Daily Baseload Therms	896	901	906	911	916	921	926	931	936	940
Peak Day Therms	6,464	6,499	6,534	6,569	6,605	6,640	6,676	6,712	6,748	6,783
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	169	170	171	172	173	174	175	176	177	178
Commercial Customers	48	48	48	48	49	49	49	49	50	50
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**220**	**221**	**222**	**223**	**224**	**226**	**227**	**228**	**229**	**230**

Lawrence	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.35%	1.37%	1.82%	1.80%	2.25%	1.27%	1.72%	1.69%	2.15%
Residential Therms	44,511	45,555	46,183	47,026	47,871	48,944	49,570	50,423	51,277	52,374
Commercial Therms	20,696	21,189	21,474	21,866	22,259	22,766	23,049	23,445	23,842	24,361
Industrial Therms	868	885	900	917	933	951	966	983	1,000	1,017
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**66,075**	**67,629**	**68,558**	**69,808**	**71,063**	**72,661**	**73,585**	**74,852**	**76,119**	**77,753**
Daily Baseload Therms	29	29	30	30	31	32	32	33	33	34
Peak Day Therms	824	839	855	870	886	902	918	933	949	965
Therms Per Residential Customer	730	733	730	730	730	733	730	730	730	733
Therms Per Commercial Customer	1,303	1,310	1,303	1,303	1,303	1,310	1,303	1,303	1,303	1,310
Therms Per Industrial Customer	852	853	852	852	852	853	852	852	852	853
Residential Customers	61	62	63	64	66	67	68	69	70	71
Commercial Customers	16	16	16	17	17	17	18	18	18	19
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**78**	**79**	**81**	**82**	**84**	**85**	**87**	**88**	**90**	**91**

Moxee (Beauchene)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.83%	0.17%	0.51%	0.51%	0.85%	0.18%	0.52%	0.52%	0.86%
Residential Therms	262,997	265,471	265,631	266,982	268,352	270,921	271,125	272,527	273,934	276,569
Commercial Therms	532,018	536,516	537,347	540,080	542,850	547,530	548,461	551,297	554,142	558,945
Industrial Therms	519,351	523,053	524,554	527,222	529,926	533,790	535,403	538,172	540,949	544,919
Ind., Inst., & Cmcl. Interrup. Therms	239,481	241,775	241,880	243,111	244,357	246,738	246,883	248,160	249,440	251,882
Total Core Therms	**1,553,847**	**1,566,815**	**1,569,413**	**1,577,394**	**1,585,485**	**1,598,979**	**1,601,872**	**1,610,156**	**1,618,465**	**1,632,314**
Daily Baseload Therms	584	589	590	593	596	601	602	605	608	613
Peak Day Therms	13,922	13,991	14,062	14,133	14,206	14,279	14,353	14,427	14,501	14,576
Therms Per Residential Customer	163	163	163	163	163	163	163	163	163	163
Therms Per Commercial Customer	1,315	1,320	1,315	1,315	1,315	1,320	1,315	1,315	1,315	1,320
Therms Per Industrial Customer	39,252	39,336	39,252	39,252	39,252	39,336	39,252	39,252	39,252	39,336
Residential Customers	1,618	1,626	1,634	1,643	1,651	1,660	1,668	1,677	1,685	1,694
Commercial Customers	405	407	409	411	413	415	417	419	421	424
Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**2,041**	**2,051**	**2,061**	**2,072**	**2,082**	**2,093**	**2,104**	**2,115**	**2,126**	**2,137**

Othello	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.74%	0.74%	0.74%	0.75%	0.75%	0.75%	0.75%	0.74%	0.75%
Residential Therms	630,697	635,346	640,079	644,839	649,682	654,527	659,457	664,388	669,333	674,345
Commercial Therms	817,556	823,583	829,717	835,888	842,166	848,447	854,838	861,229	867,639	874,135
Industrial Therms	228,503	230,188	231,902	233,627	235,382	237,137	238,923	240,710	242,501	244,317
Ind., Inst., & Cmcl. Interrup. Therms	209,124	210,665	212,235	213,813	215,419	217,026	218,660	220,295	221,935	223,596
Total Core Therms	**1,885,879**	**1,899,782**	**1,913,933**	**1,928,166**	**1,942,649**	**1,957,137**	**1,971,878**	**1,986,623**	**2,001,408**	**2,016,393**
Daily Baseload Therms	2,031	2,046	2,061	2,076	2,092	2,108	2,123	2,139	2,155	2,171
Peak Day Therms	20,743	20,896	21,052	21,208	21,367	21,527	21,689	21,851	22,014	22,178
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,087	1,095	1,104	1,112	1,120	1,128	1,137	1,145	1,154	1,163
Commercial Customers	283	285	287	289	292	294	296	298	300	303
Industrial Customers	11	11	11	11	11	11	12	12	12	12
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,383**	**1,394**	**1,404**	**1,414**	**1,425**	**1,436**	**1,447**	**1,457**	**1,468**	**1,479**

North Pasco	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Total Therms Pct. Growth		2.00%	0.93%	1.44%	1.42%	1.92%	0.86%	1.36%	1.34%	1.85%
Residential Therms	2,530,293	2,581,015	2,604,812	2,642,251	2,679,746	2,731,504	2,754,791	2,792,313	2,829,752	2,882,328
Commercial Therms	1,739,828	1,774,626	1,791,067	1,816,811	1,842,592	1,878,098	1,894,193	1,919,993	1,945,736	1,981,799
Industrial Therms	97,435	99,154	100,305	101,747	103,190	104,935	106,080	107,525	108,967	110,729
Ind., Inst., & Cmcl. Interrup. Therms	189,295	193,061	194,869	197,670	200,475	204,317	206,089	208,897	211,697	215,599
Total Core Therms	**4,556,852**	**4,647,856**	**4,691,053**	**4,758,478**	**4,826,003**	**4,918,854**	**4,961,153**	**5,028,728**	**5,096,153**	**5,190,455**
Daily Baseload Therms	1,732	1,766	1,783	1,808	1,834	1,869	1,885	1,911	1,937	1,972
Peak Day Therms	72,894	73,966	75,041	76,120	77,200	78,279	79,362	80,443	81,521	82,601
Therms Per Residential Customer	1,357	1,364	1,357	1,357	1,357	1,364	1,357	1,357	1,357	1,364
Therms Per Commercial Customer	8,803	8,849	8,803	8,803	8,803	8,849	8,803	8,803	8,803	8,849
Therms Per Industrial Customer	48,003	48,142	48,003	48,003	48,003	48,142	48,003	48,003	48,003	48,142
Residential Customers	1,864	1,892	1,919	1,947	1,974	2,002	2,030	2,057	2,085	2,113
Commercial Customers	198	201	203	206	209	212	215	218	221	224
Industrial Customers	2	2	2	2	2	2	2	2	2	2
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,065**	**2,095**	**2,126**	**2,156**	**2,187**	**2,218**	**2,248**	**2,279**	**2,309**	**2,340**

Patterson	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.84%	1.83%	1.81%	1.80%	1.79%	1.78%	1.76%	1.75%	1.74%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	10,267	10,455	10,646	10,840	11,035	11,232	11,432	11,634	11,837	12,043
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	221,302	225,373	229,491	233,655	237,865	242,121	246,422	250,769	255,161	259,598
Total Core Therms	**231,568**	**235,828**	**240,138**	**244,494**	**248,900**	**253,353**	**257,854**	**262,402**	**266,998**	**271,641**
Daily Baseload Therms	316	322	328	334	340	346	352	358	365	371
Peak Day Therms	2,510	2,557	2,603	2,651	2,698	2,747	2,795	2,845	2,895	2,945
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	4	4	4	4	4	4	5	5	5	5
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**6**	**6**	**6**	**6**	**7**	**7**	**7**	**7**	**7**	**7**

Prosser	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.73%	0.78%	1.24%	1.23%	1.68%	0.74%	1.19%	1.18%	1.63%
Residential Therms	266,543	271,284	273,282	276,675	280,079	284,933	286,904	290,323	293,737	298,679
Commercial Therms	462,263	470,202	473,950	479,835	485,737	493,858	497,575	503,503	509,426	517,685
Industrial Therms	149,719	152,240	153,505	155,411	157,322	159,899	161,156	163,076	164,995	167,613
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**878,525**	**893,726**	**900,736**	**911,921**	**923,138**	**938,690**	**945,635**	**956,902**	**968,158**	**983,977**
Daily Baseload Therms	418	426	429	434	440	447	450	456	461	469
Peak Day Therms	10,681	10,816	10,952	11,088	11,224	11,360	11,497	11,634	11,771	11,908
Therms Per Residential Customer	587	590	587	587	587	590	587	587	587	590
Therms Per Commercial Customer	3,328	3,343	3,328	3,328	3,328	3,343	3,328	3,328	3,328	3,343
Therms Per Industrial Customer	29,568	29,691	29,568	29,568	29,568	29,691	29,568	29,568	29,568	29,691
Residential Customers	454	460	465	471	477	483	489	494	500	506
Commercial Customers	139	141	142	144	146	148	150	151	153	155
Industrial Customers	5	5	5	5	5	5	5	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**605**	**613**	**621**	**628**	**636**	**644**	**651**	**659**	**667**

Quincy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.29%	1.28%	1.28%	1.28%	1.27%	1.27%	1.26%	1.25%	1.25%
Residential Therms	43,694	44,257	44,826	45,400	45,980	46,564	47,154	47,748	48,345	48,948
Commercial Therms	499,882	506,319	512,822	519,394	526,029	532,711	539,460	546,253	553,089	559,980
Industrial Therms	241,072	244,176	247,313	250,482	253,682	256,904	260,159	263,435	266,732	270,055
Ind., Inst., & Cmcl. Interrup. Therms	55,965	56,686	57,414	58,150	58,893	59,641	60,397	61,157	61,922	62,694
Total Core Therms	**840,614**	**851,438**	**862,375**	**873,425**	**884,583**	**895,819**	**907,170**	**918,593**	**930,089**	**941,676**
Daily Baseload Therms	633	641	649	657	666	674	683	691	700	709
Peak Day Therms	9,534	9,656	9,780	9,906	10,032	10,160	10,288	10,418	10,548	10,680
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	62	62	63	64	65	66	66	67	68	69
Commercial Customers	64	65	66	67	68	69	69	70	71	72
Industrial Customers	6	6	6	6	6	6	7	7	7	7
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**133**	**135**	**136**	**138**	**140**	**142**	**143**	**145**	**147**	**149**

Sunnyside	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.69%	-0.17%	0.27%	0.27%	0.71%	-0.15%	0.28%	0.28%	0.72%
Residential Therms	1,076,314	1,084,153	1,081,842	1,084,739	1,087,704	1,095,871	1,093,762	1,096,846	1,099,941	1,108,311
Commercial Therms	1,517,744	1,528,303	1,525,540	1,529,625	1,533,807	1,544,822	1,542,349	1,546,698	1,551,062	1,562,359
Industrial Therms	523,648	526,656	526,338	527,747	529,190	532,349	532,137	533,638	535,143	538,392
Ind., Inst., & Cmcl. Interrup. Therms	163,918	164,995	164,760	165,201	165,653	166,779	166,576	167,045	167,517	168,672
Total Core Therms	**3,281,625**	**3,304,107**	**3,298,480**	**3,307,312**	**3,316,355**	**3,339,820**	**3,334,824**	**3,344,227**	**3,353,663**	**3,377,733**
Daily Baseload Therms	2,831	2,850	2,845	2,853	2,860	2,881	2,876	2,885	2,893	2,913
Peak Day Therms	36,959	37,052	37,148	37,248	37,350	37,452	37,558	37,664	37,770	37,878
Therms Per Residential Customer	591	594	591	591	591	594	591	591	591	594
Therms Per Commercial Customer	2,976	2,989	2,976	2,976	2,976	2,989	2,976	2,976	2,976	2,989
Therms Per Industrial Customer	33,521	33,628	33,521	33,521	33,521	33,628	33,521	33,521	33,521	33,628
Residential Customers	1,821	1,826	1,831	1,836	1,841	1,846	1,851	1,856	1,861	1,867

Commercial Customers	510	511	513	514	515	517	518	520	521	523
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,349**	**2,355**	**2,361**	**2,367**	**2,374**	**2,380**	**2,387**	**2,394**	**2,401**	**2,408**

Moses Lake	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.43%	1.50%	1.96%	1.95%	2.42%	1.48%	1.94%	1.94%	2.40%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	153,243	157,349	159,326	162,447	165,622	170,029	172,135	175,475	178,871	183,598
Industrial Therms	3,408,593	3,491,186	3,543,916	3,613,339	3,683,953	3,772,538	3,828,825	3,903,111	3,978,660	4,073,582
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,561,836**	**3,648,535**	**3,703,242**	**3,775,786**	**3,849,575**	**3,942,567**	**4,000,960**	**4,078,586**	**4,157,531**	**4,257,180**
Daily Baseload Therms	2,349	2,406	2,442	2,490	2,539	2,600	2,638	2,690	2,742	2,807
Peak Day Therms	41,354	42,168	42,996	43,838	44,695	45,566	46,452	47,354	48,270	49,202
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	30,056	30,265	30,056	30,056	30,056	30,265	30,056	30,056	30,056	30,265
Therms Per Industrial Customer	477,522	479,653	477,522	477,522	477,522	479,653	477,522	477,522	477,522	479,653
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	6	6	6	6	6	6
Industrial Customers	7	7	7	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**12**	**12**	**13**	**13**	**13**	**13**	**14**	**14**	**14**	**15**

Woodland	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.23%	2.27%	2.64%	2.57%	2.95%	2.01%	2.39%	2.33%	2.72%
Residential Therms	354,620	366,174	374,371	384,254	394,142	405,884	413,915	423,801	433,677	445,605
Commercial Therms	663,326	684,824	700,269	718,756	737,252	759,092	774,238	792,729	811,204	833,378
Industrial Therms	348,467	359,520	367,874	377,586	387,303	398,509	406,732	416,446	426,152	437,508
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,366,413**	**1,410,518**	**1,442,513**	**1,480,596**	**1,518,697**	**1,563,486**	**1,594,885**	**1,632,976**	**1,671,033**	**1,716,491**
Daily Baseload Therms	880	908	929	953	978	1,007	1,027	1,051	1,076	1,105
Peak Day Therms	13,098	13,463	13,828	14,193	14,558	14,923	15,288	15,653	16,018	16,383
Therms Per Residential Customer	594	597	594	594	594	597	594	594	594	597
Therms Per Commercial Customer	3,321	3,336	3,321	3,321	3,321	3,336	3,321	3,321	3,321	3,336
Therms Per Industrial Customer	24,197	24,289	24,197	24,197	24,197	24,289	24,197	24,197	24,197	24,289
Residential Customers	597	613	630	647	663	680	697	713	730	746
Commercial Customers	200	205	211	216	222	228	233	239	244	250
Industrial Customers	14	15	15	16	16	16	17	17	18	18
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**811**	**833**	**856**	**879**	**901**	**924**	**947**	**969**	**992**	**1,014**

Bellingham II	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.27%	1.49%	1.84%	1.81%	2.16%	1.39%	1.73%	1.70%	2.06%
Residential Therms	465,668	476,232	483,320	492,212	501,138	511,972	519,065	528,062	537,065	548,119
Commercial Therms	4,159	4,252	4,317	4,396	4,476	4,571	4,636	4,716	4,797	4,894
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**469,827**	**480,485**	**487,637**	**496,608**	**505,613**	**516,544**	**523,701**	**532,778**	**541,862**	**553,013**
Daily Baseload Therms	687	703	713	726	740	756	766	779	793	809
Peak Day Therms	3,567	3,635	3,703	3,771	3,839	3,908	3,976	4,045	4,114	4,183
Therms Per Residential Customer	15,230	15,286	15,230	15,230	15,230	15,286	15,230	15,230	15,230	15,286
Therms Per Commercial Customer	4,081	4,095	4,081	4,081	4,081	4,095	4,081	4,081	4,081	4,095
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	31	31	32	32	33	33	34	35	35	36
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**32**	**32**	**33**	**33**	**34**	**35**	**35**	**36**	**36**	**37**

LDS Church	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		3.07%	0.54%	1.76%	1.74%	2.97%	0.46%	1.67%	1.65%	2.88%
Residential Therms	3,053	3,147	3,164	3,219	3,275	3,374	3,388	3,445	3,502	3,603
Commercial Therms	8,429	8,687	8,735	8,889	9,044	9,312	9,355	9,512	9,669	9,946
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**11,482**	**11,834**	**11,899**	**12,109**	**12,320**	**12,686**	**12,744**	**12,957**	**13,170**	**13,550**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	128	130	133	135	137	140	142	144	147	149
Therms Per Residential Customer	1,499	1,518	1,499	1,499	1,499	1,518	1,499	1,499	1,499	1,518
Therms Per Commercial Customer	8,278	8,379	8,278	8,278	8,278	8,379	8,278	8,278	8,278	8,379
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	**4**

Kalama #1	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.45%	0.46%	0.47%	0.48%	0.48%	0.49%	0.49%	0.49%	0.49%
Residential Therms	874	878	882	886	890	895	899	903	908	912
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**874**	**878**	**882**	**886**	**890**	**895**	**899**	**903**	**908**	**912**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	17	17	17	17	17	17	17	17	18	18
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.61%	-0.33%	0.16%	0.16%	0.64%	-0.30%	0.18%	0.18%	0.66%
Residential Therms	1,469	1,477	1,473	1,475	1,477	1,487	1,482	1,485	1,488	1,497
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,469**	**1,477**	**1,473**	**1,475**	**1,477**	**1,487**	**1,482**	**1,485**	**1,488**	**1,497**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	19	19	19
Therms Per Residential Customer	733	737	733	733	733	737	733	733	733	737
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	631	632	633	634	635	636	637	638	639	640
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**631**	**632**	**633**	**634**	**635**	**636**	**637**	**638**	**639**	**640**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.14%	0.15%	0.16%	0.16%	0.17%	0.17%	0.18%	0.18%	0.18%
Residential Therms	12,365	12,382	12,400	12,419	12,439	12,460	12,482	12,503	12,526	12,548
Commercial Therms	4,097	4,103	4,109	4,115	4,122	4,129	4,136	4,143	4,151	4,158
Industrial Therms	1,681	1,683	1,686	1,688	1,691	1,694	1,697	1,700	1,703	1,706
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,143**	**18,168**	**18,195**	**18,223**	**18,253**	**18,283**	**18,315**	**18,347**	**18,379**	**18,413**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	163	164	164	164	164	165	165	165	166	166
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.77%	-0.24%	0.27%	0.28%	0.79%	-0.22%	0.28%	0.29%	0.80%
Residential Therms	4,828	4,865	4,853	4,866	4,880	4,918	4,907	4,921	4,935	4,975
Commercial Therms	377,639	380,535	379,603	380,632	381,684	384,696	383,833	384,927	386,024	389,109
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**382,467**	**385,400**	**384,457**	**385,498**	**386,564**	**389,614**	**388,741**	**389,848**	**390,960**	**394,084**
Daily Baseload Therms	196	198	197	198	198	200	199	200	201	202
Peak Day Therms	4,831	4,843	4,856	4,869	4,882	4,896	4,910	4,924	4,938	4,952
Therms Per Residential Customer	195	196	195	195	195	196	195	195	195	196
Therms Per Commercial Customer	3,997	4,017	3,997	3,997	3,997	4,017	3,997	3,997	3,997	4,017
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	25	25	25	25	25	25	25	25	25	25
Commercial Customers	94	95	95	95	95	96	96	96	97	97
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**120**	**121**	**121**	**121**	**122**	**122**	**122**

Sandvik Metals	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.34%	0.39%	0.86%	0.86%	1.33%	0.38%	0.85%	0.84%	1.31%
Residential Therms	2,823,744	2,861,952	2,872,765	2,897,567	2,922,499	2,961,712	2,972,589	2,997,708	3,022,791	3,062,734
Commercial Therms	1,965,110	1,991,533	1,999,226	2,016,485	2,033,837	2,060,952	2,068,695	2,086,177	2,103,632	2,131,250
Industrial Therms	119,266	120,585	121,336	122,384	123,437	124,788	125,553	126,614	127,673	129,044
Ind., Inst., & Cmcl. Interrup. Therms	220,010	222,945	223,829	225,761	227,704	230,716	231,607	233,564	235,518	238,585
Total Core Therms	**5,128,130**	**5,197,014**	**5,217,156**	**5,262,197**	**5,307,476**	**5,378,168**	**5,398,443**	**5,444,063**	**5,489,614**	**5,561,614**
Daily Baseload Therms	3,488	3,534	3,548	3,579	3,610	3,658	3,671	3,702	3,733	3,782
Peak Day Therms	70,595	71,206	71,821	72,441	73,064	73,688	74,316	74,944	75,571	76,201
Therms Per Residential Customer	374	376	374	374	374	376	374	374	374	376
Therms Per Commercial Customer	2,448	2,459	2,448	2,448	2,448	2,459	2,448	2,448	2,448	2,459
Therms Per Industrial Customer	13,513	13,546	13,513	13,513	13,513	13,546	13,513	13,513	13,513	13,546
Residential Customers	7,542	7,607	7,673	7,739	7,806	7,873	7,940	8,007	8,074	8,141
Commercial Customers	803	810	817	824	831	838	845	852	859	867
Industrial Customers	9	9	9	9	9	9	9	9	9	10
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**8,358**	**8,430**	**8,503**	**8,577**	**8,650**	**8,724**	**8,799**	**8,873**	**8,947**	**9,022**

East Stanwood Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.93%	1.04%	1.46%	1.45%	1.87%	0.98%	1.40%	1.38%	1.80%
Residential Therms	5,437,849	5,543,660	5,600,471	5,682,396	5,764,661	5,873,184	5,929,748	6,012,540	6,095,331	6,206,007
Commercial Therms	3,494,434	3,561,733	3,598,938	3,651,583	3,704,448	3,773,449	3,810,535	3,863,738	3,916,941	3,987,284

Industrial Therms	103,702	105,606	106,803	108,365	109,934	111,883	113,083	114,661	116,240	118,223
Ind., Inst., & Cmcl. Interrup. Therms	525,909	535,674	541,637	549,560	557,516	567,516	573,482	581,489	589,496	599,676
Total Core Therms	**9,561,895**	**9,746,673**	**9,847,849**	**9,991,904**	**10,136,559**	**10,326,032**	**10,426,848**	**10,572,428**	**10,718,009**	**10,911,190**
Daily Baseload Therms	7,145	7,283	7,359	7,466	7,574	7,716	7,791	7,900	8,009	8,153
Peak Day Therms	101,621	103,136	104,660	106,191	107,728	109,267	110,813	112,360	113,907	115,459
Therms Per Residential Customer	684	687	684	684	684	687	684	684	684	687
Therms Per Commercial Customer	3,795	3,811	3,795	3,795	3,795	3,811	3,795	3,795	3,795	3,811
Therms Per Industrial Customer	41,621	41,763	41,621	41,621	41,621	41,763	41,621	41,621	41,621	41,763
Residential Customers	7,955	8,073	8,193	8,312	8,433	8,553	8,674	8,795	8,916	9,038
Commercial Customers	921	935	948	962	976	990	1,004	1,018	1,032	1,046
Industrial Customers	2	3	3	3	3	3	3	3	3	3
Interruptible Customers	5	5	5	5	5	5	6	6	6	6
Total Core Customers	**8,883**	**9,016**	**9,149**	**9,283**	**9,417**	**9,551**	**9,687**	**9,822**	**9,957**	**10,093**

Kennewick Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.74%	1.22%	1.20%	1.68%	0.70%	1.17%	1.15%	1.62%
Residential Therms	8,519,380	8,668,190	8,730,222	8,836,343	8,942,727	9,094,865	9,155,932	9,262,621	9,369,136	9,523,782
Commercial Therms	9,379,543	9,539,332	9,611,673	9,728,509	9,845,634	10,008,887	10,080,365	10,197,826	10,315,095	10,480,909
Industrial Therms	166,184	168,798	170,297	172,367	174,442	177,106	178,601	180,682	182,760	185,459
Ind., Inst., & Cmcl. Interrup. Therms	908,982	924,265	931,478	942,801	954,151	969,760	976,899	988,283	999,647	1,015,495
Total Core Therms	**18,974,089**	**19,300,585**	**19,443,671**	**19,680,020**	**19,916,954**	**20,250,618**	**20,391,797**	**20,629,413**	**20,866,639**	**21,205,645**
Daily Baseload Therms	13,971	14,212	14,317	14,491	14,666	14,911	15,015	15,190	15,365	15,615
Peak Day Therms	263,963	267,223	270,496	273,784	277,080	280,376	283,686	286,992	290,292	293,599
Therms Per Residential Customer	613	617	613	613	613	617	613	613	613	617
Therms Per Commercial Customer	4,174	4,194	4,174	4,174	4,174	4,194	4,174	4,174	4,174	4,194
Therms Per Industrial Customer	20,306	20,374	20,306	20,306	20,306	20,374	20,306	20,306	20,306	20,374
Residential Customers	13,887	14,059	14,231	14,404	14,578	14,751	14,925	15,099	15,273	15,447
Commercial Customers	2,247	2,275	2,303	2,331	2,359	2,387	2,415	2,443	2,471	2,499
Industrial Customers	8	8	8	8	9	9	9	9	9	9
Interruptible Customers	12	12	12	12	12	13	13	13	13	13
Total Core Customers	**16,154**	**16,354**	**16,554**	**16,755**	**16,957**	**17,159**	**17,361**	**17,564**	**17,766**	**17,968**

Longview South Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.06%	-0.06%	0.51%	0.51%	1.07%	-0.04%	0.51%	0.51%	1.07%
Residential Therms	744,620	752,606	752,094	755,916	759,784	768,039	767,602	771,547	775,495	783,920
Commercial Therms	2,640,935	2,668,877	2,667,442	2,681,000	2,694,718	2,723,605	2,722,446	2,736,436	2,750,438	2,779,920
Industrial Therms	146,168	147,737	147,635	148,386	149,145	150,767	150,680	151,454	152,229	153,884
Ind., Inst., & Cmcl. Interrup. Therms	488,497	493,615	493,400	495,908	498,445	503,737	503,574	506,162	508,752	514,153
Total Core Therms	**4,020,220**	**4,062,836**	**4,060,572**	**4,081,210**	**4,102,093**	**4,146,148**	**4,144,303**	**4,165,599**	**4,186,914**	**4,231,877**
Daily Baseload Therms	3,157	3,190	3,188	3,205	3,221	3,256	3,254	3,271	3,288	3,323
Peak Day Therms	42,871	43,084	43,301	43,521	43,744	43,968	44,194	44,421	44,649	44,877
Therms Per Residential Customer	406	408	406	406	406	408	406	406	406	408
Therms Per Commercial Customer	3,058	3,075	3,058	3,058	3,058	3,075	3,058	3,058	3,058	3,075
Therms Per Industrial Customer	10,841	10,903	10,841	10,841	10,841	10,903	10,841	10,841	10,841	10,903
Residential Customers	1,834	1,843	1,852	1,862	1,871	1,881	1,890	1,900	1,910	1,920
Commercial Customers	864	868	872	877	881	886	890	895	899	904
Industrial Customers	13	14	14	14	14	14	14	14	14	14
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**2,717**	**2,730**	**2,744**	**2,758**	**2,772**	**2,786**	**2,801**	**2,815**	**2,829**	**2,844**

Sedro-Woolley Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.87%	0.94%	1.39%	1.37%	1.82%	0.89%	1.33%	1.31%	1.76%
Residential Therms	16,928,564	17,247,038	17,407,551	17,649,017	17,891,272	18,217,904	18,377,623	18,621,456	18,865,158	19,198,151
Commercial Therms	8,376,631	8,533,283	8,613,645	8,733,127	8,853,001	9,013,636	9,093,658	9,214,312	9,334,901	9,498,631
Industrial Therms	1,135,127	1,155,585	1,167,245	1,183,437	1,199,681	1,220,635	1,232,293	1,248,643	1,264,984	1,286,314
Ind., Inst., & Cmcl. Interrup. Therms	1,217,733	1,239,747	1,252,188	1,269,557	1,286,984	1,309,534	1,321,969	1,339,508	1,357,039	1,379,996
Total Core Therms	**27,658,055**	**28,175,653**	**28,440,629**	**28,835,138**	**29,230,937**	**29,761,709**	**30,025,542**	**30,423,920**	**30,822,082**	**31,363,092**
Daily Baseload Therms	15,073	15,355	15,499	15,714	15,930	16,219	16,363	16,580	16,797	17,092
Peak Day Therms	321,421	325,958	330,516	335,100	339,700	344,307	348,934	353,564	358,191	362,833
Therms Per Residential Customer	687	690	687	687	687	690	687	687	687	690
Therms Per Commercial Customer	2,610	2,622	2,610	2,610	2,610	2,622	2,610	2,610	2,610	2,622
Therms Per Industrial Customer	13,917	13,971	13,917	13,917	13,917	13,971	13,917	13,917	13,917	13,971
Residential Customers	24,642	24,990	25,339	25,691	26,043	26,397	26,751	27,106	27,461	27,817
Commercial Customers	3,210	3,255	3,300	3,346	3,392	3,438	3,484	3,531	3,577	3,623
Industrial Customers	82	83	84	85	86	87	89	90	91	92
Interruptible Customers	9	9	10	10	10	10	10	10	10	10
Total Core Customers	**27,942**	**28,337**	**28,733**	**29,132**	**29,532**	**29,932**	**30,334**	**30,737**	**31,139**	**31,543**

Sumas SPE Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.35%	1.41%	1.84%	1.81%	2.24%	1.31%	1.73%	1.70%	2.14%
Residential Therms	30,593,115	31,313,529	31,752,830	32,336,965	32,923,372	33,663,525	34,101,136	34,692,224	35,283,714	36,040,256
Commercial Therms	14,135,807	14,465,891	14,671,663	14,941,568	15,212,522	15,551,518	15,756,718	16,029,835	16,303,138	16,649,495
Industrial Therms	773,510	790,999	802,832	817,601	832,428	850,361	862,206	877,151	892,106	910,399
Ind., Inst., & Cmcl. Interrup. Therms	1,136,348	1,162,936	1,179,425	1,201,122	1,222,903	1,250,211	1,266,650	1,288,605	1,310,576	1,338,479
Total Core Therms	**46,638,780**	**47,733,355**	**48,406,750**	**49,297,255**	**50,191,225**	**51,315,615**	**51,986,709**	**52,887,816**	**53,789,534**	**54,938,629**
Daily Baseload Therms	29,106	29,789	30,209	30,765	31,323	32,025	32,444	33,006	33,569	34,286
Peak Day Therms	531,961	542,021	552,127	562,284	572,481	582,698	592,960	603,238	613,523	623,838
Therms Per Residential Customer	719	722	719	719	719	722	719	719	719	722
Therms Per Commercial Customer	2,834	2,846	2,834	2,834	2,834	2,846	2,834	2,834	2,834	2,846
Therms Per Industrial Customer	16,292	16,351	16,292	16,292	16,292	16,351	16,292	16,292	16,292	16,351
Residential Customers	42,562	43,367	44,175	44,988	45,804	46,621	47,442	48,265	49,088	49,913
Commercial Customers	4,988	5,083	5,178	5,273	5,368	5,464	5,560	5,657	5,753	5,850
Industrial Customers	47	48	49	50	51	52	53	54	55	56
Interruptible Customers	13	13	13	14	14	14	14	15	15	15

Total Core Customers	**47,611**	**48,511**	**49,416**	**50,325**	**51,237**	**52,152**	**53,070**	**53,990**	**54,910**	**55,834**

Yakima Loop	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.60%	-0.32%	0.16%	0.16%	0.63%	-0.29%	0.18%	0.18%	0.65%
Residential Therms	12,374,195	12,451,524	12,409,247	12,428,563	12,448,823	12,530,262	12,491,132	12,513,081	12,535,229	12,619,186
Commercial Therms	11,237,886	11,305,092	11,269,719	11,287,261	11,305,661	11,376,580	11,344,084	11,364,018	11,384,133	11,457,317
Industrial Therms	2,730,381	2,744,812	2,738,115	2,742,377	2,746,847	2,762,169	2,756,183	2,761,026	2,765,913	2,781,772
Ind., Inst., & Cmcl. Interrup. Therms	811,981	816,812	814,281	815,548	816,878	821,977	819,654	821,094	822,547	827,810
Total Core Therms	**27,154,443**	**27,318,240**	**27,231,362**	**27,273,749**	**27,318,209**	**27,490,988**	**27,411,053**	**27,459,220**	**27,507,823**	**27,686,086**
Daily Baseload Therms	15,353	15,446	15,396	15,420	15,446	15,543	15,498	15,525	15,553	15,654
Peak Day Therms	333,048	333,504	333,991	334,511	335,057	335,613	336,195	336,786	337,382	337,994
Therms Per Residential Customer	679	682	679	679	679	682	679	679	679	682
Therms Per Commercial Customer	3,438	3,454	3,438	3,438	3,438	3,454	3,438	3,438	3,438	3,454
Therms Per Industrial Customer	37,397	37,544	37,397	37,397	37,397	37,544	37,397	37,397	37,397	37,544
Residential Customers	18,224	18,249	18,276	18,304	18,334	18,364	18,396	18,429	18,461	18,495
Commercial Customers	3,268	3,273	3,278	3,283	3,288	3,294	3,299	3,305	3,311	3,317
Industrial Customers	73	73	73	73	73	74	74	74	74	74
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,576**	**21,606**	**21,637**	**21,671**	**21,706**	**21,743**	**21,780**	**21,819**	**21,857**	**21,897**

Zone 10	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.73%	-0.14%	0.31%	0.31%	0.75%	-0.12%	0.32%	0.32%	0.76%
Residential Therms	3,077,637	3,101,615	3,095,700	3,105,131	3,114,768	3,139,753	3,134,427	3,144,423	3,154,452	3,180,076
Commercial Therms	4,739,027	4,774,768	4,767,947	4,783,019	4,798,407	4,835,675	4,829,772	4,845,709	4,861,694	4,899,925
Industrial Therms	1,828,018	1,839,001	1,838,211	1,843,549	1,849,011	1,860,564	1,860,168	1,865,848	1,871,548	1,883,450
Ind., Inst., & Cmcl. Interrup. Therms	250,996	252,411	252,152	252,762	253,390	254,879	254,674	255,331	255,989	257,524
Total Core Therms	**9,895,678**	**9,967,794**	**9,954,011**	**9,984,462**	**10,015,576**	**10,090,871**	**10,079,041**	**10,111,310**	**10,143,683**	**10,220,975**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	111,157	111,489	111,831	112,183	112,542	112,904	113,274	113,646	114,019	114,397
Therms Per Residential Customer	598	601	598	598	598	601	598	598	598	601
Therms Per Commercial Customer	3,554	3,569	3,553	3,552	3,552	3,568	3,551	3,551	3,550	3,566
Therms Per Industrial Customer	35,739	35,846	35,721	35,712	35,703	35,811	35,686	35,677	35,669	35,777
Residential Customers	5,149	5,164	5,179	5,195	5,211	5,228	5,244	5,261	5,278	5,295
Commercial Customers	1,334	1,338	1,342	1,346	1,351	1,355	1,360	1,365	1,369	1,374
Industrial Customers	51	51	51	52	52	52	52	52	52	53
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,536**	**6,556**	**6,576**	**6,596**	**6,617**	**6,638**	**6,660**	**6,681**	**6,703**	**6,725**

Zone 11	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.77%	-0.11%	0.34%	0.35%	0.79%	-0.09%	0.35%	0.35%	0.80%
Residential Therms	13,345,185	13,436,330	13,399,549	13,428,640	13,458,735	13,554,391	13,520,828	13,552,719	13,584,815	13,683,296
Commercial Therms	16,005,255	16,140,078	16,136,418	16,204,230	16,273,206	16,413,679	16,413,382	16,484,456	16,555,759	16,699,987
Industrial Therms	3,884,513	3,912,165	3,912,965	3,927,747	3,942,825	3,971,817	3,973,561	3,989,188	4,004,887	4,034,754
Ind., Inst., & Cmcl. Interrup. Therms	1,373,359	1,385,734	1,385,771	1,392,167	1,398,664	1,411,545	1,411,850	1,418,528	1,425,228	1,438,455
Total Core Therms	**34,608,312**	**34,874,308**	**34,834,703**	**34,952,784**	**35,073,430**	**35,351,432**	**35,319,621**	**35,444,891**	**35,570,689**	**35,856,492**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	411,019	412,262	413,544	414,865	416,216	417,580	418,977	420,383	421,796	423,229
Therms Per Residential Customer	625	628	625	625	625	627	624	624	624	626
Therms Per Commercial Customer	3,538	3,555	3,542	3,544	3,546	3,563	3,550	3,552	3,554	3,571
Therms Per Industrial Customer	36,136	36,251	36,114	36,103	36,092	36,207	36,071	36,060	36,050	36,165
Residential Customers	21,336	21,386	21,438	21,493	21,549	21,605	21,664	21,722	21,781	21,842
Commercial Customers	4,524	4,540	4,556	4,572	4,589	4,606	4,623	4,641	4,658	4,676
Industrial Customers	107	108	108	109	109	110	110	111	111	112
Interruptible Customers	20	21	21	21	21	21	21	21	21	21
Total Core Customers	**25,988**	**26,054**	**26,123**	**26,194**	**26,268**	**26,342**	**26,418**	**26,495**	**26,572**	**26,650**

Zone 20	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.72%	0.79%	1.25%	1.24%	1.69%	0.76%	1.21%	1.19%	1.65%
Residential Therms	14,518,811	14,761,470	14,862,949	15,036,258	15,210,101	15,458,331	15,558,593	15,733,046	15,907,216	16,159,672
Commercial Therms	14,142,700	14,375,420	14,480,649	14,650,896	14,821,727	15,059,907	15,164,350	15,335,951	15,507,350	15,749,715
Industrial Therms	4,019,982	4,109,909	4,167,756	4,243,463	4,320,404	4,416,504	4,477,982	4,558,642	4,640,561	4,743,131
Ind., Inst., & Cmcl. Interrup. Therms	1,527,410	1,550,936	1,562,411	1,580,045	1,597,750	1,621,819	1,633,256	1,651,038	1,668,798	1,693,275
Total Core Therms	**34,208,903**	**34,797,735**	**35,073,765**	**35,510,663**	**35,949,982**	**36,556,561**	**36,834,182**	**37,278,677**	**37,723,924**	**38,345,794**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	471,209	477,139	483,106	489,113	495,150	501,201	507,292	513,391	519,497	525,633
Therms Per Residential Customer	595	598	596	596	596	600	597	597	598	601
Therms Per Commercial Customer	3,985	4,006	3,990	3,993	3,995	4,016	4,000	4,002	4,005	4,025
Therms Per Industrial Customer	107,894	109,051	109,326	110,046	110,768	111,952	112,228	112,966	113,712	114,929
Residential Customers	24,408	24,680	24,954	25,229	25,506	25,782	26,060	26,337	26,614	26,892
Commercial Customers	3,549	3,589	3,629	3,669	3,710	3,750	3,791	3,832	3,872	3,913
Industrial Customers	37	38	38	39	39	39	40	40	41	41
Interruptible Customers	19	19	19	20	20	20	20	20	21	21
Total Core Customers	**28,013**	**28,326**	**28,640**	**28,957**	**29,274**	**29,592**	**29,911**	**30,230**	**30,548**	**30,868**

Zone 24	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.70%	-0.27%	0.23%	0.23%	0.72%	-0.25%	0.24%	0.23%	0.72%
Residential Therms	3,953,392	3,981,424	3,969,069	3,977,452	3,985,941	4,014,838	4,003,138	4,011,847	4,020,549	4,050,028
Commercial Therms	3,726,475	3,753,165	3,742,679	3,751,247	3,759,940	3,787,445	3,777,528	3,786,424	3,795,310	3,823,350
Industrial Therms	255,210	256,300	256,415	257,047	257,688	258,825	258,985	259,640	260,295	261,459
Ind., Inst., & Cmcl. Interrup. Therms	1,140,728	1,148,617	1,147,090	1,150,367	1,153,708	1,161,838	1,160,445	1,163,842	1,167,235	1,175,509
Total Core Therms	**9,075,805**	**9,139,506**	**9,115,253**	**9,136,112**	**9,157,277**	**9,222,946**	**9,200,095**	**9,221,754**	**9,243,388**	**9,310,345**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095

Therms Per Residential Customer	571	574	571	571	571	574	571	571	571	574
Therms Per Commercial Customer	2,653	2,666	2,652	2,652	2,652	2,665	2,652	2,652	2,651	2,665
Therms Per Industrial Customer	11,069	11,087	11,064	11,061	11,059	11,078	11,054	11,052	11,050	11,069
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Zone 26	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.50%	0.58%	1.03%	1.03%	1.48%	0.56%	1.00%	1.00%	1.45%
Residential Therms	1,324,694	1,345,601	1,354,325	1,369,251	1,384,235	1,405,636	1,414,292	1,429,359	1,444,417	1,466,181
Commercial Therms	3,614,626	3,666,289	3,681,593	3,715,425	3,749,443	3,802,464	3,817,789	3,852,098	3,886,403	3,940,388
Industrial Therms	718,749	732,580	742,051	753,741	765,451	779,515	788,891	800,618	812,334	826,581
Ind., Inst., & Cmcl. Interrup. Therms	709,799	718,988	722,891	729,563	736,310	745,858	749,996	756,931	763,913	773,751
Total Core Therms	**6,367,867**	**6,463,459**	**6,500,860**	**6,567,980**	**6,635,439**	**6,733,472**	**6,770,968**	**6,839,006**	**6,907,067**	**7,006,901**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	66,316	66,982	67,652	68,327	69,006	69,685	70,369	71,053	71,738	72,425
Therms Per Residential Customer	497	499	498	498	499	501	500	500	500	503
Therms Per Commercial Customer	3,106	3,123	3,108	3,109	3,110	3,126	3,111	3,112	3,112	3,129
Therms Per Industrial Customer	22,637	22,713	22,653	22,661	22,667	22,742	22,680	22,685	22,690	22,764
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,164	1,174	1,185	1,195	1,206	1,216	1,227	1,238	1,249	1,259
Industrial Customers	32	32	33	33	34	34	35	35	36	36
Interruptible Customers	7	7	7	7	7	7	7	7	7	8
Total Core Customers	**3,870**	**3,908**	**3,946**	**3,984**	**4,023**	**4,062**	**4,101**	**4,139**	**4,178**	**4,217**

Zone 30-S	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.44%	0.54%	0.98%	0.98%	1.42%	0.52%	0.95%	0.94%	1.38%
Residential Therms	22,747,125	23,083,517	23,211,459	23,445,576	23,680,737	24,024,930	24,152,205	24,388,347	24,624,198	24,973,976
Commercial Therms	12,564,966	12,741,252	12,809,263	12,932,445	13,056,183	13,236,406	13,304,175	13,428,362	13,552,357	13,735,310
Industrial Therms	443,926	451,501	452,171	456,328	460,504	468,274	468,871	473,060	477,242	485,165
Ind., Inst., & Cmcl. Interrup. Therms	3,562,698	3,608,194	3,626,986	3,659,406	3,691,974	3,738,423	3,757,210	3,789,868	3,822,459	3,869,524
Total Core Therms	**39,318,714**	**39,884,465**	**40,099,879**	**40,493,755**	**40,889,398**	**41,468,032**	**41,682,461**	**42,079,637**	**42,476,255**	**43,063,975**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	382,514	386,328	390,160	394,015	397,887	401,757	405,649	409,536	413,418	417,309
Therms Per Residential Customer	658	661	658	658	658	661	658	658	658	661
Therms Per Commercial Customer	3,401	3,416	3,402	3,402	3,403	3,418	3,403	3,404	3,404	3,419
Therms Per Industrial Customer	17,915	18,078	17,962	17,985	18,008	18,170	18,053	18,075	18,096	18,258
Residential Customers	34,585	34,938	35,293	35,650	36,008	36,367	36,727	37,087	37,446	37,807
Commercial Customers	3,694	3,730	3,765	3,801	3,837	3,873	3,909	3,945	3,981	4,017
Industrial Customers	25	25	25	25	26	26	26	26	26	27
Interruptible Customers	14	14	14	14	14	15	15	15	15	15
Total Core Customers	**38,318**	**38,707**	**39,098**	**39,491**	**39,885**	**40,280**	**40,677**	**41,073**	**41,469**	**41,866**

Zone 30-W	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.13%	1.21%	1.64%	1.62%	2.05%	1.13%	1.56%	1.53%	1.97%
Residential Therms	57,154,888	58,385,268	59,090,712	60,065,989	61,044,947	62,308,154	63,010,707	63,996,920	64,983,419	66,273,304
Commercial Therms	28,039,236	28,634,045	28,980,725	29,455,055	29,931,180	30,541,633	30,887,218	31,366,845	31,846,599	32,469,683
Industrial Therms	2,237,242	2,281,496	2,308,791	2,344,844	2,381,028	2,426,377	2,453,680	2,490,122	2,526,566	2,572,771
Ind., Inst., & Cmcl. Interrup. Therms	2,948,270	3,008,256	3,044,088	3,092,366	3,140,825	3,202,349	3,238,123	3,286,930	3,335,744	3,398,490
Total Core Therms	**90,379,636**	**92,309,065**	**93,424,315**	**94,958,254**	**96,497,980**	**98,478,513**	**99,589,728**	**101,140,816**	**102,692,328**	**104,714,249**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,021,551	1,038,721	1,055,970	1,073,310	1,090,716	1,108,153	1,125,667	1,143,201	1,160,740	1,178,332
Therms Per Residential Customer	714	717	714	714	714	717	714	714	714	718
Therms Per Commercial Customer	2,887	2,900	2,887	2,887	2,887	2,900	2,887	2,887	2,887	2,900
Therms Per Industrial Customer	14,287	14,343	14,291	14,292	14,294	14,349	14,297	14,299	14,300	14,355
Residential Customers	80,050	81,398	82,752	84,113	85,479	86,848	88,223	89,600	90,977	92,358
Commercial Customers	9,711	9,874	10,038	10,202	10,367	10,532	10,698	10,864	11,030	11,197
Industrial Customers	157	159	162	164	167	169	172	174	177	179
Interruptible Customers	28	29	29	30	30	31	31	32	32	33
Total Core Customers	**89,946**	**91,460**	**92,980**	**94,509**	**96,043**	**97,580**	**99,124**	**100,670**	**102,216**	**103,767**

Zone GTN	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.48%	1.54%	1.96%	1.92%	2.34%	1.41%	1.82%	1.79%	2.21%
Residential Therms	29,567,843	30,331,748	30,822,696	31,452,207	32,082,723	32,861,429	33,344,790	33,976,143	34,606,979	35,398,209
Commercial Therms	18,225,281	18,668,801	18,950,450	19,314,554	19,679,423	20,132,011	20,410,210	20,775,987	21,141,544	21,601,676
Industrial Therms	1,758,939	1,787,829	1,801,418	1,822,935	1,844,606	1,874,433	1,888,267	1,910,241	1,932,244	1,962,805
Ind., Inst., & Cmcl. Interrup. Therms	933,266	949,225	958,916	971,873	984,902	1,001,286	1,011,105	1,024,271	1,037,446	1,054,155
Total Core Therms	**50,485,329**	**51,737,603**	**52,533,480**	**53,561,569**	**54,591,653**	**55,869,159**	**56,654,373**	**57,686,642**	**58,718,213**	**60,016,845**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	719	722	720	720	720	724	721	721	721	725
Therms Per Commercial Customer	2,785	2,797	2,785	2,786	2,786	2,798	2,786	2,787	2,787	2,799
Therms Per Industrial Customer	28,501	28,597	28,446	28,420	28,394	28,492	28,345	28,322	28,299	28,399
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Zone ME-OR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.08%	0.14%	0.61%	0.62%	1.09%	0.14%	0.61%	0.61%	1.08%

Residential Therms	5,491,080	5,552,339	5,557,882	5,591,869	5,626,268	5,689,461	5,695,411	5,730,292	5,765,103	5,829,623
Commercial Therms	5,495,672	5,553,801	5,562,592	5,596,634	5,631,089	5,691,067	5,700,337	5,735,269	5,770,130	5,831,350
Industrial Therms	402,780	407,119	407,687	410,183	412,709	417,185	417,786	420,347	422,903	427,472
Ind., Inst., & Cmcl. Interrup. Therms	1,339,298	1,352,800	1,355,584	1,363,870	1,372,257	1,386,196	1,389,115	1,397,620	1,406,108	1,420,335
Total Core Therms	**12,728,830**	**12,866,059**	**12,883,744**	**12,962,556**	**13,042,323**	**13,183,909**	**13,202,649**	**13,283,527**	**13,364,243**	**13,508,780**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	169,789	170,815	171,856	172,907	173,971	175,035	176,109	177,188	178,265	179,348
Therms Per Residential Customer	589	592	589	589	589	592	589	589	589	592
Therms Per Commercial Customer	3,343	3,358	3,343	3,343	3,343	3,358	3,343	3,343	3,343	3,358
Therms Per Industrial Customer	20,186	20,280	20,184	20,184	20,183	20,277	20,182	20,182	20,181	20,276
Residential Customers	9,316	9,372	9,429	9,487	9,545	9,604	9,663	9,722	9,781	9,840
Commercial Customers	1,644	1,654	1,664	1,674	1,685	1,695	1,705	1,716	1,726	1,737
Industrial Customers	20	20	20	20	20	21	21	21	21	21
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**10,987**	**11,053**	**11,121**	**11,189**	**11,258**	**11,326**	**11,396**	**11,466**	**11,535**	**11,606**

Zone ME-WA	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.50%	-0.43%	0.05%	0.06%	0.53%	-0.40%	0.07%	0.07%	0.55%
Residential Therms	6,919,520	6,953,031	6,918,343	6,918,787	6,919,805	6,955,508	6,922,969	6,925,014	6,927,159	6,964,266
Commercial Therms	4,712,338	4,734,986	4,713,692	4,715,065	4,716,827	4,740,964	4,721,101	4,723,553	4,726,066	4,751,155
Industrial Therms	214,698	216,105	216,008	216,691	217,390	218,864	218,813	219,538	220,262	221,777
Ind., Inst., & Cmcl. Interrup. Therms	2,888,125	2,904,689	2,897,451	2,902,513	2,907,801	2,925,294	2,918,778	2,924,455	2,930,144	2,948,232
Total Core Therms	**14,734,681**	**14,808,811**	**14,745,495**	**14,753,056**	**14,761,823**	**14,840,630**	**14,781,661**	**14,792,560**	**14,803,631**	**14,885,431**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	188,513	188,526	188,557	188,607	188,672	188,744	188,833	188,926	189,022	189,130
Therms Per Residential Customer	592	595	592	591	591	594	591	591	591	594
Therms Per Commercial Customer	3,305	3,320	3,304	3,303	3,303	3,318	3,302	3,302	3,302	3,317
Therms Per Industrial Customer	16,376	16,448	16,403	16,417	16,430	16,502	16,457	16,470	16,483	16,554
Residential Customers	11,693	11,693	11,695	11,697	11,701	11,705	11,710	11,716	11,721	11,728
Commercial Customers	1,426	1,426	1,427	1,427	1,428	1,429	1,430	1,431	1,431	1,432
Industrial Customers	13	13	13	13	13	13	13	13	13	13
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,137**	**13,138**	**13,140**	**13,143**	**13,147**	**13,152**	**13,158**	**13,165**	**13,171**	**13,179**

Bellingham Disctrict	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.35%	1.41%	1.84%	1.81%	2.24%	1.31%	1.73%	1.70%	2.14%
Residential Therms	31,170,788	31,904,420	32,352,375	32,947,527	33,544,995	34,298,710	34,744,972	35,347,210	35,949,857	36,720,243
Commercial Therms	14,267,477	14,600,674	14,808,276	15,080,671	15,354,126	15,696,322	15,903,344	16,178,983	16,454,809	16,804,441
Industrial Therms	774,378	791,884	803,732	818,518	833,361	851,312	863,172	878,134	893,106	911,416
Ind., Inst., & Cmcl. Interrup. Therms	1,204,628	1,232,835	1,250,263	1,273,249	1,296,325	1,325,299	1,342,672	1,365,933	1,389,210	1,418,818
Total Core Therms	**47,417,270**	**48,529,813**	**49,214,647**	**50,119,965**	**51,028,806**	**52,171,643**	**52,854,160**	**53,770,259**	**54,686,982**	**55,854,919**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	539,184	549,379	559,622	569,916	580,251	590,607	601,007	611,424	621,848	632,303
Therms Per Residential Customer	729	733	729	729	729	733	729	729	729	733
Therms Per Commercial Customer	2,838	2,850	2,838	2,838	2,838	2,850	2,838	2,838	2,838	2,850
Therms Per Industrial Customer	15,968	16,026	15,968	15,968	15,968	16,026	15,968	15,968	15,968	16,026
Residential Customers	42,747	43,555	44,367	45,183	46,003	46,824	47,648	48,474	49,300	50,129
Commercial Customers	5,027	5,122	5,218	5,314	5,410	5,507	5,604	5,701	5,798	5,896
Industrial Customers	48	49	50	51	52	53	54	55	56	57
Interruptible Customers	14	14	14	15	15	15	16	16	16	16
Total Core Customers	**47,836**	**48,741**	**49,650**	**50,563**	**51,480**	**52,399**	**53,322**	**54,246**	**55,171**	**56,098**

Mount Vernon District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.90%	0.98%	1.42%	1.41%	1.84%	0.93%	1.36%	1.34%	1.78%
Residential Therms	25,984,101	26,480,848	26,738,337	27,118,462	27,499,953	28,009,443	28,265,735	28,649,710	29,033,562	29,553,061
Commercial Therms	13,771,759	14,033,371	14,172,448	14,374,384	14,577,054	14,845,311	14,983,874	15,187,862	15,391,789	15,665,242
Industrial Therms	1,462,865	1,489,612	1,505,059	1,526,326	1,547,667	1,575,066	1,590,508	1,611,989	1,633,461	1,661,355
Ind., Inst., & Cmcl. Interrup. Therms	1,743,642	1,775,421	1,793,825	1,819,117	1,844,500	1,877,050	1,895,451	1,920,997	1,946,535	1,979,672
Total Core Therms	**42,962,366**	**43,779,252**	**44,209,668**	**44,838,289**	**45,469,173**	**46,306,870**	**46,735,568**	**47,370,557**	**48,005,346**	**48,859,331**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	482,367	489,342	496,348	503,394	510,465	517,547	524,660	531,777	538,892	546,029
Therms Per Residential Customer	697	700	697	697	697	700	697	697	697	700
Therms Per Commercial Customer	2,940	2,953	2,941	2,941	2,941	2,954	2,941	2,942	2,942	2,955
Therms Per Industrial Customer	13,533	13,585	13,532	13,531	13,530	13,582	13,529	13,528	13,528	13,579
Residential Customers	37,303	37,843	38,385	38,930	39,477	40,025	40,575	41,126	41,676	42,228
Commercial Customers	4,684	4,752	4,820	4,888	4,957	5,025	5,094	5,163	5,232	5,302
Industrial Customers	108	110	111	113	114	116	118	119	121	122
Interruptible Customers	14	15	15	15	15	15	16	16	16	16
Total Core Customers	**42,110**	**42,719**	**43,330**	**43,946**	**44,563**	**45,181**	**45,803**	**46,424**	**47,045**	**47,668**

Bremerton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.53%	0.63%	1.07%	1.06%	1.50%	0.60%	1.04%	1.02%	1.47%
Residential Therms	20,356,541	20,670,666	20,798,180	21,020,837	21,244,474	21,566,096	21,693,022	21,917,737	22,142,256	22,469,352
Commercial Therms	10,245,411	10,400,756	10,467,688	10,579,751	10,692,307	10,851,304	10,918,060	11,031,159	11,144,159	11,305,791
Industrial Therms	330,278	336,674	337,443	341,056	344,684	351,258	351,962	355,608	359,250	365,970
Ind., Inst., & Cmcl. Interrup. Therms	2,496,862	2,533,450	2,551,032	2,578,343	2,605,773	2,643,196	2,660,791	2,688,353	2,715,892	2,753,902
Total Core Therms	**33,429,092**	**33,941,546**	**34,154,343**	**34,519,986**	**34,887,238**	**35,411,855**	**35,623,835**	**35,992,857**	**36,361,557**	**36,895,015**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	328,963	332,522	336,100	339,698	343,312	346,927	350,561	354,192	357,820	361,457
Therms Per Residential Customer	655	658	655	655	655	658	655	655	655	658
Therms Per Commercial Customer	3,473	3,488	3,473	3,473	3,473	3,488	3,473	3,473	3,473	3,488
Therms Per Industrial Customer	25,295	25,508	25,295	25,295	25,295	25,508	25,295	25,295	25,295	25,508
Residential Customers	31,091	31,427	31,765	32,106	32,447	32,789	33,132	33,475	33,818	34,162
Commercial Customers	2,950	2,982	3,014	3,046	3,079	3,111	3,144	3,176	3,209	3,241

Industrial Customers	13	13	13	13	14	14	14	14	14	14
Interruptible Customers	10	10	10	10	10	10	11	11	11	11
Total Core Customers	**34,064**	**34,433**	**34,803**	**35,176**	**35,550**	**35,924**	**36,300**	**36,676**	**37,052**	**37,429**

Longview District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.49%	0.53%	1.00%	1.00%	1.47%	0.51%	0.97%	0.97%	1.43%
Residential Therms	1,324,694	1,345,601	1,354,325	1,369,251	1,384,235	1,405,636	1,414,292	1,429,359	1,444,417	1,466,181
Commercial Therms	3,604,359	3,655,834	3,670,946	3,704,586	3,738,408	3,791,231	3,806,357	3,840,465	3,874,566	3,928,345
Industrial Therms	718,749	732,580	742,051	753,741	765,451	779,515	788,891	800,618	812,334	826,581
Ind., Inst., & Cmcl. Interrup. Therms	488,497	493,615	493,400	495,908	498,445	503,737	503,574	506,162	508,752	514,153
Total Core Therms	**6,136,299**	**6,227,630**	**6,260,722**	**6,323,486**	**6,386,540**	**6,480,119**	**6,513,114**	**6,576,604**	**6,640,069**	**6,735,260**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	63,806	64,426	65,049	65,677	66,307	66,939	67,573	68,208	68,843	69,480
Therms Per Residential Customer	497	499	498	498	499	501	500	500	500	503
Therms Per Commercial Customer	3,108	3,125	3,110	3,111	3,112	3,128	3,113	3,114	3,115	3,131
Therms Per Industrial Customer	23,387	23,468	23,408	23,418	23,427	23,507	23,444	23,452	23,460	23,539
Residential Customers	2,667	2,694	2,721	2,749	2,776	2,804	2,831	2,859	2,887	2,914
Commercial Customers	1,160	1,170	1,180	1,191	1,201	1,212	1,223	1,233	1,244	1,255
Industrial Customers	31	31	32	32	33	33	34	34	35	35
Interruptible Customers	6	6	6	6	6	6	6	6	6	6
Total Core Customers	**3,864**	**3,901**	**3,940**	**3,978**	**4,016**	**4,055**	**4,094**	**4,133**	**4,171**	**4,210**

Aberdeen District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.90%	0.04%	0.47%	0.48%	0.90%	0.04%	0.46%	0.46%	0.89%
Residential Therms	2,390,584	2,412,851	2,413,279	2,424,739	2,436,263	2,458,834	2,459,183	2,470,610	2,481,942	2,504,624
Commercial Therms	2,319,554	2,340,497	2,341,575	2,352,695	2,363,876	2,385,101	2,386,115	2,397,203	2,408,198	2,429,519
Industrial Therms	113,648	114,827	114,727	115,272	115,820	117,016	116,909	117,453	117,991	119,195
Ind., Inst., & Cmcl. Interrup. Therms	1,065,835	1,074,744	1,075,954	1,081,063	1,086,201	1,095,226	1,096,420	1,101,515	1,106,567	1,115,623
Total Core Therms	**5,889,622**	**5,942,919**	**5,945,536**	**5,973,769**	**6,002,160**	**6,056,178**	**6,058,626**	**6,086,780**	**6,114,698**	**6,168,960**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	53,551	53,805	54,060	54,316	54,575	54,831	55,088	55,344	55,598	55,852
Therms Per Residential Customer	684	687	684	684	684	687	684	684	684	687
Therms Per Commercial Customer	3,117	3,131	3,117	3,117	3,117	3,131	3,117	3,117	3,117	3,131
Therms Per Industrial Customer	9,695	9,750	9,695	9,695	9,695	9,750	9,695	9,695	9,695	9,750
Residential Customers	3,494	3,511	3,528	3,544	3,561	3,578	3,595	3,611	3,628	3,645
Commercial Customers	744	748	751	755	758	762	765	769	773	776
Industrial Customers	12	12	12	12	12	12	12	12	12	12
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,254**	**4,274**	**4,295**	**4,315**	**4,336**	**4,356**	**4,376**	**4,397**	**4,417**	**4,437**

Kennewick District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.70%	0.72%	1.19%	1.18%	1.66%	0.68%	1.15%	1.13%	1.61%
Residential Therms	13,888,115	14,126,124	14,222,870	14,391,420	14,560,419	14,803,804	14,899,136	15,068,657	15,237,883	15,485,328
Commercial Therms	13,182,168	13,404,944	13,502,251	13,663,401	13,824,974	14,052,663	14,148,809	14,310,881	14,472,677	14,704,025
Industrial Therms	382,886	388,536	391,938	396,498	401,070	406,829	410,234	414,821	419,400	425,232
Ind., Inst., & Cmcl. Interrup. Therms	1,539,588	1,565,643	1,579,667	1,599,887	1,620,195	1,646,914	1,661,017	1,681,512	1,702,024	1,729,277
Total Core Therms	**28,992,756**	**29,485,247**	**29,696,727**	**30,051,205**	**30,406,658**	**30,910,210**	**31,119,197**	**31,475,871**	**31,831,984**	**32,343,862**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	411,622	416,632	421,662	426,717	431,786	436,855	441,946	447,031	452,108	457,197
Therms Per Residential Customer	596	599	596	597	597	600	598	598	598	602
Therms Per Commercial Customer	4,038	4,059	4,042	4,044	4,046	4,067	4,050	4,051	4,053	4,074
Therms Per Industrial Customer	19,089	19,155	19,108	19,118	19,126	19,191	19,143	19,150	19,157	19,220
Residential Customers	23,320	23,585	23,851	24,118	24,386	24,654	24,923	25,192	25,461	25,730
Commercial Customers	3,265	3,303	3,341	3,379	3,417	3,455	3,494	3,532	3,571	3,609
Industrial Customers	20	20	21	21	21	21	21	22	22	22
Interruptible Customers	18	18	18	19	19	19	19	19	20	20
Total Core Customers	**26,623**	**26,926**	**27,230**	**27,536**	**27,843**	**28,149**	**28,458**	**28,765**	**29,073**	**29,381**

Walla Walla District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.42%	-0.52%	-0.03%	-0.03%	0.45%	-0.49%	-0.01%	-0.01%	0.47%
Residential Therms	6,489,808	6,518,513	6,483,465	6,481,278	6,479,638	6,510,381	6,477,452	6,476,796	6,476,249	6,508,294
Commercial Therms	4,253,868	4,271,864	4,249,711	4,248,278	4,247,203	4,266,536	4,245,770	4,245,340	4,244,981	4,265,168
Industrial Therms	97,744	98,106	97,648	97,615	97,591	97,983	97,558	97,548	97,540	97,952
Ind., Inst., & Cmcl. Interrup. Therms	1,953,540	1,960,506	1,951,631	1,950,973	1,950,479	1,958,060	1,949,821	1,949,623	1,949,459	1,957,433
Total Core Therms	**12,794,960**	**12,848,988**	**12,782,455**	**12,778,144**	**12,774,911**	**12,832,961**	**12,770,600**	**12,769,307**	**12,768,229**	**12,828,847**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,954	170,861	170,786	170,729	170,686	170,648	170,628	170,611	170,596	170,594
Therms Per Residential Customer	609	612	609	609	609	612	609	609	609	612
Therms Per Commercial Customer	3,370	3,386	3,370	3,370	3,370	3,386	3,370	3,370	3,370	3,386
Therms Per Industrial Customer	12,757	12,811	12,757	12,757	12,757	12,811	12,757	12,757	12,757	12,811
Residential Customers	10,658	10,652	10,647	10,644	10,641	10,639	10,637	10,636	10,635	10,635
Commercial Customers	1,262	1,262	1,261	1,261	1,260	1,260	1,260	1,260	1,260	1,260
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,931**	**11,924**	**11,919**	**11,915**	**11,912**	**11,909**	**11,908**	**11,907**	**11,906**	**11,905**

Wenatchee District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.70%	1.03%	1.36%	1.36%	1.69%	1.01%	1.35%	1.34%	1.68%
Residential Therms	1,333,230	1,349,184	1,359,263	1,372,434	1,385,729	1,402,182	1,412,485	1,425,940	1,439,411	1,456,270
Commercial Therms	4,828,510	4,898,867	4,938,793	4,994,593	5,050,800	5,123,350	5,163,977	5,220,918	5,277,971	5,352,349
Industrial Therms	4,271,878	4,365,674	4,426,114	4,505,113	4,585,386	4,685,532	4,749,723	4,833,810	4,919,185	5,025,962
Ind., Inst., & Cmcl. Interrup. Therms	531,021	537,813	541,845	547,322	552,848	559,855	563,973	569,570	575,175	582,359
Total Core Therms	**10,964,639**	**11,151,537**	**11,266,014**	**11,419,461**	**11,574,763**	**11,770,919**	**11,890,158**	**12,050,238**	**12,211,742**	**12,416,941**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	121,304	122,977	124,671	126,386	128,122	129,874	131,649	133,440	135,248	137,076
Therms Per Residential Customer	522	523	522	522	522	523	521	521	521	522
Therms Per Commercial Customer	4,622	4,640	4,629	4,632	4,635	4,653	4,641	4,644	4,647	4,665
Therms Per Industrial Customer	108,221	109,272	109,458	110,079	110,701	111,774	111,959	112,594	113,235	114,335
Residential Customers	2,554	2,579	2,605	2,631	2,657	2,682	2,709	2,735	2,761	2,788
Commercial Customers	1,045	1,056	1,067	1,078	1,090	1,101	1,113	1,124	1,136	1,147
Industrial Customers	39	40	40	41	41	42	42	43	43	44
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**3,645**	**3,682**	**3,719**	**3,757**	**3,795**	**3,833**	**3,871**	**3,909**	**3,948**	**3,986**

Yakima District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.65%	-0.25%	0.21%	0.22%	0.67%	-0.23%	0.23%	0.23%	0.69%
Residential Therms	15,720,288	15,824,107	15,776,065	15,806,176	15,837,457	15,946,489	15,902,228	15,935,591	15,969,189	16,081,446
Commercial Therms	16,886,570	16,996,911	16,954,617	16,990,992	17,028,602	17,144,481	17,106,150	17,145,951	17,185,993	17,305,296
Industrial Therms	5,077,750	5,106,866	5,100,880	5,113,147	5,125,784	5,156,523	5,151,754	5,165,046	5,178,410	5,210,140
Ind., Inst., & Cmcl. Interrup. Therms	1,302,458	1,310,998	1,308,313	1,311,421	1,314,625	1,323,594	1,321,211	1,324,584	1,327,977	1,337,216
Total Core Therms	**38,987,066**	**39,238,881**	**39,139,876**	**39,221,737**	**39,306,468**	**39,571,088**	**39,481,343**	**39,571,172**	**39,661,570**	**39,934,098**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	462,969	463,839	464,751	465,708	466,698	467,702	468,743	469,794	470,851	471,931
Therms Per Residential Customer	628	631	628	628	628	631	628	628	627	630
Therms Per Commercial Customer	3,310	3,325	3,309	3,309	3,308	3,323	3,307	3,307	3,306	3,321
Therms Per Industrial Customer	36,958	37,084	36,952	36,949	36,945	37,071	36,939	36,936	36,933	37,059
Residential Customers	25,018	25,066	25,116	25,169	25,223	25,279	25,336	25,394	25,452	25,512
Commercial Customers	5,101	5,112	5,123	5,135	5,147	5,160	5,172	5,185	5,198	5,211
Industrial Customers	137	138	138	138	139	139	139	140	140	141
Interruptible Customers	19	19	19	19	19	19	19	19	19	19
Total Core Customers	**30,275**	**30,334**	**30,396**	**30,461**	**30,529**	**30,597**	**30,667**	**30,738**	**30,810**	**30,883**

Central Oregon (Bend) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		2.48%	1.54%	1.96%	1.92%	2.34%	1.41%	1.82%	1.79%	2.21%
Residential Therms	29,567,843	30,331,748	30,822,696	31,452,207	32,082,723	32,861,429	33,344,790	33,976,143	34,606,979	35,398,209
Commercial Therms	18,225,281	18,668,801	18,950,450	19,314,554	19,679,423	20,132,011	20,410,210	20,775,987	21,141,544	21,601,676
Industrial Therms	1,758,939	1,787,829	1,801,418	1,822,935	1,844,606	1,874,433	1,888,267	1,910,241	1,932,244	1,962,805
Ind., Inst., & Cmcl. Interrup. Therms	933,266	949,225	958,916	971,873	984,902	1,001,286	1,011,105	1,024,271	1,037,446	1,054,155
Total Core Therms	**50,485,329**	**51,737,603**	**52,533,480**	**53,561,569**	**54,591,653**	**55,869,159**	**56,654,373**	**57,686,642**	**58,718,213**	**60,016,845**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	618,761	631,184	643,636	656,124	668,636	681,147	693,695	706,236	718,769	731,317
Therms Per Residential Customer	719	722	720	720	720	724	721	721	721	725
Therms Per Commercial Customer	2,785	2,797	2,785	2,786	2,786	2,798	2,786	2,787	2,787	2,799
Therms Per Industrial Customer	28,501	28,597	28,446	28,420	28,394	28,492	28,345	28,322	28,299	28,399
Residential Customers	41,130	41,982	42,836	43,692	44,549	45,407	46,266	47,125	47,983	48,843
Commercial Customers	6,544	6,674	6,804	6,934	7,064	7,194	7,325	7,456	7,586	7,717
Industrial Customers	62	63	63	64	65	66	67	67	68	69
Interruptible Customers	7	7	7	7	7	7	7	7	7	7
Total Core Customers	**47,743**	**48,725**	**49,709**	**50,696**	**51,685**	**52,674**	**53,665**	**54,656**	**55,646**	**56,636**

Pendleton District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.07%	0.14%	0.61%	0.61%	1.08%	0.15%	0.61%	0.61%	1.08%
Residential Therms	5,920,792	5,986,858	5,992,761	6,029,377	6,066,435	6,134,588	6,140,928	6,178,510	6,216,013	6,285,596
Commercial Therms	5,954,142	6,016,923	6,026,573	6,063,422	6,100,713	6,165,495	6,175,669	6,213,482	6,251,215	6,317,337
Industrial Therms	519,734	525,119	526,047	529,259	532,508	538,066	539,041	542,337	545,626	551,297
Ind., Inst., & Cmcl. Interrup. Therms	2,273,883	2,296,983	2,301,404	2,315,410	2,329,579	2,353,429	2,358,072	2,372,451	2,386,793	2,411,135
Total Core Therms	**14,668,551**	**14,825,882**	**14,846,784**	**14,937,468**	**15,029,235**	**15,191,577**	**15,213,710**	**15,306,780**	**15,399,646**	**15,565,365**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	187,349	188,479	189,626	190,785	191,958	193,130	194,315	195,504	196,691	197,884
Therms Per Residential Customer	572	575	572	572	572	575	572	572	572	575
Therms Per Commercial Customer	3,293	3,308	3,293	3,293	3,293	3,308	3,293	3,293	3,293	3,308
Therms Per Industrial Customer	20,460	20,548	20,459	20,458	20,458	20,545	20,457	20,457	20,456	20,544
Residential Customers	10,351	10,413	10,477	10,541	10,606	10,670	10,736	10,801	10,867	10,933
Commercial Customers	1,808	1,819	1,830	1,841	1,852	1,864	1,875	1,887	1,898	1,910
Industrial Customers	25	26	26	26	26	26	26	27	27	27
Interruptible Customers	9	9	9	9	9	9	9	9	10	10
Total Core Customers	**12,193**	**12,267**	**12,342**	**12,417**	**12,493**	**12,570**	**12,647**	**12,724**	**12,801**	**12,879**

Eastern Oregon (Ontario) District	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		0.70%	-0.27%	0.23%	0.23%	0.72%	-0.25%	0.24%	0.23%	0.72%
Residential Therms	3,953,392	3,981,424	3,969,069	3,977,452	3,985,941	4,014,838	4,003,138	4,011,847	4,020,549	4,050,028
Commercial Therms	3,726,475	3,753,165	3,742,679	3,751,247	3,759,940	3,787,445	3,777,528	3,786,424	3,795,310	3,823,350
Industrial Therms	255,210	256,300	256,415	257,047	257,688	258,825	258,985	259,640	260,295	261,459
Ind., Inst., & Cmcl. Interrup. Therms	1,140,728	1,148,617	1,147,090	1,150,367	1,153,708	1,161,838	1,160,445	1,163,842	1,167,235	1,175,509
Total Core Therms	**9,075,805**	**9,139,506**	**9,115,253**	**9,136,112**	**9,157,277**	**9,222,946**	**9,200,095**	**9,221,754**	**9,243,388**	**9,310,345**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	111,741	111,984	112,231	112,490	112,752	113,015	113,284	113,553	113,821	114,095
Therms Per Residential Customer	571	574	571	571	571	574	571	571	571	574
Therms Per Commercial Customer	2,653	2,666	2,652	2,652	2,652	2,665	2,652	2,652	2,651	2,665
Therms Per Industrial Customer	11,069	11,087	11,064	11,061	11,059	11,078	11,054	11,052	11,050	11,069
Residential Customers	6,924	6,938	6,953	6,968	6,983	6,998	7,014	7,029	7,045	7,061
Commercial Customers	1,405	1,408	1,411	1,414	1,418	1,421	1,425	1,428	1,431	1,435
Industrial Customers	23	23	23	23	23	23	23	23	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,354**	**8,371**	**8,389**	**8,407**	**8,426**	**8,445**	**8,464**	**8,483**	**8,502**	**8,522**

Oregon	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.98%	1.05%	1.49%	1.47%	1.91%	0.98%	1.41%	1.39%	1.84%
Residential Therms	39,442,028	40,300,030	40,784,526	41,459,036	42,135,099	43,010,854	43,488,856	44,166,500	44,843,541	45,733,832
Commercial Therms	27,905,898	28,438,889	28,719,701	29,129,222	29,540,076	30,084,951	30,363,407	30,775,893	31,188,068	31,742,363
Industrial Therms	2,533,883	2,569,247	2,583,881	2,609,241	2,634,802	2,671,324	2,686,294	2,712,219	2,738,164	2,775,561
Ind., Inst., & Cmcl. Interrup. Therms	4,347,877	4,394,826	4,407,409	4,437,650	4,468,189	4,516,553	4,529,623	4,560,565	4,591,474	4,640,798
Total Core Therms	**74,229,686**	**75,702,992**	**76,495,517**	**77,635,149**	**78,778,165**	**80,283,682**	**81,068,179**	**82,215,176**	**83,361,247**	**84,892,554**
Daily Baseload Therms	42,704	43,565	44,038	44,709	45,382	46,261	46,729	47,404	48,078	48,972
Peak Day Therms	917,850	931,647	945,493	959,398	973,346	987,293	1,001,294	1,015,293	1,029,281	1,043,295
Therms Per Residential Customer	11,741	11,788	11,741	11,741	11,741	11,788	11,741	11,741	11,741	11,788
Therms Per Commercial Customer	65,178	65,419	65,178	65,178	65,178	65,419	65,178	65,178	65,178	65,419
Therms Per Industrial Customer	235,683	236,645	235,683	235,683	235,683	236,645	235,683	235,683	235,683	236,645
Residential Customers	58,405	59,334	60,265	61,200	62,138	63,075	64,016	64,956	65,896	66,837
Commercial Customers	9,757	9,901	10,045	10,189	10,334	10,479	10,625	10,770	10,916	11,062
Industrial Customers	110	111	112	113	114	115	116	117	119	120
Interruptible Customers	18	18	18	18	18	18	19	19	19	19
Total Core Customers	**68,290**	**69,363**	**70,440**	**71,521**	**72,605**	**73,688**	**74,776**	**75,863**	**76,949**	**78,037**

Washington	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.57%	0.66%	1.11%	1.10%	1.55%	0.64%	1.08%	1.07%	1.51%
Residential Therms	118,658,147	120,632,313	121,498,159	122,932,124	124,373,163	126,401,576	127,268,504	128,721,609	130,174,765	132,244,800
Commercial Therms	83,359,676	84,603,718	85,106,305	85,989,349	86,877,349	88,156,300	88,662,455	89,558,760	90,455,144	91,760,176
Industrial Therms	13,230,175	13,424,758	13,519,593	13,667,286	13,816,814	14,021,034	14,120,711	14,275,026	14,430,677	14,643,804
Ind., Inst., & Cmcl. Interrup. Therms	12,326,071	12,485,025	12,545,931	12,657,283	12,769,391	12,932,933	12,994,930	13,108,250	13,221,590	13,388,452
Total Core Therms	**227,574,069**	**231,145,814**	**232,669,988**	**235,246,042**	**237,836,717**	**241,511,842**	**243,046,600**	**245,663,645**	**248,282,176**	**252,037,232**
Daily Baseload Therms	157,600	160,020	161,039	162,777	164,526	167,016	168,042	169,808	171,575	174,119
Peak Day Therms	2,634,720	2,663,783	2,693,050	2,722,541	2,752,202	2,781,929	2,811,854	2,841,821	2,871,805	2,901,917
Therms Per Residential Customer	36,785	36,937	36,785	36,785	36,785	36,937	36,785	36,785	36,785	36,937
Therms Per Commercial Customer	155,169	155,918	155,169	155,169	155,169	155,918	155,169	155,169	155,169	155,918
Therms Per Industrial Customer	1,129,953	1,133,970	1,129,953	1,129,953	1,129,953	1,133,970	1,129,953	1,129,953	1,129,953	1,133,970
Residential Customers	178,852	180,912	182,985	185,072	187,170	189,272	191,386	193,503	195,619	197,743
Commercial Customers	25,238	25,505	25,775	26,046	26,320	26,593	26,869	27,144	27,420	27,697
Industrial Customers	417	421	425	429	434	438	442	447	451	455
Interruptible Customers	95	96	97	98	99	100	101	102	103	103
Total Core Customers	**204,601**	**206,934**	**209,281**	**211,646**	**214,022**	**216,403**	**218,798**	**221,195**	**223,592**	**225,998**

System	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Therms Pct. Growth		1.67%	0.75%	1.20%	1.19%	1.64%	0.72%	1.16%	1.15%	1.59%
Residential Therms	158,100,174	160,932,343	162,282,685	164,391,160	166,508,262	169,412,430	170,757,360	172,888,109	175,018,306	177,978,633
Commercial Therms	111,265,574	113,042,606	113,826,007	115,118,572	116,417,424	118,241,251	119,025,862	120,334,653	121,643,212	123,502,539
Industrial Therms	15,764,058	15,994,005	16,103,474	16,276,527	16,451,616	16,692,358	16,807,004	16,987,245	17,168,841	17,419,365
Ind., Inst., & Cmcl. Interrup. Therms	16,673,948	16,879,851	16,953,340	17,094,933	17,237,580	17,449,486	17,524,552	17,668,814	17,813,064	18,029,250
Total Core Therms	**301,803,755**	**306,848,805**	**309,165,506**	**312,881,191**	**316,614,882**	**321,795,524**	**324,114,779**	**327,878,822**	**331,643,423**	**336,929,787**
Daily Baseload Therms	200,304	203,585	205,077	207,486	209,907	213,277	214,771	217,212	219,654	223,092
Peak Day Therms	3,552,570	3,595,429	3,638,543	3,681,940	3,725,548	3,769,222	3,813,148	3,857,114	3,901,086	3,945,213
Therms Per Residential Customer	48,526	48,725	48,526	48,526	48,526	48,725	48,526	48,526	48,526	48,725
Therms Per Commercial Customer	220,348	221,337	220,348	220,348	220,348	221,337	220,348	220,348	220,348	221,337
Therms Per Industrial Customer	1,365,636	1,370,616	1,365,636	1,365,636	1,365,636	1,370,616	1,365,636	1,365,636	1,365,636	1,370,616
Residential Customers	237,257	240,246	243,250	246,273	249,308	252,347	255,402	258,459	261,514	264,579
Commercial Customers	34,995	35,406	35,819	36,236	36,654	37,072	37,493	37,915	38,336	38,759
Industrial Customers	527	532	537	543	548	553	559	564	569	575
Interruptible Customers	112	113	115	116	117	118	119	120	121	123
Total Core Customers	**272,891**	**276,297**	**279,721**	**283,166**	**286,627**	**290,091**	**293,573**	**297,058**	**300,541**	**304,035**

Athena	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.09%	0.60%	0.59%	1.10%	0.07%	0.57%	0.57%	1.08%	0.06%	0.56%
Residential Therms	308,936	310,779	312,621	316,019	316,277	318,090	319,907	323,319	323,530	325,336
Commercial Therms	147,343	148,222	149,100	150,761	150,844	151,709	152,576	154,244	154,303	155,165
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**456,279**	**459,000**	**461,722**	**466,780**	**467,121**	**469,799**	**472,483**	**477,563**	**477,834**	**480,501**
Daily Baseload Therms	457	460	463	468	468	471	473	478	479	481
Peak Day Therms	6,294	6,332	6,369	6,407	6,444	6,481	6,518	6,555	6,592	6,628
Therms Per Residential Customer	582	582	582	585	582	582	582	585	582	582
Therms Per Commercial Customer	2,179	2,179	2,179	2,191	2,179	2,179	2,179	2,191	2,179	2,179
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	531	534	537	540	543	546	550	553	556	559
Commercial Customers	68	68	68	69	69	70	70	70	71	71
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**598**	**602**	**605**	**609**	**612**	**616**	**620**	**623**	**627**	**630**

Baker	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.33%	0.15%	0.15%	0.63%	-0.34%	0.13%	0.13%	0.62%	-0.35%	0.13%
Residential Therms	2,043,357	2,046,365	2,049,374	2,062,366	2,055,141	2,057,899	2,060,657	2,073,579	2,066,174	2,068,932
Commercial Therms	1,476,882	1,479,057	1,481,231	1,490,391	1,485,400	1,487,393	1,489,387	1,498,495	1,493,374	1,495,367
Industrial Therms	71,669	71,775	71,880	72,257	72,082	72,179	72,276	72,650	72,469	72,566
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**3,591,908**	**3,597,197**	**3,602,486**	**3,625,015**	**3,612,623**	**3,617,471**	**3,622,320**	**3,644,724**	**3,632,017**	**3,636,866**
Daily Baseload Therms	1,521	1,523	1,525	1,535	1,529	1,531	1,533	1,543	1,538	1,540
Peak Day Therms	42,428	42,490	42,553	42,613	42,672	42,730	42,787	42,844	42,902	42,959
Therms Per Residential Customer	625	625	625	628	625	625	625	628	625	625
Therms Per Commercial Customer	2,957	2,957	2,957	2,972	2,957	2,957	2,957	2,972	2,957	2,957
Therms Per Industrial Customer	23,525	23,525	23,525	23,615	23,525	23,525	23,525	23,615	23,525	23,525
Residential Customers	3,269	3,274	3,279	3,283	3,288	3,292	3,297	3,301	3,306	3,310
Commercial Customers	499	500	501	502	502	503	504	504	505	506
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3,771**	**3,777**	**3,783**	**3,788**	**3,793**	**3,798**	**3,803**	**3,808**	**3,814**	**3,819**

Umatilla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.16%	0.59%	0.59%	1.02%	0.14%	0.57%	0.56%	1.00%	0.12%	0.55%
Residential Therms	456,311	459,007	461,699	466,789	467,044	469,693	472,346	477,459	477,640	480,279
Commercial Therms	486,848	489,725	492,596	497,516	498,299	501,125	503,957	508,888	509,604	512,420
Industrial Therms	124,193	124,927	125,659	126,763	127,114	127,835	128,557	129,661	129,998	130,716
Ind., Inst., & Cmcl. Interrup. Therms	992,434	998,297	1,004,151	1,014,304	1,015,776	1,021,537	1,027,309	1,037,489	1,038,821	1,044,562
Total Core Therms	**2,059,786**	**2,071,956**	**2,084,105**	**2,105,372**	**2,108,233**	**2,120,191**	**2,132,169**	**2,153,497**	**2,156,063**	**2,167,978**
Daily Baseload Therms	1,332	1,340	1,348	1,361	1,363	1,371	1,379	1,392	1,394	1,402
Peak Day Therms	18,646	18,756	18,866	18,976	19,085	19,193	19,302	19,410	19,518	19,626
Therms Per Residential Customer	415	415	415	417	415	415	415	417	415	415
Therms Per Commercial Customer	2,799	2,799	2,799	2,811	2,799	2,799	2,799	2,811	2,799	2,799
Therms Per Industrial Customer	21,464	21,464	21,464	21,528	21,464	21,464	21,464	21,528	21,464	21,464
Residential Customers	1,099	1,106	1,112	1,119	1,125	1,131	1,138	1,144	1,150	1,157
Commercial Customers	174	175	176	177	178	179	180	181	182	183
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,281**	**1,289**	**1,296**	**1,304**	**1,311**	**1,319**	**1,326**	**1,333**	**1,341**	**1,348**

Chemult	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.58%	0.58%	0.57%	0.57%	0.56%	0.55%	0.55%	0.54%	0.54%	0.53%
Residential Therms	11,060	11,124	11,188	11,252	11,314	11,377	11,439	11,501	11,563	11,625
Commercial Therms	41,826	42,069	42,310	42,550	42,788	43,025	43,261	43,495	43,729	43,961
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**52,886**	**53,193**	**53,499**	**53,802**	**54,103**	**54,402**	**54,700**	**54,997**	**55,292**	**55,586**
Daily Baseload Therms	59	59	59	60	60	60	61	61	61	62
Peak Day Therms	672	676	680	684	687	691	695	699	702	706
Therms Per Residential Customer	416	416	416	416	416	416	416	416	416	416
Therms Per Commercial Customer	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	27	27	27	27	27	27	28	28	28	28
Commercial Customers	22	22	22	23	23	23	23	23	23	23
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**49**	**49**	**49**	**50**	**50**	**50**	**50**	**51**	**51**	**51**

Gilchrist	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.05%	0.11%	0.57%	0.57%	1.03%	0.10%	0.56%
Residential Therms	93,173	93,728	94,281	95,263	95,379	95,925	96,471	97,457	97,561	98,104
Commercial Therms	135,308	136,114	136,918	138,366	138,513	139,306	140,099	141,552	141,681	142,470
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**228,481**	**229,842**	**231,199**	**233,629**	**233,893**	**235,231**	**236,570**	**239,009**	**239,241**	**240,574**
Daily Baseload Therms	104	105	105	106	106	107	108	109	109	109
Peak Day Therms	2,907	2,924	2,941	2,959	2,976	2,993	3,010	3,027	3,044	3,061
Therms Per Residential Customer	483	483	483	485	483	483	483	485	483	483
Therms Per Commercial Customer	3,159	3,159	3,159	3,174	3,159	3,159	3,159	3,174	3,159	3,159
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0

Residential Customers	193	194	195	196	198	199	200	201	202	203
Commercial Customers	43	43	43	44	44	44	44	45	45	45
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**236**	**237**	**239**	**240**	**241**	**243**	**244**	**246**	**247**	**248**

Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	2,389,439	2,403,690	2,417,941	2,444,286	2,446,218	2,460,243	2,474,296	2,500,752	2,502,318	2,516,286
Commercial Therms	2,610,545	2,626,115	2,641,685	2,668,674	2,672,578	2,687,901	2,703,255	2,730,323	2,733,869	2,749,130
Industrial Therms	208,506	209,749	210,993	213,172	213,460	214,684	215,910	218,097	218,356	219,574
Ind., Inst., & Cmcl. Interrup. Therms	371,745	373,962	376,180	380,509	380,579	382,761	384,947	389,300	389,307	391,480
Total Core Therms	**5,580,234**	**5,613,517**	**5,646,799**	**5,706,642**	**5,712,835**	**5,745,588**	**5,778,408**	**5,838,471**	**5,843,849**	**5,876,471**
Daily Baseload Therms	4,063	4,087	4,111	4,155	4,160	4,183	4,207	4,251	4,255	4,279
Peak Day Therms	75,971	76,424	76,878	77,329	77,777	78,222	78,669	79,115	79,560	80,004
Therms Per Residential Customer	633	633	633	636	633	633	633	636	633	633
Therms Per Commercial Customer	3,531	3,531	3,531	3,546	3,531	3,531	3,531	3,546	3,531	3,531
Therms Per Industrial Customer	24,381	24,381	24,381	24,489	24,381	24,381	24,381	24,489	24,381	24,381
Residential Customers	3,774	3,796	3,819	3,841	3,863	3,886	3,908	3,930	3,952	3,974
Commercial Customers	739	744	748	753	757	761	766	770	774	779
Industrial Customers	9	9	9	9	9	9	9	9	9	9
Interruptible Customers	4	4	4	4	4	4	4	4	4	5
Total Core Customers	**4,526**	**4,553**	**4,580**	**4,607**	**4,633**	**4,660**	**4,687**	**4,713**	**4,740**	**4,766**

Huntington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.41%	0.15%	0.15%	0.70%	-0.42%	0.13%	0.13%	0.70%	-0.43%	0.13%
Residential Therms	49,839	49,913	49,986	50,340	50,127	50,194	50,261	50,614	50,396	50,463
Commercial Therms	27,462	27,503	27,543	27,735	27,620	27,658	27,695	27,885	27,769	27,806
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**77,301**	**77,415**	**77,529**	**78,075**	**77,747**	**77,851**	**77,956**	**78,499**	**78,164**	**78,269**
Daily Baseload Therms	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49
Peak Day Therms	1,247	1,248	1,250	1,252	1,254	1,255	1,257	1,259	1,260	1,262
Therms Per Residential Customer	398	398	398	400	398	398	398	400	398	398
Therms Per Commercial Customer	1,898	1,898	1,898	1,908	1,898	1,898	1,898	1,908	1,898	1,898
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	125	125	126	126	126	126	126	126	127	127
Commercial Customers	14	14	15	15	15	15	15	15	15	15
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**140**	**140**	**140**	**140**	**140**	**141**	**141**	**141**	**141**	**141**

La Pine	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.43%	1.85%	1.81%	2.23%	1.30%	1.72%	1.69%	2.11%	1.19%	1.61%
Residential Therms	154,630	157,485	160,341	163,905	166,051	168,905	171,764	175,379	177,484	180,348
Commercial Therms	415,621	423,295	430,970	440,607	446,319	453,990	461,674	471,451	477,050	484,748
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**570,250**	**580,780**	**591,311**	**604,512**	**612,370**	**622,895**	**633,437**	**646,830**	**654,534**	**665,096**
Daily Baseload Therms	339	345	352	360	364	371	377	385	389	396
Peak Day Therms	6,778	6,904	7,029	7,154	7,279	7,404	7,530	7,655	7,780	7,906
Therms Per Residential Customer	615	615	615	617	615	615	615	617	615	615
Therms Per Commercial Customer	2,653	2,653	2,653	2,664	2,653	2,653	2,653	2,664	2,653	2,653
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	252	256	261	265	270	275	279	284	289	293
Commercial Customers	157	160	162	165	168	171	174	177	180	183
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**408**	**416**	**423**	**431**	**438**	**446**	**453**	**461**	**469**	**476**

Madras	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.04%	0.51%	0.51%	0.98%	0.05%	0.51%	0.51%	0.97%	0.05%	0.51%
Residential Therms	653,548	656,868	660,215	666,847	666,965	670,368	673,772	680,525	680,658	684,143
Commercial Therms	1,170,726	1,176,673	1,182,669	1,194,133	1,194,761	1,200,856	1,206,954	1,218,626	1,219,290	1,225,532
Industrial Therms	724,838	728,519	732,232	739,555	739,718	743,492	747,267	754,725	754,905	758,769
Ind., Inst., & Cmcl. Interrup. Therms	335,141	336,844	338,560	341,586	342,022	343,766	345,512	348,592	349,043	350,830
Total Core Therms	**2,884,253**	**2,898,903**	**2,913,676**	**2,942,121**	**2,943,466**	**2,958,483**	**2,973,506**	**3,002,468**	**3,003,897**	**3,019,274**
Daily Baseload Therms	1,262	1,269	1,275	1,288	1,288	1,295	1,302	1,314	1,315	1,322
Peak Day Therms	37,555	37,746	37,938	38,132	38,326	38,522	38,717	38,914	39,113	39,313
Therms Per Residential Customer	551	551	551	554	551	551	551	554	551	551
Therms Per Commercial Customer	3,002	3,002	3,002	3,016	3,002	3,002	3,002	3,016	3,002	3,002
Therms Per Industrial Customer	40,466	40,466	40,466	40,662	40,466	40,466	40,466	40,662	40,466	40,466
Residential Customers	1,186	1,192	1,198	1,204	1,210	1,217	1,223	1,229	1,235	1,242
Commercial Customers	390	392	394	396	398	400	402	404	406	408
Industrial Customers	18	18	18	18	18	18	18	19	19	19
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**1,595**	**1,603**	**1,611**	**1,619**	**1,628**	**1,636**	**1,644**	**1,653**	**1,661**	**1,670**

Milton-Freewater	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.60%	1.07%	0.11%	0.58%	0.58%	1.05%	0.09%	0.56%
Residential Therms	106,382	107,025	107,667	108,883	108,940	109,571	110,202	111,423	111,460	112,086
Commercial Therms	308,243	310,106	311,967	315,247	315,656	317,484	319,314	322,599	322,957	324,771
Industrial Therms	29,971	30,152	30,333	30,650	30,691	30,869	31,047	31,364	31,401	31,577

Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**444,596**	**447,282**	**449,966**	**454,780**	**455,287**	**457,924**	**460,563**	**465,386**	**465,818**	**468,434**
Daily Baseload Therms	462	465	468	473	473	476	479	484	484	487
Peak Day Therms	5,844	5,879	5,914	5,949	5,984	6,019	6,054	6,088	6,123	6,157
Therms Per Residential Customer	439	439	439	441	439	439	439	441	439	439
Therms Per Commercial Customer	2,936	2,936	2,936	2,949	2,936	2,936	2,936	2,949	2,936	2,936
Therms Per Industrial Customer	4,800	4,800	4,800	4,821	4,800	4,800	4,800	4,821	4,800	4,800
Residential Customers	243	244	245	247	248	250	251	253	254	256
Commercial Customers	105	106	106	107	108	108	109	109	110	111
Industrial Customers	6	6	6	6	6	6	6	7	7	7
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**354**	**356**	**358**	**360**	**362**	**364**	**366**	**369**	**371**	**373**

Mission Tap	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.15%	0.60%	0.59%	1.04%	0.13%	0.57%	0.57%	1.02%	0.11%	0.56%
Residential Therms	129,245	130,016	130,786	132,178	132,316	133,075	133,835	135,231	135,350	136,106
Commercial Therms	348,216	350,293	352,370	356,004	356,491	358,535	360,583	364,229	364,667	366,702
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**477,461**	**480,309**	**483,157**	**488,182**	**488,807**	**491,609**	**494,418**	**499,460**	**500,017**	**502,808**
Daily Baseload Therms	423	425	428	432	433	435	438	442	443	445
Peak Day Therms	5,636	5,669	5,703	5,736	5,769	5,803	5,836	5,869	5,902	5,935
Therms Per Residential Customer	569	569	569	572	569	569	569	572	569	569
Therms Per Commercial Customer	7,756	7,756	7,756	7,790	7,756	7,756	7,756	7,790	7,756	7,756
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	228	230	231	232	234	235	236	238	239
Commercial Customers	45	45	45	46	46	46	46	47	47	47
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**272**	**274**	**275**	**277**	**278**	**280**	**282**	**283**	**285**	**286**

Nyssa-Ontario	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.20%	0.29%	0.29%	0.77%	-0.21%	0.27%	0.27%	0.75%	-0.22%	0.27%
Residential Therms	1,944,865	1,950,467	1,956,060	1,971,915	1,966,942	1,972,288	1,977,682	1,993,455	1,988,227	1,993,544
Commercial Therms	2,308,807	2,315,457	2,322,096	2,340,543	2,335,014	2,341,361	2,347,764	2,366,109	2,360,283	2,366,595
Industrial Therms	189,937	190,484	191,030	191,793	192,093	192,615	193,141	193,888	194,171	194,691
Ind., Inst., & Cmcl. Interrup. Therms	1,174,008	1,177,389	1,180,765	1,188,975	1,187,334	1,190,561	1,193,817	1,201,962	1,200,183	1,203,392
Total Core Therms	**5,617,617**	**5,633,797**	**5,649,950**	**5,693,226**	**5,681,383**	**5,696,825**	**5,712,404**	**5,755,413**	**5,742,864**	**5,758,223**
Daily Baseload Therms	1,539	1,543	1,547	1,559	1,556	1,560	1,564	1,576	1,573	1,577
Peak Day Therms	70,686	70,890	71,093	71,292	71,489	71,683	71,879	72,071	72,262	72,456
Therms Per Residential Customer	528	528	528	531	528	528	528	531	528	528
Therms Per Commercial Customer	2,498	2,498	2,498	2,510	2,498	2,498	2,498	2,510	2,498	2,498
Therms Per Industrial Customer	9,203	9,203	9,203	9,214	9,203	9,203	9,203	9,214	9,203	9,203
Residential Customers	3,682	3,693	3,704	3,714	3,724	3,734	3,745	3,754	3,764	3,775
Commercial Customers	924	927	930	932	935	937	940	943	945	948
Industrial Customers	21	21	21	21	21	21	21	21	21	21
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**4,630**	**4,643**	**4,656**	**4,669**	**4,682**	**4,695**	**4,708**	**4,720**	**4,733**	**4,745**

Pendleton	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	2,900,930	2,918,232	2,935,534	2,968,063	2,969,863	2,986,890	3,003,952	3,036,629	3,037,972	3,054,931
Commercial Therms	2,425,705	2,440,173	2,454,640	2,480,574	2,483,346	2,497,584	2,511,851	2,537,878	2,540,298	2,554,478
Industrial Therms	189,553	190,683	191,814	193,909	194,057	195,170	196,285	198,388	198,507	199,616
Ind., Inst., & Cmcl. Interrup. Therms	1,051,389	1,057,660	1,063,931	1,073,880	1,076,373	1,082,544	1,088,727	1,098,688	1,101,057	1,107,204
Total Core Therms	**6,567,577**	**6,606,748**	**6,645,919**	**6,716,425**	**6,723,639**	**6,762,188**	**6,800,814**	**6,871,582**	**6,877,835**	**6,916,228**
Daily Baseload Therms	5,391	5,423	5,455	5,513	5,519	5,550	5,582	5,640	5,645	5,677
Peak Day Therms	86,680	87,197	87,714	88,228	88,739	89,248	89,758	90,267	90,774	91,281
Therms Per Residential Customer	566	566	566	569	566	566	566	569	566	566
Therms Per Commercial Customer	3,070	3,070	3,070	3,084	3,070	3,070	3,070	3,084	3,070	3,070
Therms Per Industrial Customer	29,553	29,553	29,553	29,702	29,553	29,553	29,553	29,702	29,553	29,553
Residential Customers	5,125	5,156	5,187	5,217	5,247	5,277	5,307	5,338	5,368	5,398
Commercial Customers	790	795	800	804	809	814	818	823	828	832
Industrial Customers	6	6	6	7	7	7	7	7	7	7
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**5,925**	**5,961**	**5,996**	**6,031**	**6,066**	**6,101**	**6,136**	**6,170**	**6,205**	**6,240**

Prineville	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.07%	0.55%	0.54%	1.02%	0.07%	0.54%	0.55%	1.01%	0.07%	0.54%
Residential Therms	1,193,432	1,199,966	1,206,499	1,218,997	1,219,671	1,226,256	1,232,948	1,245,628	1,246,278	1,253,023
Commercial Therms	1,321,215	1,328,448	1,335,681	1,349,149	1,350,263	1,357,554	1,364,962	1,378,624	1,379,719	1,387,186
Industrial Therms	347,645	349,548	351,451	354,995	355,288	357,206	359,156	362,750	363,039	365,003
Ind., Inst., & Cmcl. Interrup. Therms	141,792	142,569	143,345	144,856	144,910	145,692	146,487	148,020	148,071	148,872
Total Core Therms	**3,004,085**	**3,020,530**	**3,036,975**	**3,067,996**	**3,070,131**	**3,086,709**	**3,103,553**	**3,135,023**	**3,137,108**	**3,154,084**
Daily Baseload Therms	1,060	1,066	1,072	1,083	1,083	1,089	1,095	1,106	1,107	1,113
Peak Day Therms	40,914	41,138	41,362	41,588	41,814	42,040	42,269	42,497	42,726	42,957
Therms Per Residential Customer	495	495	495	498	495	495	495	498	495	495
Therms Per Commercial Customer	2,474	2,474	2,474	2,486	2,474	2,474	2,474	2,486	2,474	2,474
Therms Per Industrial Customer	21,422	21,422	21,422	21,520	21,422	21,422	21,422	21,520	21,422	21,422
Residential Customers	2,410	2,423	2,436	2,450	2,463	2,476	2,490	2,503	2,517	2,530
Commercial Customers	534	537	540	543	546	549	552	555	558	561
Industrial Customers	16	16	16	16	17	17	17	17	17	17
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,962**	**2,979**	**2,995**	**3,011**	**3,027**	**3,044**	**3,060**	**3,077**	**3,094**	**3,110**

Redmond	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.40%	1.83%	1.80%	2.23%	1.26%	1.69%	1.66%	2.10%	1.14%	1.58%
Residential Therms	4,838,491	4,927,131	5,015,598	5,128,036	5,191,953	5,279,797	5,367,619	5,481,006	5,542,811	5,630,245
Commercial Therms	3,599,328	3,665,267	3,731,078	3,814,815	3,862,267	3,927,613	3,992,944	4,077,394	4,123,268	4,188,310
Industrial Therms	482,750	491,594	500,421	510,988	518,016	526,781	535,543	546,160	553,022	561,746
Ind., Inst., & Cmcl. Interrup. Therms	344,859	351,177	357,482	364,602	370,052	376,313	382,572	389,698	395,059	401,291
Total Core Therms	**9,265,429**	**9,435,169**	**9,604,579**	**9,818,441**	**9,942,288**	**10,110,504**	**10,278,678**	**10,494,259**	**10,614,160**	**10,781,592**
Daily Baseload Therms	4,498	4,581	4,663	4,767	4,827	4,909	4,990	5,095	5,153	5,234
Peak Day Therms	117,704	119,860	122,013	124,161	126,303	128,440	130,576	132,707	134,838	136,965
Therms Per Residential Customer	604	604	604	607	604	604	604	607	604	604
Therms Per Commercial Customer	2,583	2,583	2,583	2,595	2,583	2,583	2,583	2,595	2,583	2,583
Therms Per Industrial Customer	32,337	32,337	32,337	32,449	32,337	32,337	32,337	32,449	32,337	32,337
Residential Customers	8,006	8,153	8,299	8,445	8,591	8,736	8,881	9,026	9,171	9,316
Commercial Customers	1,394	1,419	1,445	1,470	1,495	1,521	1,546	1,571	1,596	1,622
Industrial Customers	15	15	15	16	16	16	17	17	17	17
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**9,416**	**9,588**	**9,760**	**9,932**	**10,103**	**10,274**	**10,445**	**10,616**	**10,786**	**10,956**

Stanfield	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.10%	0.60%	0.59%	1.08%	0.08%	0.57%	0.57%	1.06%	0.07%	0.56%
Residential Therms	163,509	164,484	165,460	167,273	167,395	168,354	169,316	171,138	171,234	172,189
Commercial Therms	67,409	67,811	68,213	68,934	69,011	69,407	69,803	70,526	70,594	70,988
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**230,918**	**232,296**	**233,673**	**236,207**	**236,406**	**237,761**	**239,119**	**241,664**	**241,827**	**243,177**
Daily Baseload Therms	107	107	108	109	109	110	111	112	112	112
Peak Day Therms	3,227	3,247	3,266	3,285	3,304	3,323	3,342	3,361	3,380	3,399
Therms Per Residential Customer	507	507	507	509	507	507	507	509	507	507
Therms Per Commercial Customer	1,930	1,930	1,930	1,939	1,930	1,930	1,930	1,939	1,930	1,930
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	323	325	327	329	330	332	334	336	338	340
Commercial Customers	35	35	35	36	36	36	36	36	37	37
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**358**	**360**	**362**	**364**	**366**	**368**	**370**	**372**	**375**	**377**

Stearns (Sunriver)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.42%	1.83%	1.80%	2.21%	1.28%	1.69%	1.66%	2.08%	1.16%	1.58%
Residential Therms	4,152,593	4,228,667	4,304,593	4,400,499	4,455,948	4,531,339	4,606,712	4,703,391	4,757,069	4,832,109
Commercial Therms	1,304,419	1,328,315	1,352,165	1,381,083	1,399,709	1,423,391	1,447,067	1,476,145	1,494,298	1,517,869
Industrial Therms	17,995	18,325	18,654	19,042	19,310	19,637	19,963	20,352	20,615	20,940
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**5,475,006**	**5,575,307**	**5,675,413**	**5,800,623**	**5,874,967**	**5,974,367**	**6,073,742**	**6,199,888**	**6,271,981**	**6,370,918**
Daily Baseload Therms	4,201	4,278	4,355	4,451	4,508	4,584	4,661	4,757	4,813	4,889
Peak Day Therms	63,837	65,006	66,174	67,339	68,500	69,659	70,818	71,974	73,129	74,283
Therms Per Residential Customer	956	956	956	960	956	956	956	960	956	956
Therms Per Commercial Customer	4,764	4,764	4,764	4,781	4,764	4,764	4,764	4,781	4,764	4,764
Therms Per Industrial Customer	5,944	5,944	5,944	5,963	5,944	5,944	5,944	5,963	5,944	5,944
Residential Customers	4,346	4,426	4,505	4,584	4,663	4,742	4,821	4,900	4,979	5,057
Commercial Customers	274	279	284	289	294	299	304	309	314	319
Industrial Customers	3	3	3	3	3	3	3	3	3	4
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4,623**	**4,707**	**4,792**	**4,876**	**4,960**	**5,044**	**5,128**	**5,212**	**5,296**	**5,379**

Dave Rasmussen	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Pronghorn	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.87%	1.83%	1.80%	1.76%	1.72%	1.69%	1.66%	1.63%	1.61%	1.58%
Residential Therms	366,830	373,551	380,258	386,954	393,628	400,288	406,946	413,588	420,228	426,857
Commercial Therms	312,266	317,987	323,696	329,396	335,078	340,747	346,415	352,069	357,722	363,365
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**679,097**	**691,538**	**703,954**	**716,350**	**728,706**	**741,035**	**753,361**	**765,657**	**777,950**	**790,222**
Daily Baseload Therms	724	737	751	764	777	790	803	816	829	843
Peak Day Therms	7,980	8,126	8,272	8,417	8,562	8,707	8,852	8,997	9,141	9,285
Therms Per Residential Customer	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619	1,619

Therms Per Commercial Customer	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386	10,386
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	227	231	235	239	243	247	251	256	260	264
Commercial Customers	30	31	31	32	32	33	33	34	34	35
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**257**	**261**	**266**	**271**	**275**	**280**	**285**	**289**	**294**	**299**

South Hermiston	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kosmos Farms	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Bend Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.41%	1.83%	1.80%	2.22%	1.27%	1.69%	1.66%	2.09%	1.15%	1.58%
Residential Therms	24,240,932	24,685,019	25,128,243	25,686,612	26,011,783	26,451,882	26,891,872	27,454,660	27,769,588	28,207,636
Commercial Therms	13,504,650	13,752,051	13,998,972	14,308,300	14,491,193	14,736,373	14,981,492	15,293,162	15,470,468	15,714,506
Industrial Therms	403,249	410,636	418,009	427,139	432,707	440,028	447,347	456,540	461,948	469,235
Ind., Inst., & Cmcl. Interrup. Therms	242,101	246,536	250,963	256,162	259,787	264,182	268,577	273,794	277,343	281,717
Total Core Therms	**38,390,932**	**39,094,242**	**39,796,188**	**40,678,213**	**41,195,470**	**41,892,465**	**42,589,288**	**43,478,155**	**43,979,347**	**44,673,094**
Daily Baseload Therms	21,935	22,336	22,738	23,241	23,537	23,935	24,333	24,841	25,128	25,524
Peak Day Therms	462,262	470,731	479,183	487,620	496,031	504,424	512,814	521,184	529,552	537,905
Therms Per Residential Customer	741	741	741	744	741	741	741	744	741	741
Therms Per Commercial Customer	2,717	2,717	2,717	2,729	2,717	2,717	2,717	2,729	2,717	2,717
Therms Per Industrial Customer	22,589	22,589	22,589	22,683	22,589	22,589	22,589	22,683	22,589	22,589
Residential Customers	32,731	33,331	33,929	34,527	35,122	35,717	36,311	36,903	37,496	38,087
Commercial Customers	4,970	5,061	5,152	5,242	5,333	5,423	5,513	5,603	5,693	5,783
Industrial Customers	18	18	19	19	19	19	20	20	20	21
Interruptible Customers	3	3	3	3	3	3	3	4	4	4
Total Core Customers	**37,722**	**38,413**	**39,103**	**39,791**	**40,478**	**41,163**	**41,847**	**42,530**	**43,213**	**43,895**

McCleary (Aberdeen/Hoquiam)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.02%	0.44%	0.44%	0.86%	-0.01%	0.41%	0.41%	0.83%	-0.03%	0.40%
Residential Therms	2,504,413	2,515,552	2,526,531	2,548,934	2,548,072	2,558,603	2,569,133	2,591,246	2,589,808	2,600,050
Commercial Therms	2,430,001	2,440,809	2,451,462	2,472,499	2,472,363	2,482,581	2,492,798	2,513,543	2,512,859	2,522,796
Industrial Therms	119,060	119,589	120,111	121,304	121,135	121,636	122,136	123,317	123,119	123,606
Ind., Inst., & Cmcl. Interrup. Therms	1,116,585	1,121,552	1,126,447	1,135,359	1,136,051	1,140,746	1,145,441	1,154,206	1,154,659	1,159,225
Total Core Therms	**6,170,059**	**6,197,502**	**6,224,551**	**6,278,095**	**6,277,622**	**6,303,565**	**6,329,508**	**6,382,312**	**6,380,445**	**6,405,677**
Daily Baseload Therms	6,666	6,695	6,724	6,782	6,782	6,810	6,838	6,895	6,893	6,920
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	684	684	684	687	684	684	684	687	684	684
Therms Per Commercial Customer	3,117	3,117	3,117	3,131	3,117	3,117	3,117	3,131	3,117	3,117
Therms Per Industrial Customer	9,695	9,695	9,695	9,750	9,695	9,695	9,695	9,750	9,695	9,695
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Acme	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.20%	1.63%	1.60%	2.03%	1.09%	1.52%	1.50%	1.94%	1.00%	1.44%
Residential Therms	61,061	62,055	63,048	64,331	65,032	66,023	67,014	68,312	68,996	69,987

Commercial Therms	41,787	42,467	43,147	44,024	44,505	45,183	45,861	46,748	47,217	47,896
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**102,848**	**104,522**	**106,195**	**108,354**	**109,537**	**111,205**	**112,875**	**115,060**	**116,213**	**117,883**
Daily Baseload Therms	36	37	37	38	39	39	40	41	41	42
Peak Day Therms	1,213	1,232	1,252	1,272	1,292	1,311	1,331	1,351	1,370	1,390
Therms Per Residential Customer	767	767	767	771	767	767	767	771	767	767
Therms Per Commercial Customer	3,822	3,822	3,822	3,839	3,822	3,822	3,822	3,839	3,822	3,822
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	80	81	82	83	85	86	87	89	90	91
Commercial Customers	11	11	11	11	12	12	12	12	12	13
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**91**	**92**	**93**	**95**	**96**	**98**	**99**	**101**	**102**	**104**

Arlington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.95%	1.37%	1.35%	1.77%	0.87%	1.29%	1.28%	1.70%	0.80%	1.23%
Residential Therms	4,187,967	4,245,430	4,302,834	4,379,510	4,417,346	4,474,417	4,531,548	4,608,911	4,645,607	4,702,624
Commercial Therms	2,200,311	2,230,502	2,260,662	2,300,461	2,320,825	2,350,809	2,380,825	2,420,960	2,440,751	2,470,706
Industrial Therms	259,352	262,910	266,465	271,093	273,557	277,091	280,629	285,293	287,692	291,223
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**6,647,630**	**6,738,843**	**6,829,961**	**6,951,063**	**7,011,727**	**7,102,317**	**7,193,001**	**7,315,165**	**7,374,051**	**7,464,553**
Daily Baseload Therms	6,933	7,028	7,123	7,250	7,313	7,407	7,502	7,629	7,691	7,785
Peak Day Therms	68,678	69,620	70,561	71,502	72,439	73,375	74,312	75,247	76,183	77,118
Therms Per Residential Customer	769	769	769	772	769	769	769	772	769	769
Therms Per Commercial Customer	3,433	3,433	3,433	3,448	3,433	3,433	3,433	3,448	3,433	3,433
Therms Per Industrial Customer	9,320	9,320	9,320	9,357	9,320	9,320	9,320	9,357	9,320	9,320
Residential Customers	5,448	5,523	5,598	5,672	5,747	5,821	5,895	5,969	6,044	6,118
Commercial Customers	641	650	658	667	676	685	693	702	711	720
Industrial Customers	28	28	29	29	29	30	30	30	31	31
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**6,117**	**6,201**	**6,285**	**6,369**	**6,452**	**6,535**	**6,619**	**6,702**	**6,785**	**6,869**

Bremerton (Shelton)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.55%	0.99%	0.98%	1.42%	0.51%	0.94%	0.93%	1.37%	0.46%	0.90%
Residential Therms	22,591,343	22,815,519	23,039,155	23,368,323	23,484,025	23,705,061	23,926,245	24,256,799	24,366,896	24,586,804
Commercial Therms	11,370,183	11,483,011	11,595,567	11,758,122	11,819,469	11,930,716	12,042,038	12,205,172	12,263,816	12,374,495
Industrial Therms	366,537	370,174	373,802	380,612	381,020	384,606	388,195	395,083	395,345	398,912
Ind., Inst., & Cmcl. Interrup. Therms	2,770,976	2,798,472	2,825,903	2,864,082	2,880,469	2,907,580	2,934,710	2,972,976	2,988,759	3,015,732
Total Core Therms	**37,099,039**	**37,467,176**	**37,834,427**	**38,371,139**	**38,564,982**	**38,927,964**	**39,291,188**	**39,830,030**	**40,014,815**	**40,375,943**
Daily Baseload Therms	27,278	27,548	27,818	28,213	28,355	28,622	28,889	29,286	29,421	29,687
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	655	655	655	658	655	655	655	658	655	655
Therms Per Commercial Customer	3,473	3,473	3,473	3,488	3,473	3,473	3,473	3,488	3,473	3,473
Therms Per Industrial Customer	25,295	25,295	25,295	25,508	25,295	25,295	25,295	25,508	25,295	25,295
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563
Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Castle Rock	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.09%	0.50%	0.50%	0.91%	0.07%	0.49%	0.49%	0.90%	0.06%	0.48%
Residential Therms	36,829	37,014	37,200	37,565	37,568	37,750	37,933	38,300	38,298	38,480
Commercial Therms	125,536	126,168	126,799	127,933	128,054	128,677	129,301	130,437	130,544	131,165
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**162,365**	**163,183**	**163,999**	**165,498**	**165,622**	**166,427**	**167,235**	**168,737**	**168,842**	**169,645**
Daily Baseload Therms	171	172	173	174	174	175	176	178	178	179
Peak Day Therms	1,426	1,433	1,440	1,447	1,454	1,462	1,469	1,476	1,483	1,490
Therms Per Residential Customer	543	543	543	546	543	543	543	546	543	543
Therms Per Commercial Customer	2,450	2,450	2,450	2,459	2,450	2,450	2,450	2,459	2,450	2,450
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	68	68	68	69	69	69	70	70	71	71
Commercial Customers	51	52	52	52	52	53	53	53	53	54
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**119**	**120**	**120**	**121**	**121**	**122**	**123**	**123**	**124**	**124**

Walla Walla	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%	0.00%	0.48%	-0.47%	0.00%
Residential Therms	6,475,922	6,475,812	6,475,812	6,507,965	6,475,594	6,475,375	6,475,375	6,507,525	6,475,375	6,475,484
Commercial Therms	4,244,766	4,244,695	4,244,695	4,264,952	4,244,552	4,244,408	4,244,408	4,264,664	4,244,408	4,244,480
Industrial Therms	97,535	97,533	97,533	97,947	97,530	97,526	97,526	97,940	97,526	97,528
Ind., Inst., & Cmcl. Interrup. Therms	1,949,360	1,949,327	1,949,327	1,957,333	1,949,261	1,949,196	1,949,196	1,957,201	1,949,196	1,949,229
Total Core Therms	**12,767,583**	**12,767,367**	**12,767,367**	**12,828,197**	**12,766,936**	**12,766,505**	**12,766,505**	**12,827,331**	**12,766,505**	**12,766,721**
Daily Baseload Therms	11,054	11,054	11,054	11,107	11,053	11,053	11,053	11,106	11,053	11,053
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	609	609	609	612	609	609	609	612	609	609
Therms Per Commercial Customer	3,370	3,370	3,370	3,386	3,370	3,370	3,370	3,386	3,370	3,370
Therms Per Industrial Customer	12,757	12,757	12,757	12,811	12,757	12,757	12,757	12,811	12,757	12,757
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8

Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Deming	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.18%	1.61%	1.59%	2.03%	1.08%	1.51%	1.49%	1.93%	0.99%	1.43%
Residential Therms	15,731	15,985	16,239	16,571	16,746	17,000	17,254	17,591	17,761	18,015
Commercial Therms	75,365	76,582	77,799	79,337	80,231	81,446	82,662	84,218	85,094	86,311
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	81,254	82,566	83,878	85,611	86,500	87,810	89,121	90,877	91,743	93,055
Total Core Therms	**172,350**	**175,133**	**177,916**	**181,519**	**183,478**	**186,255**	**189,037**	**192,686**	**194,599**	**197,382**
Daily Baseload Therms	110	112	114	116	117	119	121	123	124	126
Peak Day Therms	2,007	2,039	2,071	2,104	2,136	2,168	2,201	2,233	2,266	2,298
Therms Per Residential Customer	542	542	542	545	542	542	542	545	542	542
Therms Per Commercial Customer	5,327	5,327	5,327	5,349	5,327	5,327	5,327	5,349	5,327	5,327
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	29	29	30	30	31	31	32	32	33	33
Commercial Customers	14	14	15	15	15	15	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**44**	**45**	**46**	**47**	**47**	**48**	**49**	**49**	**50**	**51**

Wenatchee	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.65%	1.08%	1.06%	1.49%	0.60%	1.02%	1.02%	1.44%	0.56%	0.98%
Residential Therms	737,629	745,574	753,514	764,871	769,336	777,208	785,100	796,546	800,853	808,720
Commercial Therms	3,759,386	3,799,883	3,840,347	3,897,134	3,920,986	3,961,107	4,001,329	4,058,525	4,081,616	4,121,708
Industrial Therms	440,792	445,540	450,285	457,067	459,740	464,444	469,160	475,995	478,574	483,275
Ind., Inst., & Cmcl. Interrup. Therms	297,734	300,941	304,146	308,951	310,532	313,710	316,895	321,746	323,254	326,429
Total Core Therms	**5,235,541**	**5,291,939**	**5,348,291**	**5,428,023**	**5,460,593**	**5,516,469**	**5,572,484**	**5,652,813**	**5,684,296**	**5,740,131**
Daily Baseload Therms	4,905	4,958	5,011	5,086	5,116	5,168	5,221	5,296	5,326	5,378
Peak Day Therms	55,614	56,213	56,811	57,409	58,004	58,598	59,193	59,787	60,381	60,974
Therms Per Residential Customer	469	469	469	471	469	469	469	471	469	469
Therms Per Commercial Customer	4,851	4,851	4,851	4,871	4,851	4,851	4,851	4,871	4,851	4,851
Therms Per Industrial Customer	25,941	25,941	25,941	26,057	25,941	25,941	25,941	26,057	25,941	25,941
Residential Customers	1,573	1,590	1,607	1,624	1,641	1,658	1,674	1,691	1,708	1,725
Commercial Customers	775	783	792	800	808	817	825	833	841	850
Industrial Customers	17	17	17	18	18	18	18	18	18	19
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**2,369**	**2,395**	**2,420**	**2,446**	**2,471**	**2,496**	**2,522**	**2,547**	**2,572**	**2,597**

Finley	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.61%	1.14%	1.13%	1.65%	0.55%	1.08%	1.07%	1.59%	0.50%	1.03%
Residential Therms	16,582	16,771	16,960	17,243	17,335	17,522	17,709	17,995	18,082	18,268
Commercial Therms	98,628	99,752	100,874	102,537	103,108	104,220	105,332	107,008	107,549	108,657
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**115,210**	**116,523**	**117,834**	**119,780**	**120,444**	**121,742**	**123,041**	**125,003**	**125,631**	**126,925**
Daily Baseload Therms	32	32	32	33	33	34	34	34	35	35
Peak Day Therms	1,872	1,893	1,914	1,935	1,957	1,978	1,999	2,020	2,041	2,062
Therms Per Residential Customer	558	558	558	561	558	558	558	561	558	558
Therms Per Commercial Customer	6,640	6,640	6,640	6,675	6,640	6,640	6,640	6,675	6,640	6,640
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	30	30	30	31	31	31	32	32	32	33
Commercial Customers	15	15	15	15	16	16	16	16	16	16
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**45**	**45**	**46**	**46**	**47**	**47**	**48**	**48**	**49**	**49**

Grandview	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.25%	0.18%	0.18%	0.61%	-0.25%	0.17%	0.18%	0.60%	-0.25%	0.18%
Residential Therms	594,190	595,269	596,344	600,349	598,471	599,517	600,582	604,587	602,698	603,767
Commercial Therms	677,089	678,318	679,543	684,064	681,967	683,159	684,372	688,893	686,783	688,002
Industrial Therms	586,167	587,231	588,291	591,055	590,390	591,422	592,472	595,227	594,559	595,614
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,857,446**	**1,860,819**	**1,864,177**	**1,875,468**	**1,870,827**	**1,874,097**	**1,877,426**	**1,888,707**	**1,884,040**	**1,887,383**
Daily Baseload Therms	1,133	1,135	1,137	1,144	1,141	1,143	1,145	1,152	1,149	1,151
Peak Day Therms	19,071	19,106	19,140	19,175	19,208	19,242	19,276	19,310	19,344	19,378
Therms Per Residential Customer	614	614	614	617	614	614	614	617	614	614
Therms Per Commercial Customer	3,612	3,612	3,612	3,629	3,612	3,612	3,612	3,629	3,612	3,612
Therms Per Industrial Customer	72,735	72,735	72,735	72,946	72,735	72,735	72,735	72,946	72,735	72,735
Residential Customers	967	969	971	973	974	976	978	980	981	983
Commercial Customers	187	188	188	188	189	189	189	190	190	190
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,163**	**1,165**	**1,167**	**1,169**	**1,171**	**1,173**	**1,175**	**1,178**	**1,180**	**1,182**

Zillah (Toppenish)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.23%	0.22%	0.21%	0.66%	-0.23%	0.21%	0.21%	0.65%	-0.23%	0.21%
Residential Therms	1,159,667	1,162,171	1,164,664	1,173,001	1,169,605	1,172,038	1,174,506	1,182,843	1,179,407	1,181,877
Commercial Therms	2,131,523	2,136,126	2,140,708	2,154,945	2,149,789	2,154,262	2,158,797	2,173,026	2,167,806	2,172,346
Industrial Therms	588,162	589,432	590,697	593,990	593,202	594,437	595,688	598,973	598,174	599,427
Ind., Inst., & Cmcl. Interrup. Therms	88,853	89,045	89,236	89,617	89,615	89,801	89,990	90,369	90,366	90,555
Total Core Therms	**3,968,206**	**3,976,774**	**3,985,306**	**4,011,553**	**4,002,210**	**4,010,538**	**4,018,981**	**4,045,211**	**4,035,753**	**4,044,205**
Daily Baseload Therms	2,965	2,971	2,977	2,997	2,990	2,996	3,002	3,022	3,015	3,021

Peak Day Therms	45,485	45,583	45,681	45,779	45,875	45,970	46,067	46,163	46,259	46,356
Therms Per Residential Customer	595	595	595	598	595	595	595	598	595	595
Therms Per Commercial Customer	4,184	4,184	4,184	4,203	4,184	4,184	4,184	4,203	4,184	4,184
Therms Per Industrial Customer	26,765	26,765	26,765	26,857	26,765	26,765	26,765	26,857	26,765	26,765
Residential Customers	1,948	1,952	1,956	1,960	1,964	1,968	1,973	1,977	1,981	1,985
Commercial Customers	509	511	512	513	514	515	516	517	518	519
Industrial Customers	22	22	22	22	22	22	22	22	22	22
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,480**	**2,485**	**2,491**	**2,496**	**2,501**	**2,507**	**2,512**	**2,517**	**2,522**	**2,528**

Kalama #2	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.52%	0.52%	0.51%	0.51%	0.50%	0.49%	0.49%	0.48%	0.48%	0.47%
Residential Therms	199,960	200,996	202,026	203,049	204,062	205,066	206,067	207,060	208,047	209,028
Commercial Therms	190,634	191,621	192,603	193,578	194,544	195,501	196,456	197,402	198,343	199,279
Industrial Therms	236,415	237,640	238,858	240,067	241,264	242,452	243,636	244,809	245,976	247,137
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**627,009**	**630,257**	**633,487**	**636,693**	**639,869**	**643,019**	**646,159**	**649,271**	**652,366**	**655,444**
Daily Baseload Therms	945	950	955	960	965	970	974	979	984	988
Peak Day Therms	6,819	6,854	6,889	6,924	6,958	6,993	7,027	7,061	7,094	7,128
Therms Per Residential Customer	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Therms Per Commercial Customer	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804	3,804
Therms Per Industrial Customer	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676	78,676
Residential Customers	179	179	180	181	182	183	184	185	186	187
Commercial Customers	50	50	51	51	51	51	52	52	52	52
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**232**	**233**	**234**	**235**	**236**	**238**	**239**	**240**	**241**	**242**

Lawrence	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.17%	1.62%	1.59%	2.04%	1.07%	1.52%	1.50%	1.95%	0.98%	1.43%
Residential Therms	52,988	53,845	54,703	55,817	56,415	57,270	58,126	59,255	59,838	60,695
Commercial Therms	24,638	25,037	25,435	25,962	26,231	26,629	27,027	27,562	27,823	28,222
Industrial Therms	1,033	1,050	1,066	1,084	1,100	1,116	1,133	1,151	1,167	1,183
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**78,660**	**79,932**	**81,204**	**82,864**	**83,746**	**85,015**	**86,287**	**87,968**	**88,828**	**90,100**
Daily Baseload Therms	34	35	35	36	36	37	38	38	39	39
Peak Day Therms	981	997	1,013	1,028	1,044	1,060	1,076	1,092	1,108	1,124
Therms Per Residential Customer	730	730	730	733	730	730	730	733	730	730
Therms Per Commercial Customer	1,303	1,303	1,303	1,310	1,303	1,303	1,303	1,310	1,303	1,303
Therms Per Industrial Customer	852	852	852	853	852	852	852	853	852	852
Residential Customers	73	74	75	76	77	78	80	81	82	83
Commercial Customers	19	19	20	20	20	20	21	21	21	22
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**93**	**94**	**96**	**97**	**99**	**100**	**102**	**103**	**105**	**106**

Moxee (Beauchene)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.51%	0.51%	0.85%	0.17%	0.50%	0.50%	0.83%	0.16%	0.49%
Residential Therms	276,764	278,185	279,604	282,266	282,435	283,843	285,259	287,938	288,087	289,506
Commercial Therms	559,867	562,741	565,613	570,459	571,339	574,189	577,052	581,922	582,773	585,643
Industrial Therms	546,538	549,344	552,147	556,144	557,737	560,518	563,314	567,320	568,898	571,700
Ind., Inst., & Cmcl. Interrup. Therms	252,018	253,311	254,604	257,071	257,181	258,464	259,753	262,236	262,328	263,620
Total Core Therms	**1,635,187**	**1,643,581**	**1,651,967**	**1,665,940**	**1,668,692**	**1,677,015**	**1,685,378**	**1,699,416**	**1,702,086**	**1,710,468**
Daily Baseload Therms	614	618	621	626	627	630	633	639	640	643
Peak Day Therms	14,651	14,726	14,801	14,877	14,951	15,026	15,101	15,176	15,251	15,326
Therms Per Residential Customer	163	163	163	163	163	163	163	163	163	163
Therms Per Commercial Customer	1,315	1,315	1,315	1,320	1,315	1,315	1,315	1,320	1,315	1,315
Therms Per Industrial Customer	39,252	39,252	39,252	39,336	39,252	39,252	39,252	39,336	39,252	39,252
Residential Customers	1,703	1,712	1,720	1,729	1,738	1,746	1,755	1,764	1,772	1,781
Commercial Customers	426	428	430	432	434	437	439	441	443	445
Industrial Customers	14	14	14	14	14	14	14	14	14	15
Interruptible Customers	5	5	5	5	5	5	5	5	6	6
Total Core Customers	**2,148**	**2,159**	**2,170**	**2,181**	**2,192**	**2,203**	**2,214**	**2,225**	**2,236**	**2,247**

Othello	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.74%	0.74%	0.74%	0.73%	0.73%	0.73%	0.72%	0.72%	0.71%	0.72%
Residential Therms	679,333	684,384	689,428	694,466	699,531	704,608	709,678	714,793	719,900	725,052
Commercial Therms	880,601	887,149	893,688	900,219	906,784	913,365	919,938	926,568	933,188	939,866
Industrial Therms	246,124	247,954	249,782	251,607	253,442	255,281	257,118	258,972	260,822	262,688
Ind., Inst., & Cmcl. Interrup. Therms	225,250	226,925	228,598	230,268	231,948	233,631	235,312	237,008	238,702	240,410
Total Core Therms	**2,031,308**	**2,046,413**	**2,061,495**	**2,076,561**	**2,091,705**	**2,106,884**	**2,122,047**	**2,137,341**	**2,152,612**	**2,168,017**
Daily Baseload Therms	2,187	2,204	2,220	2,236	2,252	2,269	2,285	2,302	2,318	2,335
Peak Day Therms	22,343	22,509	22,675	22,840	23,007	23,174	23,341	23,509	23,677	23,846
Therms Per Residential Customer	580	580	580	580	580	580	580	580	580	580
Therms Per Commercial Customer	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Therms Per Industrial Customer	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621	20,621
Residential Customers	1,171	1,180	1,189	1,197	1,206	1,215	1,224	1,232	1,241	1,250
Commercial Customers	305	307	309	312	314	316	318	321	323	325
Industrial Customers	12	12	12	12	12	12	12	13	13	13
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**1,490**	**1,501**	**1,512**	**1,523**	**1,534**	**1,546**	**1,557**	**1,568**	**1,579**	**1,590**

North Pasco	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034

Total Therms Pct. Growth	0.78%	1.29%	1.26%	1.77%	0.70%	1.20%	1.19%	1.70%	0.63%	1.14%
Residential Therms	2,904,575	2,941,903	2,979,093	3,032,063	3,053,111	3,089,884	3,126,657	3,179,901	3,199,841	3,236,364
Commercial Therms	1,997,184	2,022,851	2,048,423	2,084,753	2,099,317	2,124,603	2,149,888	2,186,401	2,200,209	2,225,322
Industrial Therms	111,848	113,286	114,718	116,481	117,568	118,984	120,400	122,161	123,218	124,624
Ind., Inst., & Cmcl. Interrup. Therms	217,295	220,088	222,870	226,799	228,407	231,158	233,909	237,857	239,384	242,117
Total Core Therms	**5,230,903**	**5,298,128**	**5,365,103**	**5,460,096**	**5,498,403**	**5,564,628**	**5,630,853**	**5,726,320**	**5,762,653**	**5,828,428**
Daily Baseload Therms	1,988	2,013	2,039	2,075	2,089	2,115	2,140	2,176	2,190	2,215
Peak Day Therms	83,677	84,752	85,824	86,892	87,956	89,015	90,075	91,129	92,183	93,235
Therms Per Residential Customer	1,357	1,357	1,357	1,364	1,357	1,357	1,357	1,364	1,357	1,357
Therms Per Commercial Customer	8,803	8,803	8,803	8,849	8,803	8,803	8,803	8,849	8,803	8,803
Therms Per Industrial Customer	48,003	48,003	48,003	48,142	48,003	48,003	48,003	48,142	48,003	48,003
Residential Customers	2,140	2,168	2,195	2,222	2,250	2,277	2,304	2,331	2,358	2,385
Commercial Customers	227	230	233	236	238	241	244	247	250	253
Industrial Customers	2	2	2	2	2	2	3	3	3	3
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**2,370**	**2,401**	**2,431**	**2,462**	**2,492**	**2,522**	**2,552**	**2,582**	**2,611**	**2,641**

Patterson	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.73%	1.71%	1.70%	1.69%	1.68%	1.66%	1.65%	1.64%	1.63%	1.61%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	12,251	12,461	12,673	12,887	13,103	13,321	13,541	13,763	13,987	14,213
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	264,080	268,605	273,175	277,788	282,445	287,144	291,886	296,670	301,495	306,362
Total Core Therms	**276,331**	**281,066**	**285,848**	**290,675**	**295,548**	**300,465**	**305,427**	**310,433**	**315,482**	**320,575**
Daily Baseload Therms	377	384	390	397	404	410	417	424	431	438
Peak Day Therms	2,996	3,047	3,099	3,151	3,204	3,257	3,311	3,365	3,420	3,475
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520	2,520
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	5	5	5	5	5	5	5	5	6	6
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**7**	**7**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**

Prosser	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.68%	1.13%	1.12%	1.57%	0.62%	1.07%	1.06%	1.52%	0.57%	1.02%
Residential Therms	300,569	303,980	307,385	312,369	314,162	317,532	320,904	325,924	327,626	330,983
Commercial Therms	521,273	527,189	533,094	541,412	544,847	550,692	556,540	564,907	568,198	574,020
Industrial Therms	168,832	170,748	172,660	175,296	176,467	178,360	180,254	182,902	184,030	185,916
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**990,674**	**1,001,916**	**1,013,139**	**1,029,077**	**1,035,475**	**1,046,584**	**1,057,698**	**1,073,733**	**1,079,855**	**1,090,918**
Daily Baseload Therms	472	477	483	490	493	499	504	511	514	520
Peak Day Therms	12,045	12,182	12,318	12,454	12,590	12,725	12,860	12,995	13,129	13,264
Therms Per Residential Customer	587	587	587	590	587	587	587	590	587	587
Therms Per Commercial Customer	3,328	3,328	3,328	3,343	3,328	3,328	3,328	3,343	3,328	3,328
Therms Per Industrial Customer	29,568	29,568	29,568	29,691	29,568	29,568	29,568	29,691	29,568	29,568
Residential Customers	512	518	523	529	535	541	546	552	558	564
Commercial Customers	157	158	160	162	164	165	167	169	171	172
Industrial Customers	6	6	6	6	6	6	6	6	6	6
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**674**	**682**	**689**	**697**	**705**	**712**	**720**	**727**	**735**	**742**

Quincy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.24%	1.23%	1.22%	1.21%	1.20%	1.19%	1.19%	1.18%	1.17%	1.17%
Residential Therms	49,553	50,162	50,774	51,390	52,008	52,629	53,253	53,881	54,513	55,148
Commercial Therms	566,902	573,872	580,878	587,924	594,990	602,094	609,240	616,423	623,650	630,916
Industrial Therms	273,393	276,754	280,133	283,531	286,939	290,364	293,811	297,275	300,760	304,264
Ind., Inst., & Cmcl. Interrup. Therms	63,469	64,249	65,033	65,822	66,613	67,409	68,209	69,013	69,822	70,636
Total Core Therms	**953,316**	**965,037**	**976,819**	**988,667**	**1,000,551**	**1,012,496**	**1,024,514**	**1,036,592**	**1,048,745**	**1,060,965**
Daily Baseload Therms	718	726	735	744	753	762	771	780	789	799
Peak Day Therms	10,812	10,945	11,078	11,213	11,347	11,483	11,619	11,756	11,894	12,033
Therms Per Residential Customer	710	710	710	710	710	710	710	710	710	710
Therms Per Commercial Customer	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
Therms Per Industrial Customer	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666	39,666
Residential Customers	70	71	72	72	73	74	75	76	77	78
Commercial Customers	73	74	75	76	77	77	78	79	80	81
Industrial Customers	7	7	7	7	7	7	7	7	8	8
Interruptible Customers	1	1	1	1	1	1	1	1	1	1
Total Core Customers	**151**	**153**	**154**	**156**	**158**	**160**	**162**	**164**	**166**	**168**

Sunnyside	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.15%	0.28%	0.28%	0.71%	-0.15%	0.27%	0.28%	0.70%	-0.16%	0.27%
Residential Therms	1,106,183	1,109,318	1,112,440	1,120,849	1,118,633	1,121,693	1,124,779	1,133,190	1,130,911	1,133,990
Commercial Therms	1,559,864	1,564,284	1,568,687	1,580,034	1,577,421	1,581,735	1,586,087	1,597,430	1,594,734	1,599,075
Industrial Therms	538,180	539,705	541,224	544,482	544,238	545,726	547,227	550,477	550,211	551,709
Ind., Inst., & Cmcl. Interrup. Therms	168,467	168,945	169,420	170,580	170,363	170,829	171,299	172,458	172,233	172,702
Total Core Therms	**3,372,693**	**3,382,252**	**3,391,771**	**3,415,945**	**3,410,655**	**3,419,983**	**3,429,392**	**3,453,556**	**3,448,090**	**3,457,476**
Daily Baseload Therms	2,909	2,917	2,926	2,946	2,942	2,950	2,958	2,979	2,974	2,982
Peak Day Therms	37,984	38,092	38,199	38,306	38,412	38,517	38,623	38,728	38,833	38,939
Therms Per Residential Customer	591	591	591	594	591	591	591	594	591	591
Therms Per Commercial Customer	2,976	2,976	2,976	2,989	2,976	2,976	2,976	2,989	2,976	2,976
Therms Per Industrial Customer	33,521	33,521	33,521	33,628	33,521	33,521	33,521	33,628	33,521	33,521
Residential Customers	1,872	1,877	1,883	1,888	1,893	1,898	1,903	1,909	1,914	1,919

Commercial Customers	524	526	527	529	530	532	533	534	536	537
Industrial Customers	16	16	16	16	16	16	16	16	16	16
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**2,414**	**2,421**	**2,428**	**2,435**	**2,441**	**2,448**	**2,455**	**2,462**	**2,468**	**2,475**

Moses Lake	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.46%	1.92%	1.92%	2.38%	1.44%	1.90%	1.90%	2.36%	1.42%	1.88%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	185,836	189,407	193,037	198,100	200,478	204,291	208,166	213,585	216,107	220,175
Industrial Therms	4,133,583	4,213,003	4,293,744	4,395,354	4,459,255	4,544,066	4,630,267	4,738,925	4,806,903	4,897,379
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**4,319,420**	**4,402,410**	**4,486,781**	**4,593,454**	**4,659,733**	**4,748,357**	**4,838,433**	**4,952,509**	**5,023,010**	**5,117,554**
Daily Baseload Therms	2,848	2,903	2,959	3,029	3,073	3,131	3,191	3,266	3,312	3,375
Peak Day Therms	50,150	51,113	52,093	53,089	54,101	55,130	56,176	57,239	58,319	59,417
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	30,056	30,056	30,056	30,265	30,056	30,056	30,056	30,265	30,056	30,056
Therms Per Industrial Customer	477,522	477,522	477,522	479,653	477,522	477,522	477,522	479,653	477,522	477,522
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	6	6	6	7	7	7	7	7	7	7
Industrial Customers	9	9	9	9	9	10	10	10	10	10
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**15**	**15**	**15**	**16**	**16**	**16**	**17**	**17**	**17**	**18**

Woodland	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.78%	2.18%	2.13%	2.52%	1.60%	1.99%	1.95%	2.35%	1.44%	1.84%
Residential Therms	453,425	463,291	473,145	485,214	492,813	502,624	512,438	524,646	532,042	541,841
Commercial Therms	848,141	866,596	885,028	907,456	921,818	940,169	958,527	981,201	995,196	1,013,526
Industrial Therms	445,556	455,251	464,934	476,398	484,261	493,901	503,545	515,112	522,809	532,438
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,747,122**	**1,785,137**	**1,823,107**	**1,869,068**	**1,898,891**	**1,936,694**	**1,974,510**	**2,020,959**	**2,050,046**	**2,087,805**
Daily Baseload Therms	1,125	1,149	1,174	1,204	1,223	1,247	1,271	1,301	1,320	1,344
Peak Day Therms	16,748	17,112	17,476	17,840	18,202	18,565	18,927	19,289	19,651	20,013
Therms Per Residential Customer	594	594	594	597	594	594	594	597	594	594
Therms Per Commercial Customer	3,321	3,321	3,321	3,336	3,321	3,321	3,321	3,336	3,321	3,321
Therms Per Industrial Customer	24,197	24,197	24,197	24,289	24,197	24,197	24,197	24,289	24,197	24,197
Residential Customers	763	780	796	813	829	846	862	879	895	912
Commercial Customers	255	261	266	272	278	283	289	294	300	305
Industrial Customers	18	19	19	20	20	20	21	21	22	22
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**1,037**	**1,059**	**1,082**	**1,104**	**1,127**	**1,149**	**1,172**	**1,194**	**1,217**	**1,239**

Bellingham II	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/M Rendering	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.28%	1.63%	1.60%	1.95%	1.17%	1.52%	1.50%	1.85%	1.08%	1.44%
Residential Therms	555,112	564,146	573,178	584,365	591,217	600,218	609,234	620,528	627,248	636,260
Commercial Therms	4,958	5,039	5,119	5,218	5,280	5,361	5,441	5,541	5,602	5,683
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**560,070**	**569,185**	**578,297**	**589,583**	**596,498**	**605,579**	**614,675**	**626,069**	**632,851**	**641,943**
Daily Baseload Therms	819	833	846	862	873	886	899	916	926	939
Peak Day Therms	4,253	4,322	4,391	4,460	4,529	4,598	4,667	4,736	4,805	4,874
Therms Per Residential Customer	15,230	15,230	15,230	15,286	15,230	15,230	15,230	15,286	15,230	15,230
Therms Per Commercial Customer	4,081	4,081	4,081	4,095	4,081	4,081	4,081	4,095	4,081	4,081
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	36	37	38	38	39	39	40	41	41	42
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**38**	**38**	**39**	**40**	**40**	**41**	**41**	**42**	**43**	**43**

LDS Church	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.36%	1.58%	1.56%	2.79%	0.27%	1.49%	1.47%	2.70%	0.19%	1.41%
Residential Therms	3,615	3,673	3,730	3,835	3,844	3,901	3,959	4,067	4,074	4,131
Commercial Therms	9,983	10,141	10,299	10,585	10,615	10,773	10,931	11,225	11,248	11,407
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0

Total Core Therms	**13,599**	**13,813**	**14,028**	**14,420**	**14,459**	**14,674**	**14,890**	**15,292**	**15,322**	**15,538**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	151	154	156	159	161	163	166	168	171	173
Therms Per Residential Customer	1,499	1,499	1,499	1,518	1,499	1,499	1,499	1,518	1,499	1,499
Therms Per Commercial Customer	8,278	8,278	8,278	8,379	8,278	8,278	8,278	8,379	8,278	8,278
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	3	3	3	3	3	3	3
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Kalama #1	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.49%	0.49%	0.49%	0.49%	0.49%	0.48%	0.48%	0.48%	0.48%	0.48%
Residential Therms	917	921	926	930	935	939	944	948	953	958
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**917**	**921**	**926**	**930**	**935**	**939**	**944**	**948**	**953**	**958**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	18	18	18	18	18	18	18	18	18	19
Therms Per Residential Customer	290	290	290	290	290	290	290	290	290	290
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	3	3	3	3	3	3	3	3	3	3
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Dehawn Dairy	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.30%	0.18%	0.18%	0.66%	-0.30%	0.17%	0.18%	0.65%	-0.30%	0.18%
Residential Therms	1,493	1,496	1,498	1,508	1,504	1,506	1,509	1,519	1,514	1,517
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**1,493**	**1,496**	**1,498**	**1,508**	**1,504**	**1,506**	**1,509**	**1,519**	**1,514**	**1,517**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	19	19	19	19	19	19	19	20	20	20
Therms Per Residential Customer	733	733	733	737	733	733	733	737	733	733
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Yakima Chief Ranch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	641	642	644	645	646	647	648	649	650	652
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**641**	**642**	**644**	**645**	**646**	**647**	**648**	**649**	**650**	**652**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	11	11	11	11	11	11	11	11	11	11
Therms Per Residential Customer	315	315	315	315	315	315	315	315	315	315
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	2	2	2	2	2	2	2	2	2	2
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

7th Day School	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.18%	0.18%	0.18%	0.18%
Residential Therms	12,571	12,594	12,616	12,639	12,661	12,683	12,706	12,728	12,751	12,773
Commercial Therms	4,166	4,173	4,181	4,188	4,196	4,203	4,211	4,218	4,225	4,233
Industrial Therms	1,709	1,712	1,715	1,718	1,721	1,724	1,727	1,730	1,734	1,737
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**18,446**	**18,479**	**18,512**	**18,546**	**18,578**	**18,611**	**18,644**	**18,677**	**18,710**	**18,743**
Daily Baseload Therms	1	1	1	1	1	1	1	1	1	1
Peak Day Therms	166	166	167	167	167	168	168	168	169	169
Therms Per Residential Customer	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123
Therms Per Commercial Customer	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092	4,092
Therms Per Industrial Customer	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679	1,679
Residential Customers	11	11	11	11	11	11	11	11	11	11
Commercial Customers	1	1	1	1	1	1	1	1	1	1
Industrial Customers	1	1	1	1	1	1	1	1	1	1
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**

Brulotte Hop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Alcoa	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Kawecki Chemical	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Yakima Training Center	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.22%	0.29%	0.28%	0.79%	-0.23%	0.28%	0.28%	0.79%	-0.23%	0.27%
Residential Therms	4,964	4,978	4,992	5,032	5,020	5,034	5,048	5,088	5,076	5,090
Commercial Therms	388,237	389,349	390,456	393,556	392,652	393,736	394,830	397,933	397,004	398,096
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**393,201**	**394,327**	**395,448**	**398,587**	**397,672**	**398,770**	**399,878**	**403,020**	**402,080**	**403,185**
Daily Baseload Therms	202	202	203	205	204	205	205	207	206	207
Peak Day Therms	4,966	4,980	4,995	5,009	5,023	5,037	5,051	5,064	5,078	5,092
Therms Per Residential Customer	195	195	195	196	195	195	195	196	195	195
Therms Per Commercial Customer	3,997	3,997	3,997	4,017	3,997	3,997	3,997	4,017	3,997	3,997
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	26	26	26	26	26	26	26	26	26	26
Commercial Customers	97	97	98	98	98	99	99	99	99	100
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**123**	**123**	**123**	**124**	**124**	**124**	**125**	**125**	**125**	**126**

Sandvik Metals	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0

Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A/W Feed	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Menan Starch	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Plymouth	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Residential Therms	0	0	0	0	0	0	0	0	0	0
Commercial Therms	0	0	0	0	0	0	0	0	0	0
Industrial Therms	0	0	0	0	0	0	0	0	0	0
Ind., Inst., & Cmcl. Interrup. Therms	0	0	0	0	0	0	0	0	0	0
Total Core Therms	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Daily Baseload Therms	0	0	0	0	0	0	0	0	0	0
Peak Day Therms	0	0	0	0	0	0	0	0	0	0
Therms Per Residential Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Commercial Customer	0	0	0	0	0	0	0	0	0	0
Therms Per Industrial Customer	0	0	0	0	0	0	0	0	0	0
Residential Customers	0	0	0	0	0	0	0	0	0	0
Commercial Customers	0	0	0	0	0	0	0	0	0	0
Industrial Customers	0	0	0	0	0	0	0	0	0	0
Interruptible Customers	0	0	0	0	0	0	0	0	0	0
Total Core Customers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Burbank Heights Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.35%	0.82%	0.81%	1.28%	0.31%	0.78%	0.77%	1.24%	0.28%	0.75%
Residential Therms	3,073,049	3,098,132	3,123,139	3,163,323	3,172,872	3,197,561	3,222,287	3,262,611	3,271,495	3,296,071
Commercial Therms	2,138,608	2,156,063	2,173,467	2,201,246	2,208,077	2,225,259	2,242,466	2,270,338	2,276,711	2,293,814
Industrial Therms	129,796	130,855	131,911	133,283	134,012	135,055	136,099	137,466	138,177	139,215
Ind., Inst., & Cmcl. Interrup. Therms	239,434	241,388	243,337	246,421	247,212	249,135	251,062	254,156	254,896	256,810
Total Core Therms	**5,580,887**	**5,626,438**	**5,671,854**	**5,744,273**	**5,762,173**	**5,807,009**	**5,851,914**	**5,924,571**	**5,941,279**	**5,985,911**
Daily Baseload Therms	3,796	3,826	3,857	3,907	3,919	3,949	3,980	4,029	4,041	4,071
Peak Day Therms	76,828	77,455	78,080	78,704	79,323	79,941	80,559	81,174	81,789	82,403
Therms Per Residential Customer	374	374	374	376	374	374	374	376	374	374
Therms Per Commercial Customer	2,448	2,448	2,448	2,459	2,448	2,448	2,448	2,459	2,448	2,448
Therms Per Industrial Customer	13,513	13,513	13,513	13,546	13,513	13,513	13,513	13,546	13,513	13,513
Residential Customers	8,208	8,275	8,342	8,409	8,475	8,541	8,607	8,672	8,738	8,804
Commercial Customers	874	881	888	895	902	909	916	923	930	937
Industrial Customers	10	10	10	10	10	10	10	10	10	10
Interruptible Customers	4	4	4	4	5	5	5	5	5	5
Total Core Customers	**9,096**	**9,170**	**9,244**	**9,318**	**9,391**	**9,464**	**9,538**	**9,610**	**9,683**	**9,756**

East Stanwood Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.90%	1.32%	1.31%	1.73%	0.83%	1.25%	1.23%	1.66%	0.76%	1.19%
Residential Therms	6,261,150	6,344,059	6,426,876	6,538,724	6,592,024	6,674,313	6,756,677	6,869,478	6,921,074	7,003,245
Commercial Therms	4,023,498	4,076,777	4,129,996	4,201,050	4,236,123	4,289,003	4,341,930	4,413,556	4,447,575	4,500,379

Industrial Therms	119,403	120,984	122,563	124,561	125,712	127,282	128,852	130,862	131,988	133,555
Ind., Inst., & Cmcl. Interrup. Therms	605,533	613,551	621,561	631,826	637,533	645,491	653,456	663,786	669,356	677,303
Total Core Therms	**11,009,584**	**11,155,371**	**11,300,995**	**11,496,162**	**11,591,392**	**11,736,089**	**11,880,916**	**12,077,682**	**12,169,992**	**12,314,482**
Daily Baseload Therms	8,227	8,336	8,444	8,590	8,661	8,770	8,878	9,025	9,094	9,202
Peak Day Therms	117,006	118,555	120,103	121,649	123,189	124,727	126,266	127,802	129,339	130,874
Therms Per Residential Customer	684	684	684	687	684	684	684	687	684	684
Therms Per Commercial Customer	3,795	3,795	3,795	3,811	3,795	3,795	3,795	3,811	3,795	3,795
Therms Per Industrial Customer	41,621	41,621	41,621	41,763	41,621	41,621	41,621	41,763	41,621	41,621
Residential Customers	9,159	9,280	9,401	9,522	9,643	9,763	9,884	10,004	10,124	10,245
Commercial Customers	1,060	1,074	1,088	1,102	1,116	1,130	1,144	1,158	1,172	1,186
Industrial Customers	3	3	3	3	3	3	3	3	3	3
Interruptible Customers	6	6	6	6	6	6	6	6	6	7
Total Core Customers	**10,228**	**10,363**	**10,499**	**10,634**	**10,768**	**10,903**	**11,037**	**11,172**	**11,306**	**11,440**

Kennewick Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.64%	1.11%	1.09%	1.56%	0.58%	1.05%	1.03%	1.51%	0.53%	1.00%
Residential Therms	9,582,034	9,688,243	9,794,188	9,949,839	10,004,809	10,109,441	10,214,072	10,370,525	10,422,458	10,526,432
Commercial Therms	10,549,489	10,666,420	10,783,063	10,949,785	11,014,949	11,130,145	11,245,340	11,412,749	11,474,767	11,589,238
Industrial Therms	186,913	188,985	191,051	193,755	195,160	197,201	199,242	201,947	203,307	205,335
Ind., Inst., & Cmcl. Interrup. Therms	1,022,363	1,033,695	1,044,999	1,060,924	1,067,471	1,078,635	1,089,799	1,105,781	1,112,032	1,123,126
Total Core Therms	**21,340,799**	**21,577,343**	**21,813,301**	**22,154,303**	**22,282,389**	**22,515,421**	**22,748,453**	**23,091,001**	**23,212,564**	**23,444,131**
Daily Baseload Therms	15,714	15,888	16,062	16,313	16,407	16,579	16,751	17,003	17,092	17,263
Peak Day Therms	296,888	300,179	303,462	306,734	309,988	313,230	316,471	319,702	322,928	326,150
Therms Per Residential Customer	613	613	613	617	613	613	613	617	613	613
Therms Per Commercial Customer	4,174	4,174	4,174	4,194	4,174	4,174	4,174	4,194	4,174	4,174
Therms Per Industrial Customer	20,306	20,306	20,306	20,374	20,306	20,306	20,306	20,374	20,306	20,306
Residential Customers	15,620	15,793	15,965	16,138	16,309	16,479	16,650	16,820	16,990	17,159
Commercial Customers	2,527	2,555	2,583	2,611	2,639	2,666	2,694	2,721	2,749	2,776
Industrial Customers	9	9	9	10	10	10	10	10	10	10
Interruptible Customers	13	14	14	14	14	14	14	14	15	15
Total Core Customers	**18,169**	**18,371**	**18,572**	**18,772**	**18,971**	**19,169**	**19,368**	**19,566**	**19,763**	**19,960**

Longview South Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.05%	0.51%	0.50%	1.06%	-0.07%	0.49%	0.49%	1.04%	-0.08%	0.48%
Residential Therms	783,413	787,377	791,333	799,820	799,188	803,081	806,982	815,498	814,738	818,609
Commercial Therms	2,778,523	2,792,582	2,806,612	2,836,305	2,834,471	2,848,279	2,862,116	2,891,901	2,889,623	2,903,352
Industrial Therms	153,784	154,562	155,338	157,005	156,880	157,644	158,410	160,083	159,933	160,692
Ind., Inst., & Cmcl. Interrup. Therms	513,947	516,548	519,143	524,582	524,296	526,850	529,409	534,864	534,497	537,037
Total Core Therms	**4,229,667**	**4,251,069**	**4,272,425**	**4,317,712**	**4,314,834**	**4,335,854**	**4,356,918**	**4,402,346**	**4,398,791**	**4,419,691**
Daily Baseload Therms	3,321	3,338	3,355	3,390	3,388	3,404	3,421	3,457	3,454	3,470
Peak Day Therms	45,104	45,333	45,560	45,787	46,013	46,237	46,461	46,685	46,908	47,131
Therms Per Residential Customer	406	406	406	408	406	406	406	408	406	406
Therms Per Commercial Customer	3,058	3,058	3,058	3,075	3,058	3,058	3,058	3,075	3,058	3,058
Therms Per Industrial Customer	10,841	10,841	10,841	10,903	10,841	10,841	10,841	10,903	10,841	10,841
Residential Customers	1,929	1,939	1,949	1,958	1,968	1,978	1,987	1,997	2,006	2,016
Commercial Customers	909	913	918	922	927	931	936	940	945	949
Industrial Customers	14	14	14	14	14	15	15	15	15	15
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**2,858**	**2,873**	**2,887**	**2,902**	**2,916**	**2,930**	**2,944**	**2,959**	**2,973**	**2,987**

Sedro-Woolley Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.82%	1.26%	1.24%	1.69%	0.75%	1.19%	1.18%	1.62%	0.69%	1.13%
Residential Therms	19,353,220	19,597,316	19,840,886	20,177,208	20,326,577	20,568,435	20,810,556	21,149,516	21,293,613	21,534,943
Commercial Therms	9,576,405	9,697,189	9,817,713	9,983,037	10,058,044	10,177,721	10,297,528	10,464,104	10,536,555	10,655,970
Industrial Therms	1,297,710	1,314,078	1,330,410	1,351,912	1,362,978	1,379,195	1,395,430	1,417,059	1,427,821	1,444,003
Ind., Inst., & Cmcl. Interrup. Therms	1,392,147	1,409,706	1,427,226	1,450,372	1,462,164	1,479,562	1,496,978	1,520,263	1,531,726	1,549,086
Total Core Therms	**31,619,482**	**32,018,289**	**32,416,236**	**32,962,529**	**33,209,763**	**33,604,913**	**34,000,493**	**34,550,941**	**34,789,715**	**35,184,003**
Daily Baseload Therms	17,232	17,449	17,666	17,964	18,098	18,314	18,529	18,829	18,959	19,174
Peak Day Therms	367,458	372,092	376,717	381,337	385,939	390,531	395,128	399,713	404,300	408,882
Therms Per Residential Customer	687	687	687	690	687	687	687	690	687	687
Therms Per Commercial Customer	2,610	2,610	2,610	2,622	2,610	2,610	2,610	2,622	2,610	2,610
Therms Per Industrial Customer	13,917	13,917	13,917	13,971	13,917	13,917	13,917	13,971	13,917	13,917
Residential Customers	28,171	28,527	28,881	29,235	29,588	29,940	30,293	30,644	30,996	31,347
Commercial Customers	3,669	3,716	3,762	3,808	3,854	3,900	3,946	3,991	4,037	4,083
Industrial Customers	93	94	96	97	98	99	100	101	103	104
Interruptible Customers	11	11	11	11	11	11	11	12	12	12
Total Core Customers	**31,945**	**32,348**	**32,750**	**33,151**	**33,551**	**33,950**	**34,350**	**34,749**	**35,147**	**35,546**

Sumas SPE Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.20%	1.63%	1.60%	2.03%	1.10%	1.52%	1.50%	1.93%	1.01%	1.44%
Residential Therms	36,469,371	37,062,869	37,656,234	38,423,575	38,841,354	39,432,708	40,025,000	40,801,374	41,208,512	41,800,536
Commercial Therms	16,850,981	17,125,212	17,399,381	17,750,515	17,946,976	18,220,216	18,493,889	18,848,985	19,040,741	19,314,291
Industrial Therms	922,084	937,090	952,092	970,603	982,057	997,008	1,011,984	1,030,667	1,041,907	1,056,876
Ind., Inst., & Cmcl. Interrup. Therms	1,354,616	1,376,660	1,398,700	1,426,992	1,442,720	1,464,685	1,486,686	1,515,300	1,530,646	1,552,636
Total Core Therms	**55,597,052**	**56,501,831**	**57,406,407**	**58,571,685**	**59,213,106**	**60,114,617**	**61,017,559**	**62,196,326**	**62,821,806**	**63,724,339**
Daily Baseload Therms	34,697	35,261	35,826	36,553	36,953	37,516	38,079	38,815	39,205	39,769
Peak Day Therms	634,139	644,459	654,777	665,092	675,384	685,667	695,966	706,251	716,545	726,839
Therms Per Residential Customer	719	719	719	722	719	719	719	722	719	719
Therms Per Commercial Customer	2,834	2,834	2,834	2,846	2,834	2,834	2,834	2,846	2,834	2,834
Therms Per Industrial Customer	16,292	16,292	16,292	16,351	16,292	16,292	16,292	16,351	16,292	16,292
Residential Customers	50,737	51,563	52,388	53,214	54,037	54,860	55,684	56,507	57,330	58,154
Commercial Customers	5,947	6,043	6,140	6,237	6,333	6,430	6,526	6,623	6,719	6,816
Industrial Customers	57	58	58	59	60	61	62	63	64	65
Interruptible Customers	15	16	16	16	16	17	17	17	17	18

Total Core Customers	**56,756**	**57,679**	**58,603**	**59,526**	**60,447**	**61,367**	**62,289**	**63,210**	**64,131**	**65,052**

Yakima Loop	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.29%	0.18%	0.18%	0.65%	-0.29%	0.17%	0.18%	0.64%	-0.29%	0.18%
Residential Therms	12,580,370	12,603,214	12,625,959	12,710,358	12,671,000	12,693,148	12,715,694	12,800,081	12,760,487	12,783,132
Commercial Therms	11,425,128	11,445,874	11,466,530	11,540,094	11,507,436	11,527,550	11,548,025	11,621,557	11,588,705	11,609,271
Industrial Therms	2,775,874	2,780,914	2,785,933	2,801,869	2,795,871	2,800,758	2,805,733	2,821,648	2,815,617	2,820,613
Ind., Inst., & Cmcl. Interrup. Therms	825,510	827,009	828,501	833,791	831,457	832,910	834,389	839,677	837,329	838,815
Total Core Therms	**27,606,882**	**27,657,011**	**27,706,922**	**27,886,112**	**27,805,763**	**27,854,366**	**27,903,841**	**28,082,963**	**28,002,137**	**28,051,831**
Daily Baseload Therms	15,609	15,637	15,665	15,767	15,721	15,749	15,777	15,878	15,832	15,860
Peak Day Therms	338,597	339,212	339,824	340,436	341,036	341,633	342,239	342,839	343,445	344,054
Therms Per Residential Customer	679	679	679	682	679	679	679	682	679	679
Therms Per Commercial Customer	3,438	3,438	3,438	3,454	3,438	3,438	3,438	3,454	3,438	3,438
Therms Per Industrial Customer	37,397	37,397	37,397	37,544	37,397	37,397	37,397	37,544	37,397	37,397
Residential Customers	18,528	18,561	18,595	18,628	18,661	18,694	18,727	18,760	18,793	18,826
Commercial Customers	3,323	3,329	3,335	3,341	3,347	3,353	3,359	3,364	3,370	3,376
Industrial Customers	74	74	74	75	75	75	75	75	75	75
Interruptible Customers	11	11	11	11	11	11	11	11	11	11
Total Core Customers	**21,936**	**21,976**	**22,015**	**22,055**	**22,094**	**22,133**	**22,172**	**22,211**	**22,250**	**22,289**

Zone 10	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.12%	0.32%	0.32%	0.76%	-0.12%	0.31%	0.31%	0.75%	-0.13%	0.31%
Residential Therms	3,174,673	3,184,827	3,194,947	3,220,716	3,215,036	3,224,970	3,234,985	3,260,792	3,254,907	3,264,907
Commercial Therms	4,893,914	4,910,091	4,926,213	4,964,644	4,958,219	4,974,051	4,990,006	5,028,474	5,021,747	5,037,676
Industrial Therms	1,883,050	1,888,829	1,894,588	1,906,541	1,906,018	1,911,669	1,917,369	1,929,311	1,928,708	1,934,402
Ind., Inst., & Cmcl. Interrup. Therms	257,320	257,990	258,656	260,197	259,978	260,630	261,289	262,827	262,599	263,257
Total Core Therms	**10,208,957**	**10,241,737**	**10,274,404**	**10,352,097**	**10,339,250**	**10,371,320**	**10,403,650**	**10,481,403**	**10,467,961**	**10,500,242**
Daily Baseload Therms	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270	7,270
Peak Day Therms	114,771	115,148	115,525	115,900	116,271	116,641	117,013	117,383	117,754	118,126
Therms Per Residential Customer	598	598	598	601	598	598	598	600	598	598
Therms Per Commercial Customer	3,550	3,549	3,549	3,564	3,548	3,548	3,547	3,563	3,547	3,546
Therms Per Industrial Customer	35,652	35,644	35,636	35,744	35,620	35,612	35,604	35,713	35,589	35,581
Residential Customers	5,312	5,329	5,346	5,363	5,380	5,397	5,414	5,430	5,447	5,464
Commercial Customers	1,379	1,383	1,388	1,393	1,397	1,402	1,407	1,411	1,416	1,421
Industrial Customers	53	53	53	53	54	54	54	54	54	54
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**6,747**	**6,769**	**6,791**	**6,813**	**6,834**	**6,856**	**6,877**	**6,899**	**6,920**	**6,942**

Zone 11	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.09%	0.36%	0.35%	0.80%	-0.09%	0.35%	0.35%	0.79%	-0.10%	0.35%
Residential Therms	13,649,921	13,682,755	13,715,486	13,814,561	13,780,445	13,812,510	13,845,003	13,944,184	13,909,666	13,942,247
Commercial Therms	16,699,522	16,771,719	16,843,823	16,989,167	16,987,402	17,058,676	17,130,477	17,276,360	17,273,748	17,345,633
Industrial Therms	4,036,597	4,052,553	4,068,497	4,098,611	4,100,286	4,116,085	4,132,018	4,162,238	4,163,849	4,179,852
Ind., Inst., & Cmcl. Interrup. Therms	1,438,730	1,445,510	1,452,284	1,465,636	1,465,784	1,472,493	1,479,246	1,492,672	1,492,733	1,499,499
Total Core Therms	**35,824,769**	**35,952,538**	**36,080,090**	**36,367,975**	**36,333,917**	**36,459,763**	**36,586,744**	**36,875,454**	**36,839,995**	**36,967,231**
Daily Baseload Therms	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147	21,147
Peak Day Therms	424,651	426,087	427,521	428,955	430,373	431,787	433,214	434,634	436,060	437,490
Therms Per Residential Customer	623	623	623	626	622	622	622	625	622	621
Therms Per Commercial Customer	3,558	3,560	3,562	3,579	3,566	3,567	3,569	3,587	3,573	3,575
Therms Per Industrial Customer	36,030	36,020	36,010	36,125	35,990	35,981	35,971	36,087	35,953	35,944
Residential Customers	21,901	21,961	22,021	22,082	22,141	22,200	22,260	22,319	22,378	22,438
Commercial Customers	4,694	4,711	4,729	4,747	4,764	4,782	4,799	4,817	4,835	4,852
Industrial Customers	112	113	113	113	114	114	115	115	116	116
Interruptible Customers	21	22	22	22	22	22	22	22	22	22
Total Core Customers	**26,728**	**26,807**	**26,885**	**26,964**	**27,041**	**27,118**	**27,196**	**27,273**	**27,351**	**27,429**

Zone 20	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.71%	1.16%	1.15%	1.60%	0.66%	1.11%	1.10%	1.55%	0.62%	1.07%
Residential Therms	16,255,573	16,429,433	16,602,808	16,856,934	16,947,659	17,119,015	17,290,403	17,545,825	17,631,777	17,802,188
Commercial Therms	15,850,346	16,021,643	16,192,551	16,436,639	16,532,714	16,701,881	16,871,130	17,116,648	17,208,532	17,377,073
Industrial Therms	4,808,264	4,894,083	4,981,206	5,090,480	5,159,437	5,250,587	5,343,126	5,459,470	5,532,427	5,629,243
Ind., Inst., & Cmcl. Interrup. Therms	1,704,342	1,722,096	1,739,803	1,764,413	1,775,038	1,792,559	1,810,082	1,834,802	1,845,014	1,862,463
Total Core Therms	**38,618,526**	**39,067,254**	**39,516,368**	**40,148,466**	**40,414,847**	**40,864,042**	**41,314,741**	**41,956,745**	**42,217,750**	**42,670,966**
Daily Baseload Therms	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599	23,599
Peak Day Therms	531,757	537,901	544,047	550,195	556,331	562,467	568,620	574,773	580,937	587,113
Therms Per Residential Customer	598	599	599	602	599	600	600	603	601	601
Therms Per Commercial Customer	4,009	4,011	4,013	4,033	4,017	4,019	4,021	4,041	4,025	4,027
Therms Per Industrial Customer	115,219	115,982	116,753	118,015	118,320	119,116	119,917	121,223	121,541	122,362
Residential Customers	27,169	27,446	27,721	27,997	28,270	28,543	28,816	29,088	29,359	29,630
Commercial Customers	3,954	3,994	4,035	4,075	4,115	4,155	4,196	4,235	4,275	4,315
Industrial Customers	42	42	43	43	44	44	45	45	46	46
Interruptible Customers	21	21	22	22	22	22	22	23	23	23
Total Core Customers	**31,185**	**31,503**	**31,820**	**32,137**	**32,451**	**32,765**	**33,078**	**33,391**	**33,703**	**34,015**

Zone 24	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.25%	0.23%	0.23%	0.71%	-0.26%	0.22%	0.22%	0.70%	-0.27%	0.21%
Residential Therms	4,038,061	4,046,745	4,055,419	4,084,622	4,072,209	4,080,381	4,088,600	4,117,648	4,104,796	4,112,939
Commercial Therms	3,813,151	3,822,016	3,830,870	3,858,669	3,848,034	3,856,412	3,864,846	3,892,489	3,881,425	3,889,769
Industrial Therms	261,606	262,258	262,910	264,050	264,175	264,794	265,417	266,538	266,641	267,257
Ind., Inst., & Cmcl. Interrup. Therms	1,174,008	1,177,389	1,180,765	1,188,975	1,187,334	1,190,561	1,193,817	1,201,962	1,200,183	1,203,392
Total Core Therms	**9,286,826**	**9,308,409**	**9,329,965**	**9,396,315**	**9,371,753**	**9,392,148**	**9,412,680**	**9,478,637**	**9,453,045**	**9,473,357**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676

Therms Per Residential Customer	571	571	571	573	571	570	570	573	570	570
Therms Per Commercial Customer	2,651	2,651	2,651	2,664	2,651	2,650	2,650	2,663	2,650	2,650
Therms Per Industrial Customer	11,045	11,043	11,041	11,060	11,036	11,034	11,032	11,051	11,028	11,025
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Zone 26	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.52%	0.97%	0.96%	1.40%	0.48%	0.93%	0.92%	1.36%	0.45%	0.89%
Residential Therms	1,474,544	1,489,599	1,504,629	1,526,578	1,534,565	1,549,460	1,564,365	1,586,451	1,594,078	1,608,916
Commercial Therms	3,955,085	3,989,428	4,023,715	4,078,160	4,091,989	4,125,947	4,159,941	4,214,705	4,227,693	4,261,535
Industrial Therms	835,755	847,452	859,130	873,470	882,405	893,997	905,591	920,004	928,718	940,267
Ind., Inst., & Cmcl. Interrup. Therms	778,027	785,153	792,317	802,369	806,740	813,994	821,295	831,534	835,993	843,399
Total Core Therms	**7,043,410**	**7,111,633**	**7,179,791**	**7,280,577**	**7,315,699**	**7,383,398**	**7,451,192**	**7,552,695**	**7,586,481**	**7,654,117**
Daily Baseload Therms	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412	5,412
Peak Day Therms	73,110	73,796	74,482	75,167	75,850	76,531	77,214	77,894	78,575	79,256
Therms Per Residential Customer	501	502	502	505	503	503	504	506	504	505
Therms Per Commercial Customer	3,114	3,115	3,115	3,131	3,116	3,117	3,118	3,134	3,119	3,119
Therms Per Industrial Customer	22,699	22,703	22,707	22,780	22,713	22,716	22,718	22,791	22,722	22,724
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,270	1,281	1,292	1,302	1,313	1,324	1,334	1,345	1,356	1,366
Industrial Customers	37	37	38	38	39	39	40	40	41	41
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**4,256**	**4,295**	**4,334**	**4,373**	**4,412**	**4,450**	**4,489**	**4,527**	**4,566**	**4,604**

Zone 30-S	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.48%	0.91%	0.90%	1.34%	0.43%	0.87%	0.86%	1.30%	0.40%	0.83%
Residential Therms	25,095,756	25,331,071	25,565,686	25,917,257	26,032,097	26,263,664	26,495,378	26,848,045	26,956,704	27,186,853
Commercial Therms	13,800,184	13,923,820	14,047,029	14,230,621	14,291,832	14,413,297	14,534,835	14,718,715	14,776,675	14,897,292
Industrial Therms	485,596	489,763	493,914	501,915	502,155	506,242	510,332	518,400	518,464	522,519
Ind., Inst., & Cmcl. Interrup. Therms	3,887,561	3,920,024	3,952,349	3,999,441	4,016,520	4,048,326	4,080,151	4,127,182	4,143,417	4,174,957
Total Core Therms	**43,269,097**	**43,664,678**	**44,058,978**	**44,649,234**	**44,842,604**	**45,231,529**	**45,620,696**	**46,212,341**	**46,395,260**	**46,781,620**
Daily Baseload Therms	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942	30,942
Peak Day Therms	421,179	425,051	428,911	432,758	436,583	440,390	444,201	447,995	451,785	455,568
Therms Per Residential Customer	658	658	658	661	658	657	657	660	657	657
Therms Per Commercial Customer	3,405	3,405	3,405	3,420	3,406	3,406	3,406	3,421	3,407	3,407
Therms Per Industrial Customer	18,139	18,160	18,181	18,343	18,222	18,243	18,263	18,425	18,302	18,321
Residential Customers	38,165	38,524	38,881	39,238	39,592	39,945	40,298	40,650	41,002	41,353
Commercial Customers	4,053	4,089	4,125	4,161	4,196	4,232	4,267	4,302	4,337	4,372
Industrial Customers	27	27	27	27	28	28	28	28	28	29
Interruptible Customers	15	15	15	16	16	16	16	16	16	16
Total Core Customers	**42,260**	**42,655**	**43,049**	**43,442**	**43,832**	**44,221**	**44,609**	**44,997**	**45,384**	**45,770**

Zone 30-W	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.04%	1.47%	1.45%	1.88%	0.95%	1.38%	1.36%	1.80%	0.88%	1.31%
Residential Therms	66,960,216	67,949,379	68,937,727	70,243,935	70,910,557	71,894,285	72,879,367	74,199,030	74,846,724	75,830,437
Commercial Therms	32,807,927	33,288,946	33,769,551	34,400,189	34,728,830	35,207,139	35,686,095	36,322,898	36,642,606	37,120,864
Industrial Therms	2,599,581	2,636,111	2,672,597	2,719,254	2,745,403	2,781,693	2,818,029	2,865,033	2,890,575	2,926,840
Ind., Inst., & Cmcl. Interrup. Therms	3,433,549	3,482,483	3,531,366	3,594,801	3,628,917	3,677,548	3,726,242	3,790,227	3,823,471	3,872,080
Total Core Therms	**105,801,273**	**107,356,919**	**108,911,240**	**110,958,179**	**112,013,707**	**113,560,664**	**115,109,732**	**117,177,188**	**118,203,376**	**119,750,222**
Daily Baseload Therms	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153	58,153
Peak Day Therms	1,195,885	1,213,471	1,231,042	1,248,602	1,266,114	1,283,601	1,301,113	1,318,593	1,336,085	1,353,571
Therms Per Residential Customer	714	714	714	718	714	714	715	718	715	715
Therms Per Commercial Customer	2,887	2,887	2,887	2,900	2,887	2,887	2,887	2,900	2,887	2,887
Therms Per Industrial Customer	14,303	14,304	14,306	14,361	14,308	14,309	14,311	14,366	14,313	14,314
Residential Customers	93,736	95,116	96,496	97,874	99,249	100,622	101,997	103,369	104,743	106,116
Commercial Customers	11,363	11,530	11,697	11,863	12,029	12,195	12,361	12,526	12,692	12,858
Industrial Customers	182	184	187	189	192	194	197	199	202	204
Interruptible Customers	33	34	34	35	35	35	36	36	37	37
Total Core Customers	**105,314**	**106,864**	**108,413**	**109,961**	**111,505**	**113,047**	**114,590**	**116,131**	**117,674**	**119,215**

Zone GTN	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.27%	1.70%	1.66%	2.09%	1.15%	1.58%	1.55%	1.98%	1.05%	1.48%
Residential Therms	35,868,199	36,498,021	37,126,676	37,925,637	38,380,087	39,004,491	39,628,860	40,434,274	40,874,474	41,496,279
Commercial Therms	21,872,770	22,238,030	22,602,673	23,067,333	23,329,902	23,692,262	24,054,670	24,523,044	24,777,819	25,138,933
Industrial Therms	1,976,477	1,998,622	2,020,767	2,051,719	2,065,039	2,087,144	2,109,276	2,140,527	2,153,529	2,175,694
Ind., Inst., & Cmcl. Interrup. Therms	1,063,894	1,077,125	1,090,350	1,107,206	1,116,770	1,129,954	1,143,148	1,160,105	1,169,516	1,182,711
Total Core Therms	**60,781,339**	**61,811,799**	**62,840,466**	**64,151,894**	**64,891,799**	**65,913,851**	**66,935,954**	**68,257,950**	**68,975,338**	**69,993,617**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	722	722	722	726	723	723	723	726	723	723
Therms Per Commercial Customer	2,787	2,787	2,787	2,800	2,788	2,788	2,788	2,800	2,788	2,789
Therms Per Industrial Customer	28,256	28,235	28,215	28,317	28,176	28,158	28,140	28,243	28,105	28,089
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Zone ME-OR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%

Residential Therms	5,834,931	5,869,741	5,904,549	5,969,430	5,973,614	6,007,869	6,042,192	6,107,354	6,110,630	6,144,745
Commercial Therms	5,840,053	5,874,909	5,909,763	5,971,260	5,978,915	6,013,213	6,047,577	6,109,272	6,116,094	6,150,246
Industrial Therms	428,029	430,584	433,139	437,730	438,208	440,723	443,242	447,849	448,264	450,767
Ind., Inst., & Cmcl. Interrup. Therms	1,423,134	1,431,622	1,440,110	1,454,389	1,456,951	1,465,304	1,473,675	1,487,987	1,490,364	1,498,684
Total Core Therms	**13,526,147**	**13,606,856**	**13,687,562**	**13,832,809**	**13,847,688**	**13,927,109**	**14,006,686**	**14,152,463**	**14,165,353**	**14,244,442**
Daily Baseload Therms	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159	10,159
Peak Day Therms	180,425	181,501	182,578	183,650	184,714	185,773	186,834	187,894	188,951	190,006
Therms Per Residential Customer	589	589	589	592	589	589	589	592	589	589
Therms Per Commercial Customer	3,343	3,343	3,343	3,358	3,343	3,343	3,343	3,358	3,343	3,343
Therms Per Industrial Customer	20,180	20,180	20,180	20,274	20,179	20,179	20,179	20,273	20,178	20,178
Residential Customers	9,899	9,958	10,017	10,076	10,135	10,193	10,251	10,309	10,367	10,425
Commercial Customers	1,747	1,758	1,768	1,778	1,789	1,799	1,809	1,819	1,830	1,840
Industrial Customers	21	21	21	22	22	22	22	22	22	22
Interruptible Customers	7	8	8	8	8	8	8	8	8	8
Total Core Customers	**11,675**	**11,745**	**11,815**	**11,884**	**11,953**	**12,021**	**12,090**	**12,159**	**12,227**	**12,295**

Zone ME-WA	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.39%	0.08%	0.08%	0.55%	-0.39%	0.08%	0.08%	0.55%	-0.39%	0.08%
Residential Therms	6,932,233	6,934,819	6,937,511	6,974,754	6,942,637	6,945,068	6,947,721	6,984,984	6,953,015	6,955,763
Commercial Therms	4,731,615	4,734,420	4,737,291	4,762,468	4,742,851	4,745,534	4,748,365	4,773,552	4,754,012	4,756,900
Industrial Therms	221,728	222,460	223,192	224,710	224,644	225,361	226,084	227,601	227,524	228,244
Ind., Inst., & Cmcl. Interrup. Therms	2,941,794	2,947,625	2,953,478	2,971,638	2,965,038	2,970,733	2,976,505	2,994,690	2,988,017	2,993,790
Total Core Therms	**14,827,369**	**14,839,323**	**14,851,473**	**14,933,569**	**14,875,170**	**14,886,696**	**14,898,675**	**14,980,828**	**14,922,568**	**14,934,698**
Daily Baseload Therms	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332	12,332
Peak Day Therms	189,234	189,341	189,451	189,561	189,664	189,766	189,875	189,983	190,091	190,202
Therms Per Residential Customer	591	591	591	593	590	590	590	593	590	590
Therms Per Commercial Customer	3,301	3,301	3,300	3,315	3,299	3,299	3,299	3,314	3,298	3,298
Therms Per Industrial Customer	16,508	16,521	16,533	16,604	16,558	16,570	16,582	16,652	16,606	16,618
Residential Customers	11,734	11,740	11,747	11,753	11,759	11,765	11,772	11,778	11,784	11,791
Commercial Customers	1,433	1,434	1,435	1,436	1,437	1,438	1,439	1,440	1,441	1,442
Industrial Customers	13	13	13	14	14	14	14	14	14	14
Interruptible Customers	5	5	5	5	5	5	5	5	5	5
Total Core Customers	**13,186**	**13,193**	**13,201**	**13,208**	**13,215**	**13,223**	**13,230**	**13,237**	**13,245**	**13,252**

Bellingham Disctrict	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.20%	1.63%	1.60%	2.03%	1.10%	1.52%	1.50%	1.93%	1.01%	1.44%
Residential Therms	37,157,879	37,762,573	38,367,131	39,148,494	39,574,609	40,177,119	40,780,587	41,571,126	41,986,429	42,589,624
Commercial Therms	17,007,713	17,284,477	17,561,180	17,915,641	18,113,838	18,389,606	18,665,812	19,024,279	19,217,726	19,493,809
Industrial Therms	923,117	938,139	953,159	971,687	983,156	998,125	1,013,117	1,031,819	1,043,074	1,058,059
Ind., Inst., & Cmcl. Interrup. Therms	1,435,870	1,459,227	1,482,579	1,512,603	1,529,221	1,552,495	1,575,807	1,606,177	1,622,389	1,645,691
Total Core Therms	**56,524,578**	**57,444,416**	**58,364,048**	**59,548,425**	**60,200,824**	**61,117,345**	**62,035,322**	**63,233,400**	**63,869,618**	**64,787,184**
Daily Baseload Therms	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946	29,946
Peak Day Therms	642,743	653,203	663,660	674,115	684,546	694,968	705,406	715,831	726,264	736,698
Therms Per Residential Customer	729	729	729	733	729	729	729	733	729	729
Therms Per Commercial Customer	2,838	2,838	2,838	2,850	2,838	2,838	2,838	2,850	2,838	2,838
Therms Per Industrial Customer	15,968	15,968	15,968	16,026	15,968	15,968	15,968	16,026	15,968	15,968
Residential Customers	50,957	51,786	52,615	53,444	54,271	55,098	55,925	56,752	57,579	58,406
Commercial Customers	5,993	6,091	6,188	6,285	6,383	6,480	6,577	6,674	6,772	6,869
Industrial Customers	58	59	60	61	62	63	63	64	65	66
Interruptible Customers	17	17	17	17	18	18	18	18	19	19
Total Core Customers	**57,025**	**57,953**	**58,880**	**59,808**	**60,733**	**61,658**	**62,584**	**63,509**	**64,435**	**65,360**

Mount Vernon District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.85%	1.29%	1.27%	1.71%	0.78%	1.22%	1.20%	1.64%	0.72%	1.16%
Residential Therms	29,802,336	30,186,806	30,570,596	31,095,441	31,335,948	31,717,165	32,098,780	32,627,905	32,860,294	33,240,812
Commercial Therms	15,800,215	16,004,468	16,208,371	16,484,548	16,614,992	16,817,533	17,020,283	17,298,619	17,424,880	17,627,056
Industrial Therms	1,676,465	1,697,972	1,719,438	1,747,567	1,762,247	1,783,568	1,804,912	1,833,214	1,847,501	1,868,781
Ind., Inst., & Cmcl. Interrup. Therms	1,997,680	2,023,257	2,048,787	2,082,198	2,099,696	2,125,053	2,150,435	2,184,049	2,201,082	2,226,389
Total Core Therms	**49,276,695**	**49,912,503**	**50,547,192**	**51,409,754**	**51,812,883**	**52,443,319**	**53,074,410**	**53,943,788**	**54,333,758**	**54,963,038**
Daily Baseload Therms	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207	28,207
Peak Day Therms	553,142	560,268	567,382	574,487	581,567	588,633	595,706	602,762	609,821	616,874
Therms Per Residential Customer	697	697	697	700	697	697	697	700	697	697
Therms Per Commercial Customer	2,942	2,942	2,942	2,956	2,943	2,943	2,943	2,956	2,943	2,943
Therms Per Industrial Customer	13,526	13,526	13,525	13,576	13,524	13,523	13,523	13,574	13,522	13,521
Residential Customers	42,779	43,330	43,880	44,430	44,978	45,525	46,072	46,618	47,164	47,710
Commercial Customers	5,370	5,440	5,509	5,578	5,646	5,715	5,783	5,852	5,920	5,989
Industrial Customers	124	126	127	129	130	132	133	135	137	138
Interruptible Customers	16	17	17	17	17	18	18	18	18	18
Total Core Customers	**48,290**	**48,912**	**49,533**	**50,153**	**50,772**	**51,389**	**52,006**	**52,622**	**53,239**	**53,855**

Bremerton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.55%	0.99%	0.98%	1.42%	0.51%	0.94%	0.93%	1.37%	0.46%	0.90%
Residential Therms	22,591,343	22,815,519	23,039,155	23,368,323	23,484,025	23,705,061	23,926,245	24,256,799	24,366,896	24,586,804
Commercial Therms	11,370,183	11,483,011	11,595,567	11,758,122	11,819,469	11,930,716	12,042,038	12,205,172	12,263,816	12,374,495
Industrial Therms	366,537	370,174	373,802	380,612	381,020	384,606	388,195	395,083	395,345	398,912
Ind., Inst., & Cmcl. Interrup. Therms	2,770,976	2,798,472	2,825,903	2,864,082	2,880,469	2,907,580	2,934,710	2,972,976	2,988,759	3,015,732
Total Core Therms	**37,099,039**	**37,467,176**	**37,834,427**	**38,371,139**	**38,564,982**	**38,927,964**	**39,291,188**	**39,830,030**	**40,014,815**	**40,375,943**
Daily Baseload Therms	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579	24,579
Peak Day Therms	365,078	368,700	372,314	375,919	379,503	383,075	386,650	390,211	393,771	397,324
Therms Per Residential Customer	655	655	655	658	655	655	655	658	655	655
Therms Per Commercial Customer	3,473	3,473	3,473	3,488	3,473	3,473	3,473	3,488	3,473	3,473
Therms Per Industrial Customer	25,295	25,295	25,295	25,508	25,295	25,295	25,295	25,508	25,295	25,295
Residential Customers	34,504	34,847	35,188	35,529	35,868	36,205	36,543	36,880	37,216	37,552
Commercial Customers	3,274	3,306	3,339	3,371	3,403	3,435	3,467	3,499	3,531	3,563

Industrial Customers	14	15	15	15	15	15	15	15	16	16
Interruptible Customers	11	11	11	11	11	12	12	12	12	12
Total Core Customers	**37,804**	**38,179**	**38,553**	**38,926**	**39,297**	**39,667**	**40,037**	**40,406**	**40,775**	**41,143**

Longview District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.47%	0.94%	0.93%	1.39%	0.43%	0.89%	0.89%	1.35%	0.40%	0.86%
Residential Therms	1,474,544	1,489,599	1,504,629	1,526,578	1,534,565	1,549,460	1,564,365	1,586,451	1,594,078	1,608,916
Commercial Therms	3,942,834	3,976,967	4,011,042	4,065,273	4,078,886	4,112,626	4,146,400	4,200,942	4,213,706	4,247,322
Industrial Therms	835,755	847,452	859,130	873,470	882,405	893,997	905,591	920,004	928,718	940,267
Ind., Inst., & Cmcl. Interrup. Therms	513,947	516,548	519,143	524,582	524,296	526,850	529,409	534,864	534,497	537,037
Total Core Therms	**6,767,079**	**6,830,567**	**6,893,943**	**6,989,902**	**7,020,152**	**7,082,933**	**7,145,765**	**7,242,262**	**7,270,998**	**7,333,542**
Daily Baseload Therms	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096	5,096
Peak Day Therms	70,114	70,749	71,383	72,016	72,646	73,274	73,902	74,529	75,155	75,780
Therms Per Residential Customer	501	502	502	505	503	503	504	506	504	505
Therms Per Commercial Customer	3,116	3,117	3,118	3,134	3,119	3,119	3,120	3,136	3,121	3,122
Therms Per Industrial Customer	23,474	23,481	23,487	23,566	23,499	23,505	23,510	23,589	23,521	23,526
Residential Customers	2,942	2,969	2,997	3,025	3,052	3,079	3,107	3,134	3,161	3,189
Commercial Customers	1,265	1,276	1,287	1,297	1,308	1,318	1,329	1,339	1,350	1,360
Industrial Customers	36	36	37	37	38	38	39	39	39	40
Interruptible Customers	6	6	6	6	6	7	7	7	7	7
Total Core Customers	**4,249**	**4,288**	**4,327**	**4,365**	**4,404**	**4,442**	**4,481**	**4,519**	**4,557**	**4,596**

Aberdeen District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.02%	0.44%	0.44%	0.86%	-0.01%	0.41%	0.41%	0.83%	-0.03%	0.40%
Residential Therms	2,504,413	2,515,552	2,526,531	2,548,934	2,548,072	2,558,603	2,569,133	2,591,246	2,589,808	2,600,050
Commercial Therms	2,430,001	2,440,809	2,451,462	2,472,499	2,472,363	2,482,581	2,492,798	2,513,543	2,512,859	2,522,796
Industrial Therms	119,060	119,589	120,111	121,304	121,135	121,636	122,136	123,317	123,119	123,606
Ind., Inst., & Cmcl. Interrup. Therms	1,116,585	1,121,552	1,126,447	1,135,359	1,136,051	1,140,746	1,145,441	1,154,206	1,154,659	1,159,225
Total Core Therms	**6,170,059**	**6,197,502**	**6,224,551**	**6,278,095**	**6,277,622**	**6,303,565**	**6,329,508**	**6,382,312**	**6,380,445**	**6,405,677**
Daily Baseload Therms	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363	6,363
Peak Day Therms	56,101	56,351	56,597	56,840	57,079	57,315	57,551	57,783	58,014	58,244
Therms Per Residential Customer	684	684	684	687	684	684	684	687	684	684
Therms Per Commercial Customer	3,117	3,117	3,117	3,131	3,117	3,117	3,117	3,131	3,117	3,117
Therms Per Industrial Customer	9,695	9,695	9,695	9,750	9,695	9,695	9,695	9,750	9,695	9,695
Residential Customers	3,661	3,677	3,693	3,709	3,725	3,740	3,755	3,771	3,786	3,801
Commercial Customers	780	783	786	790	793	796	800	803	806	809
Industrial Customers	12	12	12	12	12	13	13	13	13	13
Interruptible Customers	4	4	4	4	4	4	4	4	4	4
Total Core Customers	**4,457**	**4,477**	**4,496**	**4,516**	**4,535**	**4,553**	**4,572**	**4,590**	**4,609**	**4,627**

Kennewick District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.62%	1.09%	1.08%	1.55%	0.56%	1.03%	1.02%	1.49%	0.51%	0.99%
Residential Therms	15,576,241	15,745,049	15,913,380	16,162,468	16,248,128	16,414,407	16,580,725	16,831,031	16,911,877	17,077,136
Commercial Therms	14,796,160	14,957,548	15,118,499	15,351,207	15,438,556	15,597,547	15,756,567	15,990,259	16,073,223	16,231,244
Industrial Therms	428,557	433,125	437,680	443,519	446,740	451,240	455,741	461,574	464,702	469,175
Ind., Inst., & Cmcl. Interrup. Therms	1,743,171	1,763,776	1,784,380	1,811,932	1,825,535	1,846,072	1,866,656	1,894,464	1,907,808	1,928,415
Total Core Therms	**32,544,129**	**32,899,498**	**33,253,939**	**33,769,127**	**33,958,957**	**34,309,266**	**34,659,688**	**35,177,328**	**35,357,610**	**35,705,970**
Daily Baseload Therms	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535	19,535
Peak Day Therms	462,260	467,326	472,379	477,417	482,428	487,421	492,415	497,391	502,361	507,326
Therms Per Residential Customer	599	599	600	603	600	601	601	604	601	602
Therms Per Commercial Customer	4,056	4,058	4,060	4,080	4,063	4,064	4,066	4,086	4,068	4,070
Therms Per Industrial Customer	19,170	19,176	19,182	19,244	19,192	19,197	19,201	19,262	19,209	19,212
Residential Customers	25,998	26,266	26,533	26,799	27,064	27,328	27,592	27,855	28,118	28,380
Commercial Customers	3,648	3,686	3,724	3,762	3,800	3,838	3,876	3,913	3,951	3,988
Industrial Customers	22	23	23	23	23	24	24	24	24	24
Interruptible Customers	20	20	21	21	21	21	21	22	22	22
Total Core Customers	**29,688**	**29,994**	**30,300**	**30,605**	**30,909**	**31,211**	**31,513**	**31,814**	**32,115**	**32,415**

Walla Walla District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.48%	0.00%	0.00%	0.48%	-0.48%	0.00%	0.00%	0.48%	-0.47%	0.00%
Residential Therms	6,475,922	6,475,812	6,475,812	6,507,965	6,475,594	6,475,375	6,475,375	6,507,525	6,475,375	6,475,484
Commercial Therms	4,244,766	4,244,695	4,244,695	4,264,952	4,244,552	4,244,408	4,244,408	4,264,664	4,244,408	4,244,480
Industrial Therms	97,535	97,533	97,533	97,947	97,530	97,526	97,526	97,940	97,526	97,528
Ind., Inst., & Cmcl. Interrup. Therms	1,949,360	1,949,327	1,949,327	1,957,333	1,949,261	1,949,196	1,949,196	1,957,201	1,949,196	1,949,229
Total Core Therms	**12,767,583**	**12,767,367**	**12,767,367**	**12,828,197**	**12,766,936**	**12,766,505**	**12,766,505**	**12,827,331**	**12,766,505**	**12,766,721**
Daily Baseload Therms	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078	11,078
Peak Day Therms	170,588	170,585	170,585	170,585	170,579	170,573	170,573	170,573	170,573	170,576
Therms Per Residential Customer	609	609	609	612	609	609	609	612	609	609
Therms Per Commercial Customer	3,370	3,370	3,370	3,386	3,370	3,370	3,370	3,386	3,370	3,370
Therms Per Industrial Customer	12,757	12,757	12,757	12,811	12,757	12,757	12,757	12,811	12,757	12,757
Residential Customers	10,635	10,635	10,635	10,635	10,634	10,634	10,634	10,634	10,634	10,634
Commercial Customers	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Industrial Customers	8	8	8	8	8	8	8	8	8	8
Interruptible Customers	3	3	3	3	3	3	3	3	3	3
Total Core Customers	**11,905**	**11,905**	**11,905**	**11,905**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**	**11,904**

Wenatchee District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.99%	1.33%	1.32%	1.66%	0.96%	1.30%	1.29%	1.64%	0.94%	1.28%
Residential Therms	1,466,514	1,480,120	1,493,716	1,510,727	1,520,875	1,534,445	1,548,032	1,565,221	1,575,267	1,588,920
Commercial Therms	5,392,726	5,450,311	5,507,949	5,583,376	5,623,238	5,680,856	5,738,673	5,815,101	5,854,561	5,912,666
Industrial Therms	5,093,892	5,183,252	5,273,944	5,387,559	5,459,376	5,554,156	5,650,356	5,771,166	5,847,059	5,947,607
Ind., Inst., & Cmcl. Interrup. Therms	586,453	592,116	597,777	605,042	609,093	614,749	620,416	627,767	631,777	637,474
Total Core Therms	**12,539,585**	**12,705,799**	**12,873,386**	**13,086,705**	**13,212,582**	**13,384,206**	**13,557,478**	**13,779,255**	**13,908,664**	**14,086,667**

Daily Baseload Therms	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394	9,394
Peak Day Therms	138,918	140,780	142,657	144,551	146,460	148,385	150,328	152,290	154,270	156,269
Therms Per Residential Customer	521	521	521	522	521	521	521	522	521	521
Therms Per Commercial Customer	4,653	4,656	4,659	4,677	4,665	4,668	4,671	4,689	4,677	4,679
Therms Per Industrial Customer	114,530	115,185	115,847	116,984	117,191	117,873	118,561	119,734	119,951	120,653
Residential Customers	2,814	2,841	2,867	2,894	2,920	2,946	2,973	2,999	3,026	3,052
Commercial Customers	1,159	1,171	1,182	1,194	1,205	1,217	1,229	1,240	1,252	1,264
Industrial Customers	44	45	46	46	47	47	48	48	49	49
Interruptible Customers	7	7	7	8	8	8	8	8	8	8
Total Core Customers	**4,025**	**4,064**	**4,102**	**4,141**	**4,180**	**4,218**	**4,257**	**4,296**	**4,334**	**4,373**

Yakima District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.22%	0.23%	0.23%	0.68%	-0.23%	0.22%	0.23%	0.68%	-0.23%	0.23%
Residential Therms	16,037,412	16,071,847	16,106,145	16,219,016	16,174,136	16,207,643	16,241,634	16,354,548	16,309,208	16,343,286
Commercial Therms	17,267,148	17,308,055	17,348,811	17,468,753	17,429,645	17,469,526	17,509,914	17,629,885	17,590,229	17,630,685
Industrial Therms	5,205,462	5,219,087	5,232,667	5,264,555	5,259,626	5,272,945	5,286,416	5,318,279	5,313,223	5,326,715
Ind., Inst., & Cmcl. Interrup. Therms	1,334,848	1,338,310	1,341,761	1,351,059	1,348,616	1,352,005	1,355,432	1,364,740	1,362,256	1,365,692
Total Core Therms	**39,844,869**	**39,937,298**	**40,029,384**	**40,303,382**	**40,212,023**	**40,302,118**	**40,393,396**	**40,667,452**	**40,574,915**	**40,666,377**
Daily Baseload Therms	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403	23,403
Peak Day Therms	472,996	474,078	475,156	476,233	477,293	478,347	479,415	480,474	481,539	482,610
Therms Per Residential Customer	627	627	627	630	627	627	627	629	626	626
Therms Per Commercial Customer	3,305	3,305	3,304	3,319	3,303	3,303	3,302	3,317	3,301	3,300
Therms Per Industrial Customer	36,927	36,924	36,921	37,047	36,915	36,912	36,909	37,035	36,903	36,900
Residential Customers	25,570	25,630	25,689	25,749	25,807	25,865	25,924	25,982	26,041	26,100
Commercial Customers	5,224	5,238	5,251	5,264	5,277	5,290	5,303	5,316	5,329	5,342
Industrial Customers	141	141	142	142	142	143	143	144	144	144
Interruptible Customers	19	19	20	20	20	20	20	20	20	20
Total Core Customers	**30,955**	**31,028**	**31,101**	**31,174**	**31,246**	**31,317**	**31,390**	**31,461**	**31,534**	**31,606**

Central Oregon (Bend) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	1.27%	1.70%	1.66%	2.09%	1.15%	1.58%	1.55%	1.98%	1.05%	1.48%
Residential Therms	35,868,199	36,498,021	37,126,676	37,925,637	38,380,087	39,004,491	39,628,860	40,434,274	40,874,474	41,496,279
Commercial Therms	21,872,770	22,238,030	22,602,673	23,067,333	23,329,902	23,692,262	24,054,670	24,523,044	24,777,819	25,138,933
Industrial Therms	1,976,477	1,998,622	2,020,767	2,051,719	2,065,039	2,087,144	2,109,276	2,140,527	2,153,529	2,175,694
Ind., Inst., & Cmcl. Interrup. Therms	1,063,894	1,077,125	1,090,350	1,107,206	1,116,770	1,129,954	1,143,148	1,160,105	1,169,516	1,182,711
Total Core Therms	**60,781,339**	**61,811,799**	**62,840,466**	**64,151,894**	**64,891,799**	**65,913,851**	**66,935,954**	**68,257,950**	**68,975,338**	**69,993,617**
Daily Baseload Therms	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344	28,344
Peak Day Therms	743,837	756,358	768,857	781,339	793,783	806,202	818,623	831,014	843,406	855,780
Therms Per Residential Customer	722	722	722	726	723	723	723	726	723	723
Therms Per Commercial Customer	2,787	2,787	2,787	2,800	2,788	2,788	2,788	2,800	2,788	2,789
Therms Per Industrial Customer	28,256	28,235	28,215	28,317	28,176	28,158	28,140	28,243	28,105	28,089
Residential Customers	49,700	50,557	51,412	52,267	53,118	53,968	54,818	55,666	56,514	57,360
Commercial Customers	7,848	7,978	8,109	8,239	8,369	8,498	8,628	8,757	8,886	9,015
Industrial Customers	70	71	72	72	73	74	75	76	77	77
Interruptible Customers	8	8	8	8	8	8	8	8	8	8
Total Core Customers	**57,625**	**58,614**	**59,600**	**60,586**	**61,568**	**62,549**	**63,529**	**64,507**	**65,485**	**66,461**

Pendleton District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.13%	0.60%	0.59%	1.06%	0.11%	0.57%	0.57%	1.04%	0.09%	0.56%
Residential Therms	6,291,242	6,328,748	6,366,248	6,436,219	6,440,657	6,477,562	6,514,539	6,584,813	6,588,270	6,625,024
Commercial Therms	6,326,901	6,364,634	6,402,359	6,468,776	6,477,214	6,514,338	6,551,534	6,618,160	6,625,698	6,662,666
Industrial Therms	552,222	555,511	558,799	564,493	565,323	568,558	571,799	577,510	578,262	581,484
Ind., Inst., & Cmcl. Interrup. Therms	2,415,568	2,429,919	2,444,261	2,468,694	2,472,727	2,486,842	2,500,984	2,525,476	2,529,185	2,543,246
Total Core Therms	**15,585,933**	**15,678,812**	**15,771,667**	**15,938,182**	**15,955,922**	**16,047,299**	**16,138,855**	**16,305,960**	**16,321,416**	**16,412,420**
Daily Baseload Therms	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413	11,413
Peak Day Therms	199,071	200,258	201,444	202,626	203,798	204,966	206,136	207,304	208,469	209,632
Therms Per Residential Customer	572	572	572	575	572	572	572	575	572	572
Therms Per Commercial Customer	3,293	3,293	3,293	3,308	3,293	3,293	3,293	3,308	3,293	3,293
Therms Per Industrial Customer	20,456	20,455	20,455	20,543	20,455	20,454	20,454	20,542	20,454	20,454
Residential Customers	10,998	11,064	11,130	11,195	11,260	11,324	11,389	11,453	11,518	11,582
Commercial Customers	1,921	1,933	1,944	1,955	1,967	1,978	1,989	2,001	2,012	2,023
Industrial Customers	27	27	27	27	28	28	28	28	28	28
Interruptible Customers	10	10	10	10	10	10	10	10	10	10
Total Core Customers	**12,956**	**13,033**	**13,111**	**13,188**	**13,264**	**13,340**	**13,416**	**13,492**	**13,568**	**13,643**

Eastern Oregon (Ontario) District	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	-0.25%	0.23%	0.23%	0.71%	-0.26%	0.22%	0.22%	0.70%	-0.27%	0.21%
Residential Therms	4,038,061	4,046,745	4,055,419	4,084,622	4,072,209	4,080,381	4,088,600	4,117,648	4,104,796	4,112,939
Commercial Therms	3,813,151	3,822,016	3,830,870	3,858,669	3,848,034	3,856,412	3,864,846	3,892,489	3,881,425	3,889,769
Industrial Therms	261,606	262,258	262,910	264,050	264,175	264,794	265,417	266,538	266,641	267,257
Ind., Inst., & Cmcl. Interrup. Therms	1,174,008	1,177,389	1,180,765	1,188,975	1,187,334	1,190,561	1,193,817	1,201,962	1,200,183	1,203,392
Total Core Therms	**9,286,826**	**9,308,409**	**9,329,965**	**9,396,315**	**9,371,753**	**9,392,148**	**9,412,680**	**9,478,637**	**9,453,045**	**9,473,357**
Daily Baseload Therms	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Peak Day Therms	114,361	114,628	114,896	115,157	115,415	115,668	115,923	116,174	116,424	116,676
Therms Per Residential Customer	571	571	571	573	571	570	570	573	570	570
Therms Per Commercial Customer	2,651	2,651	2,651	2,664	2,651	2,650	2,650	2,663	2,650	2,650
Therms Per Industrial Customer	11,045	11,043	11,041	11,060	11,036	11,034	11,032	11,051	11,028	11,025
Residential Customers	7,077	7,092	7,108	7,123	7,138	7,153	7,167	7,182	7,197	7,211
Commercial Customers	1,438	1,442	1,445	1,448	1,452	1,455	1,458	1,461	1,465	1,468
Industrial Customers	24	24	24	24	24	24	24	24	24	24
Interruptible Customers	2	2	2	2	2	2	2	2	2	2
Total Core Customers	**8,541**	**8,560**	**8,579**	**8,597**	**8,616**	**8,634**	**8,652**	**8,670**	**8,687**	**8,705**

Oregon	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.90%	1.34%	1.32%	1.76%	0.82%	1.26%	1.24%	1.68%	0.75%	1.19%
Residential Therms	46,197,502	46,873,514	47,548,343	48,446,478	48,892,954	49,562,434	50,231,998	51,136,735	51,567,541	52,234,242
Commercial Therms	32,012,822	32,424,680	32,835,903	33,394,777	33,655,151	34,063,012	34,471,050	35,033,694	35,284,942	35,691,368
Industrial Therms	2,790,304	2,816,392	2,842,475	2,880,262	2,894,537	2,920,495	2,946,493	2,984,574	2,998,432	3,024,434
Ind., Inst., & Cmcl. Interrup. Therms	4,653,469	4,684,434	4,715,376	4,764,874	4,776,831	4,807,357	4,837,949	4,887,543	4,898,884	4,929,349
Total Core Therms	**85,654,098**	**86,799,019**	**87,942,098**	**89,486,391**	**90,219,473**	**91,353,298**	**92,487,490**	**94,042,547**	**94,749,799**	**95,879,394**
Daily Baseload Therms	49,427	50,101	50,773	51,675	52,112	52,779	53,446	54,354	54,777	55,441
Peak Day Therms	1,057,268	1,071,244	1,085,197	1,099,121	1,112,996	1,126,837	1,140,682	1,154,491	1,168,298	1,182,088
Therms Per Residential Customer	11,741	11,741	11,741	11,788	11,741	11,741	11,741	11,788	11,741	11,741
Therms Per Commercial Customer	65,178	65,178	65,178	65,419	65,178	65,178	65,178	65,419	65,178	65,178
Therms Per Industrial Customer	235,683	235,683	235,683	236,645	235,683	235,683	235,683	236,645	235,683	235,683
Residential Customers	67,775	68,713	69,650	70,585	71,516	72,445	73,374	74,301	75,228	76,154
Commercial Customers	11,207	11,353	11,498	11,643	11,787	11,931	12,075	12,219	12,362	12,506
Industrial Customers	121	122	123	124	125	126	127	128	129	130
Interruptible Customers	19	19	20	20	20	20	20	20	21	21
Total Core Customers	**79,122**	**80,207**	**81,290**	**82,371**	**83,448**	**84,522**	**85,597**	**86,668**	**87,740**	**88,810**

Washington	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.59%	1.04%	1.03%	1.47%	0.55%	0.99%	0.98%	1.42%	0.51%	0.95%
Residential Therms	133,086,603	134,542,877	135,997,095	138,087,946	138,895,951	140,339,279	141,784,876	143,891,852	144,669,231	146,111,032
Commercial Therms	92,251,746	93,150,343	94,047,576	95,364,371	95,835,538	96,725,399	97,616,893	98,942,463	99,395,409	100,284,552
Industrial Therms	14,746,378	14,906,324	15,067,464	15,288,218	15,393,234	15,557,799	15,723,991	15,952,397	16,060,266	16,230,651
Ind., Inst., & Cmcl. Interrup. Therms	13,448,889	13,562,583	13,676,103	13,844,189	13,902,238	14,014,745	14,127,501	14,296,445	14,352,423	14,464,884
Total Core Therms	**253,533,616**	**256,162,126**	**258,788,238**	**262,584,725**	**264,026,961**	**266,637,222**	**269,253,261**	**273,083,157**	**274,477,329**	**277,091,119**
Daily Baseload Therms	175,120	176,893	178,666	181,237	182,200	183,961	185,726	188,319	189,250	191,013
Peak Day Therms	2,931,940	2,962,040	2,992,113	3,022,162	3,052,102	3,081,991	3,111,948	3,141,845	3,171,769	3,201,700
Therms Per Residential Customer	36,785	36,785	36,785	36,937	36,785	36,785	36,785	36,937	36,785	36,785
Therms Per Commercial Customer	155,169	155,169	155,169	155,918	155,169	155,169	155,169	155,918	155,169	155,169
Therms Per Industrial Customer	1,129,953	1,129,953	1,129,953	1,133,970	1,129,953	1,129,953	1,129,953	1,133,970	1,129,953	1,129,953
Residential Customers	199,859	201,980	204,098	206,213	208,319	210,420	212,525	214,624	216,724	218,823
Commercial Customers	27,973	28,249	28,525	28,801	29,075	29,349	29,623	29,896	30,170	30,443
Industrial Customers	460	464	468	473	477	481	486	490	494	499
Interruptible Customers	104	105	106	107	108	109	110	111	112	113
Total Core Customers	**228,396**	**230,799**	**233,198**	**235,594**	**237,979**	**240,360**	**242,744**	**245,122**	**247,501**	**249,879**

System	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Therms Pct. Growth	0.67%	1.11%	1.10%	1.54%	0.62%	1.06%	1.05%	1.49%	0.57%	1.01%
Residential Therms	179,284,105	181,416,390	183,545,439	186,534,424	187,788,905	189,901,713	192,016,875	195,028,587	196,236,772	198,345,274
Commercial Therms	124,264,568	125,575,023	126,883,479	128,759,148	129,490,689	130,788,411	132,087,943	133,976,157	134,680,351	135,975,921
Industrial Therms	17,536,683	17,722,715	17,909,939	18,168,480	18,287,771	18,478,294	18,670,483	18,936,971	19,058,698	19,255,085
Ind., Inst., & Cmcl. Interrup. Therms	18,102,358	18,247,017	18,391,479	18,609,063	18,679,069	18,822,102	18,965,450	19,183,988	19,251,307	19,394,233
Total Core Therms	**339,187,714**	**342,961,145**	**346,730,336**	**352,071,116**	**354,246,434**	**357,990,520**	**361,740,751**	**367,125,704**	**369,227,129**	**372,970,513**
Daily Baseload Therms	224,547	226,994	229,438	232,911	234,313	236,740	239,172	242,673	244,027	246,454
Peak Day Therms	3,989,209	4,033,284	4,077,310	4,121,284	4,165,098	4,208,828	4,252,630	4,296,336	4,340,067	4,383,788
Therms Per Residential Customer	48,526	48,526	48,526	48,725	48,526	48,526	48,526	48,725	48,526	48,526
Therms Per Commercial Customer	220,348	220,348	220,348	221,337	220,348	220,348	220,348	221,337	220,348	220,348
Therms Per Industrial Customer	1,365,636	1,365,636	1,365,636	1,370,616	1,365,636	1,365,636	1,365,636	1,370,616	1,365,636	1,365,636
Residential Customers	267,634	270,693	273,748	276,797	279,835	282,865	285,900	288,926	291,952	294,977
Commercial Customers	39,180	39,602	40,023	40,443	40,862	41,280	41,698	42,115	42,532	42,949
Industrial Customers	580	586	591	596	602	607	613	618	623	629
Interruptible Customers	124	125	126	127	128	129	131	132	133	134
Total Core Customers	**307,518**	**311,005**	**314,487**	**317,964**	**321,427**	**324,882**	**328,341**	**331,791**	**335,241**	**338,689**

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Athena

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	271,090	157,028	428,117	272,372	157,028	429,400	273,654	157,028	430,682
2016	273,282	158,298	431,580	275,401	158,774	434,175	277,528	159,250	436,778
2017	272,735	157,981	430,716	275,684	158,937	434,621	278,653	159,896	438,550
2018	273,569	158,464	432,033	277,369	159,909	437,278	281,208	161,362	442,570
2019	274,410	158,951	433,361	279,075	160,892	439,967	283,802	162,851	446,653
2020	276,640	160,243	436,883	282,200	162,694	444,893	287,852	165,174	453,026
2021	276,093	159,926	436,019	282,503	162,869	445,372	289,040	165,856	454,896
2022	276,938	160,416	437,354	284,233	163,866	448,099	291,694	167,379	459,074
2023	277,779	160,903	438,682	285,959	164,861	450,820	294,352	168,904	463,256
2024	280,031	162,207	442,238	289,150	166,701	455,850	298,534	171,304	469,838
2025	279,458	161,875	441,334	289,422	166,857	456,279	299,706	171,977	471,683
2026	280,292	162,358	442,650	291,148	167,852	459,000	302,387	173,515	475,903
2027	281,123	162,839	443,962	292,874	168,848	461,722	305,077	175,058	480,135
2028	283,373	164,143	447,516	296,083	170,697	466,780	309,319	177,493	486,811
2029	282,764	163,790	446,554	296,299	170,822	467,121	310,436	178,134	488,569
2030	283,575	164,260	447,834	297,998	171,802	469,799	313,106	179,666	492,771
2031	284,385	164,729	449,114	299,700	172,783	472,483	315,788	181,205	496,993
2032	286,632	166,031	452,663	302,922	174,641	477,563	320,083	183,669	503,753
2033	285,993	165,660	451,653	303,094	174,740	477,834	321,160	184,288	505,448
2034	286,791	166,123	452,914	304,786	175,715	480,501	323,850	185,831	509,680

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.81%	0.81%	1.11%	1.11%	1.11%	1.42%	1.42%	1.42%
2017	-0.20%	-0.20%	-0.20%	0.10%	0.10%	0.10%	0.41%	0.41%	0.41%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.81%	0.81%	1.12%	1.12%	1.12%	1.43%	1.43%	1.43%
2021	-0.20%	-0.20%	-0.20%	0.11%	0.11%	0.11%	0.41%	0.41%	0.41%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.81%	0.81%	1.12%	1.12%	1.12%	1.42%	1.42%	1.42%
2025	-0.20%	-0.20%	-0.20%	0.09%	0.09%	0.09%	0.39%	0.39%	0.39%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.39%	1.39%	1.39%
2029	-0.21%	-0.21%	-0.21%	0.07%	0.07%	0.07%	0.36%	0.36%	0.36%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.79%	0.79%	1.08%	1.08%	1.08%	1.36%	1.36%	1.36%
2033	-0.22%	-0.22%	-0.22%	0.06%	0.06%	0.06%	0.34%	0.34%	0.34%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	430	5,476	5,906	430	5,493	5,924	430	5,511	5,941
2016	434	5,490	5,924	435	5,524	5,959	436	5,559	5,995
2017	433	5,509	5,942	435	5,560	5,996	438	5,612	6,050
2018	434	5,526	5,960	438	5,594	6,032	442	5,663	6,105
2019	435	5,543	5,978	441	5,629	6,069	446	5,715	6,162
2020	439	5,557	5,996	446	5,661	6,106	453	5,765	6,218
2021	438	5,577	6,015	446	5,698	6,144	454	5,821	6,275
2022	439	5,594	6,033	449	5,733	6,181	459	5,874	6,333
2023	441	5,611	6,052	452	5,767	6,219	463	5,928	6,391
2024	444	5,626	6,070	457	5,800	6,257	469	5,979	6,449
2025	443	5,645	6,088	457	5,837	6,294	471	6,036	6,507
2026	445	5,661	6,106	460	5,872	6,332	475	6,090	6,565
2027	446	5,678	6,124	463	5,907	6,369	480	6,144	6,623
2028	450	5,693	6,142	468	5,939	6,407	486	6,195	6,682
2029	449	5,711	6,160	468	5,976	6,444	488	6,252	6,740
2030	450	5,728	6,178	471	6,010	6,481	492	6,305	6,798
2031	451	5,744	6,195	473	6,044	6,518	496	6,360	6,856
2032	455	5,758	6,213	478	6,076	6,555	503	6,411	6,914
2033	454	5,777	6,231	479	6,113	6,592	505	6,468	6,973
2034	455	5,793	6,248	481	6,147	6,628	509	6,522	7,031

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.26%	0.30%	1.11%	0.56%	0.60%	1.42%	0.87%	0.91%
2017	-0.20%	0.34%	0.30%	0.10%	0.65%	0.61%	0.41%	0.95%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.27%	0.31%	1.12%	0.57%	0.61%	1.43%	0.88%	0.92%
2021	-0.20%	0.35%	0.31%	0.11%	0.65%	0.61%	0.41%	0.96%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.26%	0.30%	1.12%	0.57%	0.61%	1.42%	0.87%	0.91%
2025	-0.20%	0.34%	0.30%	0.09%	0.64%	0.60%	0.39%	0.94%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.25%	0.29%	1.10%	0.55%	0.59%	1.39%	0.84%	0.88%
2029	-0.21%	0.33%	0.29%	0.07%	0.62%	0.58%	0.36%	0.91%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.24%	0.28%	1.08%	0.53%	0.57%	1.36%	0.81%	0.85%
2033	-0.22%	0.32%	0.28%	0.06%	0.60%	0.56%	0.34%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	289,869	138,249	428,117	290,737	138,663	429,400	291,605	139,077	430,682
2016	292,188	139,392	431,580	293,945	140,230	434,175	295,707	141,071	436,778
2017	291,628	139,088	430,716	294,272	140,349	434,621	296,932	141,618	438,550
2018	292,520	139,513	432,033	296,071	141,207	437,278	299,654	142,916	442,570
2019	293,419	139,942	433,361	297,892	142,075	439,967	302,418	144,234	446,653
2020	295,778	141,105	436,883	301,201	143,692	444,893	306,707	146,319	453,026
2021	295,219	140,800	436,019	301,551	143,821	445,372	308,000	146,896	454,896
2022	296,122	141,231	437,354	303,397	144,701	448,099	310,828	148,245	459,074
2023	297,021	141,660	438,682	305,240	145,580	450,820	313,660	149,596	463,256
2024	299,404	142,834	442,238	308,619	147,231	455,850	318,090	151,749	469,838
2025	298,817	142,517	441,334	308,936	147,343	456,279	319,366	152,317	471,683
2026	299,708	142,942	442,650	310,779	148,222	459,000	322,223	153,680	475,903
2027	300,597	143,365	443,962	312,621	149,100	461,722	325,088	155,046	480,135
2028	302,977	144,539	447,516	316,019	150,761	466,780	329,581	157,231	486,811
2029	302,352	144,203	446,554	316,277	150,844	467,121	330,799	157,770	488,569
2030	303,219	144,616	447,834	318,090	151,709	469,799	333,644	159,127	492,771
2031	304,085	145,029	449,114	319,907	152,576	472,483	336,503	160,490	496,993
2032	306,462	146,202	452,663	323,319	154,244	477,563	341,050	162,703	503,753
2033	305,804	145,849	451,653	323,530	154,303	477,834	342,227	163,221	505,448
2034	306,658	146,256	452,914	325,336	155,165	480,501	345,093	164,587	509,680

Annual Change

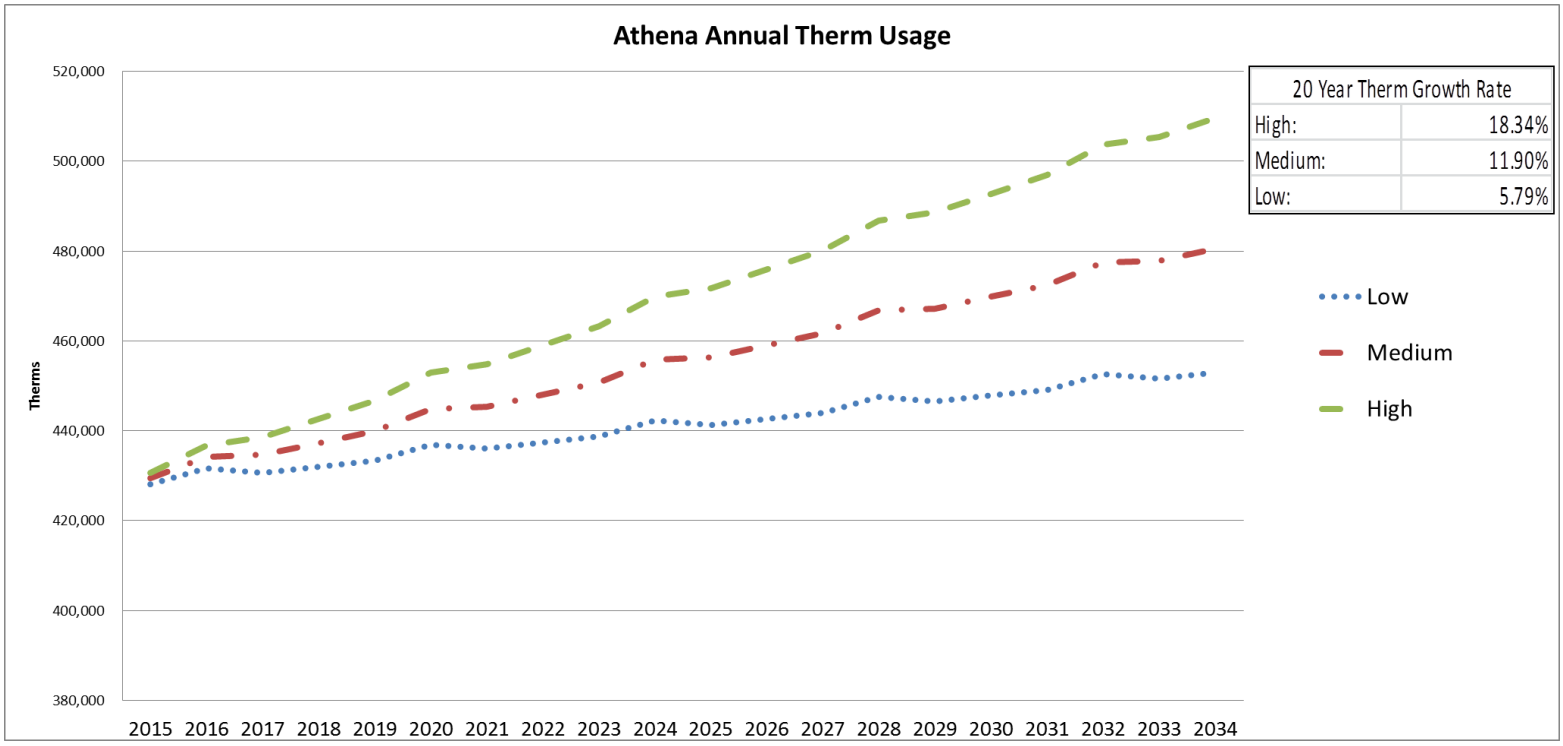
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.83%	0.81%	1.10%	1.13%	1.11%	1.41%	1.43%	1.42%
2017	-0.19%	-0.22%	-0.20%	0.11%	0.08%	0.10%	0.41%	0.39%	0.41%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.83%	0.81%	1.11%	1.14%	1.12%	1.42%	1.45%	1.43%
2021	-0.19%	-0.22%	-0.20%	0.12%	0.09%	0.11%	0.42%	0.39%	0.41%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.83%	0.81%	1.11%	1.13%	1.12%	1.41%	1.44%	1.42%
2025	-0.20%	-0.22%	-0.20%	0.10%	0.08%	0.09%	0.40%	0.37%	0.39%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.82%	0.80%	1.09%	1.11%	1.10%	1.38%	1.41%	1.39%
2029	-0.21%	-0.23%	-0.21%	0.08%	0.06%	0.07%	0.37%	0.34%	0.36%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.81%	0.79%	1.07%	1.09%	1.08%	1.35%	1.38%	1.36%
2033	-0.21%	-0.24%	-0.22%	0.07%	0.04%	0.06%	0.35%	0.32%	0.34%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Customer Count Forecast

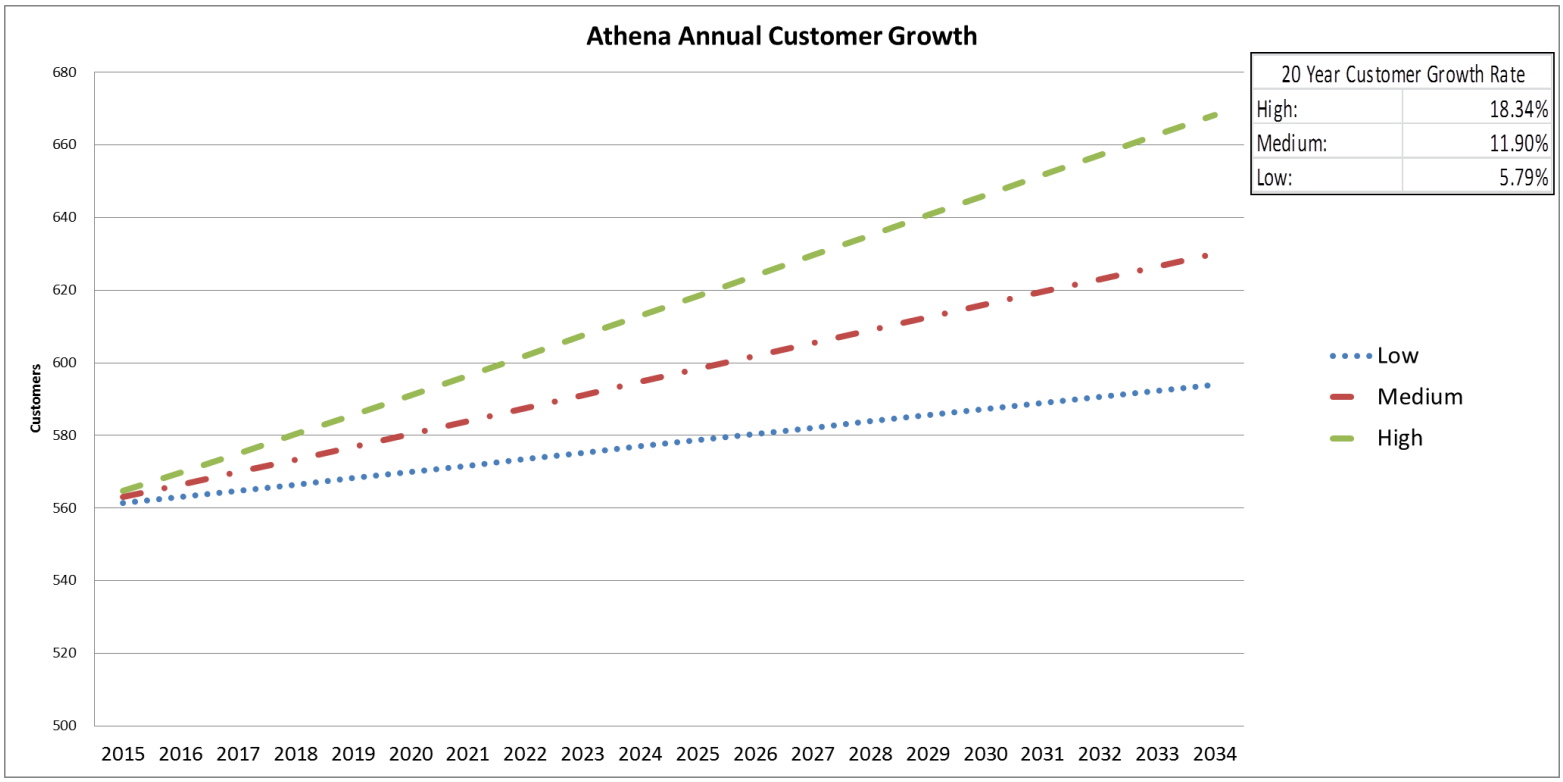
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	498	63	561	499	64	563	501	64	565
2016	499	64	563	502	64	566	505	64	570
2017	501	64	565	505	64	570	510	65	575
2018	502	64	566	509	65	573	515	66	580
2019	504	64	568	512	65	577	519	66	586
2020	506	64	570	515	66	580	524	67	591
2021	507	65	572	518	66	584	529	67	596
2022	509	65	573	521	66	588	534	68	602
2023	510	65	575	524	67	591	539	69	607
2024	512	65	577	527	67	595	544	69	613
2025	513	65	579	531	68	598	549	70	618
2026	515	66	580	534	68	602	553	71	624
2027	516	66	582	537	68	605	558	71	630
2028	518	66	584	540	69	609	563	72	635
2029	519	66	586	543	69	612	568	72	641
2030	521	66	587	546	70	616	573	73	646
2031	522	67	589	550	70	620	578	74	652
2032	524	67	591	553	70	623	583	74	657
2033	525	67	592	556	71	627	588	75	663
2034	527	67	594	559	71	630	593	76	668

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%



20 Year Therm Growth Rate	
High:	18.34%
Medium:	11.90%
Low:	5.79%



20 Year Customer Growth Rate	
High:	18.34%
Medium:	11.90%
Low:	5.79%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Baker

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,991,968	547,160	3,539,128	2,994,062	547,160	3,541,222	2,996,156	547,160	3,543,316
2016	3,008,320	550,151	3,558,471	3,012,299	550,493	3,562,791	3,016,279	550,835	3,567,114
2017	2,995,691	547,841	3,543,532	3,001,516	548,522	3,550,039	3,007,349	549,204	3,556,553
2018	2,997,830	548,232	3,546,062	3,005,802	549,306	3,555,107	3,013,790	550,380	3,564,170
2019	2,999,967	548,623	3,548,590	3,010,087	550,089	3,560,176	3,020,235	551,557	3,571,792
2020	3,016,633	551,671	3,568,303	3,028,962	553,538	3,582,501	3,041,334	555,411	3,596,745
2021	3,004,329	549,421	3,553,750	3,018,844	551,689	3,570,533	3,033,420	553,965	3,587,385
2022	3,006,554	549,828	3,556,382	3,023,316	552,506	3,575,822	3,040,159	555,196	3,595,355
2023	3,008,778	550,234	3,559,012	3,027,787	553,323	3,581,111	3,046,904	556,428	3,603,332
2024	3,025,665	553,323	3,578,988	3,047,122	556,857	3,603,979	3,068,716	560,411	3,629,126
2025	3,013,312	551,063	3,564,375	3,036,916	554,992	3,591,908	3,060,689	558,945	3,619,634
2026	3,015,530	551,469	3,566,999	3,041,388	555,809	3,597,197	3,067,449	560,180	3,627,629
2027	3,017,747	551,874	3,569,621	3,045,860	556,626	3,602,486	3,074,214	561,415	3,635,629
2028	3,034,486	554,936	3,589,422	3,064,908	560,107	3,625,015	3,095,613	565,323	3,660,935
2029	3,021,991	552,651	3,574,642	3,054,431	558,192	3,612,623	3,087,194	563,786	3,650,980
2030	3,024,019	553,022	3,577,041	3,058,530	558,942	3,617,471	3,093,410	564,921	3,658,330
2031	3,026,046	553,392	3,579,438	3,062,629	559,691	3,622,320	3,099,629	566,056	3,665,685
2032	3,042,727	556,443	3,599,170	3,081,572	563,152	3,644,724	3,120,885	569,938	3,690,823
2033	3,030,095	554,133	3,584,227	3,070,828	561,189	3,632,017	3,112,080	568,330	3,680,410
2034	3,032,117	554,502	3,586,620	3,074,928	561,938	3,636,866	3,118,311	569,468	3,687,780

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.55%	0.55%	0.55%	0.61%	0.61%	0.61%	0.67%	0.67%	0.67%
2017	-0.42%	-0.42%	-0.42%	-0.36%	-0.36%	-0.36%	-0.30%	-0.30%	-0.30%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.56%	0.56%	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%
2021	-0.41%	-0.41%	-0.41%	-0.33%	-0.33%	-0.33%	-0.26%	-0.26%	-0.26%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.56%	0.56%	0.56%	0.64%	0.64%	0.64%	0.72%	0.72%	0.72%
2025	-0.41%	-0.41%	-0.41%	-0.33%	-0.33%	-0.33%	-0.26%	-0.26%	-0.26%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.55%	0.55%	0.55%	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%
2029	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%	-0.27%	-0.27%	-0.27%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.55%	0.55%	0.55%	0.62%	0.62%	0.62%	0.69%	0.69%	0.69%
2033	-0.42%	-0.42%	-0.42%	-0.35%	-0.35%	-0.35%	-0.28%	-0.28%	-0.28%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,499	40,305	41,804	1,499	40,330	41,829	1,499	40,355	41,854
2016	1,507	40,323	41,830	1,508	40,373	41,881	1,509	40,423	41,932
2017	1,501	40,355	41,856	1,503	40,430	41,933	1,505	40,505	42,010
2018	1,502	40,384	41,886	1,505	40,488	41,993	1,508	40,592	42,100
2019	1,503	40,413	41,916	1,507	40,546	42,053	1,511	40,679	42,190
2020	1,511	40,434	41,946	1,517	40,596	42,113	1,522	40,759	42,280
2021	1,505	40,472	41,977	1,511	40,664	42,175	1,518	40,857	42,374
2022	1,506	40,502	42,008	1,514	40,724	42,238	1,521	40,947	42,468
2023	1,507	40,532	42,039	1,516	40,784	42,300	1,524	41,038	42,563
2024	1,516	40,556	42,072	1,526	40,840	42,365	1,535	41,126	42,661
2025	1,510	40,593	42,103	1,521	40,907	42,428	1,531	41,224	42,755
2026	1,511	40,623	42,134	1,523	40,967	42,490	1,535	41,315	42,850
2027	1,512	40,653	42,164	1,525	41,028	42,553	1,538	41,406	42,944
2028	1,520	40,674	42,194	1,535	41,078	42,613	1,549	41,486	43,035
2029	1,514	40,710	42,224	1,529	41,143	42,672	1,545	41,581	43,126
2030	1,515	40,737	42,252	1,531	41,198	42,730	1,548	41,665	43,212
2031	1,516	40,764	42,280	1,533	41,254	42,787	1,551	41,748	43,299
2032	1,525	40,784	42,309	1,543	41,301	42,844	1,561	41,825	43,386
2033	1,518	40,819	42,337	1,538	41,364	42,902	1,557	41,916	43,473
2034	1,519	40,846	42,365	1,540	41,419	42,959	1,560	42,000	43,560

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.55%	0.04%	0.06%	0.61%	0.11%	0.12%	0.67%	0.17%	0.19%
2017	-0.42%	0.08%	0.06%	-0.36%	0.14%	0.12%	-0.30%	0.20%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.05%	0.07%	0.63%	0.12%	0.14%	0.70%	0.20%	0.21%
2021	-0.41%	0.09%	0.07%	-0.33%	0.17%	0.15%	-0.26%	0.24%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.56%	0.06%	0.08%	0.64%	0.14%	0.15%	0.72%	0.21%	0.23%
2025	-0.41%	0.09%	0.07%	-0.33%	0.17%	0.15%	-0.26%	0.24%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.55%	0.05%	0.07%	0.63%	0.12%	0.14%	0.70%	0.19%	0.21%
2029	-0.41%	0.09%	0.07%	-0.34%	0.16%	0.14%	-0.27%	0.23%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.55%	0.05%	0.07%	0.62%	0.12%	0.13%	0.69%	0.18%	0.20%
2033	-0.42%	0.08%	0.07%	-0.35%	0.15%	0.13%	-0.28%	0.22%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,013,331	1,525,797	3,539,128	2,014,522	1,526,700	3,541,222	2,015,714	1,527,602	3,543,316
2016	2,024,508	1,533,963	3,558,471	2,026,966	1,535,826	3,562,791	2,029,425	1,537,689	3,567,114
2017	2,015,837	1,527,696	3,543,532	2,019,538	1,530,501	3,550,039	2,023,244	1,533,309	3,556,553
2018	2,017,276	1,528,786	3,546,062	2,022,422	1,532,686	3,555,107	2,027,577	1,536,593	3,564,170
2019	2,018,714	1,529,876	3,548,590	2,025,305	1,534,871	3,560,176	2,031,913	1,539,879	3,571,792
2020	2,030,102	1,538,202	3,568,303	2,038,179	1,544,322	3,582,501	2,046,283	1,550,462	3,596,745
2021	2,021,649	1,532,101	3,553,750	2,031,197	1,539,336	3,570,533	2,040,783	1,546,601	3,587,385
2022	2,023,146	1,533,235	3,556,382	2,034,206	1,541,616	3,575,822	2,045,318	1,550,038	3,595,355
2023	2,024,643	1,534,369	3,559,012	2,037,214	1,543,896	3,581,111	2,049,855	1,553,476	3,603,332
2024	2,036,180	1,542,808	3,578,988	2,050,398	1,553,581	3,603,979	2,064,705	1,564,421	3,629,126
2025	2,027,694	1,536,681	3,564,375	2,043,357	1,548,551	3,591,908	2,059,129	1,560,505	3,619,634
2026	2,029,186	1,537,813	3,566,999	2,046,365	1,550,832	3,597,197	2,063,677	1,563,951	3,627,629
2027	2,030,678	1,538,943	3,569,621	2,049,374	1,553,112	3,602,486	2,068,228	1,567,400	3,635,629
2028	2,042,116	1,547,305	3,589,422	2,062,366	1,562,649	3,625,015	2,082,802	1,578,133	3,660,935
2029	2,033,534	1,541,108	3,574,642	2,055,141	1,557,482	3,612,623	2,076,961	1,574,019	3,650,980
2030	2,034,899	1,542,142	3,577,041	2,057,899	1,559,572	3,617,471	2,081,143	1,577,187	3,658,330
2031	2,036,263	1,543,175	3,579,438	2,060,657	1,561,663	3,622,320	2,085,327	1,580,358	3,665,685
2032	2,047,662	1,551,507	3,599,170	2,073,579	1,571,145	3,644,724	2,099,806	1,591,017	3,690,823
2033	2,038,987	1,545,240	3,584,227	2,066,174	1,565,843	3,632,017	2,093,703	1,586,707	3,680,410
2034	2,040,348	1,546,272	3,586,620	2,068,932	1,567,934	3,636,866	2,097,896	1,589,884	3,687,780

Annual Change

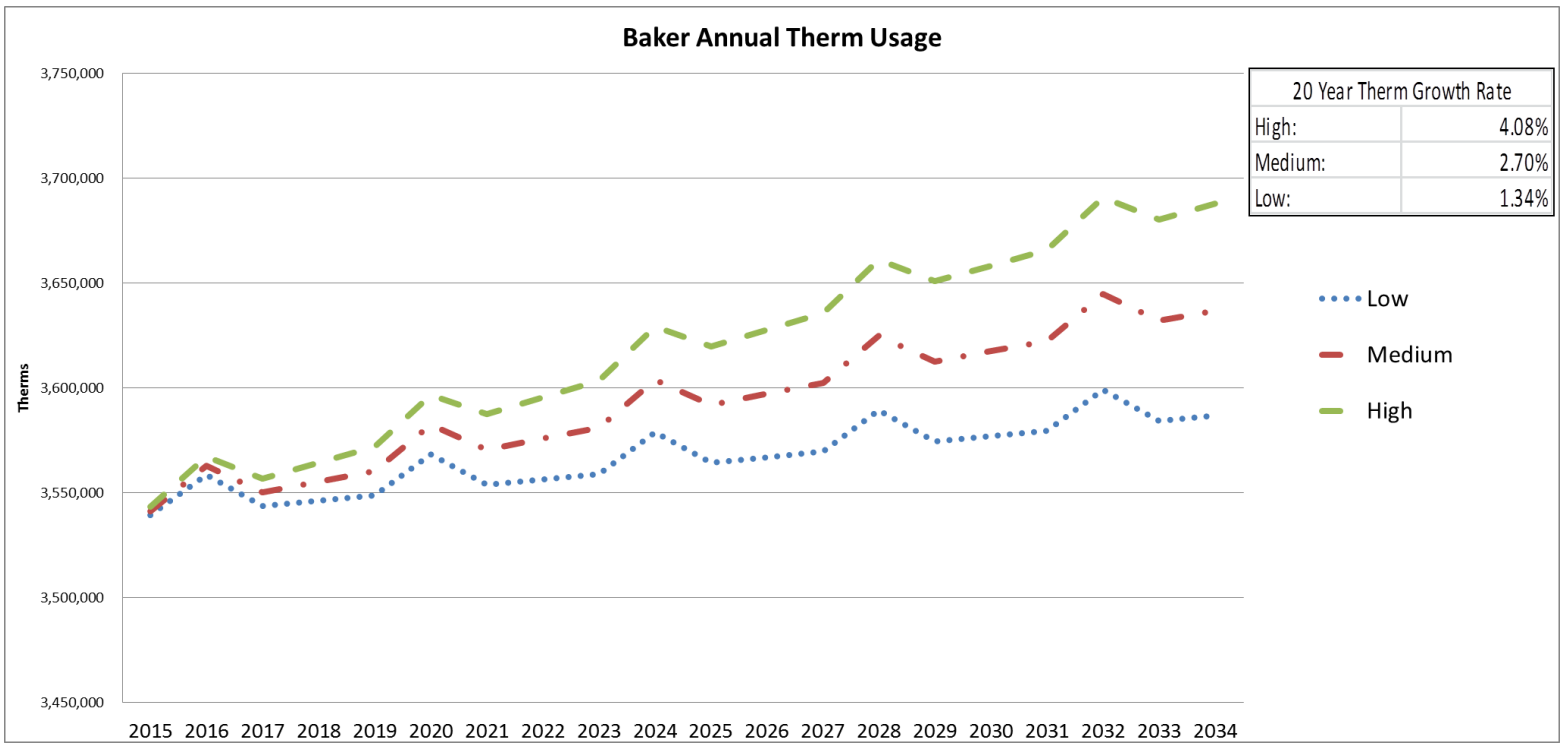
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.54%	0.55%	0.62%	0.60%	0.61%	0.68%	0.66%	0.67%
2017	-0.43%	-0.41%	-0.42%	-0.37%	-0.35%	-0.36%	-0.30%	-0.28%	-0.30%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.54%	0.56%	0.64%	0.62%	0.63%	0.71%	0.69%	0.70%
2021	-0.42%	-0.40%	-0.41%	-0.34%	-0.32%	-0.33%	-0.27%	-0.25%	-0.26%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.57%	0.55%	0.56%	0.65%	0.63%	0.64%	0.72%	0.70%	0.72%
2025	-0.42%	-0.40%	-0.41%	-0.34%	-0.32%	-0.33%	-0.27%	-0.25%	-0.26%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.56%	0.54%	0.55%	0.63%	0.61%	0.63%	0.70%	0.68%	0.70%
2029	-0.42%	-0.40%	-0.41%	-0.35%	-0.33%	-0.34%	-0.28%	-0.26%	-0.27%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.56%	0.54%	0.55%	0.63%	0.61%	0.62%	0.69%	0.67%	0.69%
2033	-0.42%	-0.40%	-0.42%	-0.36%	-0.34%	-0.35%	-0.29%	-0.27%	-0.28%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

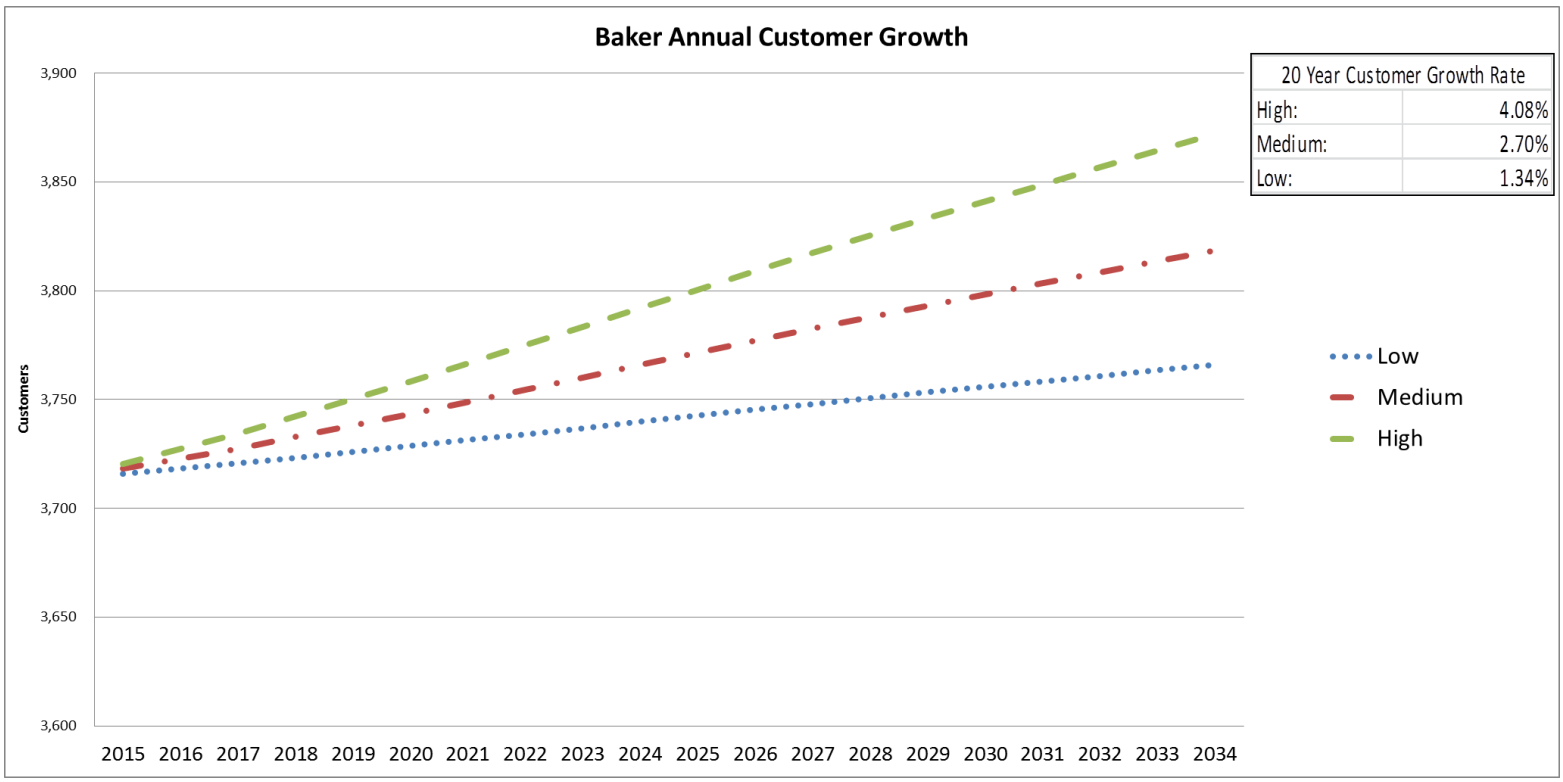
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,221	495	3,716	3,223	495	3,718	3,225	496	3,720
2016	3,223	495	3,718	3,227	496	3,723	3,231	497	3,727
2017	3,225	496	3,721	3,231	497	3,727	3,237	497	3,734
2018	3,227	496	3,723	3,236	497	3,733	3,244	499	3,742
2019	3,230	496	3,726	3,240	498	3,738	3,251	500	3,750
2020	3,232	497	3,729	3,245	499	3,743	3,258	501	3,758
2021	3,234	497	3,731	3,250	499	3,749	3,265	502	3,767
2022	3,237	497	3,734	3,254	500	3,755	3,272	503	3,775
2023	3,239	498	3,737	3,259	501	3,760	3,279	504	3,783
2024	3,242	498	3,740	3,264	502	3,766	3,287	505	3,792
2025	3,244	499	3,743	3,269	502	3,771	3,294	506	3,801
2026	3,246	499	3,745	3,274	503	3,777	3,302	507	3,809
2027	3,249	499	3,748	3,279	504	3,783	3,309	509	3,817
2028	3,251	500	3,751	3,283	505	3,788	3,316	510	3,825
2029	3,253	500	3,753	3,288	505	3,793	3,323	511	3,833
2030	3,255	500	3,756	3,292	506	3,798	3,329	512	3,841
2031	3,258	501	3,758	3,297	507	3,803	3,336	513	3,849
2032	3,260	501	3,761	3,301	507	3,808	3,343	514	3,857
2033	3,262	501	3,763	3,306	508	3,814	3,350	515	3,864
2034	3,264	502	3,766	3,310	509	3,819	3,356	516	3,872

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2017	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2021	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.08%	0.08%	0.08%	0.15%	0.15%	0.15%	0.23%	0.23%	0.23%
2025	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2029	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2033	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%


Baker Annual Therm Usage
Therms
3,750,000
3,700,000
3,650,000
3,600,000
3,550,000
3,500,000
3,450,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High


Baker Annual Customer Growth
Customers
3,900
3,850
3,800
3,750
3,700
3,650
3,600
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Umatilla

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,476,208	457,790	1,933,998	1,481,931	457,790	1,939,721	1,487,654	457,790	1,945,444
2016	1,487,082	461,163	1,948,245	1,497,288	462,534	1,959,822	1,507,528	463,906	1,971,434
2017	1,485,068	460,538	1,945,606	1,499,746	463,294	1,963,040	1,514,520	466,058	1,980,578
2018	1,489,559	461,930	1,951,489	1,508,816	466,096	1,974,912	1,528,260	470,286	1,998,545
2019	1,494,084	463,334	1,957,418	1,517,984	468,928	1,986,912	1,542,189	474,572	2,016,761
2020	1,505,153	466,766	1,971,919	1,533,842	473,826	2,007,669	1,562,985	480,972	2,043,957
2021	1,503,150	466,145	1,969,295	1,536,434	474,627	2,011,061	1,570,347	483,237	2,053,584
2022	1,507,706	467,558	1,975,265	1,545,749	477,504	2,023,253	1,584,627	487,631	2,072,259
2023	1,512,233	468,962	1,981,195	1,555,030	480,372	2,035,402	1,598,900	492,024	2,090,924
2024	1,523,406	472,427	1,995,833	1,571,214	485,371	2,056,585	1,620,366	498,629	2,118,996
2025	1,521,278	471,767	1,993,044	1,573,659	486,126	2,059,786	1,627,674	500,878	2,128,553
2026	1,525,772	473,161	1,998,933	1,582,957	488,999	2,071,956	1,642,100	505,317	2,147,418
2027	1,530,245	474,548	2,004,793	1,592,239	491,866	2,084,105	1,656,543	509,762	2,166,305
2028	1,541,396	478,006	2,019,402	1,608,487	496,885	2,105,372	1,678,280	516,451	2,194,731
2029	1,539,090	477,291	2,016,381	1,610,673	497,560	2,108,233	1,685,352	518,627	2,203,979
2030	1,543,455	478,644	2,022,099	1,619,808	500,382	2,120,191	1,699,690	523,039	2,222,729
2031	1,547,815	479,996	2,027,812	1,628,960	503,210	2,132,169	1,714,094	527,472	2,241,566
2032	1,558,938	483,446	2,042,384	1,645,254	508,243	2,153,497	1,736,067	534,233	2,270,301
2033	1,556,476	482,682	2,039,158	1,647,214	508,849	2,156,063	1,742,947	536,351	2,279,298
2034	1,560,776	484,016	2,044,792	1,656,317	511,661	2,167,978	1,757,395	540,797	2,298,192

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2017	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.46%	0.46%	0.46%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.35%	1.35%	1.35%
2021	-0.13%	-0.13%	-0.13%	0.17%	0.17%	0.17%	0.47%	0.47%	0.47%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2025	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.45%	0.45%	0.45%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.73%	0.73%	0.73%	1.02%	1.02%	1.02%	1.31%	1.31%	1.31%
2029	-0.15%	-0.15%	-0.15%	0.14%	0.14%	0.14%	0.42%	0.42%	0.42%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.72%	0.72%	0.72%	1.00%	1.00%	1.00%	1.28%	1.28%	1.28%
2033	-0.16%	-0.16%	-0.16%	0.12%	0.12%	0.12%	0.40%	0.40%	0.40%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,254	16,253	17,508	1,254	16,305	17,559	1,254	16,357	17,611
2016	1,263	16,296	17,560	1,267	16,397	17,664	1,271	16,498	17,769
2017	1,262	16,351	17,613	1,269	16,501	17,771	1,277	16,652	17,929
2018	1,266	16,400	17,666	1,277	16,601	17,878	1,288	16,803	18,092
2019	1,269	16,450	17,720	1,285	16,702	17,987	1,300	16,957	18,257
2020	1,279	16,494	17,773	1,298	16,797	18,095	1,318	17,105	18,423
2021	1,277	16,550	17,827	1,300	16,905	18,205	1,324	17,266	18,590
2022	1,281	16,600	17,881	1,308	17,007	18,316	1,336	17,423	18,759
2023	1,285	16,650	17,935	1,316	17,110	18,426	1,348	17,580	18,928
2024	1,294	16,694	17,989	1,330	17,207	18,536	1,366	17,733	19,099
2025	1,293	16,750	18,042	1,332	17,314	18,646	1,372	17,897	19,269
2026	1,296	16,799	18,095	1,340	17,417	18,756	1,384	18,055	19,440
2027	1,300	16,848	18,148	1,348	17,519	18,866	1,397	18,214	19,611
2028	1,310	16,892	18,201	1,361	17,615	18,976	1,415	18,367	19,781
2029	1,308	16,946	18,253	1,363	17,722	19,085	1,421	18,531	19,952
2030	1,311	16,994	18,305	1,371	17,822	19,193	1,433	18,688	20,121
2031	1,315	17,042	18,357	1,379	17,923	19,302	1,445	18,847	20,292
2032	1,325	17,084	18,408	1,392	18,017	19,410	1,464	18,999	20,463
2033	1,322	17,137	18,460	1,394	18,124	19,518	1,469	19,164	20,633
2034	1,326	17,185	18,511	1,402	18,224	19,626	1,482	19,323	20,805

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.26%	0.30%	1.04%	0.56%	0.60%	1.34%	0.86%	0.90%
2017	-0.14%	0.33%	0.30%	0.16%	0.64%	0.60%	0.46%	0.94%	0.90%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.74%	0.27%	0.30%	1.04%	0.57%	0.61%	1.35%	0.87%	0.91%
2021	-0.13%	0.34%	0.30%	0.17%	0.64%	0.61%	0.47%	0.94%	0.91%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.74%	0.27%	0.30%	1.04%	0.57%	0.60%	1.34%	0.87%	0.90%
2025	-0.14%	0.33%	0.30%	0.16%	0.63%	0.59%	0.45%	0.92%	0.89%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.73%	0.26%	0.29%	1.02%	0.55%	0.58%	1.31%	0.84%	0.87%
2029	-0.15%	0.32%	0.29%	0.14%	0.61%	0.57%	0.42%	0.89%	0.86%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.72%	0.25%	0.28%	1.00%	0.53%	0.56%	1.28%	0.81%	0.84%
2033	-0.16%	0.31%	0.28%	0.12%	0.59%	0.56%	0.40%	0.87%	0.84%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	428,445	573,726	1,002,171	429,713	575,424	1,005,136	430,981	577,121	1,008,102
2016	431,952	577,688	1,009,640	434,519	581,121	1,015,640	437,093	584,564	1,021,657
2017	431,016	577,169	1,008,186	434,879	582,341	1,017,220	438,764	587,544	1,026,308
2018	432,320	578,915	1,011,234	437,509	585,863	1,023,372	442,744	592,874	1,035,618
2019	433,633	580,673	1,014,307	440,167	589,423	1,029,590	446,779	598,278	1,045,057
2020	437,201	584,708	1,021,909	445,127	595,308	1,040,435	453,172	606,068	1,059,241
2021	436,264	584,197	1,020,461	445,517	596,587	1,042,104	454,937	609,201	1,064,139
2022	437,587	585,968	1,023,555	448,218	600,204	1,048,421	459,074	614,741	1,073,815
2023	438,901	587,727	1,026,628	450,909	603,808	1,054,717	463,209	620,278	1,083,487
2024	442,503	591,799	1,034,302	455,972	609,813	1,065,785	469,809	628,319	1,098,128
2025	441,526	591,242	1,032,768	456,311	611,041	1,067,352	471,545	631,441	1,102,986
2026	442,830	592,989	1,035,819	459,007	614,652	1,073,659	475,724	637,037	1,112,762
2027	444,128	594,727	1,038,856	461,699	618,256	1,079,954	479,909	642,640	1,122,549
2028	447,728	598,787	1,046,516	466,789	624,279	1,091,068	486,601	650,775	1,137,376
2029	446,695	598,165	1,044,861	467,044	625,413	1,092,457	488,254	653,816	1,142,071
2030	447,962	599,861	1,047,824	469,693	628,960	1,098,653	492,408	659,379	1,151,787
2031	449,228	601,556	1,050,784	472,346	632,514	1,104,860	496,581	664,967	1,161,548
2032	452,824	605,602	1,058,426	477,459	638,549	1,116,008	503,356	673,183	1,176,539
2033	451,741	604,922	1,056,663	477,640	639,602	1,117,242	504,940	676,160	1,181,100
2034	452,989	606,593	1,059,583	480,279	643,137	1,123,416	509,126	681,765	1,190,891

Annual Change

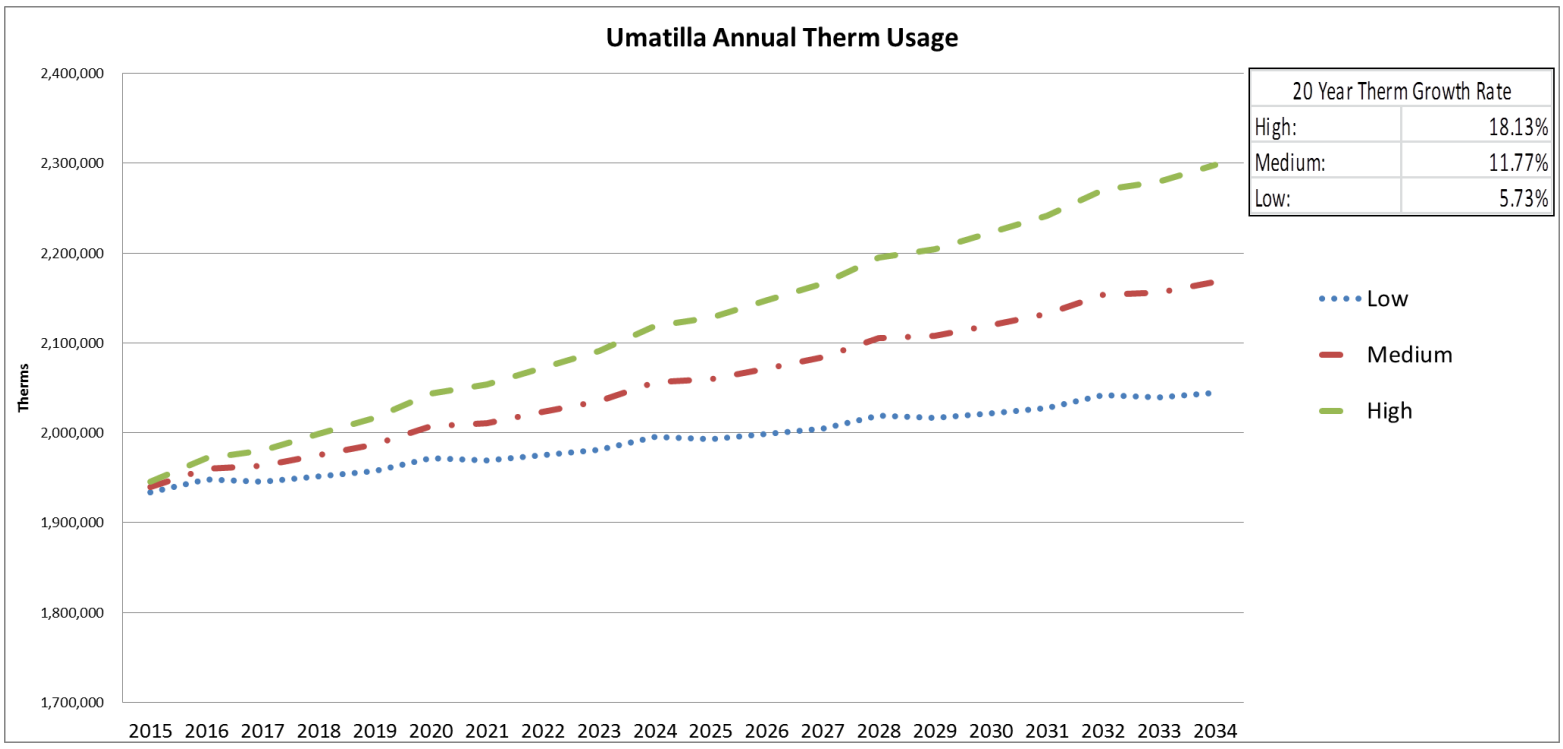
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.69%	0.75%	1.12%	0.99%	1.04%	1.42%	1.29%	1.34%
2017	-0.22%	-0.09%	-0.14%	0.08%	0.21%	0.16%	0.38%	0.51%	0.46%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.82%	0.69%	0.75%	1.13%	1.00%	1.05%	1.43%	1.30%	1.36%
2021	-0.21%	-0.09%	-0.14%	0.09%	0.21%	0.16%	0.39%	0.52%	0.46%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.82%	0.69%	0.75%	1.12%	0.99%	1.05%	1.42%	1.30%	1.35%
2025	-0.22%	-0.09%	-0.15%	0.07%	0.20%	0.15%	0.37%	0.50%	0.44%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.81%	0.68%	0.74%	1.10%	0.97%	1.03%	1.39%	1.27%	1.32%
2029	-0.23%	-0.10%	-0.16%	0.05%	0.18%	0.13%	0.34%	0.47%	0.41%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.80%	0.67%	0.73%	1.08%	0.95%	1.01%	1.36%	1.24%	1.29%
2033	-0.24%	-0.11%	-0.17%	0.04%	0.16%	0.11%	0.31%	0.44%	0.39%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

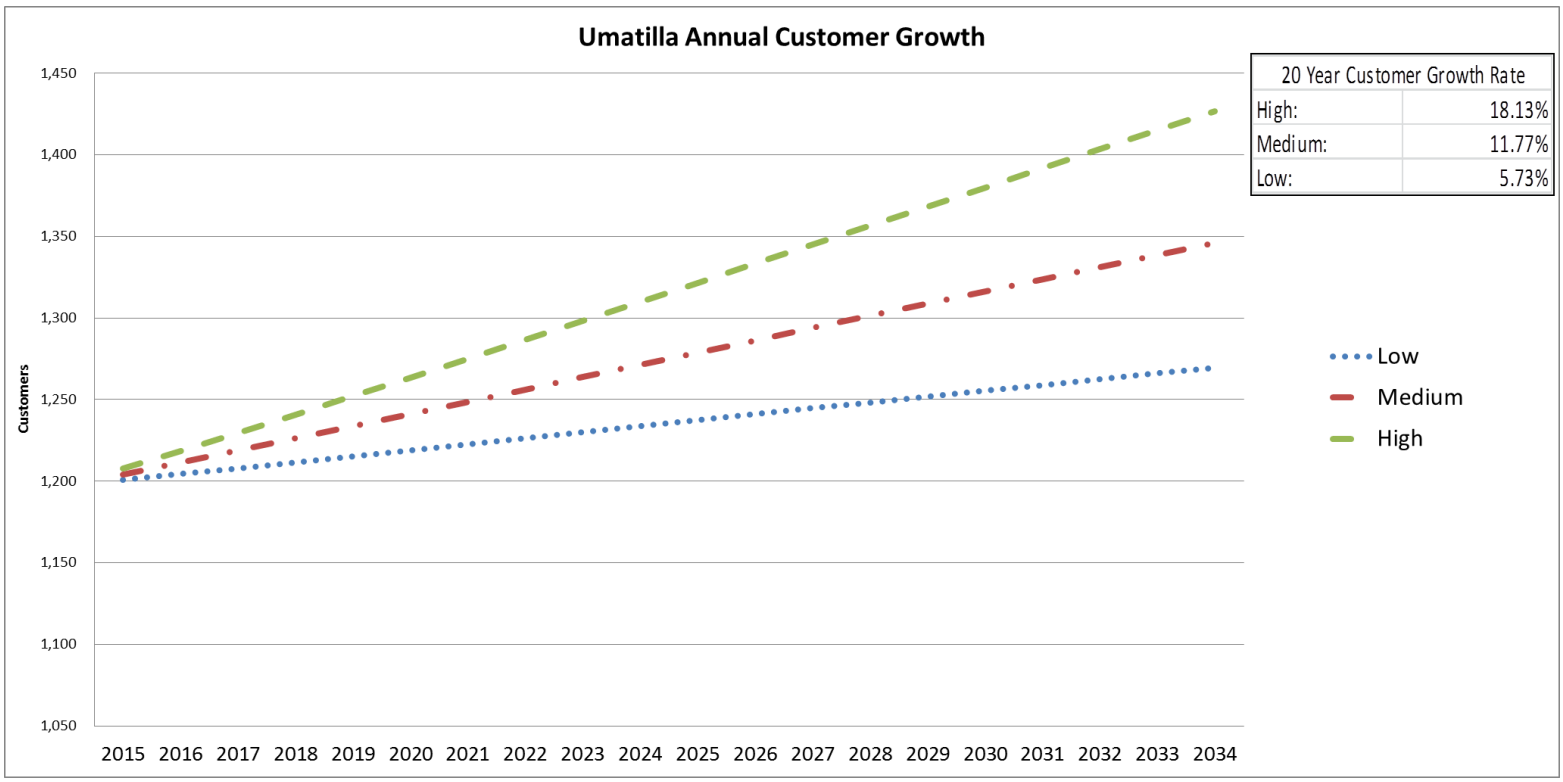
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,032	169	1,201	1,035	169	1,204	1,038	170	1,208
2016	1,035	169	1,204	1,041	170	1,211	1,047	171	1,219
2017	1,038	170	1,208	1,047	171	1,219	1,057	173	1,230
2018	1,041	170	1,212	1,054	172	1,226	1,066	174	1,241
2019	1,044	171	1,215	1,060	173	1,234	1,076	176	1,252
2020	1,048	171	1,219	1,067	174	1,241	1,086	178	1,263
2021	1,051	172	1,223	1,073	175	1,249	1,096	179	1,275
2022	1,054	172	1,226	1,080	177	1,256	1,106	181	1,287
2023	1,057	173	1,230	1,086	178	1,264	1,116	182	1,298
2024	1,060	173	1,234	1,093	179	1,271	1,126	184	1,310
2025	1,063	174	1,237	1,099	180	1,279	1,136	186	1,322
2026	1,067	174	1,241	1,106	181	1,286	1,146	187	1,333
2027	1,070	175	1,245	1,112	182	1,294	1,156	189	1,345
2028	1,073	175	1,248	1,119	183	1,301	1,166	191	1,357
2029	1,076	176	1,252	1,125	184	1,309	1,176	192	1,368
2030	1,079	176	1,255	1,131	185	1,316	1,186	194	1,380
2031	1,082	177	1,259	1,138	186	1,324	1,196	196	1,392
2032	1,085	177	1,262	1,144	187	1,331	1,206	197	1,403
2033	1,088	178	1,266	1,150	188	1,339	1,216	199	1,415
2034	1,091	178	1,270	1,157	189	1,346	1,226	201	1,427

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2017	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2025	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2029	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%


Umatilla Annual Therm Usage
Therms
2,400,000
2,300,000
2,200,000
2,100,000
2,000,000
1,900,000
1,800,000
1,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.13%
Medium: 11.77%
Low: 5.73%
Low
Medium
High


Umatilla Annual Customer Growth
Customers
1,450
1,400
1,350
1,300
1,250
1,200
1,150
1,100
1,050
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.13%
Medium: 11.77%
Low: 5.73%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Chemult

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	29,496	20,165	49,661	29,646	20,165	49,811	29,796	20,165	49,961
2016	29,585	20,226	49,812	29,826	20,287	50,113	30,067	20,349	50,416
2017	29,675	20,288	49,963	30,007	20,411	50,417	30,341	20,534	50,875
2018	29,765	20,349	50,115	30,189	20,535	50,724	30,618	20,721	51,339
2019	29,856	20,411	50,267	30,373	20,660	51,033	30,897	20,910	51,808
2020	29,946	20,473	50,419	30,557	20,785	51,341	31,178	21,100	52,277
2021	30,037	20,535	50,571	30,741	20,910	51,651	31,460	21,291	52,751
2022	30,127	20,596	50,723	30,926	21,035	51,961	31,743	21,483	53,225
2023	30,216	20,658	50,874	31,109	21,161	52,270	32,026	21,674	53,700
2024	30,306	20,719	51,024	31,294	21,286	52,579	32,310	21,867	54,177
2025	30,394	20,779	51,173	31,476	21,410	52,886	32,593	22,058	54,651
2026	30,482	20,839	51,322	31,659	21,534	53,193	32,877	22,250	55,127
2027	30,570	20,899	51,469	31,841	21,658	53,499	33,160	22,442	55,602
2028	30,656	20,959	51,615	32,021	21,781	53,802	33,442	22,633	56,075
2029	30,742	21,017	51,759	32,200	21,902	54,103	33,722	22,822	56,545
2030	30,827	21,075	51,902	32,378	22,024	54,402	34,002	23,012	57,014
2031	30,911	21,133	52,044	32,556	22,144	54,700	34,282	23,201	57,482
2032	30,995	21,190	52,186	32,732	22,264	54,997	34,561	23,389	57,950
2033	31,079	21,247	52,326	32,908	22,384	55,292	34,839	23,578	58,417
2034	31,161	21,304	52,465	33,083	22,503	55,586	35,117	23,766	58,883

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	55	576	631	55	578	633	55	579	635
2016	55	577	633	56	581	637	56	585	640
2017	56	579	635	56	585	641	56	590	646
2018	56	581	637	56	588	644	57	595	652
2019	56	583	639	57	592	648	57	601	658
2020	56	584	641	57	595	652	58	606	664
2021	56	586	642	57	599	656	58	612	670
2022	56	588	644	58	602	660	59	617	676
2023	57	590	646	58	606	664	59	623	682
2024	57	591	648	58	610	668	60	628	688
2025	57	593	650	59	613	672	60	634	694
2026	57	595	652	59	617	676	61	639	700
2027	57	597	654	59	620	680	61	645	706
2028	57	598	656	60	624	684	62	650	712
2029	58	600	658	60	627	687	63	656	718
2030	58	602	659	60	631	691	63	661	724
2031	58	603	661	61	634	695	64	667	730
2032	58	605	663	61	638	699	64	672	736
2033	58	607	665	61	641	702	65	678	742
2034	58	608	667	62	645	706	65	683	748

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,386	39,275	49,661	10,417	39,394	49,811	10,448	39,513	49,961
2016	10,417	39,394	49,812	10,480	39,633	50,113	10,543	39,873	50,416
2017	10,449	39,514	49,963	10,544	39,874	50,417	10,639	40,235	50,875
2018	10,480	39,634	50,115	10,608	40,116	50,724	10,737	40,603	51,339
2019	10,512	39,755	50,267	10,672	40,360	51,033	10,834	40,973	51,808
2020	10,544	39,875	50,419	10,737	40,604	51,341	10,933	41,345	52,277
2021	10,576	39,995	50,571	10,802	40,850	51,651	11,032	41,719	52,751
2022	10,608	40,115	50,723	10,867	41,094	51,961	11,131	42,094	53,225
2023	10,639	40,235	50,874	10,931	41,339	52,270	11,230	42,470	53,700
2024	10,671	40,354	51,024	10,996	41,584	52,579	11,330	42,847	54,177
2025	10,702	40,471	51,173	11,060	41,826	52,886	11,429	43,222	54,651
2026	10,733	40,589	51,322	11,124	42,069	53,193	11,529	43,598	55,127
2027	10,764	40,705	51,469	11,188	42,310	53,499	11,628	43,974	55,602
2028	10,794	40,821	51,615	11,252	42,550	53,802	11,727	44,348	56,075
2029	10,824	40,935	51,759	11,314	42,788	54,103	11,825	44,720	56,545
2030	10,854	41,048	51,902	11,377	43,025	54,402	11,923	45,091	57,014
2031	10,884	41,160	52,044	11,439	43,261	54,700	12,021	45,461	57,482
2032	10,914	41,272	52,186	11,501	43,495	54,997	12,119	45,831	57,950
2033	10,943	41,383	52,326	11,563	43,729	55,292	12,217	46,200	58,417
2034	10,972	41,493	52,465	11,625	43,961	55,586	12,314	46,569	58,883

Annual Change

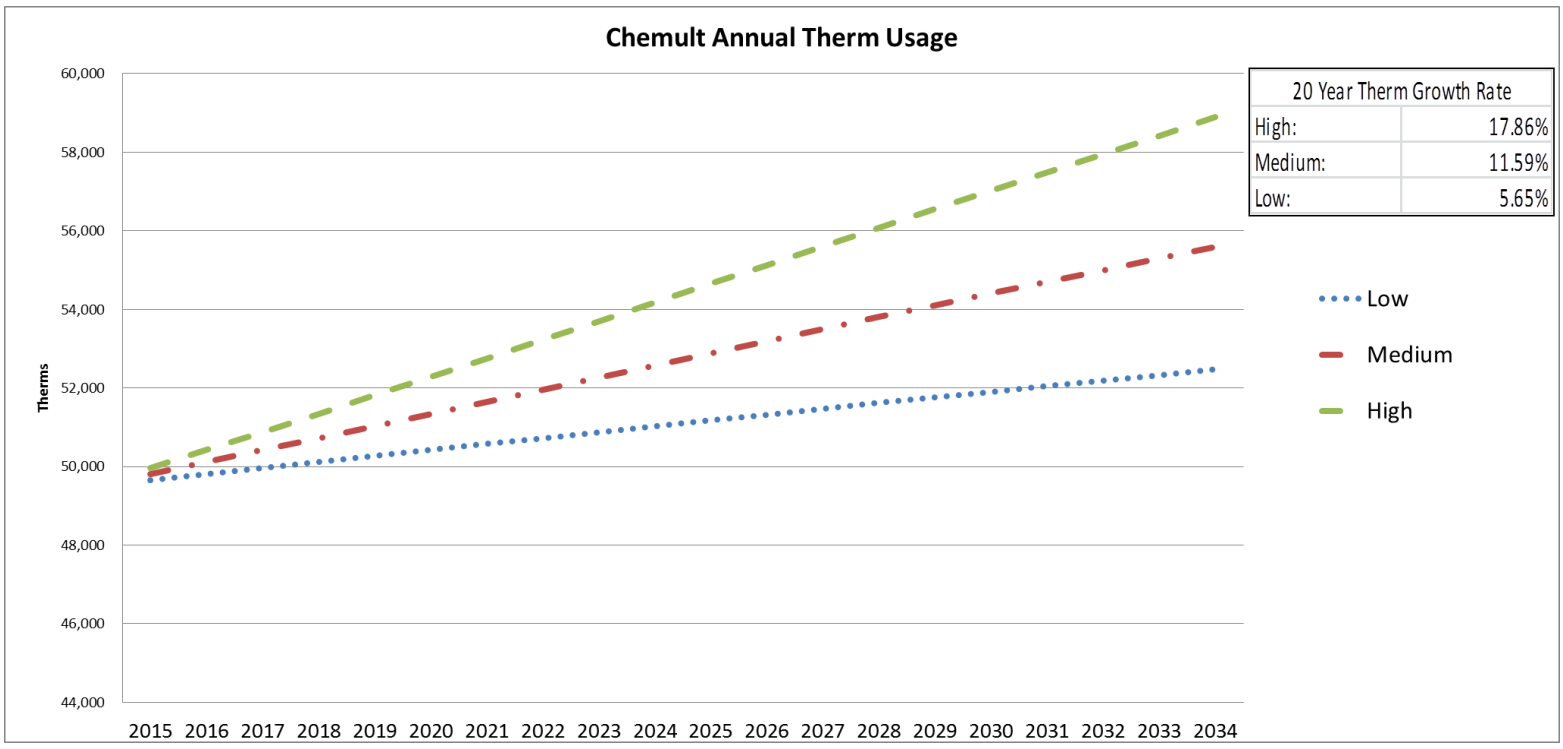
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

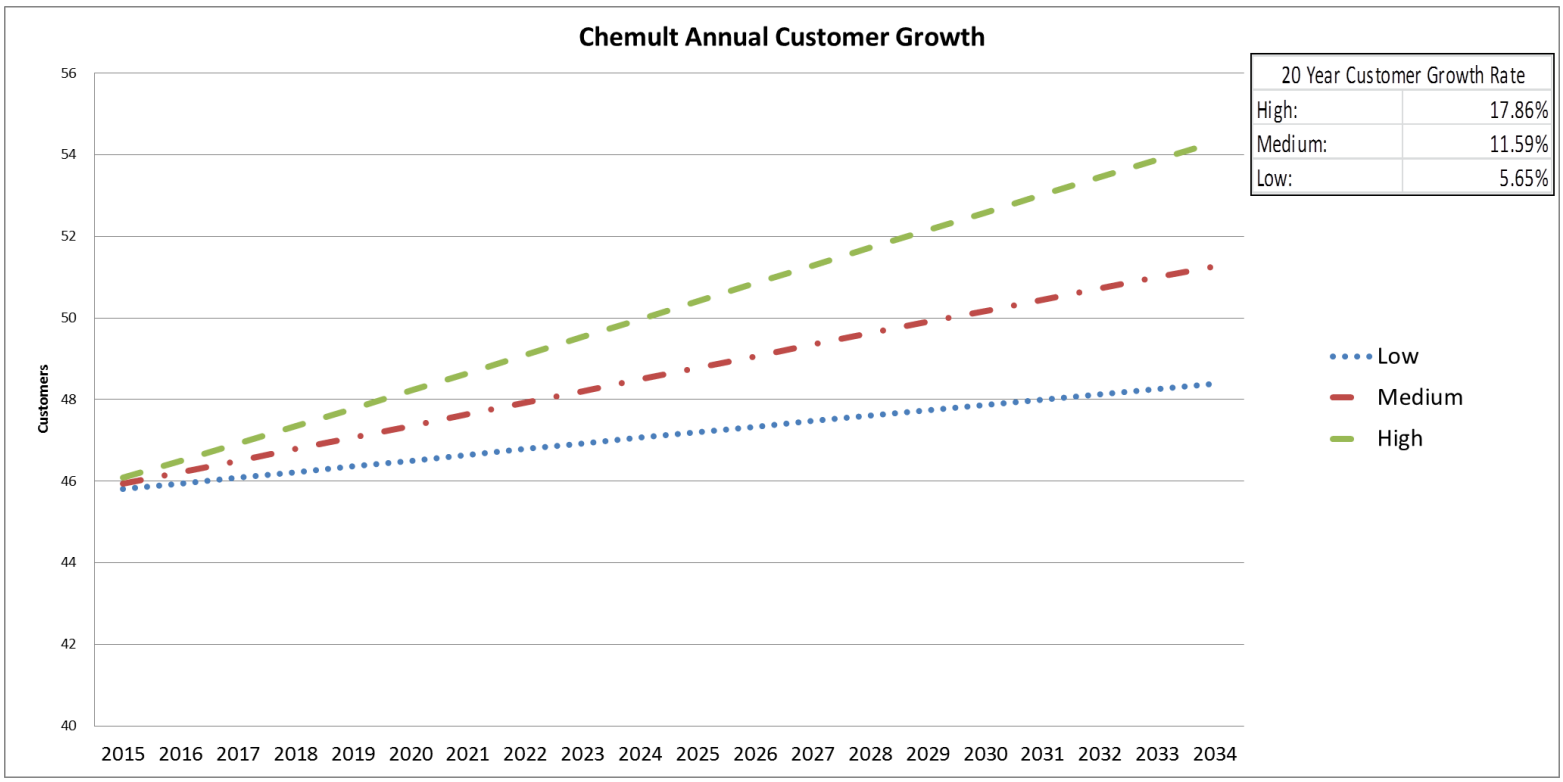
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25	21	46	25	21	46	25	21	46
2016	25	21	46	25	21	46	25	21	47
2017	25	21	46	25	21	47	26	21	47
2018	25	21	46	26	21	47	26	22	47
2019	25	21	46	26	21	47	26	22	48
2020	25	21	47	26	22	47	26	22	48
2021	25	21	47	26	22	48	27	22	49
2022	26	21	47	26	22	48	27	22	49
2023	26	21	47	26	22	48	27	23	50
2024	26	21	47	26	22	48	27	23	50
2025	26	21	47	27	22	49	28	23	50
2026	26	22	47	27	22	49	28	23	51
2027	26	22	47	27	22	49	28	23	51
2028	26	22	48	27	23	50	28	24	52
2029	26	22	48	27	23	50	28	24	52
2030	26	22	48	27	23	50	29	24	53
2031	26	22	48	28	23	50	29	24	53
2032	26	22	48	28	23	51	29	24	53
2033	26	22	48	28	23	51	29	24	54
2034	26	22	48	28	23	51	30	25	54

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%


Chemult Annual Therm Usage
Therms
60,000
58,000
56,000
54,000
52,000
50,000
48,000
46,000
44,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 17.86%
Medium: 11.59%
Low: 5.65%
Low
Medium
High


Chemult Annual Customer Growth
Customers
56
54
52
50
48
46
44
42
40
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 17.86%
Medium: 11.59%
Low: 5.65%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Gilchrist

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	178,766	35,699	214,465	179,404	35,699	215,103	180,042	35,699	215,741
2016	180,133	35,972	216,105	181,316	36,080	217,395	182,502	36,187	218,689
2017	179,842	35,914	215,756	181,566	36,130	217,696	183,302	36,346	219,648
2018	180,388	36,023	216,411	182,670	36,349	219,019	184,973	36,677	221,650
2019	180,938	36,133	217,071	183,784	36,571	220,355	186,665	37,013	223,678
2020	182,331	36,411	218,742	185,761	36,964	222,725	189,244	37,524	226,768
2021	182,043	36,354	218,397	186,033	37,018	223,051	190,097	37,693	227,790
2022	182,596	36,464	219,060	187,162	37,243	224,405	191,828	38,036	229,864
2023	183,148	36,575	219,723	188,295	37,468	225,763	193,569	38,381	231,950
2024	184,554	36,855	221,409	190,311	37,870	228,180	196,229	38,909	235,137
2025	184,249	36,794	221,044	190,562	37,920	228,481	197,070	39,076	236,145
2026	184,798	36,904	221,702	191,696	38,145	229,842	198,830	39,425	238,255
2027	185,344	37,013	222,357	192,829	38,371	231,199	200,592	39,774	240,366
2028	186,747	37,293	224,041	194,855	38,774	233,629	203,289	40,309	243,598
2029	186,422	37,228	223,650	195,075	38,818	233,893	204,102	40,470	244,572
2030	186,955	37,335	224,290	196,191	39,040	235,231	205,854	40,817	246,672
2031	187,487	37,441	224,928	197,308	39,262	236,570	207,611	41,166	248,777
2032	188,888	37,721	226,609	199,342	39,667	239,009	210,341	41,707	252,048
2033	188,544	37,652	226,196	199,536	39,705	239,241	211,133	41,864	252,997
2034	189,069	37,757	226,826	200,647	39,927	240,574	212,897	42,214	255,110

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.76%	0.76%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2017	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2021	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.45%	0.45%	0.45%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.77%	0.77%	0.77%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2025	-0.16%	-0.16%	-0.16%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.76%	0.76%	1.05%	1.05%	1.05%	1.34%	1.34%	1.34%
2029	-0.17%	-0.17%	-0.17%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.75%	0.75%	0.75%	1.03%	1.03%	1.03%	1.31%	1.31%	1.31%
2033	-0.18%	-0.18%	-0.18%	0.10%	0.10%	0.10%	0.38%	0.38%	0.38%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	98	2,631	2,729	98	2,639	2,737	98	2,647	2,745
2016	99	2,638	2,737	99	2,654	2,753	99	2,670	2,769
2017	98	2,647	2,745	99	2,671	2,770	100	2,695	2,795
2018	99	2,655	2,753	100	2,687	2,787	100	2,720	2,820
2019	99	2,663	2,762	100	2,703	2,804	101	2,744	2,846
2020	100	2,670	2,770	101	2,719	2,821	103	2,769	2,872
2021	100	2,679	2,779	101	2,736	2,838	103	2,795	2,898
2022	100	2,687	2,787	102	2,753	2,855	104	2,820	2,924
2023	100	2,695	2,795	103	2,770	2,872	105	2,846	2,951
2024	101	2,703	2,804	104	2,786	2,890	107	2,871	2,978
2025	101	2,711	2,812	104	2,803	2,907	107	2,897	3,004
2026	101	2,720	2,821	105	2,820	2,924	108	2,923	3,031
2027	101	2,728	2,829	105	2,836	2,941	109	2,949	3,058
2028	102	2,735	2,837	106	2,852	2,959	110	2,974	3,085
2029	102	2,743	2,845	106	2,869	2,976	111	3,001	3,112
2030	102	2,751	2,854	107	2,886	2,993	112	3,026	3,138
2031	103	2,759	2,862	108	2,902	3,010	113	3,052	3,165
2032	103	2,766	2,870	109	2,918	3,027	114	3,078	3,192
2033	103	2,775	2,878	109	2,935	3,044	115	3,104	3,219
2034	103	2,782	2,886	109	2,951	3,061	116	3,130	3,246

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.28%	0.30%	1.07%	0.58%	0.60%	1.37%	0.88%	0.90%
2017	-0.16%	0.32%	0.30%	0.14%	0.62%	0.60%	0.44%	0.92%	0.90%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.77%	0.29%	0.30%	1.08%	0.59%	0.61%	1.38%	0.90%	0.91%
2021	-0.16%	0.32%	0.31%	0.15%	0.63%	0.61%	0.45%	0.93%	0.92%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.77%	0.28%	0.30%	1.07%	0.59%	0.60%	1.37%	0.89%	0.91%
2025	-0.16%	0.32%	0.30%	0.13%	0.61%	0.60%	0.43%	0.91%	0.89%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.27%	0.29%	1.05%	0.57%	0.58%	1.34%	0.86%	0.88%
2029	-0.17%	0.31%	0.29%	0.11%	0.59%	0.58%	0.40%	0.88%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.75%	0.26%	0.28%	1.03%	0.55%	0.56%	1.31%	0.83%	0.85%
2033	-0.18%	0.30%	0.28%	0.10%	0.58%	0.56%	0.38%	0.86%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	87,457	127,008	214,465	87,717	127,386	215,103	87,977	127,764	215,741
2016	88,118	127,987	216,105	88,644	128,752	217,395	89,172	129,518	218,689
2017	87,983	127,772	215,756	88,775	128,921	217,696	89,571	130,077	219,648
2018	88,251	128,161	216,411	89,314	129,705	219,019	90,387	131,263	221,650
2019	88,520	128,551	217,071	89,859	130,496	220,355	91,214	132,464	223,678
2020	89,193	129,549	218,742	90,817	131,908	222,725	92,466	134,302	226,768
2021	89,061	129,337	218,397	90,958	132,093	223,051	92,891	134,899	227,790
2022	89,331	129,729	219,060	91,511	132,895	224,405	93,737	136,128	229,864
2023	89,601	130,122	219,723	92,064	133,699	225,763	94,587	137,363	231,950
2024	90,280	131,128	221,409	93,041	135,139	228,180	95,878	139,259	235,137
2025	90,140	130,904	221,044	93,173	135,308	228,481	96,298	139,847	236,145
2026	90,408	131,294	221,702	93,728	136,114	229,842	97,158	141,097	238,255
2027	90,675	131,681	222,357	94,281	136,918	231,199	98,019	142,347	240,366
2028	91,354	132,687	224,041	95,263	138,366	233,629	99,328	144,270	243,598
2029	91,203	132,447	223,650	95,379	138,513	233,893	99,734	144,837	244,572
2030	91,464	132,826	224,290	95,925	139,306	235,231	100,591	146,081	246,672
2031	91,724	133,204	224,928	96,471	140,099	236,570	101,449	147,328	248,777
2032	92,401	134,208	226,609	97,457	141,552	239,009	102,773	149,274	252,048
2033	92,241	133,955	226,196	97,561	141,681	239,241	103,170	149,827	252,997
2034	92,498	134,328	226,826	98,104	142,470	240,574	104,032	151,078	255,110

Annual Change

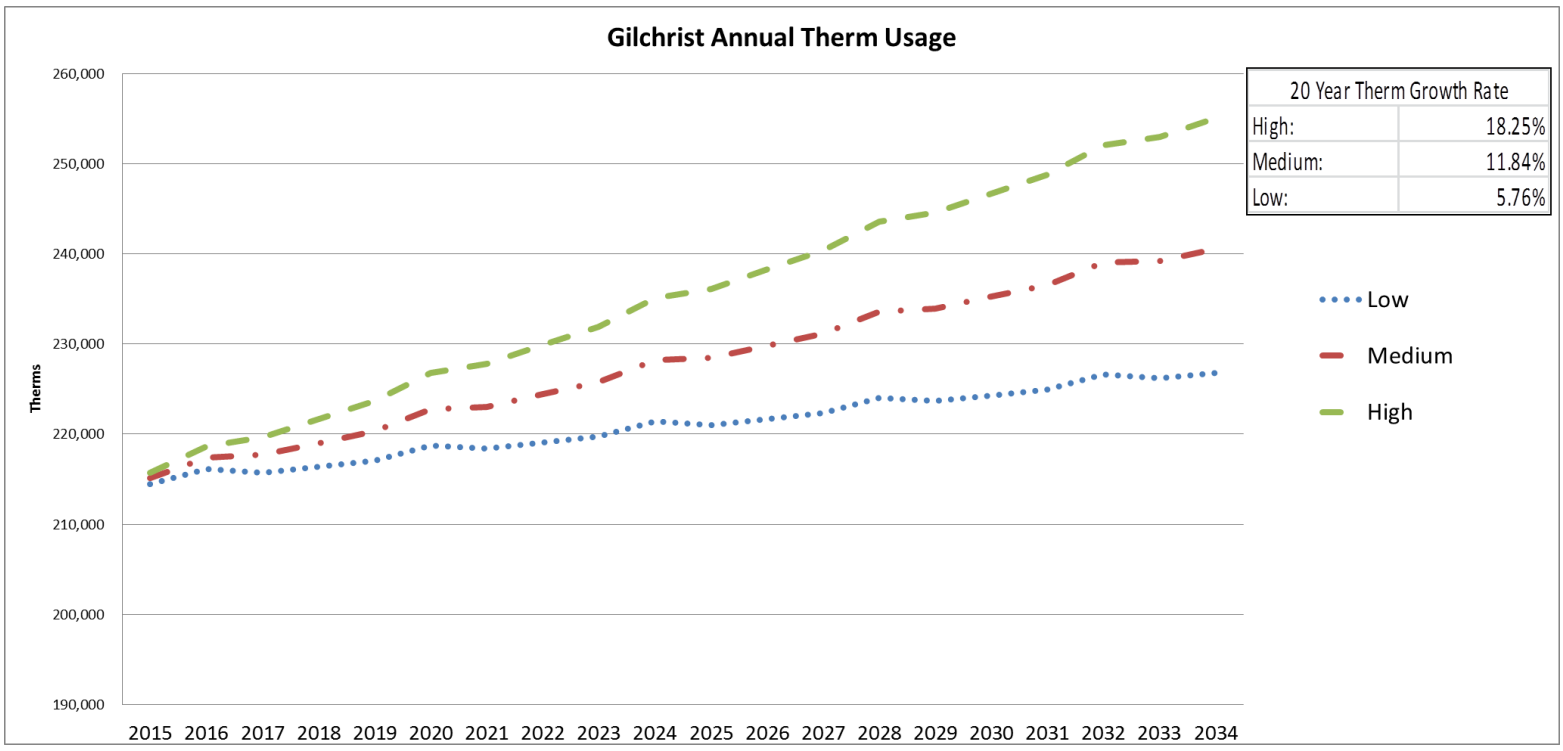
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.77%	0.76%	1.06%	1.07%	1.07%	1.36%	1.37%	1.37%
2017	-0.15%	-0.17%	-0.16%	0.15%	0.13%	0.14%	0.45%	0.43%	0.44%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.76%	0.78%	0.77%	1.07%	1.08%	1.08%	1.37%	1.39%	1.38%
2021	-0.15%	-0.16%	-0.16%	0.16%	0.14%	0.15%	0.46%	0.44%	0.45%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.76%	0.77%	0.77%	1.06%	1.08%	1.07%	1.36%	1.38%	1.37%
2025	-0.16%	-0.17%	-0.16%	0.14%	0.13%	0.13%	0.44%	0.42%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.76%	0.76%	1.04%	1.06%	1.05%	1.34%	1.35%	1.34%
2029	-0.17%	-0.18%	-0.17%	0.12%	0.11%	0.11%	0.41%	0.39%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.74%	0.75%	0.75%	1.02%	1.04%	1.03%	1.31%	1.32%	1.31%
2033	-0.17%	-0.19%	-0.18%	0.11%	0.09%	0.10%	0.39%	0.37%	0.38%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

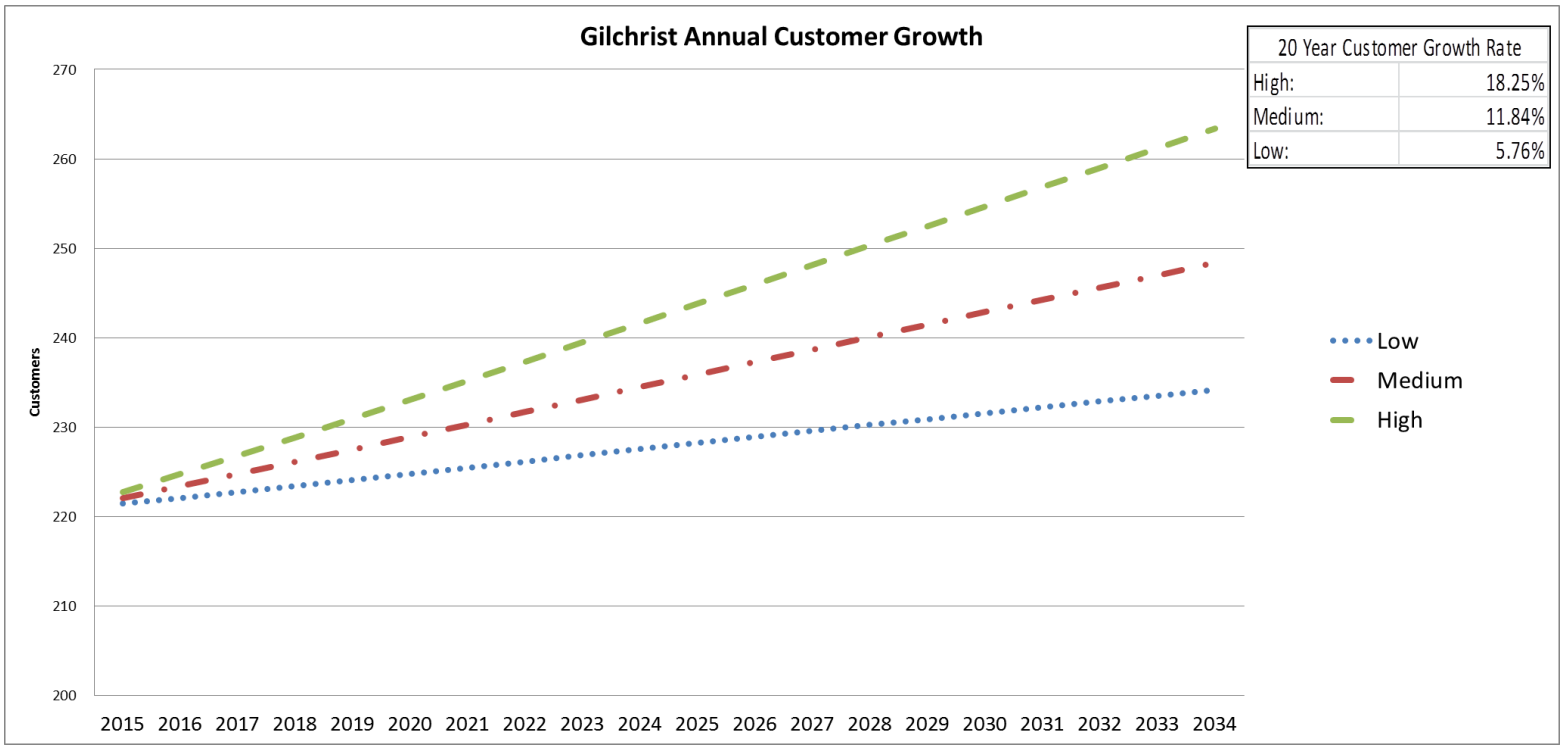
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	181	40	221	182	40	222	182	40	223
2016	182	40	222	183	41	223	184	41	225
2017	182	40	223	184	41	225	186	41	227
2018	183	41	223	185	41	226	187	42	229
2019	183	41	224	186	41	227	189	42	231
2020	184	41	225	187	42	229	191	42	233
2021	185	41	225	188	42	230	192	43	235
2022	185	41	226	190	42	232	194	43	237
2023	186	41	227	191	42	233	196	43	239
2024	186	41	228	192	43	234	198	44	242
2025	187	41	228	193	43	236	200	44	244
2026	187	42	229	194	43	237	201	45	246
2027	188	42	230	195	43	239	203	45	248
2028	188	42	230	196	44	240	205	45	250
2029	189	42	231	198	44	241	207	46	252
2030	190	42	232	199	44	243	208	46	255
2031	190	42	232	200	44	244	210	47	257
2032	191	42	233	201	45	246	212	47	259
2033	191	42	234	202	45	247	214	47	261
2034	192	43	234	203	45	248	216	48	263

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2017	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Gilchrist Annual Therm Usage
Therms
260,000
250,000
240,000
230,000
220,000
210,000
200,000
190,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.25%
Medium: 11.84%
Low: 5.76%
Low
Medium
High


Gilchrist Annual Customer Growth
Customers
270
260
250
240
230
220
210
200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.25%
Medium: 11.84%
Low: 5.76%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Hermiston

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,840,201	1,395,623	5,235,824	3,855,885	1,395,623	5,251,507	3,871,568	1,395,623	5,267,191
2016	3,869,892	1,406,413	5,276,305	3,897,388	1,410,645	5,308,033	3,924,980	1,414,876	5,339,856
2017	3,863,514	1,404,095	5,267,609	3,902,771	1,412,593	5,315,364	3,942,291	1,421,117	5,363,407
2018	3,875,322	1,408,386	5,283,708	3,926,627	1,421,227	5,347,854	3,978,436	1,434,146	5,412,582
2019	3,887,237	1,412,717	5,299,954	3,950,773	1,429,967	5,380,740	4,015,133	1,447,375	5,462,508
2020	3,917,440	1,423,693	5,341,133	3,993,599	1,445,468	5,439,067	4,070,985	1,467,508	5,538,493
2021	3,911,078	1,421,381	5,332,459	3,999,308	1,447,534	5,446,842	4,089,235	1,474,087	5,563,322
2022	3,923,050	1,425,732	5,348,783	4,023,794	1,456,397	5,480,190	4,126,789	1,487,625	5,614,414
2023	3,934,963	1,430,061	5,365,025	4,048,231	1,465,241	5,513,472	4,164,383	1,501,177	5,665,560
2024	3,965,459	1,441,144	5,406,604	4,091,954	1,481,067	5,573,020	4,222,064	1,521,969	5,744,033
2025	3,958,751	1,438,707	5,397,458	4,097,250	1,482,984	5,580,234	4,240,136	1,528,484	5,768,620
2026	3,970,557	1,442,997	5,413,554	4,121,688	1,491,829	5,613,517	4,278,070	1,542,159	5,820,229
2027	3,982,328	1,447,275	5,429,602	4,146,125	1,500,674	5,646,799	4,316,117	1,555,874	5,871,991
2028	4,012,787	1,458,344	5,471,131	4,190,064	1,516,578	5,706,642	4,374,586	1,576,951	5,951,537
2029	4,005,579	1,455,725	5,461,304	4,194,611	1,518,223	5,712,835	4,391,939	1,583,206	5,975,144
2030	4,017,062	1,459,898	5,476,960	4,218,660	1,526,928	5,745,588	4,429,709	1,596,821	6,026,531
2031	4,028,535	1,464,068	5,492,603	4,242,758	1,535,650	5,778,408	4,467,664	1,610,503	6,078,168
2032	4,058,938	1,475,117	5,534,055	4,286,859	1,551,612	5,838,471	4,526,825	1,631,829	6,158,654
2033	4,051,315	1,472,346	5,523,661	4,290,808	1,553,041	5,843,849	4,543,667	1,637,901	6,181,567
2034	4,062,622	1,476,456	5,539,078	4,314,760	1,561,711	5,876,471	4,581,712	1,651,615	6,233,327

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2017	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2021	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.45%	0.45%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.35%	1.35%	1.35%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.75%	0.75%	0.75%	1.04%	1.04%	1.04%	1.32%	1.32%	1.32%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	3,824	67,459	71,282	3,824	67,672	71,496	3,824	67,886	71,709
2016	3,853	67,644	71,497	3,865	68,063	71,927	3,876	68,482	72,359
2017	3,847	67,868	71,715	3,870	68,495	72,365	3,893	69,126	73,019
2018	3,859	68,076	71,934	3,894	68,914	72,808	3,929	69,760	73,689
2019	3,870	68,285	72,155	3,918	69,338	73,255	3,965	70,403	74,369
2020	3,901	68,475	72,376	3,960	69,743	73,703	4,021	71,030	75,050
2021	3,894	68,704	72,598	3,966	70,189	74,155	4,039	71,702	75,741
2022	3,906	68,914	72,820	3,990	70,619	74,609	4,076	72,361	76,437
2023	3,918	69,123	73,041	4,014	71,048	75,062	4,113	73,020	77,133
2024	3,948	69,315	73,263	4,058	71,460	75,518	4,170	73,666	77,836
2025	3,942	69,541	73,483	4,063	71,908	75,971	4,188	74,348	78,536
2026	3,953	69,749	73,702	4,087	72,337	76,424	4,225	75,014	79,239
2027	3,965	69,955	73,921	4,111	72,766	76,878	4,263	75,681	79,943
2028	3,995	70,142	74,138	4,155	73,174	77,329	4,320	76,327	80,647
2029	3,988	70,364	74,352	4,160	73,617	77,777	4,338	77,010	81,348
2030	4,000	70,566	74,565	4,183	74,039	78,222	4,375	77,672	82,047
2031	4,011	70,767	74,778	4,207	74,462	78,669	4,412	78,338	82,750
2032	4,041	70,949	74,990	4,251	74,864	79,115	4,471	78,983	83,454
2033	4,034	71,167	75,201	4,255	75,305	79,560	4,487	79,671	84,158
2034	4,045	71,366	75,411	4,279	75,726	80,004	4,525	80,338	84,863

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.28%	0.30%	1.08%	0.58%	0.60%	1.38%	0.88%	0.91%
2017	-0.16%	0.33%	0.30%	0.14%	0.64%	0.61%	0.44%	0.94%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.28%	0.31%	1.08%	0.58%	0.61%	1.39%	0.89%	0.92%
2021	-0.16%	0.33%	0.31%	0.14%	0.64%	0.61%	0.45%	0.95%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.28%	0.30%	1.08%	0.58%	0.61%	1.39%	0.88%	0.91%
2025	-0.17%	0.33%	0.30%	0.13%	0.63%	0.60%	0.43%	0.93%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.27%	0.29%	1.06%	0.56%	0.59%	1.35%	0.85%	0.88%
2029	-0.18%	0.32%	0.29%	0.11%	0.61%	0.58%	0.40%	0.90%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.75%	0.26%	0.28%	1.04%	0.54%	0.57%	1.32%	0.82%	0.85%
2033	-0.19%	0.31%	0.28%	0.09%	0.59%	0.56%	0.37%	0.87%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,241,963	2,645,060	4,887,023	2,248,679	2,652,983	4,901,661	2,255,394	2,660,906	4,916,300
2016	2,259,963	2,664,527	4,924,490	2,273,553	2,680,549	4,954,102	2,287,184	2,696,620	4,983,803
2017	2,255,573	2,661,117	4,916,690	2,276,022	2,685,242	4,961,264	2,296,594	2,709,513	5,006,107
2018	2,262,467	2,669,250	4,931,717	2,289,934	2,701,655	4,991,590	2,317,651	2,734,355	5,052,006
2019	2,269,423	2,677,457	4,946,880	2,304,016	2,718,269	5,022,285	2,339,029	2,759,577	5,098,606
2020	2,287,731	2,697,264	4,984,995	2,329,678	2,746,721	5,076,399	2,372,265	2,796,931	5,169,196
2021	2,283,342	2,693,878	4,977,220	2,332,320	2,751,663	5,083,983	2,382,197	2,810,507	5,192,703
2022	2,290,332	2,702,125	4,992,456	2,346,600	2,768,510	5,115,110	2,404,074	2,836,318	5,240,392
2023	2,297,286	2,710,330	5,007,616	2,360,851	2,785,323	5,146,175	2,425,975	2,862,156	5,288,130
2024	2,315,773	2,730,327	5,046,100	2,387,053	2,814,367	5,201,421	2,460,302	2,900,728	5,361,031
2025	2,311,174	2,726,715	5,037,889	2,389,439	2,819,051	5,208,489	2,470,105	2,914,220	5,384,325
2026	2,318,067	2,734,846	5,052,913	2,403,690	2,835,864	5,239,554	2,492,204	2,940,292	5,432,496
2027	2,324,938	2,742,954	5,067,892	2,417,941	2,852,678	5,270,619	2,514,368	2,966,441	5,480,809
2028	2,343,412	2,762,913	5,106,325	2,444,286	2,881,846	5,326,132	2,549,181	3,005,518	5,554,698
2029	2,338,513	2,758,969	5,097,482	2,446,218	2,886,038	5,332,256	2,558,538	3,018,553	5,577,091
2030	2,345,217	2,766,878	5,112,095	2,460,243	2,902,585	5,362,828	2,580,541	3,044,513	5,625,054
2031	2,351,915	2,774,780	5,126,695	2,474,296	2,919,165	5,393,461	2,602,652	3,070,599	5,673,251
2032	2,370,364	2,794,690	5,165,054	2,500,752	2,948,420	5,449,172	2,637,894	3,110,111	5,748,005
2033	2,365,214	2,790,471	5,155,685	2,502,318	2,952,225	5,454,543	2,646,927	3,122,835	5,769,762
2034	2,371,816	2,798,259	5,170,075	2,516,286	2,968,705	5,484,991	2,669,091	3,148,983	5,818,074

Annual Change

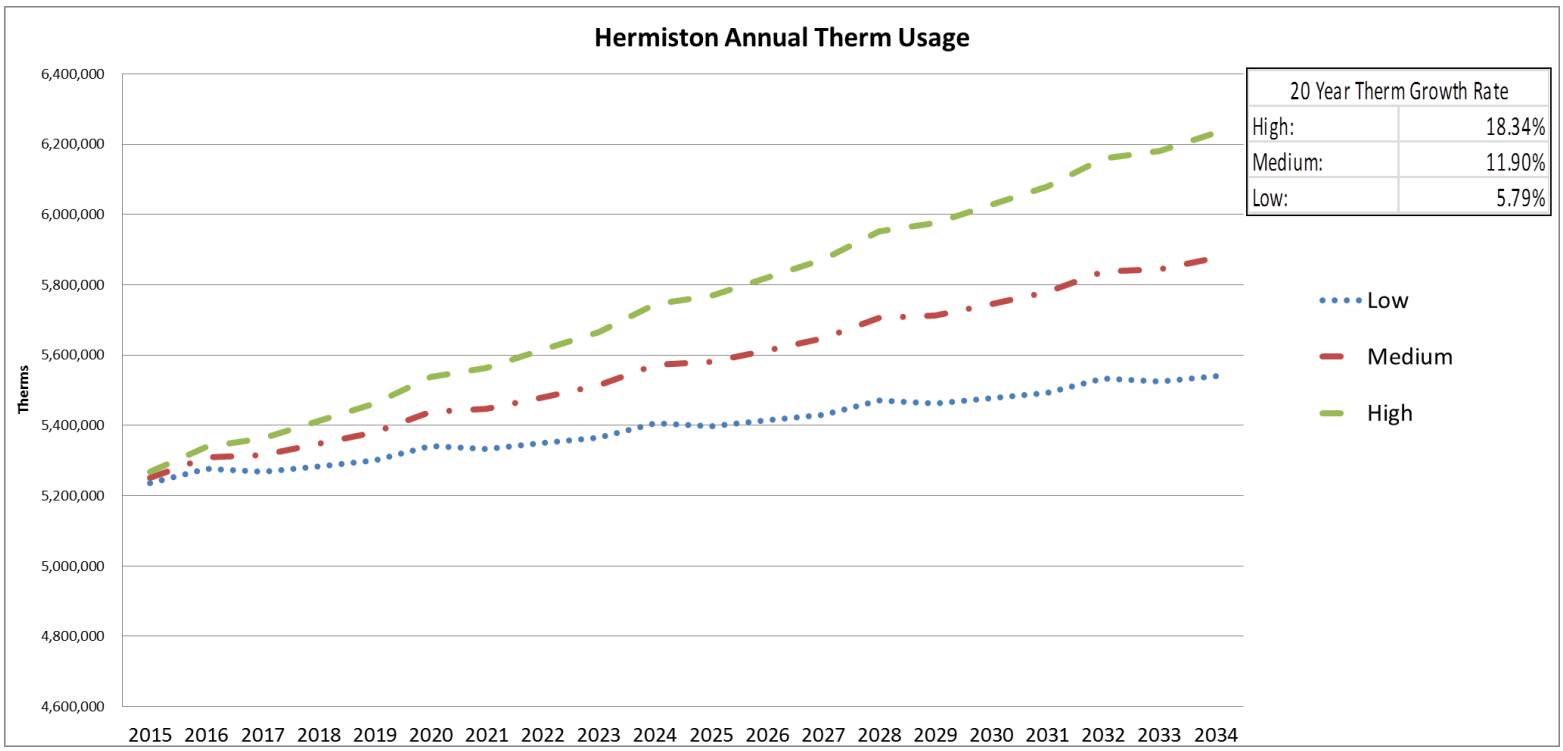
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.74%	0.77%	1.11%	1.04%	1.07%	1.41%	1.34%	1.37%
2017	-0.19%	-0.13%	-0.16%	0.11%	0.18%	0.14%	0.41%	0.48%	0.45%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.74%	0.77%	1.11%	1.05%	1.08%	1.42%	1.35%	1.38%
2021	-0.19%	-0.13%	-0.16%	0.11%	0.18%	0.15%	0.42%	0.49%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.74%	0.77%	1.11%	1.04%	1.07%	1.41%	1.35%	1.38%
2025	-0.20%	-0.13%	-0.16%	0.10%	0.17%	0.14%	0.40%	0.47%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.73%	0.76%	1.09%	1.02%	1.05%	1.38%	1.32%	1.35%
2029	-0.21%	-0.14%	-0.17%	0.08%	0.15%	0.11%	0.37%	0.43%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.72%	0.75%	1.07%	1.00%	1.03%	1.35%	1.29%	1.32%
2033	-0.22%	-0.15%	-0.18%	0.06%	0.13%	0.10%	0.34%	0.41%	0.38%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

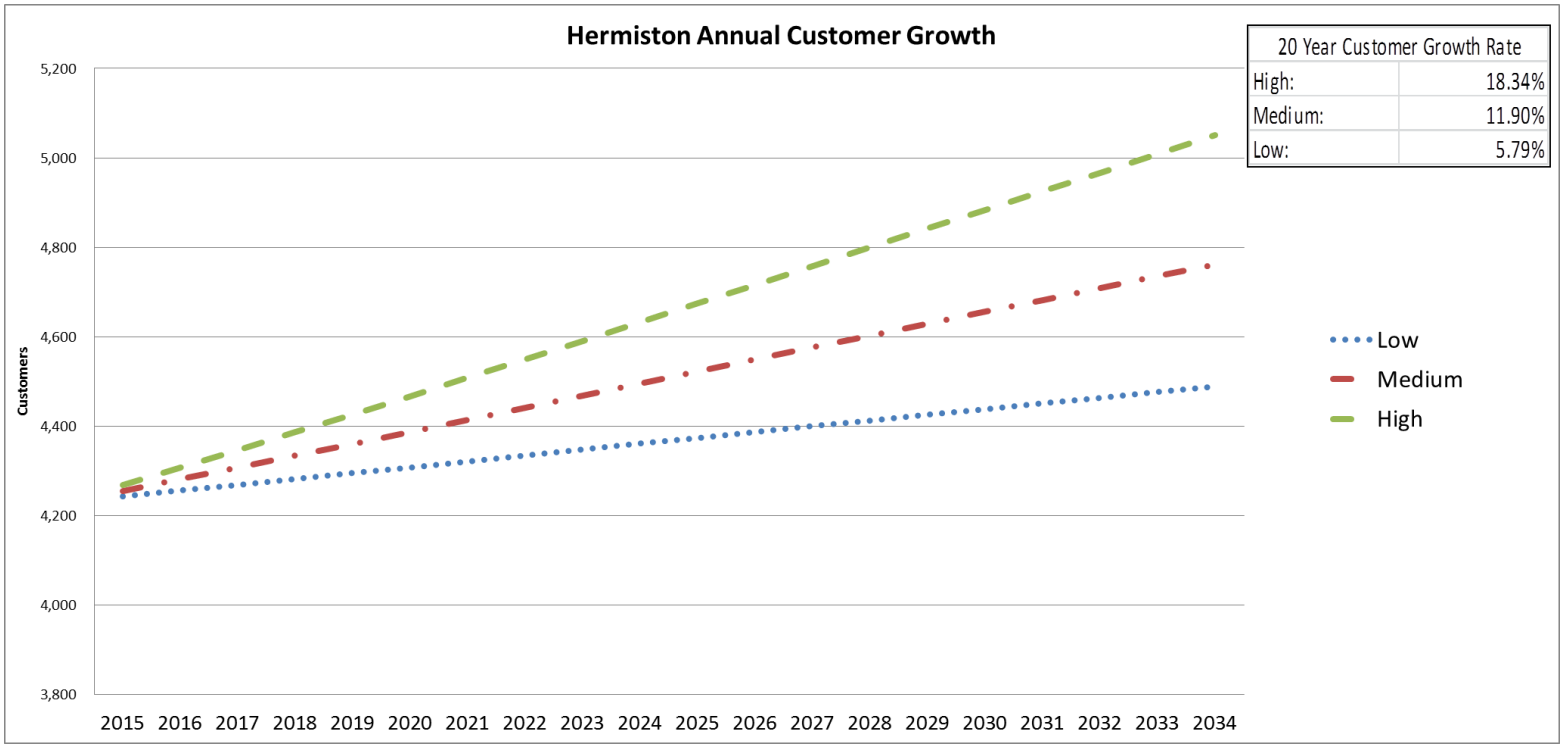
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,541	702	4,243	3,551	704	4,255	3,562	706	4,268
2016	3,551	704	4,255	3,573	708	4,281	3,594	712	4,307
2017	3,562	706	4,268	3,595	712	4,307	3,627	719	4,346
2018	3,573	708	4,281	3,617	717	4,333	3,660	725	4,386
2019	3,584	710	4,295	3,639	721	4,360	3,694	732	4,426
2020	3,595	713	4,308	3,661	726	4,387	3,728	739	4,467
2021	3,606	715	4,321	3,683	730	4,414	3,762	746	4,508
2022	3,617	717	4,334	3,706	735	4,441	3,797	753	4,549
2023	3,628	719	4,347	3,729	739	4,468	3,831	759	4,591
2024	3,639	721	4,360	3,751	743	4,495	3,866	766	4,633
2025	3,650	723	4,374	3,774	748	4,522	3,901	773	4,674
2026	3,661	726	4,387	3,796	752	4,549	3,936	780	4,716
2027	3,672	728	4,400	3,819	757	4,576	3,971	787	4,758
2028	3,683	730	4,412	3,841	761	4,602	4,006	794	4,800
2029	3,693	732	4,425	3,863	766	4,629	4,041	801	4,842
2030	3,704	734	4,438	3,886	770	4,656	4,075	808	4,883
2031	3,714	736	4,451	3,908	774	4,682	4,110	815	4,925
2032	3,725	738	4,463	3,930	779	4,709	4,145	822	4,967
2033	3,735	740	4,476	3,952	783	4,735	4,180	829	5,009
2034	3,746	742	4,488	3,974	788	4,762	4,215	835	5,051

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Hermiston Annual Therm Usage
Therms
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
5,200,000
5,000,000
4,800,000
4,600,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Hermiston Annual Customer Growth
Customers
5,200
5,000
4,800
4,600
4,400
4,200
4,000
3,800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Huntington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	93,619	(17,453)	76,165	93,664	(17,453)	76,210	93,709	(17,453)	76,255
2016	94,204	(17,562)	76,641	94,308	(17,573)	76,734	94,412	(17,584)	76,827
2017	93,735	(17,475)	76,260	93,897	(17,497)	76,400	94,059	(17,518)	76,540
2018	93,802	(17,487)	76,315	94,031	(17,522)	76,509	94,260	(17,556)	76,704
2019	93,869	(17,500)	76,369	94,165	(17,547)	76,618	94,462	(17,593)	76,868
2020	94,464	(17,611)	76,853	94,829	(17,670)	77,159	95,196	(17,730)	77,466
2021	94,005	(17,525)	76,480	94,439	(17,598)	76,841	94,874	(17,670)	77,204
2022	94,075	(17,538)	76,537	94,579	(17,624)	76,955	95,085	(17,710)	77,375
2023	94,145	(17,551)	76,593	94,719	(17,650)	77,069	95,296	(17,749)	77,547
2024	94,747	(17,664)	77,083	95,398	(17,776)	77,621	96,053	(17,890)	78,163
2025	94,286	(17,578)	76,709	95,004	(17,703)	77,301	95,727	(17,829)	77,898
2026	94,356	(17,591)	76,765	95,144	(17,729)	77,415	95,938	(17,869)	78,070
2027	94,425	(17,604)	76,822	95,284	(17,755)	77,529	96,150	(17,908)	78,242
2028	95,023	(17,715)	77,308	95,955	(17,880)	78,075	96,895	(18,047)	78,848
2029	94,558	(17,628)	76,930	95,552	(17,805)	77,747	96,556	(17,984)	78,572
2030	94,621	(17,640)	76,981	95,680	(17,829)	77,851	96,750	(18,020)	78,731
2031	94,685	(17,652)	77,033	95,809	(17,853)	77,956	96,945	(18,056)	78,889
2032	95,281	(17,763)	77,518	96,476	(17,977)	78,499	97,686	(18,194)	79,492
2033	94,812	(17,676)	77,136	96,065	(17,901)	78,164	97,334	(18,129)	79,206
2034	94,875	(17,687)	77,187	96,193	(17,925)	78,269	97,529	(18,165)	79,364

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	0.69%	0.69%	0.69%	0.75%	0.75%	0.75%
2017	-0.50%	-0.50%	-0.50%	-0.44%	-0.44%	-0.44%	-0.37%	-0.37%	-0.37%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.63%	0.63%	0.63%	0.71%	0.71%	0.71%	0.78%	0.78%	0.78%
2021	-0.49%	-0.49%	-0.49%	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.64%	0.64%	0.72%	0.72%	0.72%	0.79%	0.79%	0.79%
2025	-0.49%	-0.49%	-0.49%	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%	0.77%	0.77%	0.77%
2029	-0.49%	-0.49%	-0.49%	-0.42%	-0.42%	-0.42%	-0.35%	-0.35%	-0.35%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%	0.76%	0.76%	0.76%
2033	-0.49%	-0.49%	-0.49%	-0.43%	-0.43%	-0.43%	-0.36%	-0.36%	-0.36%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	(48)	1,276	1,228	(48)	1,277	1,229	(48)	1,278	1,230
2016	(48)	1,277	1,229	(48)	1,279	1,230	(48)	1,280	1,232
2017	(48)	1,278	1,230	(48)	1,280	1,232	(48)	1,282	1,234
2018	(48)	1,279	1,231	(48)	1,282	1,234	(48)	1,285	1,237
2019	(48)	1,279	1,232	(48)	1,284	1,236	(48)	1,288	1,240
2020	(48)	1,281	1,232	(48)	1,286	1,237	(49)	1,291	1,242
2021	(48)	1,281	1,233	(48)	1,287	1,239	(48)	1,293	1,245
2022	(48)	1,282	1,234	(48)	1,289	1,241	(49)	1,296	1,248
2023	(48)	1,283	1,235	(48)	1,291	1,243	(49)	1,299	1,251
2024	(48)	1,284	1,236	(49)	1,293	1,245	(49)	1,302	1,253
2025	(48)	1,285	1,237	(49)	1,295	1,247	(49)	1,305	1,256
2026	(48)	1,286	1,238	(49)	1,297	1,248	(49)	1,308	1,259
2027	(48)	1,287	1,239	(49)	1,299	1,250	(49)	1,311	1,262
2028	(49)	1,288	1,240	(49)	1,301	1,252	(49)	1,314	1,264
2029	(48)	1,289	1,241	(49)	1,303	1,254	(49)	1,316	1,267
2030	(48)	1,290	1,241	(49)	1,304	1,255	(49)	1,319	1,270
2031	(48)	1,291	1,242	(49)	1,306	1,257	(49)	1,322	1,272
2032	(49)	1,292	1,243	(49)	1,308	1,259	(50)	1,325	1,275
2033	(48)	1,292	1,244	(49)	1,310	1,260	(50)	1,327	1,277
2034	(48)	1,293	1,245	(49)	1,311	1,262	(50)	1,330	1,280

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.08%	0.06%	0.69%	0.15%	0.12%	0.75%	0.21%	0.19%
2017	-0.50%	0.04%	0.06%	-0.44%	0.10%	0.12%	-0.37%	0.17%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.63%	0.09%	0.07%	0.71%	0.16%	0.14%	0.78%	0.23%	0.21%
2021	-0.49%	0.05%	0.07%	-0.41%	0.13%	0.15%	-0.34%	0.20%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.10%	0.08%	0.72%	0.17%	0.15%	0.79%	0.25%	0.23%
2025	-0.49%	0.05%	0.07%	-0.41%	0.13%	0.15%	-0.34%	0.20%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.63%	0.09%	0.07%	0.70%	0.16%	0.14%	0.77%	0.23%	0.21%
2029	-0.49%	0.05%	0.07%	-0.42%	0.12%	0.14%	-0.35%	0.19%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.09%	0.07%	0.70%	0.15%	0.13%	0.76%	0.22%	0.20%
2033	-0.49%	0.05%	0.07%	-0.43%	0.11%	0.13%	-0.36%	0.18%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	49,107	27,059	76,165	49,136	27,075	76,210	49,165	27,091	76,255
2016	49,416	27,225	76,641	49,476	27,258	76,734	49,536	27,292	76,827
2017	49,168	27,092	76,260	49,258	27,142	76,400	49,349	27,192	76,540
2018	49,203	27,112	76,315	49,329	27,181	76,509	49,454	27,250	76,704
2019	49,238	27,131	76,369	49,399	27,219	76,618	49,560	27,308	76,868
2020	49,552	27,301	76,853	49,750	27,409	77,159	49,947	27,518	77,466
2021	49,310	27,170	76,480	49,543	27,299	76,841	49,776	27,427	77,204
2022	49,346	27,190	76,537	49,616	27,339	76,955	49,887	27,488	77,375
2023	49,383	27,211	76,593	49,689	27,380	77,069	49,998	27,549	77,547
2024	49,701	27,382	77,083	50,048	27,574	77,621	50,397	27,766	78,163
2025	49,457	27,252	76,709	49,839	27,462	77,301	50,224	27,674	77,898
2026	49,494	27,272	76,765	49,913	27,503	77,415	50,335	27,735	78,070
2027	49,530	27,292	76,822	49,986	27,543	77,529	50,446	27,796	78,242
2028	49,846	27,462	77,308	50,340	27,735	78,075	50,839	28,009	78,848
2029	49,600	27,330	76,930	50,127	27,620	77,747	50,659	27,914	78,572
2030	49,633	27,348	76,981	50,194	27,658	77,851	50,761	27,970	78,731
2031	49,666	27,367	77,033	50,261	27,695	77,956	50,863	28,026	78,889
2032	49,981	27,537	77,518	50,614	27,885	78,499	51,254	28,238	79,492
2033	49,733	27,403	77,136	50,396	27,769	78,164	51,067	28,139	79,206
2034	49,766	27,422	77,187	50,463	27,806	78,269	51,169	28,195	79,364

Annual Change

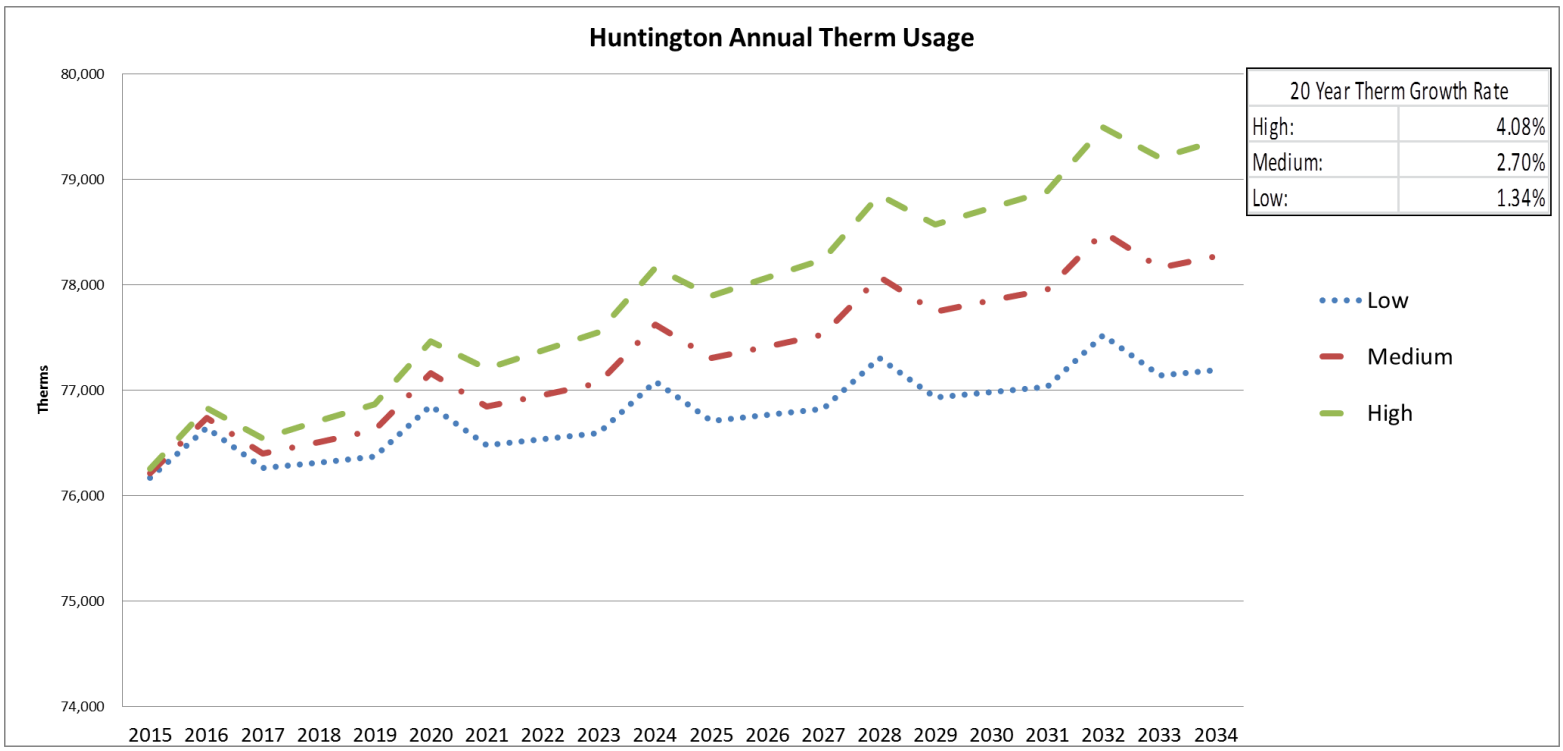
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.62%	0.62%	0.69%	0.68%	0.69%	0.75%	0.74%	0.75%
2017	-0.50%	-0.49%	-0.50%	-0.44%	-0.43%	-0.44%	-0.38%	-0.37%	-0.37%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.64%	0.63%	0.63%	0.71%	0.70%	0.71%	0.78%	0.77%	0.78%
2021	-0.49%	-0.48%	-0.49%	-0.42%	-0.40%	-0.41%	-0.34%	-0.33%	-0.34%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.63%	0.64%	0.72%	0.71%	0.72%	0.80%	0.79%	0.79%
2025	-0.49%	-0.48%	-0.49%	-0.42%	-0.40%	-0.41%	-0.34%	-0.33%	-0.34%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.64%	0.62%	0.63%	0.71%	0.70%	0.70%	0.78%	0.77%	0.77%
2029	-0.49%	-0.48%	-0.49%	-0.42%	-0.41%	-0.42%	-0.35%	-0.34%	-0.35%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.62%	0.63%	0.70%	0.69%	0.70%	0.77%	0.76%	0.76%
2033	-0.50%	-0.48%	-0.49%	-0.43%	-0.42%	-0.43%	-0.36%	-0.35%	-0.36%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

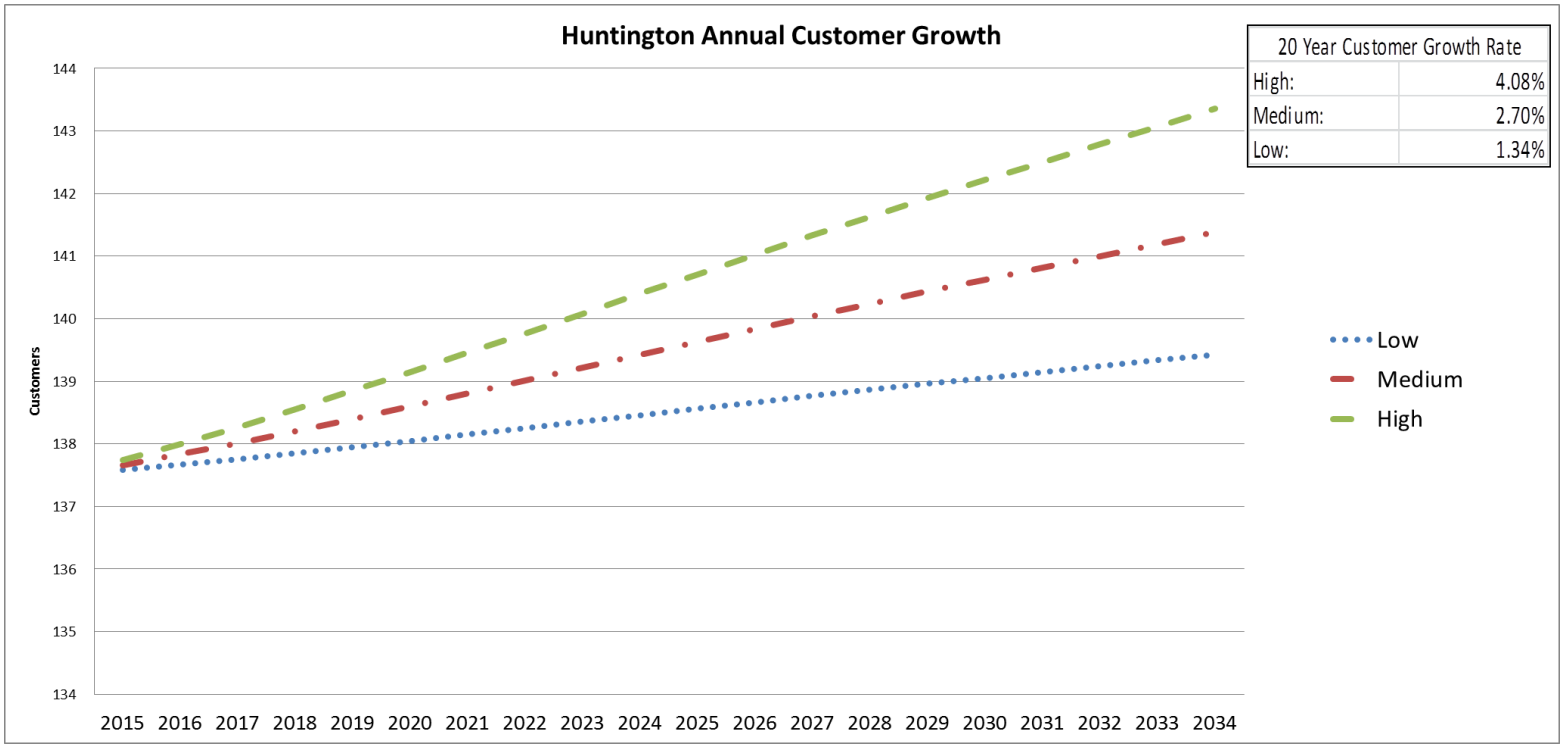
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	123	14	138	123	14	138	123	14	138
2016	123	14	138	124	14	138	124	14	138
2017	123	14	138	124	14	138	124	14	138
2018	124	14	138	124	14	138	124	14	139
2019	124	14	138	124	14	138	124	14	139
2020	124	14	138	124	14	139	125	14	139
2021	124	14	138	124	14	139	125	14	139
2022	124	14	138	125	14	139	125	14	140
2023	124	14	138	125	14	139	126	15	140
2024	124	14	138	125	14	139	126	15	140
2025	124	14	139	125	14	140	126	15	141
2026	124	14	139	125	14	140	126	15	141
2027	124	14	139	126	15	140	127	15	141
2028	124	14	139	126	15	140	127	15	142
2029	125	14	139	126	15	140	127	15	142
2030	125	14	139	126	15	141	127	15	142
2031	125	14	139	126	15	141	128	15	143
2032	125	14	139	126	15	141	128	15	143
2033	125	14	139	127	15	141	128	15	143
2034	125	14	139	127	15	141	129	15	143

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2017	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2021	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.08%	0.08%	0.08%	0.15%	0.15%	0.15%	0.23%	0.23%	0.23%
2025	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2029	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2033	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%


Huntington Annual Therm Usage
Therms
80,000
79,000
78,000
77,000
76,000
75,000
74,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High


Huntington Annual Customer Growth
Customers
144
143
142
141
140
139
138
137
136
135
134
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

La Pine

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	359,547	101,146	460,693	364,698	101,146	465,844	369,850	101,146	470,995
2016	365,143	102,720	467,863	374,434	103,846	478,280	383,841	104,972	488,812
2017	367,486	103,379	470,865	380,891	105,637	486,528	394,616	107,919	502,534
2018	371,411	104,483	475,894	389,028	107,893	496,921	407,260	111,377	518,637
2019	375,306	105,579	480,885	397,187	110,156	507,343	420,073	114,881	534,953
2020	380,845	107,137	487,982	407,151	112,920	520,071	434,950	118,949	553,899
2021	382,999	107,743	490,742	413,554	114,695	528,249	446,168	122,017	568,185
2022	386,799	108,812	495,611	421,760	116,971	538,731	459,448	125,649	585,097
2023	390,566	109,872	500,437	429,974	119,249	549,223	472,870	129,319	602,189
2024	396,052	111,415	507,467	440,148	122,071	562,218	488,606	133,623	622,229
2025	398,007	111,965	509,972	446,436	123,815	570,250	500,154	136,781	636,935
2026	401,682	112,999	514,680	454,679	126,101	580,780	514,007	140,569	654,576
2027	405,323	114,023	519,347	462,923	128,387	591,311	527,987	144,393	672,379
2028	410,746	115,549	526,294	473,258	131,254	604,512	544,499	148,908	693,407
2029	412,510	116,045	528,555	479,410	132,960	612,370	556,317	152,140	708,457
2030	416,055	117,042	533,097	487,650	135,245	622,895	570,659	156,062	726,721
2031	419,575	118,032	537,608	495,903	137,534	633,437	585,146	160,024	745,171
2032	424,940	119,542	544,482	506,388	140,442	646,830	602,408	164,745	767,153
2033	426,534	119,990	546,524	512,420	142,115	654,534	614,499	168,052	782,551
2034	429,975	120,958	550,933	520,688	144,408	665,096	629,372	172,119	801,492

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.56%	1.56%	2.67%	2.67%	2.67%	3.78%	3.78%	3.78%
2017	0.64%	0.64%	0.64%	1.72%	1.72%	1.72%	2.81%	2.81%	2.81%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.48%	1.48%	1.48%	2.51%	2.51%	2.51%	3.54%	3.54%	3.54%
2021	0.57%	0.57%	0.57%	1.57%	1.57%	1.57%	2.58%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	1.40%	1.40%	2.37%	2.37%	2.37%	3.33%	3.33%	3.33%
2025	0.49%	0.49%	0.49%	1.43%	1.43%	1.43%	2.36%	2.36%	2.36%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.13%	3.13%	3.13%
2029	0.43%	0.43%	0.43%	1.30%	1.30%	1.30%	2.17%	2.17%	2.17%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.28%	1.28%	1.28%	2.11%	2.11%	2.11%	2.95%	2.95%	2.95%
2033	0.37%	0.37%	0.37%	1.19%	1.19%	1.19%	2.01%	2.01%	2.01%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	277	5,199	5,476	277	5,260	5,537	277	5,322	5,599
2016	281	5,255	5,537	285	5,376	5,660	288	5,497	5,785
2017	283	5,314	5,597	289	5,494	5,783	296	5,678	5,974
2018	286	5,371	5,657	296	5,611	5,907	305	5,860	6,165
2019	289	5,427	5,716	302	5,729	6,031	315	6,044	6,359
2020	294	5,481	5,775	309	5,845	6,155	326	6,229	6,555
2021	295	5,538	5,833	314	5,965	6,279	334	6,420	6,754
2022	298	5,593	5,891	320	6,083	6,404	344	6,611	6,955
2023	301	5,648	5,949	327	6,202	6,529	354	6,804	7,158
2024	305	5,700	6,006	334	6,319	6,654	366	6,998	7,364
2025	307	5,755	6,062	339	6,439	6,778	375	7,196	7,571
2026	310	5,808	6,118	345	6,558	6,904	385	7,396	7,781
2027	312	5,861	6,173	352	6,677	7,029	396	7,597	7,992
2028	317	5,912	6,228	360	6,794	7,154	408	7,798	8,206
2029	318	5,965	6,283	364	6,915	7,279	417	8,004	8,421
2030	321	6,016	6,337	371	7,034	7,404	428	8,211	8,638
2031	323	6,067	6,390	377	7,153	7,530	438	8,419	8,858
2032	328	6,116	6,444	385	7,270	7,655	451	8,627	9,079
2033	329	6,168	6,496	389	7,391	7,780	460	8,842	9,302
2034	331	6,217	6,549	396	7,510	7,906	472	9,056	9,527

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.08%	1.11%	2.67%	2.19%	2.22%	3.78%	3.30%	3.33%
2017	0.64%	1.11%	1.09%	1.72%	2.20%	2.18%	2.81%	3.29%	3.26%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.48%	1.00%	1.03%	2.51%	2.03%	2.06%	3.54%	3.06%	3.08%
2021	0.57%	1.04%	1.01%	1.57%	2.05%	2.02%	2.58%	3.06%	3.03%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	0.93%	0.96%	2.37%	1.89%	1.91%	3.33%	2.85%	2.87%
2025	0.49%	0.96%	0.94%	1.43%	1.90%	1.88%	2.36%	2.84%	2.82%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.34%	0.87%	0.89%	2.23%	1.76%	1.78%	3.13%	2.65%	2.67%
2029	0.43%	0.90%	0.87%	1.30%	1.77%	1.75%	2.17%	2.65%	2.62%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.28%	0.81%	0.83%	2.11%	1.64%	1.66%	2.95%	2.47%	2.50%
2033	0.37%	0.84%	0.82%	1.19%	1.66%	1.64%	2.01%	2.48%	2.46%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	124,922	335,771	460,693	126,319	339,525	465,844	127,716	343,280	470,995
2016	126,854	341,008	467,863	129,679	348,601	478,280	132,535	356,278	488,812
2017	127,680	343,184	470,865	131,928	354,600	486,528	136,268	366,266	502,534
2018	129,044	346,850	475,894	134,746	362,175	496,921	140,634	378,002	518,637
2019	130,397	350,487	480,885	137,572	369,771	507,343	145,059	389,894	534,953
2020	132,310	355,672	487,982	141,010	379,061	520,071	150,182	403,717	553,899
2021	133,070	357,672	490,742	143,241	385,008	528,249	154,070	414,115	568,185
2022	134,391	361,221	495,611	146,083	392,648	538,731	158,656	426,441	585,097
2023	135,699	364,738	500,437	148,928	400,295	549,223	163,291	438,899	602,189
2024	137,593	369,874	507,467	152,438	409,781	562,218	168,709	453,520	622,229
2025	138,285	371,687	509,972	154,630	415,621	570,250	172,712	464,223	636,935
2026	139,561	375,119	514,680	157,485	423,295	580,780	177,496	477,080	654,576
2027	140,827	378,520	519,347	160,341	430,970	591,311	182,323	490,056	672,379
2028	142,697	383,597	526,294	163,905	440,607	604,512	188,008	505,399	693,407
2029	143,324	385,231	528,555	166,051	446,319	612,370	192,106	516,351	708,457
2030	144,555	388,541	533,097	168,905	453,990	622,895	197,059	529,663	726,721
2031	145,779	391,829	537,608	171,764	461,674	633,437	202,062	543,109	745,171
2032	147,629	396,853	544,482	175,379	471,451	646,830	208,003	559,150	767,153
2033	148,196	398,328	546,524	177,484	477,050	654,534	212,198	570,353	782,551
2034	149,392	401,541	550,933	180,348	484,748	665,096	217,334	584,158	801,492

Annual Change

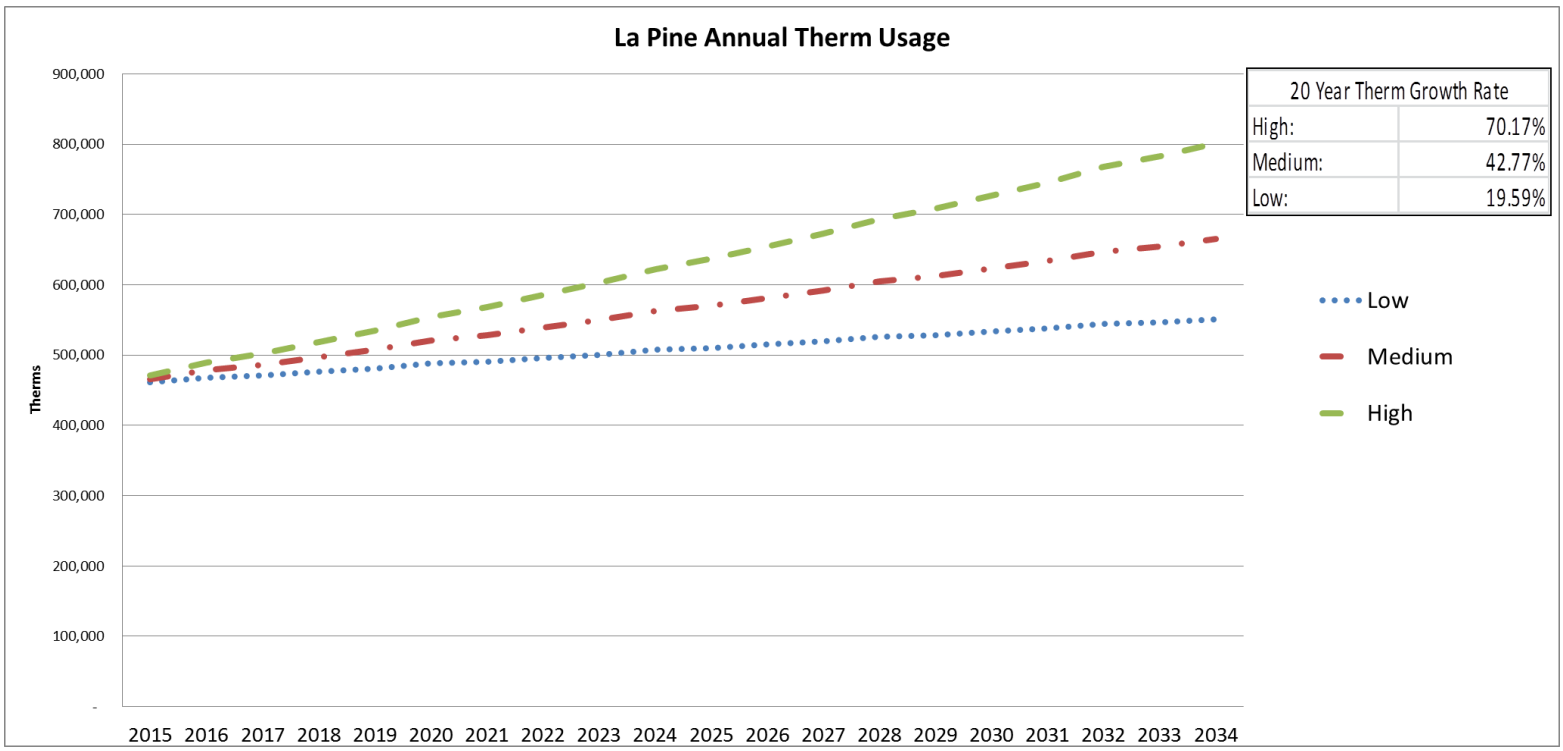
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.55%	1.56%	1.56%	2.66%	2.67%	2.67%	3.77%	3.79%	3.78%
2017	0.65%	0.64%	0.64%	1.73%	1.72%	1.72%	2.82%	2.80%	2.81%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.47%	1.48%	1.48%	2.50%	2.51%	2.51%	3.53%	3.55%	3.54%
2021	0.58%	0.56%	0.57%	1.58%	1.57%	1.57%	2.59%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	1.41%	1.40%	2.36%	2.37%	2.37%	3.32%	3.33%	3.33%
2025	0.50%	0.49%	0.49%	1.44%	1.43%	1.43%	2.37%	2.36%	2.36%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.33%	1.34%	1.34%	2.22%	2.24%	2.23%	3.12%	3.13%	3.13%
2029	0.44%	0.43%	0.43%	1.31%	1.30%	1.30%	2.18%	2.17%	2.17%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.27%	1.28%	1.28%	2.10%	2.12%	2.11%	2.94%	2.95%	2.95%
2033	0.38%	0.37%	0.37%	1.20%	1.19%	1.19%	2.02%	2.00%	2.01%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

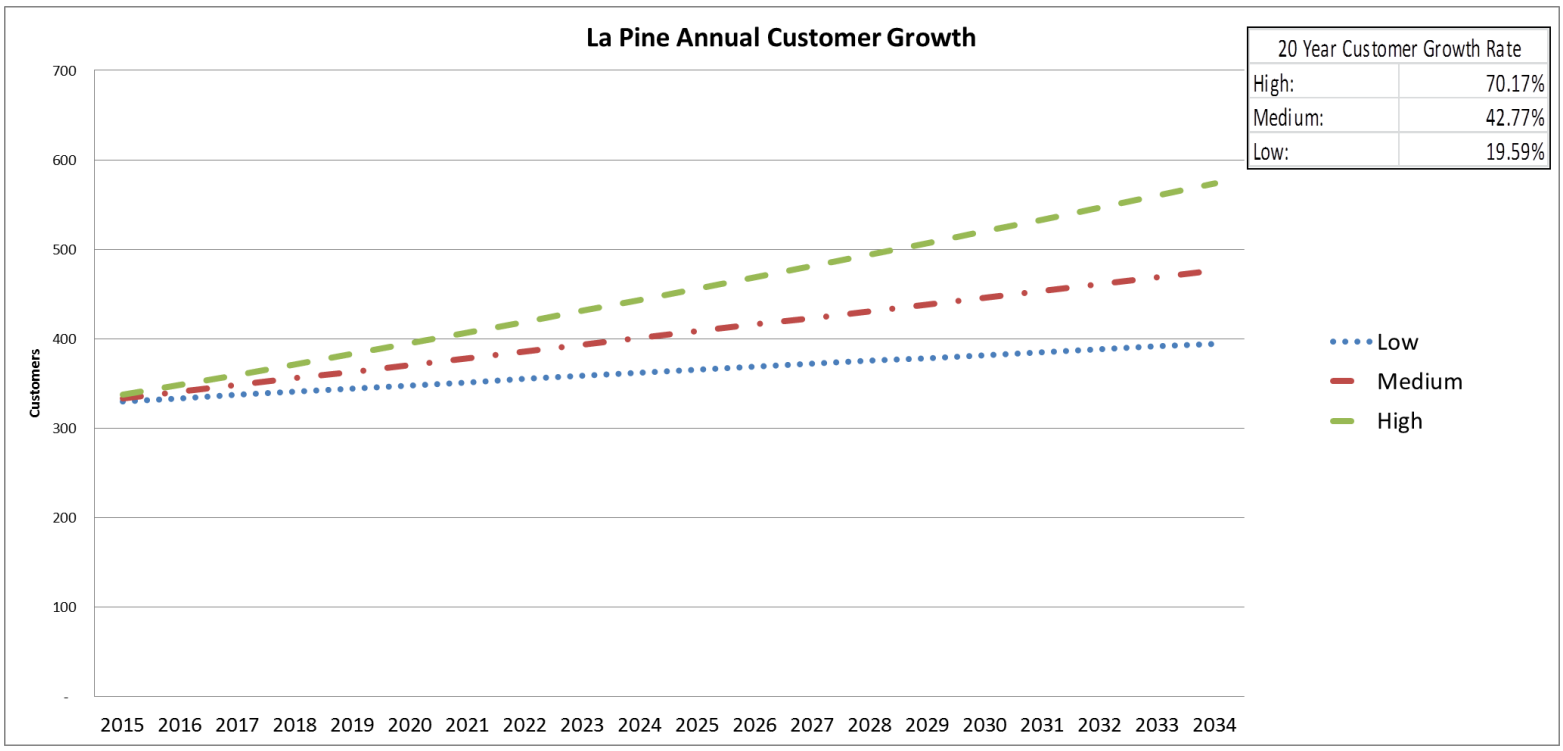
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	203	127	330	205	128	333	208	129	337
2016	205	128	333	210	131	341	215	134	348
2017	208	129	337	215	134	348	222	138	360
2018	210	131	341	219	137	356	229	143	371
2019	212	132	344	224	139	363	236	147	383
2020	214	133	348	228	142	371	243	152	395
2021	216	135	351	233	145	378	251	156	407
2022	219	136	355	238	148	386	258	161	419
2023	221	138	358	242	151	393	266	165	431
2024	223	139	362	247	154	401	273	170	443
2025	225	140	365	252	157	408	281	175	456
2026	227	141	368	256	160	416	289	180	469
2027	229	143	372	261	162	423	297	185	481
2028	231	144	375	265	165	431	304	190	494
2029	233	145	378	270	168	438	312	195	507
2030	235	146	382	275	171	446	321	200	520
2031	237	148	385	279	174	453	329	205	533
2032	239	149	388	284	177	461	337	210	547
2033	241	150	391	289	180	469	345	215	560
2034	243	151	394	293	183	476	353	220	574

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.11%	1.11%	1.11%	2.22%	2.22%	2.22%	3.33%	3.33%	3.33%
2017	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.08%	3.08%	3.08%
2021	1.01%	1.01%	1.01%	2.02%	2.02%	2.02%	3.03%	3.03%	3.03%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	0.96%	0.96%	0.96%	1.91%	1.91%	1.91%	2.87%	2.87%	2.87%
2025	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.67%	2.67%	2.67%
2029	0.87%	0.87%	0.87%	1.75%	1.75%	1.75%	2.62%	2.62%	2.62%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2033	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%


La Pine Annual Therm Usage
Therms
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 70.17%
Medium: 42.77%
Low: 19.59%
Low
Medium
High


La Pine Annual Customer Growth
Customers
700
600
500
400
300
200
100
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 70.17%
Medium: 42.77%
Low: 19.59%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Madras

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,303,939	439,173	2,743,112	2,309,715	439,173	2,748,888	2,315,491	439,173	2,754,665
2016	2,319,698	442,177	2,761,876	2,330,627	443,149	2,773,777	2,341,582	444,122	2,785,704
2017	2,314,227	441,134	2,755,361	2,330,366	443,100	2,773,465	2,346,579	445,070	2,791,649
2018	2,319,613	442,161	2,761,774	2,341,214	445,162	2,786,376	2,362,965	448,177	2,811,142
2019	2,325,131	443,213	2,768,344	2,352,352	447,280	2,799,632	2,379,827	451,376	2,831,203
2020	2,341,514	446,336	2,787,849	2,374,618	451,514	2,826,132	2,408,111	456,740	2,864,852
2021	2,336,459	445,372	2,781,831	2,375,302	451,644	2,826,945	2,414,696	457,989	2,872,685
2022	2,342,272	446,480	2,788,753	2,387,121	453,891	2,841,012	2,432,719	461,407	2,894,126
2023	2,348,118	447,595	2,795,712	2,399,036	456,157	2,855,193	2,450,933	464,862	2,915,795
2024	2,364,982	450,809	2,815,791	2,422,396	460,599	2,882,995	2,481,062	470,577	2,951,639
2025	2,360,053	449,869	2,809,922	2,423,454	460,800	2,884,253	2,488,399	471,968	2,960,367
2026	2,366,046	451,012	2,817,058	2,435,763	463,140	2,898,903	2,507,358	475,564	2,982,922
2027	2,372,075	452,161	2,824,236	2,448,176	465,500	2,913,676	2,526,524	479,199	3,005,723
2028	2,389,141	455,414	2,844,555	2,472,076	470,045	2,942,121	2,557,677	485,108	3,042,785
2029	2,384,186	454,470	2,838,655	2,473,206	470,260	2,943,466	2,565,320	486,558	3,051,878
2030	2,390,268	455,629	2,845,897	2,485,824	472,659	2,958,483	2,584,952	490,281	3,075,234
2031	2,396,336	456,786	2,853,122	2,498,447	475,059	2,973,506	2,604,641	494,015	3,098,657
2032	2,413,550	460,067	2,873,617	2,522,782	479,686	3,002,468	2,636,671	500,090	3,136,761
2033	2,408,567	459,117	2,867,684	2,523,983	479,914	3,003,897	2,644,624	501,599	3,146,223
2034	2,414,732	460,292	2,875,024	2,536,903	482,371	3,019,274	2,664,931	505,450	3,170,381

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.68%	0.68%	0.68%	0.91%	0.91%	0.91%	1.13%	1.13%	1.13%
2017	-0.24%	-0.24%	-0.24%	-0.01%	-0.01%	-0.01%	0.21%	0.21%	0.21%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.70%	0.70%	0.70%	0.95%	0.95%	0.95%	1.19%	1.19%	1.19%
2021	-0.22%	-0.22%	-0.22%	0.03%	0.03%	0.03%	0.27%	0.27%	0.27%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.72%	0.72%	0.72%	0.97%	0.97%	0.97%	1.23%	1.23%	1.23%
2025	-0.21%	-0.21%	-0.21%	0.04%	0.04%	0.04%	0.30%	0.30%	0.30%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.72%	0.72%	0.72%	0.98%	0.98%	0.98%	1.23%	1.23%	1.23%
2029	-0.21%	-0.21%	-0.21%	0.05%	0.05%	0.05%	0.30%	0.30%	0.30%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.72%	0.72%	0.72%	0.97%	0.97%	0.97%	1.23%	1.23%	1.23%
2033	-0.21%	-0.21%	-0.21%	0.05%	0.05%	0.05%	0.30%	0.30%	0.30%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,203	34,514	35,717	1,203	34,589	35,792	1,203	34,664	35,868
2016	1,211	34,584	35,796	1,214	34,736	35,950	1,217	34,888	36,105
2017	1,209	34,668	35,877	1,214	34,898	36,112	1,219	35,130	36,349
2018	1,211	34,749	35,960	1,220	35,061	36,281	1,228	35,375	36,603
2019	1,214	34,831	36,046	1,225	35,228	36,453	1,237	35,628	36,864
2020	1,223	34,910	36,133	1,237	35,392	36,629	1,251	35,879	37,131
2021	1,220	35,001	36,221	1,237	35,571	36,809	1,255	36,150	37,404
2022	1,223	35,088	36,311	1,244	35,748	36,992	1,264	36,419	37,684
2023	1,226	35,176	36,402	1,250	35,927	37,177	1,274	36,692	37,966
2024	1,235	35,260	36,495	1,262	36,104	37,366	1,289	36,966	38,255
2025	1,233	35,355	36,587	1,262	36,293	37,555	1,293	37,253	38,546
2026	1,236	35,444	36,680	1,269	36,477	37,746	1,303	37,537	38,840
2027	1,239	35,535	36,774	1,275	36,663	37,938	1,313	37,824	39,137
2028	1,248	35,620	36,868	1,288	36,844	38,132	1,329	38,108	39,437
2029	1,245	35,716	36,961	1,288	37,038	38,326	1,333	38,405	39,738
2030	1,248	35,807	37,056	1,295	37,227	38,522	1,343	38,698	40,042
2031	1,251	35,898	37,150	1,302	37,416	38,717	1,353	38,993	40,347
2032	1,260	35,984	37,244	1,314	37,600	38,914	1,370	39,285	40,655
2033	1,258	36,081	37,339	1,315	37,798	39,113	1,374	39,592	40,966
2034	1,261	36,174	37,435	1,322	37,991	39,313	1,385	39,896	41,281

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.68%	0.20%	0.22%	0.91%	0.42%	0.44%	1.13%	0.64%	0.66%
2017	-0.24%	0.24%	0.23%	-0.01%	0.47%	0.45%	0.21%	0.69%	0.68%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.70%	0.22%	0.24%	0.95%	0.47%	0.48%	1.19%	0.71%	0.72%
2021	-0.22%	0.26%	0.25%	0.03%	0.51%	0.49%	0.27%	0.75%	0.74%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.72%	0.24%	0.25%	0.97%	0.49%	0.51%	1.23%	0.75%	0.76%
2025	-0.21%	0.27%	0.25%	0.04%	0.52%	0.51%	0.30%	0.78%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.72%	0.24%	0.26%	0.98%	0.50%	0.51%	1.23%	0.75%	0.77%
2029	-0.21%	0.27%	0.25%	0.05%	0.52%	0.51%	0.30%	0.78%	0.76%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.72%	0.24%	0.25%	0.97%	0.49%	0.51%	1.23%	0.75%	0.76%
2033	-0.21%	0.27%	0.26%	0.05%	0.53%	0.51%	0.30%	0.78%	0.77%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	621,567	1,802,804	2,424,371	622,875	1,806,601	2,429,476	624,184	1,810,397	2,434,581
2016	625,993	1,815,223	2,441,217	628,691	1,823,045	2,451,736	631,394	1,830,884	2,462,278
2017	624,342	1,810,855	2,435,197	628,444	1,822,753	2,451,197	632,565	1,834,703	2,467,268
2018	625,795	1,815,069	2,440,865	631,370	1,831,238	2,462,608	636,982	1,847,514	2,484,496
2019	627,284	1,819,387	2,446,671	634,374	1,839,950	2,474,324	641,527	1,860,699	2,502,226
2020	631,881	1,832,294	2,464,175	640,557	1,857,455	2,498,013	649,333	1,882,903	2,532,237
2021	630,340	1,828,251	2,458,591	640,563	1,857,901	2,498,463	650,927	1,887,961	2,538,888
2022	631,908	1,832,800	2,464,708	643,750	1,867,145	2,510,895	655,785	1,902,053	2,557,838
2023	633,485	1,837,374	2,470,859	646,963	1,876,465	2,523,428	660,695	1,916,293	2,576,989
2024	638,214	1,850,659	2,488,872	653,446	1,894,828	2,548,274	669,004	1,939,944	2,608,948
2025	636,705	1,846,713	2,483,418	653,548	1,895,564	2,549,112	670,795	1,945,587	2,616,382
2026	638,322	1,851,403	2,489,725	656,868	1,905,192	2,562,060	675,906	1,960,410	2,636,316
2027	639,949	1,856,120	2,496,069	660,215	1,914,901	2,575,116	681,072	1,975,395	2,656,468
2028	644,733	1,869,563	2,514,297	666,847	1,933,688	2,600,535	689,663	1,999,849	2,689,512
2029	643,216	1,865,596	2,508,812	666,965	1,934,479	2,601,444	691,530	2,005,729	2,697,259
2030	644,857	1,870,355	2,515,212	670,368	1,944,348	2,614,716	696,823	2,021,078	2,717,901
2031	646,494	1,875,104	2,521,598	673,772	1,954,222	2,627,993	702,130	2,036,472	2,738,603
2032	651,320	1,888,664	2,539,984	680,525	1,973,351	2,653,876	710,963	2,061,614	2,772,577
2033	649,794	1,884,675	2,534,468	680,658	1,974,195	2,654,854	712,908	2,067,734	2,780,642
2034	651,457	1,889,498	2,540,955	684,143	1,984,301	2,668,444	718,382	2,083,611	2,801,993

Annual Change

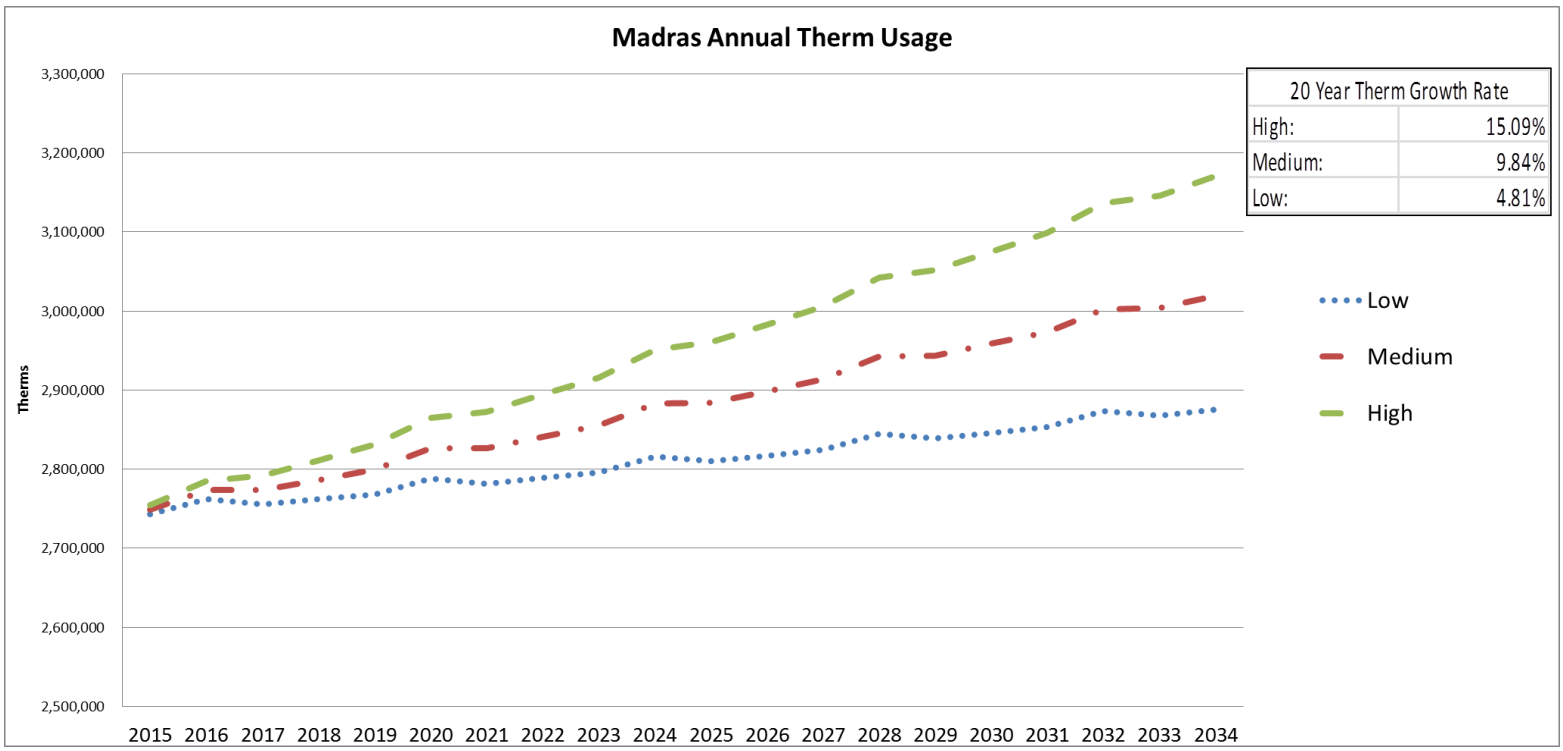
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.69%	0.69%	0.93%	0.91%	0.92%	1.16%	1.13%	1.14%
2017	-0.26%	-0.24%	-0.25%	-0.04%	-0.02%	-0.02%	0.19%	0.21%	0.20%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.73%	0.71%	0.72%	0.97%	0.95%	0.96%	1.22%	1.19%	1.20%
2021	-0.24%	-0.22%	-0.23%	0.00%	0.02%	0.02%	0.25%	0.27%	0.26%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.75%	0.72%	0.73%	1.00%	0.98%	0.98%	1.26%	1.23%	1.24%
2025	-0.24%	-0.21%	-0.22%	0.02%	0.04%	0.03%	0.27%	0.29%	0.28%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.75%	0.72%	0.73%	1.00%	0.98%	0.99%	1.26%	1.24%	1.24%
2029	-0.24%	-0.21%	-0.22%	0.02%	0.04%	0.03%	0.27%	0.29%	0.29%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.75%	0.72%	0.73%	1.00%	0.98%	0.98%	1.26%	1.23%	1.24%
2033	-0.23%	-0.21%	-0.22%	0.02%	0.04%	0.04%	0.27%	0.30%	0.29%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

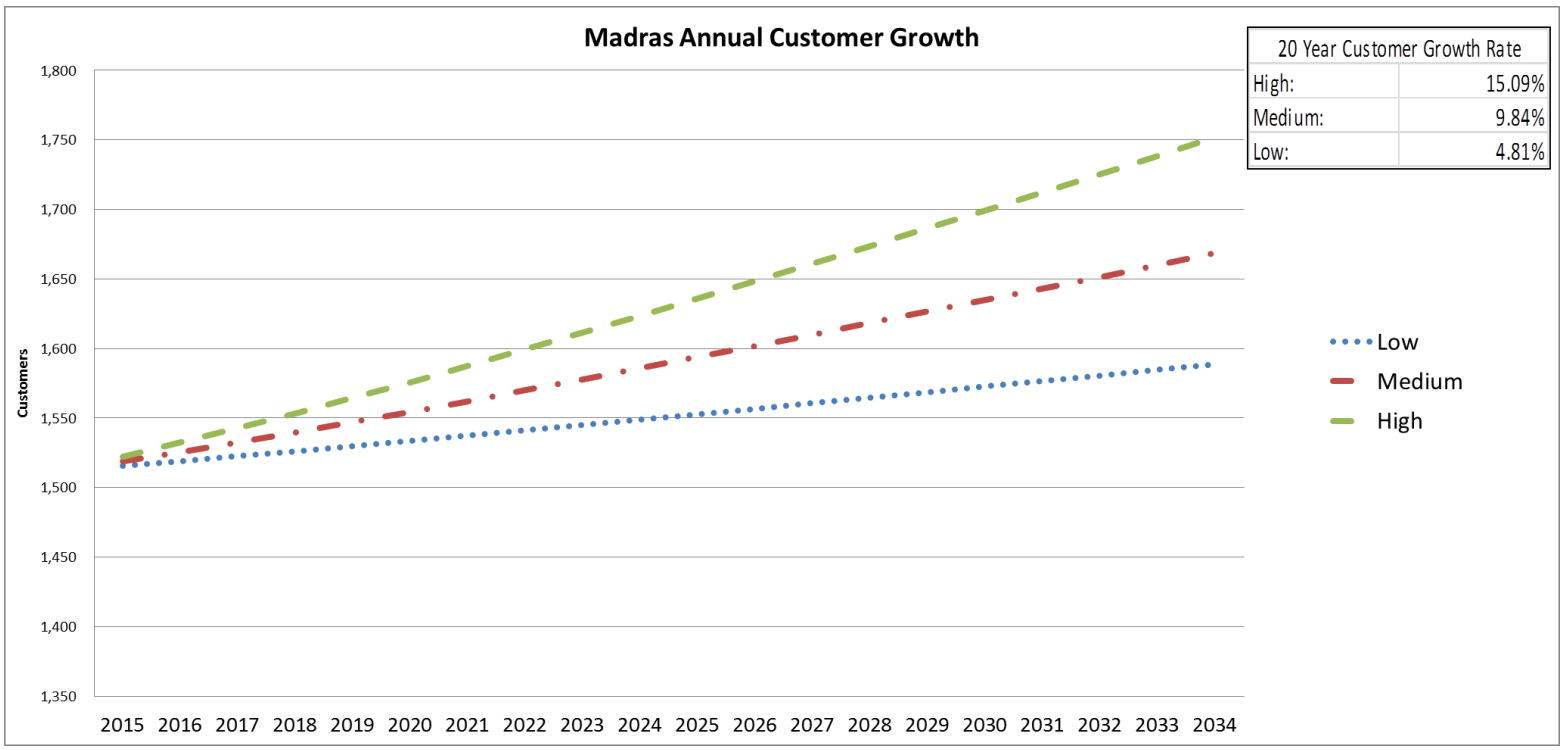
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,128	388	1,516	1,130	389	1,519	1,133	390	1,522
2016	1,130	389	1,519	1,135	390	1,526	1,140	392	1,532
2017	1,133	390	1,523	1,140	392	1,533	1,148	395	1,543
2018	1,136	391	1,526	1,146	394	1,540	1,156	398	1,553
2019	1,138	391	1,530	1,151	396	1,547	1,164	400	1,565
2020	1,141	392	1,533	1,157	398	1,555	1,173	403	1,576
2021	1,144	393	1,537	1,162	400	1,562	1,181	406	1,587
2022	1,147	394	1,541	1,168	402	1,570	1,190	409	1,599
2023	1,150	395	1,545	1,174	404	1,578	1,199	412	1,611
2024	1,153	396	1,549	1,180	406	1,586	1,208	415	1,624
2025	1,155	397	1,553	1,186	408	1,594	1,217	419	1,636
2026	1,158	398	1,557	1,192	410	1,602	1,227	422	1,648
2027	1,161	399	1,561	1,198	412	1,610	1,236	425	1,661
2028	1,164	400	1,565	1,204	414	1,618	1,245	428	1,674
2029	1,167	401	1,569	1,210	416	1,627	1,255	432	1,686
2030	1,170	402	1,573	1,217	418	1,635	1,265	435	1,699
2031	1,173	403	1,577	1,223	420	1,643	1,274	438	1,712
2032	1,176	404	1,581	1,229	423	1,652	1,284	442	1,725
2033	1,179	406	1,585	1,235	425	1,660	1,294	445	1,739
2034	1,182	407	1,589	1,242	427	1,668	1,304	448	1,752

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.66%	0.66%	0.66%
2017	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2025	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2029	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2033	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%


Madras Annual Therm Usage
Therms
3,300,000
3,200,000
3,100,000
3,000,000
2,900,000
2,800,000
2,700,000
2,600,000
2,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.09%
Medium: 9.84%
Low: 4.81%
Low
Medium
High


Madras Annual Customer Growth
Customers
1,800
1,750
1,700
1,650
1,600
1,550
1,500
1,450
1,400
1,350
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.09%
Medium: 9.84%
Low: 4.81%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Milton-Freewater

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	258,126	158,491	416,617	259,411	158,491	417,902	260,696	158,491	419,187
2016	260,152	159,735	419,887	262,256	160,229	422,485	264,367	160,723	425,090
2017	259,735	159,479	419,214	262,649	160,470	423,119	265,585	161,464	427,049
2018	260,547	159,978	420,525	264,292	161,474	425,766	268,077	162,979	431,056
2019	261,365	160,480	421,845	265,952	162,488	428,440	270,603	164,514	435,117
2020	263,421	161,742	425,163	268,877	164,275	433,152	274,426	166,839	441,265
2021	262,999	161,484	424,483	269,283	164,523	433,805	275,694	167,609	443,303
2022	263,818	161,986	425,804	270,960	165,547	436,507	278,269	169,175	447,444
2023	264,632	162,486	427,118	272,632	166,569	439,201	280,845	170,741	451,586
2024	266,703	163,758	430,462	275,610	168,388	443,998	284,782	173,134	457,916
2025	266,255	163,483	429,737	275,981	168,615	444,596	286,028	173,892	459,920
2026	267,059	163,977	431,036	277,648	169,634	447,282	288,620	175,468	464,088
2027	267,861	164,469	432,329	279,314	170,652	449,966	291,218	177,047	468,265
2028	269,927	165,737	435,665	282,302	172,477	454,780	295,202	179,469	474,671
2029	269,442	165,440	434,882	282,617	172,670	455,287	296,391	180,192	476,584
2030	270,222	165,919	436,141	284,254	173,670	457,924	298,966	181,758	480,724
2031	271,001	166,397	437,398	285,892	174,671	460,563	301,551	183,329	484,880
2032	273,061	167,662	440,723	288,886	176,500	465,386	305,574	185,775	491,349
2033	272,545	167,345	439,889	289,154	176,664	465,818	306,719	186,471	493,190
2034	273,310	167,815	441,124	290,778	177,656	468,434	309,302	188,042	497,344

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.78%	0.78%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2017	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.46%	0.46%	0.46%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.79%	0.79%	0.79%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2021	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.46%	0.46%	0.46%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.78%	0.78%	0.78%	1.09%	1.09%	1.09%	1.40%	1.40%	1.40%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.44%	0.44%	0.44%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.77%	0.77%	0.77%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.76%	0.76%	0.76%	1.05%	1.05%	1.05%	1.33%	1.33%	1.33%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	434	5,042	5,476	434	5,059	5,493	434	5,076	5,510
2016	438	5,055	5,493	439	5,088	5,527	440	5,121	5,561
2017	437	5,073	5,510	440	5,122	5,561	442	5,171	5,613
2018	438	5,089	5,527	442	5,154	5,596	447	5,219	5,666
2019	440	5,105	5,545	445	5,186	5,631	451	5,268	5,719
2020	443	5,119	5,562	450	5,216	5,667	457	5,316	5,773
2021	442	5,137	5,579	451	5,251	5,702	459	5,368	5,827
2022	444	5,153	5,597	454	5,284	5,737	463	5,418	5,881
2023	445	5,169	5,614	456	5,317	5,773	468	5,468	5,936
2024	449	5,183	5,631	461	5,347	5,808	474	5,516	5,991
2025	448	5,201	5,648	462	5,382	5,844	476	5,569	6,045
2026	449	5,216	5,666	465	5,414	5,879	481	5,619	6,100
2027	451	5,232	5,683	468	5,447	5,914	485	5,670	6,155
2028	454	5,245	5,699	473	5,477	5,949	492	5,718	6,210
2029	453	5,263	5,716	473	5,511	5,984	494	5,771	6,264
2030	455	5,278	5,733	476	5,543	6,019	498	5,821	6,319
2031	456	5,293	5,749	479	5,575	6,054	502	5,871	6,373
2032	459	5,306	5,766	484	5,605	6,088	509	5,919	6,428
2033	458	5,323	5,782	484	5,639	6,123	511	5,972	6,482
2034	460	5,338	5,798	487	5,670	6,157	515	6,022	6,537

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.27%	0.31%	1.10%	0.58%	0.62%	1.41%	0.89%	0.93%
2017	-0.16%	0.35%	0.31%	0.15%	0.67%	0.62%	0.46%	0.98%	0.94%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.79%	0.27%	0.31%	1.10%	0.58%	0.62%	1.41%	0.89%	0.94%
2021	-0.16%	0.35%	0.31%	0.15%	0.67%	0.62%	0.46%	0.98%	0.94%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.78%	0.27%	0.31%	1.09%	0.58%	0.62%	1.40%	0.88%	0.92%
2025	-0.17%	0.35%	0.30%	0.13%	0.65%	0.61%	0.44%	0.95%	0.91%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.77%	0.26%	0.30%	1.07%	0.55%	0.59%	1.37%	0.85%	0.89%
2029	-0.18%	0.33%	0.29%	0.11%	0.63%	0.59%	0.40%	0.92%	0.88%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.76%	0.24%	0.29%	1.05%	0.53%	0.57%	1.33%	0.82%	0.86%
2033	-0.19%	0.32%	0.28%	0.09%	0.61%	0.57%	0.37%	0.89%	0.85%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	99,687	316,930	416,617	99,995	317,908	417,902	100,302	318,885	419,187
2016	100,529	319,358	419,887	101,151	321,333	422,485	101,775	323,315	425,090
2017	100,308	318,905	419,214	101,243	321,876	423,119	102,183	324,866	427,049
2018	100,622	319,903	420,525	101,876	323,890	425,766	103,142	327,914	431,056
2019	100,938	320,907	421,845	102,516	325,924	428,440	104,114	331,003	435,117
2020	101,793	323,371	425,163	103,705	329,447	433,152	105,648	335,618	441,265
2021	101,569	322,913	424,483	103,800	330,006	433,805	106,072	337,231	443,303
2022	101,885	323,919	425,804	104,446	332,060	436,507	107,063	340,381	447,444
2023	102,200	324,918	427,118	105,091	334,110	439,201	108,054	343,532	451,586
2024	103,061	327,400	430,462	106,302	337,696	443,998	109,634	348,282	457,916
2025	102,827	326,911	429,737	106,382	338,214	444,596	110,048	349,871	459,920
2026	103,137	327,899	431,036	107,025	340,258	447,282	111,046	353,042	464,088
2027	103,447	328,882	432,329	107,667	342,299	449,966	112,045	356,220	468,265
2028	104,307	331,358	435,665	108,883	345,896	454,780	113,646	361,026	474,671
2029	104,057	330,824	434,882	108,940	346,347	455,287	114,036	362,548	476,584
2030	104,359	331,782	436,141	109,571	348,353	457,924	115,026	365,698	480,724
2031	104,659	332,738	437,398	110,202	350,361	460,563	116,021	368,859	484,880
2032	105,518	335,205	440,723	111,423	353,963	465,386	117,639	373,710	491,349
2033	105,256	334,634	439,889	111,460	354,358	465,818	118,009	375,180	493,190
2034	105,551	335,573	441,124	112,086	356,348	468,434	119,003	378,341	497,344

Annual Change

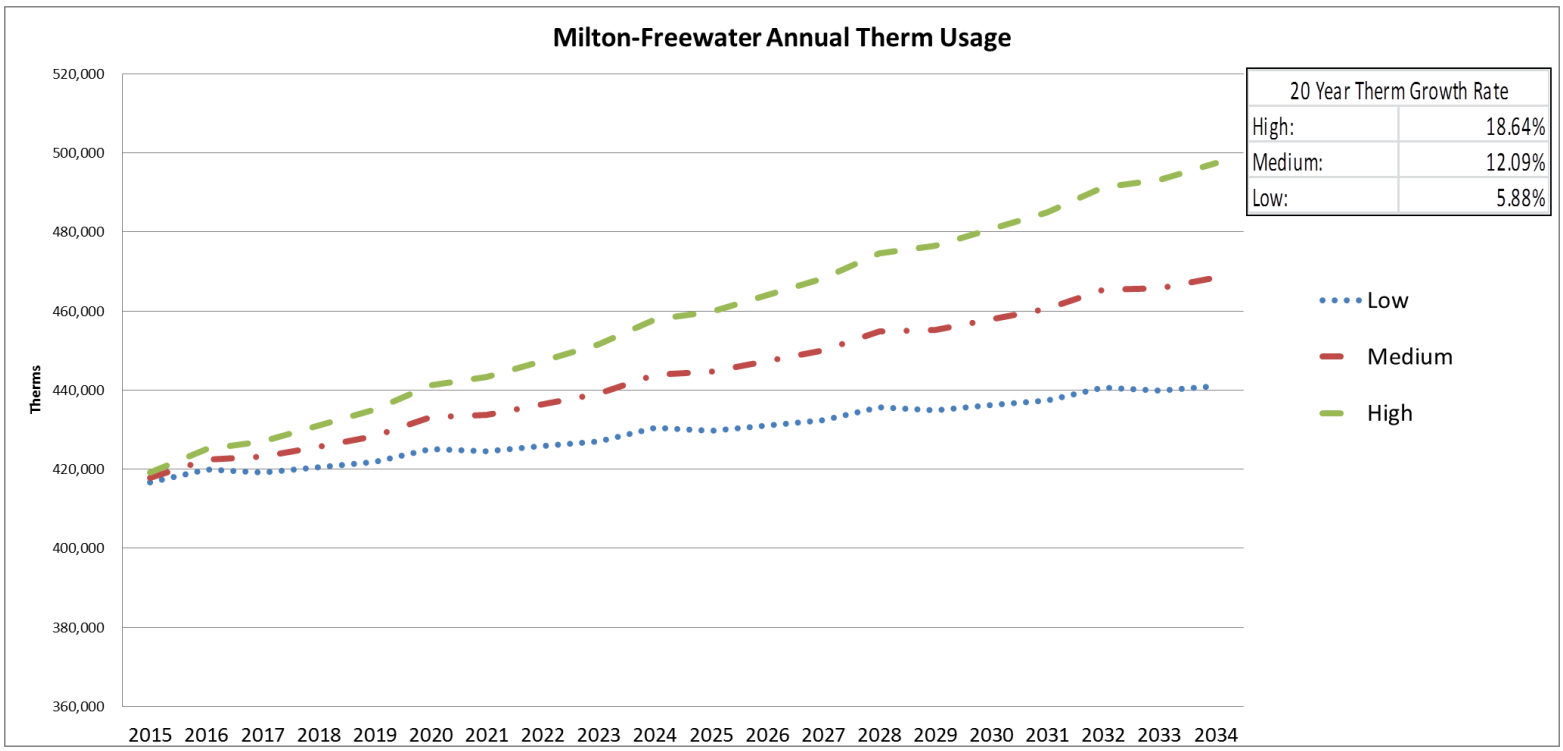
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.84%	0.77%	0.78%	1.16%	1.08%	1.10%	1.47%	1.39%	1.41%
2017	-0.22%	-0.14%	-0.16%	0.09%	0.17%	0.15%	0.40%	0.48%	0.46%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.85%	0.77%	0.79%	1.16%	1.08%	1.10%	1.47%	1.39%	1.41%
2021	-0.22%	-0.14%	-0.16%	0.09%	0.17%	0.15%	0.40%	0.48%	0.46%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.84%	0.76%	0.78%	1.15%	1.07%	1.09%	1.46%	1.38%	1.40%
2025	-0.23%	-0.15%	-0.17%	0.07%	0.15%	0.13%	0.38%	0.46%	0.44%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.83%	0.75%	0.77%	1.13%	1.05%	1.07%	1.43%	1.35%	1.37%
2029	-0.24%	-0.16%	-0.18%	0.05%	0.13%	0.11%	0.34%	0.42%	0.40%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.82%	0.74%	0.76%	1.11%	1.03%	1.05%	1.39%	1.32%	1.33%
2033	-0.25%	-0.17%	-0.19%	0.03%	0.11%	0.09%	0.31%	0.39%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

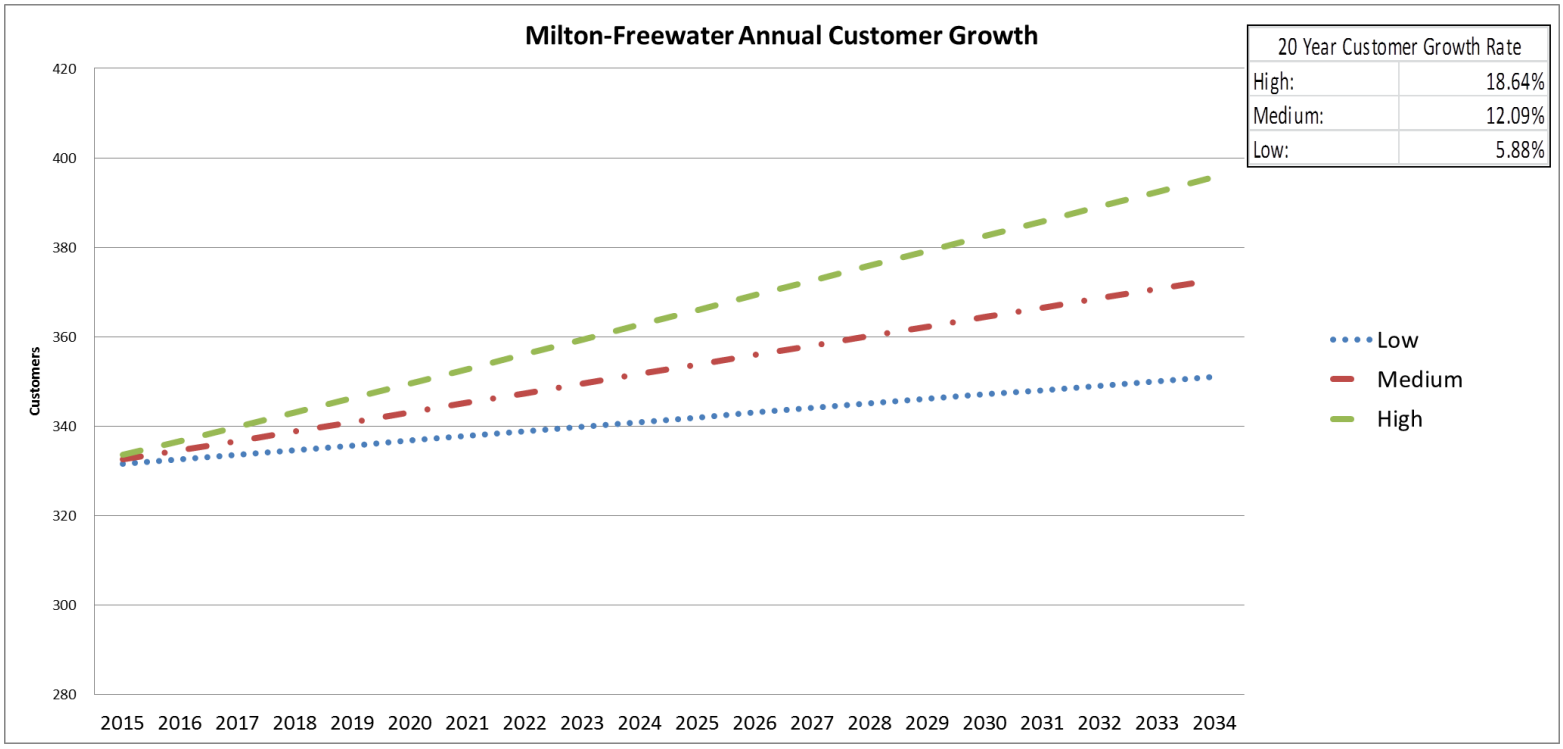
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	227	104	332	228	105	333	229	105	334
2016	228	105	333	229	105	335	231	106	337
2017	229	105	334	231	106	337	233	107	340
2018	229	105	335	232	107	339	235	108	343
2019	230	106	336	234	107	341	237	109	346
2020	231	106	337	235	108	343	240	110	349
2021	232	106	338	237	109	345	242	111	353
2022	232	107	339	238	109	347	244	112	356
2023	233	107	340	240	110	349	246	113	359
2024	234	107	341	241	111	352	249	114	363
2025	234	108	342	243	111	354	251	115	366
2026	235	108	343	244	112	356	253	116	369
2027	236	108	344	245	113	358	255	117	373
2028	237	108	345	247	113	360	258	118	376
2029	237	109	346	248	114	362	260	119	379
2030	238	109	347	250	115	364	262	120	383
2031	239	109	348	251	115	366	265	121	386
2032	239	110	349	253	116	369	267	122	389
2033	240	110	350	254	117	371	269	123	392
2034	241	110	351	256	117	373	271	124	396

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2017	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2021	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2025	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2029	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2033	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Milton-Freewater Annual Therm Usage
Therms
520,000
500,000
480,000
460,000
440,000
420,000
400,000
380,000
360,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.64%
Medium: 12.09%
Low: 5.88%
Low
Medium
High


Milton-Freewater Annual Customer Growth
Customers
420
400
380
360
340
320
300
280
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.64%
Medium: 12.09%
Low: 5.88%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Mission Tap

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	302,758	145,234	447,992	304,100	145,234	449,334	305,442	145,234	450,676
2016	305,040	146,329	451,369	307,314	146,769	454,083	309,596	147,209	456,805
2017	304,596	146,116	450,712	307,798	147,000	454,798	311,022	147,887	458,909
2018	305,527	146,562	452,090	309,679	147,899	457,578	313,873	149,243	463,116
2019	306,467	147,013	453,480	311,584	148,808	460,392	316,769	150,620	467,388
2020	308,788	148,127	456,914	314,900	150,392	465,292	321,113	152,685	473,798
2021	308,346	147,915	456,261	315,411	150,636	466,048	322,615	153,400	476,014
2022	309,290	148,367	457,658	317,343	151,559	468,901	325,577	154,808	480,386
2023	310,229	148,818	459,047	319,270	152,479	471,749	328,543	156,219	484,762
2024	312,573	149,942	462,515	322,656	154,096	476,751	333,029	158,352	491,381
2025	312,105	149,718	461,822	323,136	154,325	477,461	334,520	159,060	493,580
2026	313,035	150,164	463,200	325,063	155,246	480,309	337,513	160,483	497,996
2027	313,963	150,609	464,573	326,990	156,166	483,157	340,514	161,911	502,425
2028	316,303	151,732	468,035	330,392	157,791	488,182	345,060	164,072	509,132
2029	315,797	151,489	467,285	330,814	157,993	488,807	346,496	164,755	511,251
2030	316,702	151,923	468,625	332,711	158,898	491,609	349,476	166,172	515,648
2031	317,606	152,357	469,963	334,612	159,806	494,418	352,470	167,596	520,066
2032	319,941	153,477	473,418	338,024	161,436	499,460	357,068	169,782	526,850
2033	319,402	153,218	472,621	338,401	161,616	500,017	358,466	170,447	528,913
2034	320,294	153,646	473,940	340,290	162,518	502,808	361,468	171,874	533,342

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.75%	0.75%	1.06%	1.06%	1.06%	1.36%	1.36%	1.36%
2017	-0.15%	-0.15%	-0.15%	0.16%	0.16%	0.16%	0.46%	0.46%	0.46%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.37%	1.37%	1.37%
2021	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.47%	0.47%	0.47%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.37%	1.37%	1.37%
2025	-0.15%	-0.15%	-0.15%	0.15%	0.15%	0.15%	0.45%	0.45%	0.45%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.75%	0.75%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2029	-0.16%	-0.16%	-0.16%	0.13%	0.13%	0.13%	0.42%	0.42%	0.42%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.74%	0.74%	0.74%	1.02%	1.02%	1.02%	1.30%	1.30%	1.30%
2033	-0.17%	-0.17%	-0.17%	0.11%	0.11%	0.11%	0.39%	0.39%	0.39%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	398	4,890	5,288	398	4,906	5,304	398	4,921	5,319
2016	401	4,903	5,304	402	4,933	5,336	403	4,964	5,368
2017	400	4,919	5,320	403	4,965	5,368	405	5,011	5,417
2018	402	4,935	5,336	405	4,996	5,401	409	5,057	5,466
2019	403	4,950	5,352	408	5,026	5,434	413	5,104	5,517
2020	406	4,963	5,369	412	5,055	5,467	418	5,149	5,567
2021	405	4,980	5,385	413	5,088	5,501	420	5,198	5,618
2022	406	4,995	5,402	415	5,119	5,535	424	5,246	5,670
2023	408	5,010	5,418	418	5,150	5,568	428	5,294	5,722
2024	411	5,024	5,435	422	5,180	5,602	434	5,340	5,774
2025	410	5,041	5,451	423	5,213	5,636	436	5,390	5,826
2026	411	5,056	5,467	425	5,244	5,669	440	5,438	5,878
2027	413	5,071	5,483	428	5,275	5,703	444	5,487	5,930
2028	416	5,084	5,500	432	5,304	5,736	450	5,533	5,982
2029	415	5,100	5,515	433	5,337	5,769	451	5,583	6,034
2030	416	5,115	5,531	435	5,367	5,803	455	5,631	6,086
2031	417	5,130	5,547	438	5,398	5,836	459	5,679	6,138
2032	420	5,142	5,563	442	5,426	5,869	465	5,725	6,191
2033	420	5,159	5,578	443	5,459	5,902	467	5,776	6,243
2034	421	5,173	5,594	445	5,489	5,935	471	5,824	6,295

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.27%	0.30%	1.06%	0.57%	0.60%	1.36%	0.87%	0.91%
2017	-0.15%	0.34%	0.30%	0.16%	0.65%	0.61%	0.46%	0.95%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.76%	0.27%	0.31%	1.06%	0.57%	0.61%	1.37%	0.88%	0.92%
2021	-0.14%	0.34%	0.31%	0.16%	0.65%	0.61%	0.47%	0.96%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.76%	0.27%	0.30%	1.06%	0.57%	0.61%	1.37%	0.87%	0.91%
2025	-0.15%	0.34%	0.30%	0.15%	0.64%	0.60%	0.45%	0.94%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.26%	0.29%	1.04%	0.55%	0.59%	1.34%	0.84%	0.88%
2029	-0.16%	0.33%	0.29%	0.13%	0.62%	0.58%	0.42%	0.91%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.74%	0.25%	0.28%	1.02%	0.53%	0.57%	1.30%	0.81%	0.85%
2033	-0.17%	0.32%	0.28%	0.11%	0.60%	0.56%	0.39%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	121,268	326,725	447,992	121,631	327,703	449,334	121,994	328,682	450,676
2016	122,210	329,158	451,369	122,945	331,138	454,083	123,682	333,123	456,805
2017	122,004	328,708	450,712	123,110	331,688	454,798	124,223	334,686	458,909
2018	122,377	329,713	452,090	123,863	333,716	457,578	125,362	337,755	463,116
2019	122,753	330,726	453,480	124,624	335,768	460,392	126,518	340,870	467,388
2020	123,712	333,202	456,914	125,980	339,312	465,292	128,283	345,515	473,798
2021	123,506	332,755	456,261	126,155	339,893	466,048	128,853	347,161	476,014
2022	123,884	333,773	457,658	126,928	341,974	468,901	130,036	350,349	480,386
2023	124,260	334,787	459,047	127,698	344,050	471,749	131,221	353,541	484,762
2024	125,228	337,287	462,515	129,083	347,669	476,751	133,044	358,337	491,381
2025	125,011	336,811	461,822	129,245	348,216	477,461	133,608	359,972	493,580
2026	125,384	337,815	463,200	130,016	350,293	480,309	134,803	363,193	497,996
2027	125,756	338,817	464,573	130,786	352,370	483,157	136,002	366,423	502,425
2028	126,723	341,312	468,035	132,178	356,004	488,182	137,850	371,282	509,132
2029	126,490	340,795	467,285	132,316	356,491	488,807	138,391	372,860	511,251
2030	126,853	341,772	468,625	133,075	358,535	491,609	139,581	376,066	515,648
2031	127,215	342,748	469,963	133,835	360,583	494,418	140,777	379,288	520,066
2032	128,180	345,238	473,418	135,231	364,229	499,460	142,647	384,203	526,850
2033	127,934	344,686	472,621	135,350	364,667	500,017	143,172	385,741	528,913
2034	128,292	345,648	473,940	136,106	366,702	502,808	144,371	388,971	533,342

Annual Change

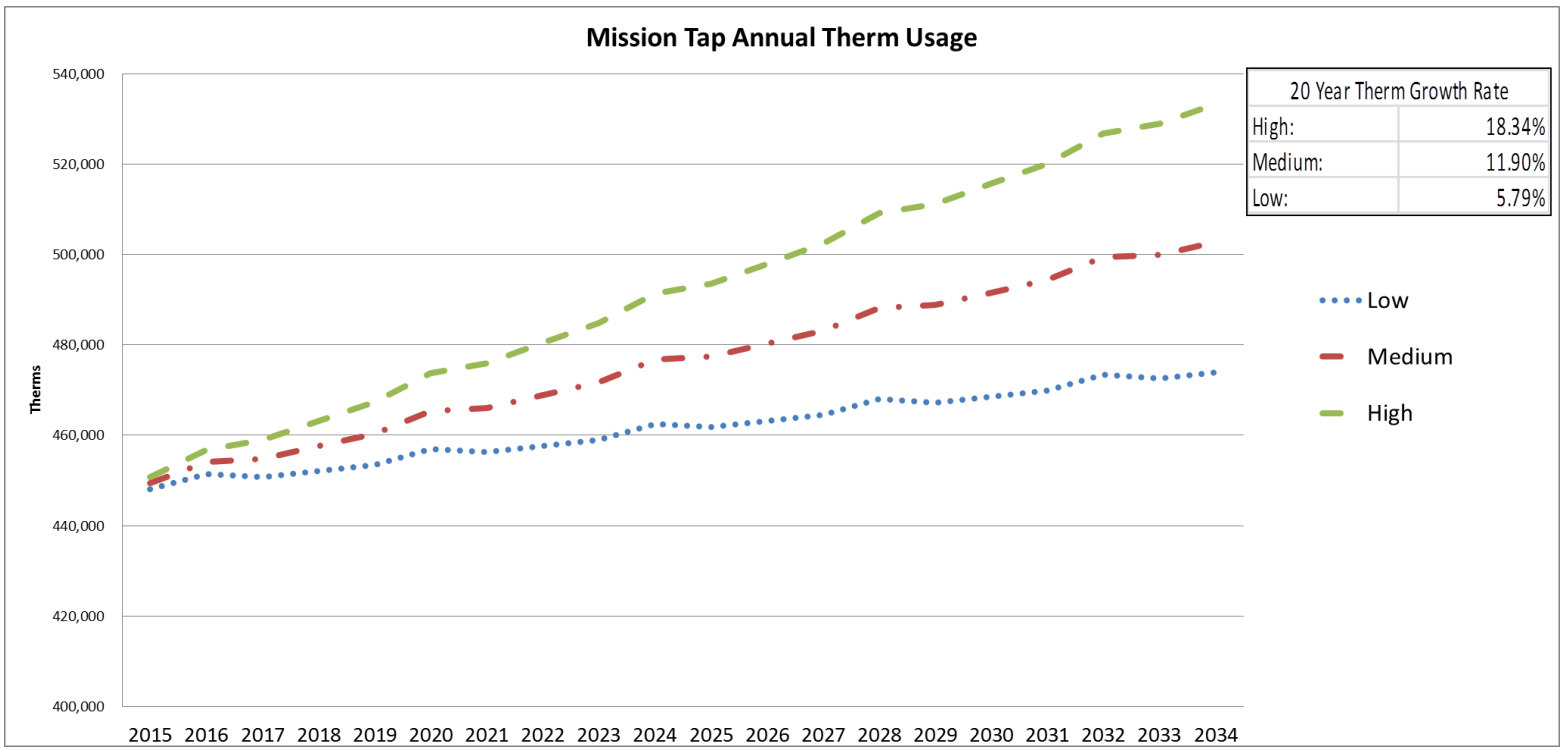
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.74%	0.75%	1.08%	1.05%	1.06%	1.38%	1.35%	1.36%
2017	-0.17%	-0.14%	-0.15%	0.13%	0.17%	0.16%	0.44%	0.47%	0.46%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.75%	0.76%	1.09%	1.06%	1.06%	1.40%	1.36%	1.37%
2021	-0.17%	-0.13%	-0.14%	0.14%	0.17%	0.16%	0.44%	0.48%	0.47%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.75%	0.76%	1.08%	1.05%	1.06%	1.39%	1.36%	1.37%
2025	-0.17%	-0.14%	-0.15%	0.13%	0.16%	0.15%	0.42%	0.46%	0.45%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.74%	0.75%	1.06%	1.03%	1.04%	1.36%	1.33%	1.34%
2029	-0.18%	-0.15%	-0.16%	0.10%	0.14%	0.13%	0.39%	0.42%	0.42%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.73%	0.74%	1.04%	1.01%	1.02%	1.33%	1.30%	1.30%
2033	-0.19%	-0.16%	-0.17%	0.09%	0.12%	0.11%	0.37%	0.40%	0.39%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

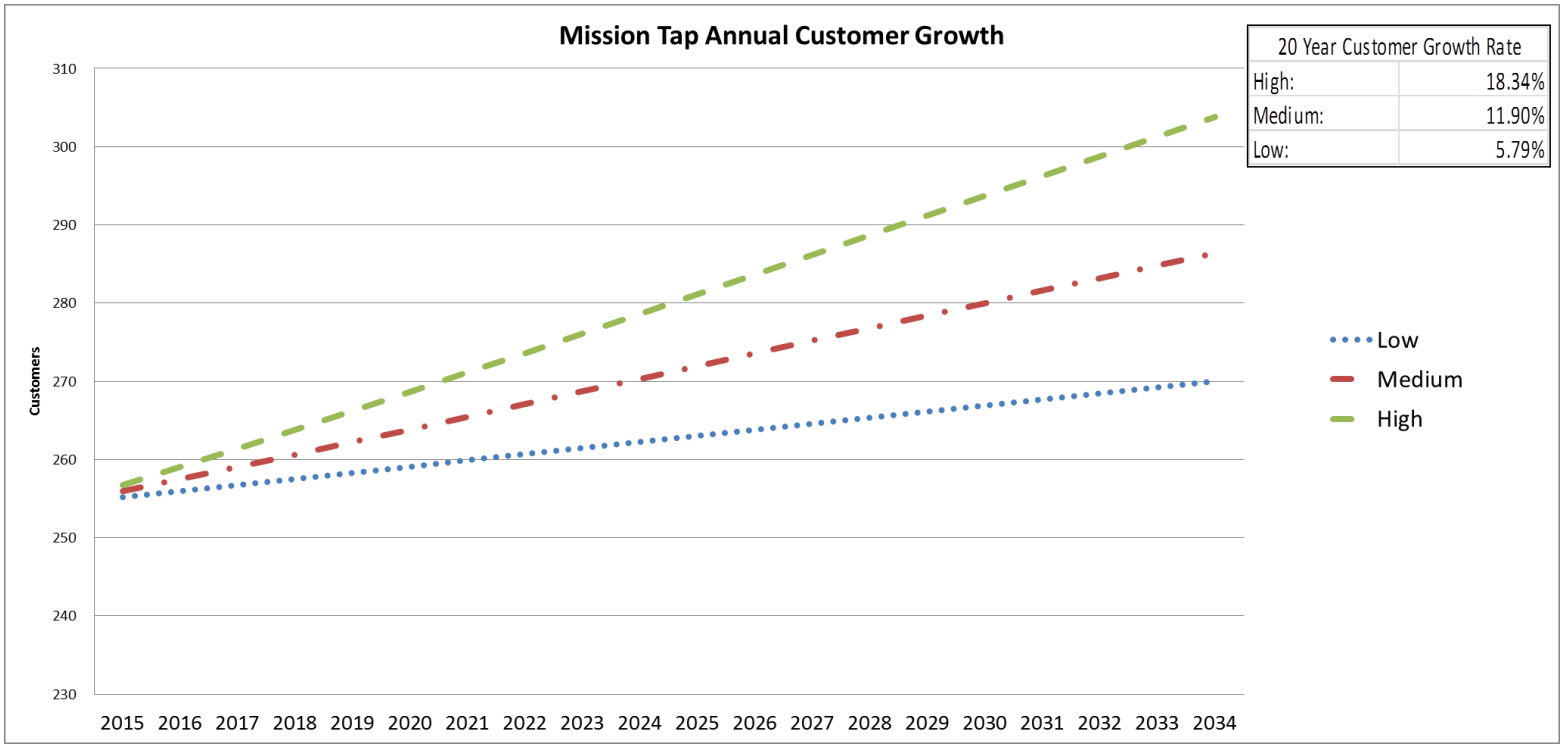
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	213	42	255	214	42	256	214	42	257
2016	214	42	256	215	43	257	216	43	259
2017	214	42	257	216	43	259	218	43	261
2018	215	43	258	218	43	261	220	44	264
2019	216	43	258	219	43	262	222	44	266
2020	216	43	259	220	44	264	224	44	269
2021	217	43	260	222	44	265	226	45	271
2022	218	43	261	223	44	267	228	45	274
2023	218	43	261	224	44	269	231	46	276
2024	219	43	262	226	45	270	233	46	279
2025	220	43	263	227	45	272	235	46	281
2026	220	44	264	228	45	274	237	47	284
2027	221	44	265	230	45	275	239	47	286
2028	222	44	265	231	46	277	241	48	289
2029	222	44	266	232	46	278	243	48	291
2030	223	44	267	234	46	280	245	48	294
2031	224	44	268	235	46	282	247	49	296
2032	224	44	268	236	47	283	249	49	299
2033	225	44	269	238	47	285	252	50	301
2034	225	45	270	239	47	286	254	50	304

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Mission Tap Annual Therm Usage
Therms
540,000
520,000
500,000
480,000
460,000
440,000
420,000
400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%


Mission Tap Annual Customer Growth
Customers
310
300
290
280
270
260
250
240
230
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Nyssa-Ontario

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,905,435	545,641	5,451,076	4,912,732	545,641	5,458,373	4,920,029	545,641	5,465,670
2016	4,936,023	549,043	5,485,066	4,950,180	549,800	5,499,981	4,964,358	550,557	5,514,916
2017	4,919,104	547,161	5,466,266	4,940,130	548,684	5,488,814	4,961,215	550,209	5,511,424
2018	4,926,131	547,943	5,474,075	4,954,244	550,252	5,504,496	4,982,477	552,567	5,535,043
2019	4,933,285	548,739	5,482,024	4,968,633	551,850	5,520,483	5,004,183	554,974	5,559,157
2020	4,964,369	552,196	5,516,565	5,007,158	556,129	5,563,286	5,050,253	560,083	5,610,337
2021	4,947,679	550,340	5,498,019	4,997,649	555,072	5,552,721	5,048,050	559,839	5,607,889
2022	4,954,921	551,145	5,506,067	5,012,279	556,697	5,568,977	5,070,217	562,297	5,632,514
2023	4,962,142	551,949	5,514,091	5,026,889	558,320	5,585,209	5,092,384	564,756	5,657,140
2024	4,993,511	555,438	5,548,948	5,066,072	562,672	5,628,744	5,139,582	569,990	5,709,572
2025	4,976,528	553,549	5,530,077	5,056,057	561,560	5,617,617	5,136,739	569,675	5,706,414
2026	4,983,695	554,346	5,538,041	5,070,620	563,177	5,633,797	5,158,932	572,136	5,731,068
2027	4,990,840	555,141	5,545,981	5,085,158	564,792	5,649,950	5,181,120	574,597	5,755,716
2028	5,022,052	558,612	5,580,664	5,124,108	569,118	5,693,226	5,228,087	579,805	5,807,893
2029	5,004,713	556,684	5,561,397	5,113,449	567,934	5,681,383	5,224,386	579,395	5,803,781
2030	5,011,515	557,440	5,568,955	5,127,347	569,478	5,696,825	5,245,686	581,757	5,827,443
2031	5,018,367	558,203	5,576,570	5,141,369	571,035	5,712,404	5,267,205	584,144	5,851,348
2032	5,049,424	561,657	5,611,081	5,180,079	575,334	5,755,413	5,313,922	589,325	5,903,247
2033	5,031,738	559,690	5,591,428	5,168,784	574,080	5,742,864	5,309,361	588,819	5,898,180
2034	5,038,466	560,438	5,598,905	5,182,608	575,615	5,758,223	5,330,661	591,181	5,921,842

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	0.76%	0.76%	0.76%	0.90%	0.90%	0.90%
2017	-0.34%	-0.34%	-0.34%	-0.20%	-0.20%	-0.20%	-0.06%	-0.06%	-0.06%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.63%	0.63%	0.63%	0.78%	0.78%	0.78%	0.92%	0.92%	0.92%
2021	-0.34%	-0.34%	-0.34%	-0.19%	-0.19%	-0.19%	-0.04%	-0.04%	-0.04%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.63%	0.63%	0.63%	0.78%	0.78%	0.78%	0.93%	0.93%	0.93%
2025	-0.34%	-0.34%	-0.34%	-0.20%	-0.20%	-0.20%	-0.06%	-0.06%	-0.06%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.63%	0.63%	0.63%	0.77%	0.77%	0.77%	0.91%	0.91%	0.91%
2029	-0.35%	-0.35%	-0.35%	-0.21%	-0.21%	-0.21%	-0.07%	-0.07%	-0.07%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.62%	0.62%	0.62%	0.75%	0.75%	0.75%	0.89%	0.89%	0.89%
2033	-0.35%	-0.35%	-0.35%	-0.22%	-0.22%	-0.22%	-0.09%	-0.09%	-0.09%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,495	67,096	68,591	1,495	67,188	68,683	1,495	67,279	68,774
2016	1,504	67,181	68,685	1,506	67,366	68,872	1,508	67,551	69,059
2017	1,499	67,283	68,782	1,503	67,562	69,066	1,507	67,843	69,350
2018	1,501	67,379	68,880	1,508	67,755	69,263	1,514	68,133	69,647
2019	1,503	67,477	68,980	1,512	67,952	69,464	1,520	68,430	69,951
2020	1,513	67,567	69,080	1,524	68,141	69,665	1,534	68,720	70,254
2021	1,508	67,674	69,181	1,521	68,349	69,870	1,534	69,030	70,564
2022	1,510	67,773	69,283	1,525	68,549	70,074	1,541	69,333	70,874
2023	1,512	67,871	69,384	1,530	68,749	70,278	1,547	69,636	71,184
2024	1,522	67,964	69,485	1,542	68,943	70,485	1,562	69,935	71,497
2025	1,517	68,068	69,585	1,539	69,148	70,686	1,561	70,243	71,804
2026	1,519	68,166	69,685	1,543	69,347	70,890	1,567	70,546	72,114
2027	1,521	68,264	69,785	1,547	69,546	71,093	1,574	70,850	72,424
2028	1,530	68,352	69,882	1,559	69,733	71,292	1,589	71,139	72,728
2029	1,525	68,454	69,979	1,556	69,933	71,489	1,587	71,441	73,029
2030	1,527	68,547	70,074	1,560	70,123	71,683	1,594	71,733	73,327
2031	1,529	68,640	70,170	1,564	70,314	71,879	1,600	72,027	73,627
2032	1,539	68,725	70,263	1,576	70,494	72,071	1,615	72,307	73,922
2033	1,533	68,823	70,357	1,573	70,689	72,262	1,613	72,603	74,217
2034	1,535	68,915	70,451	1,577	70,878	72,456	1,620	72,895	74,514

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.13%	0.14%	0.76%	0.27%	0.28%	0.90%	0.40%	0.41%
2017	-0.34%	0.15%	0.14%	-0.20%	0.29%	0.28%	-0.06%	0.43%	0.42%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.63%	0.13%	0.14%	0.78%	0.28%	0.29%	0.92%	0.42%	0.43%
2021	-0.34%	0.16%	0.15%	-0.19%	0.30%	0.29%	-0.04%	0.45%	0.44%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.63%	0.14%	0.15%	0.78%	0.28%	0.29%	0.93%	0.43%	0.44%
2025	-0.34%	0.15%	0.14%	-0.20%	0.30%	0.29%	-0.06%	0.44%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.63%	0.13%	0.14%	0.77%	0.27%	0.28%	0.91%	0.41%	0.42%
2029	-0.35%	0.15%	0.14%	-0.21%	0.29%	0.28%	-0.07%	0.42%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.62%	0.12%	0.13%	0.75%	0.26%	0.27%	0.89%	0.39%	0.40%
2033	-0.35%	0.14%	0.13%	-0.22%	0.28%	0.27%	-0.09%	0.41%	0.40%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,887,208	2,424,666	4,311,873	1,889,734	2,427,911	4,317,645	1,892,260	2,431,157	4,323,417
2016	1,899,817	2,439,746	4,339,563	1,904,983	2,446,380	4,351,363	1,910,156	2,453,024	4,363,179
2017	1,892,467	2,431,422	4,323,889	1,900,273	2,441,452	4,341,725	1,908,101	2,451,509	4,359,609
2018	1,895,170	2,434,895	4,330,065	1,905,702	2,448,427	4,354,129	1,916,278	2,462,015	4,378,293
2019	1,897,922	2,438,431	4,336,353	1,911,237	2,455,538	4,366,775	1,924,626	2,472,740	4,397,367
2020	1,910,727	2,453,757	4,364,484	1,926,909	2,474,539	4,401,448	1,943,206	2,495,467	4,438,672
2021	1,903,460	2,445,546	4,349,006	1,922,398	2,469,878	4,392,276	1,941,497	2,494,417	4,435,914
2022	1,906,246	2,449,126	4,355,372	1,928,026	2,477,108	4,405,134	1,950,023	2,505,370	4,455,393
2023	1,909,024	2,452,695	4,361,719	1,933,645	2,484,328	4,417,974	1,958,549	2,516,324	4,474,873
2024	1,921,943	2,468,161	4,390,104	1,949,582	2,503,654	4,453,236	1,977,577	2,539,606	4,517,183
2025	1,914,559	2,459,806	4,374,364	1,944,865	2,498,744	4,443,609	1,975,608	2,538,241	4,513,849
2026	1,917,316	2,463,348	4,380,664	1,950,467	2,505,941	4,456,408	1,984,143	2,549,207	4,533,350
2027	1,920,064	2,466,880	4,386,944	1,956,060	2,513,126	4,469,185	1,992,677	2,560,171	4,552,848
2028	1,932,928	2,482,268	4,415,197	1,971,915	2,532,336	4,504,251	2,011,632	2,583,339	4,594,971
2029	1,925,402	2,473,737	4,399,139	1,966,942	2,527,107	4,494,049	2,009,317	2,581,550	4,590,867
2030	1,928,018	2,477,099	4,405,117	1,972,288	2,533,976	4,506,264	2,017,509	2,592,076	4,609,585
2031	1,930,655	2,480,486	4,411,141	1,977,682	2,540,906	4,518,587	2,025,785	2,602,709	4,628,494
2032	1,943,464	2,495,798	4,439,261	1,993,455	2,559,996	4,553,451	2,044,659	2,625,753	4,670,411
2033	1,935,799	2,487,095	4,422,893	1,988,227	2,554,454	4,542,681	2,041,999	2,623,539	4,665,538
2034	1,938,387	2,490,420	4,428,808	1,993,544	2,561,286	4,554,830	2,050,191	2,634,064	4,684,255

Annual Change

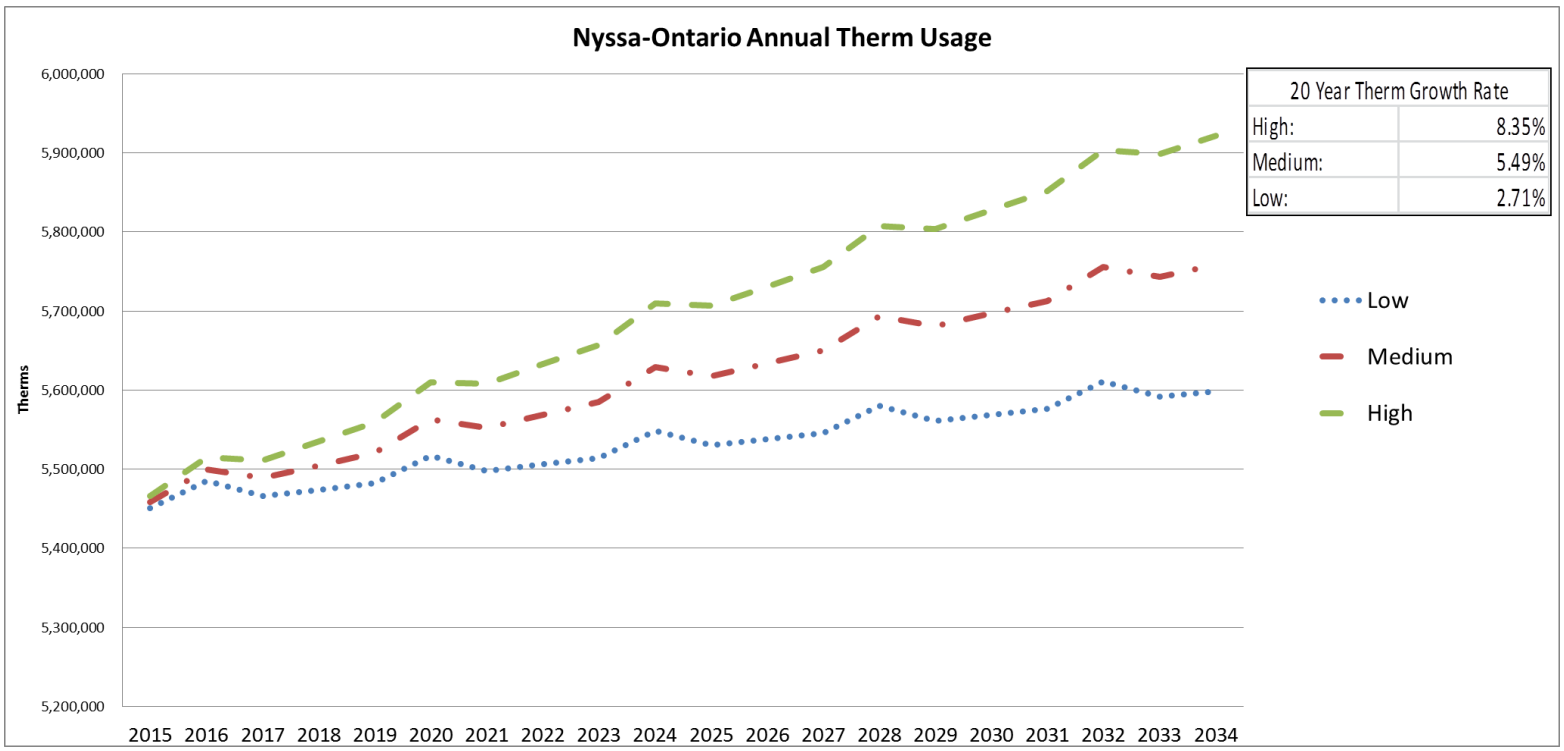
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.62%	0.64%	0.81%	0.76%	0.78%	0.95%	0.90%	0.92%
2017	-0.39%	-0.34%	-0.36%	-0.25%	-0.20%	-0.22%	-0.11%	-0.06%	-0.08%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.67%	0.63%	0.65%	0.82%	0.77%	0.79%	0.97%	0.92%	0.94%
2021	-0.38%	-0.33%	-0.35%	-0.23%	-0.19%	-0.21%	-0.09%	-0.04%	-0.06%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.68%	0.63%	0.65%	0.82%	0.78%	0.80%	0.97%	0.93%	0.95%
2025	-0.38%	-0.34%	-0.36%	-0.24%	-0.20%	-0.22%	-0.10%	-0.05%	-0.07%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.67%	0.62%	0.64%	0.81%	0.76%	0.78%	0.95%	0.90%	0.93%
2029	-0.39%	-0.34%	-0.36%	-0.25%	-0.21%	-0.23%	-0.12%	-0.07%	-0.09%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.66%	0.62%	0.64%	0.80%	0.75%	0.77%	0.93%	0.89%	0.91%
2033	-0.39%	-0.35%	-0.37%	-0.26%	-0.22%	-0.24%	-0.13%	-0.08%	-0.10%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

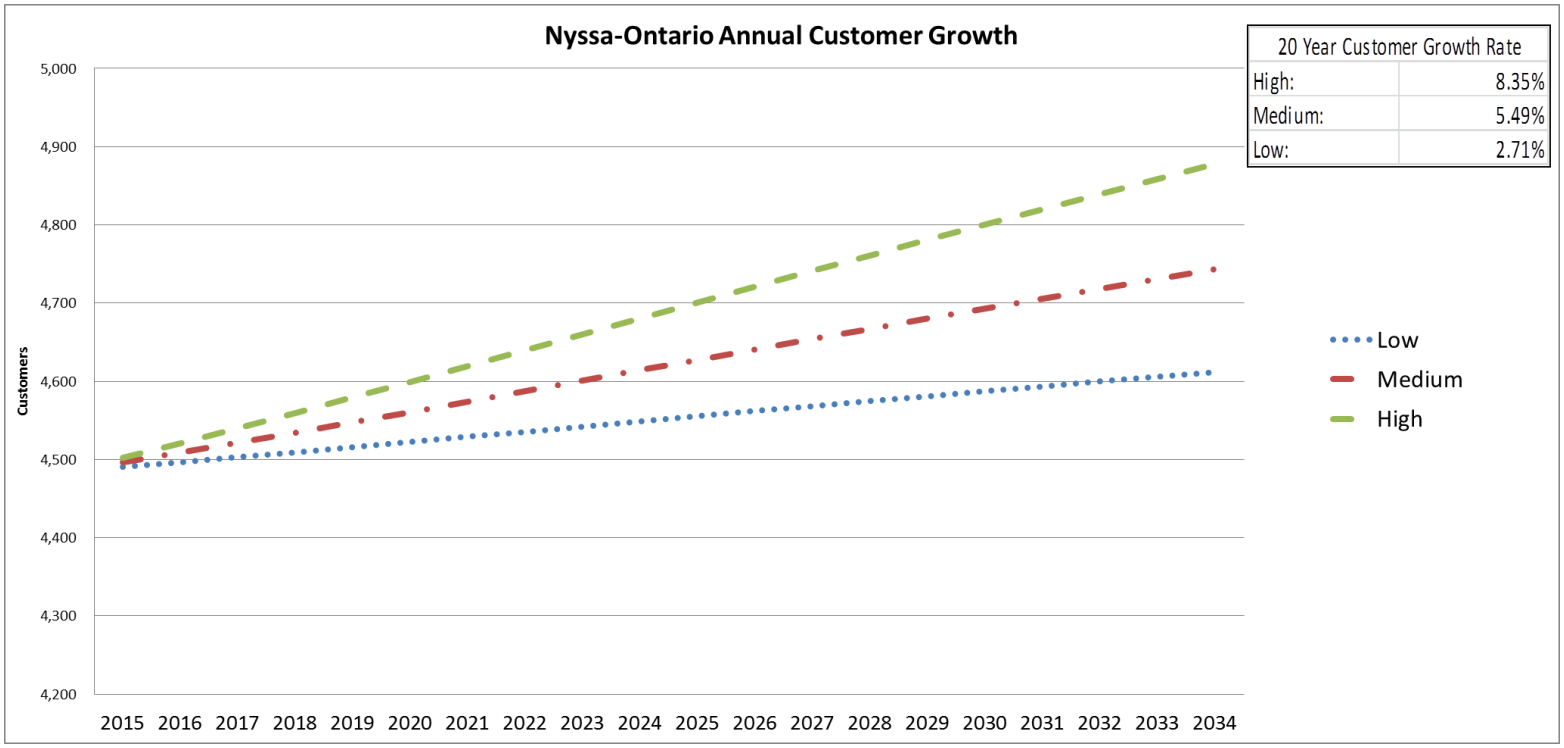
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,573	917	4,490	3,578	918	4,496	3,583	920	4,502
2016	3,578	918	4,496	3,588	921	4,509	3,598	923	4,521
2017	3,583	920	4,503	3,598	923	4,521	3,613	927	4,540
2018	3,588	921	4,509	3,608	926	4,534	3,628	931	4,559
2019	3,593	922	4,516	3,619	929	4,547	3,644	935	4,579
2020	3,599	924	4,522	3,629	931	4,561	3,660	939	4,599
2021	3,604	925	4,529	3,640	934	4,574	3,676	943	4,619
2022	3,609	926	4,536	3,650	937	4,587	3,692	948	4,640
2023	3,615	928	4,542	3,661	940	4,601	3,708	952	4,660
2024	3,620	929	4,549	3,672	942	4,614	3,725	956	4,681
2025	3,625	930	4,555	3,682	945	4,627	3,741	960	4,701
2026	3,630	932	4,562	3,693	948	4,641	3,757	964	4,721
2027	3,635	933	4,568	3,704	951	4,654	3,773	968	4,741
2028	3,640	934	4,575	3,714	953	4,667	3,789	972	4,761
2029	3,646	936	4,581	3,724	956	4,680	3,804	976	4,781
2030	3,650	937	4,587	3,734	958	4,693	3,820	980	4,800
2031	3,655	938	4,594	3,745	961	4,706	3,836	984	4,820
2032	3,660	939	4,600	3,754	964	4,718	3,851	988	4,839
2033	3,665	941	4,606	3,764	966	4,731	3,866	992	4,859
2034	3,670	942	4,612	3,775	969	4,743	3,882	996	4,878

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2017	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2021	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2025	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2033	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%


Nyssa-Ontario Annual Therm Usage
Therms
6,000,000
5,900,000
5,800,000
5,700,000
5,600,000
5,500,000
5,400,000
5,300,000
5,200,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 8.35%
Medium: 5.49%
Low: 2.71%
Low
Medium
High


Nyssa-Ontario Annual Customer Growth
Customers
5,000
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.35%
Medium: 5.49%
Low: 2.71%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pendleton

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,310,548	1,851,679	6,162,228	4,329,007	1,851,679	6,180,686	4,347,465	1,851,679	6,199,145
2016	4,343,925	1,866,017	6,209,941	4,375,652	1,871,631	6,247,283	4,407,491	1,877,246	6,284,737
2017	4,336,716	1,862,920	6,199,637	4,381,646	1,874,195	6,255,841	4,426,881	1,885,504	6,312,385
2018	4,349,970	1,868,614	6,218,584	4,408,429	1,885,651	6,294,080	4,467,469	1,902,792	6,370,261
2019	4,363,345	1,874,359	6,237,704	4,435,538	1,897,247	6,332,784	4,508,678	1,920,343	6,429,021
2020	4,397,296	1,888,944	6,286,240	4,483,669	1,917,834	6,401,504	4,571,446	1,947,078	6,518,523
2021	4,390,106	1,885,855	6,275,961	4,490,028	1,920,554	6,410,582	4,591,888	1,955,784	6,547,672
2022	4,403,545	1,891,628	6,295,173	4,517,518	1,932,313	6,449,831	4,634,058	1,973,745	6,607,804
2023	4,416,917	1,897,372	6,314,289	4,544,954	1,944,048	6,489,002	4,676,273	1,991,726	6,667,999
2024	4,451,198	1,912,098	6,363,296	4,594,093	1,965,067	6,559,160	4,741,097	2,019,336	6,760,433
2025	4,443,619	1,908,842	6,352,461	4,599,988	1,967,588	6,567,577	4,761,338	2,027,957	6,789,295
2026	4,456,870	1,914,535	6,371,405	4,627,424	1,979,324	6,606,748	4,803,935	2,046,100	6,850,035
2027	4,470,082	1,920,210	6,390,292	4,654,860	1,991,059	6,645,919	4,846,658	2,064,296	6,910,955
2028	4,504,323	1,934,919	6,439,241	4,704,243	2,012,182	6,716,425	4,912,370	2,092,285	7,004,655
2029	4,496,182	1,931,422	6,427,603	4,709,295	2,014,343	6,723,639	4,931,800	2,100,560	7,032,360
2030	4,509,071	1,936,959	6,446,029	4,736,296	2,025,892	6,762,188	4,974,214	2,118,625	7,092,839
2031	4,521,949	1,942,491	6,464,440	4,763,350	2,037,464	6,800,814	5,016,834	2,136,778	7,153,612
2032	4,556,127	1,957,173	6,513,300	4,812,916	2,058,666	6,871,582	5,083,324	2,165,097	7,248,421
2033	4,547,519	1,953,475	6,500,994	4,817,296	2,060,539	6,877,835	5,102,179	2,173,128	7,275,307
2034	4,560,212	1,958,927	6,519,139	4,844,187	2,072,041	6,916,228	5,144,901	2,191,324	7,336,225

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2017	-0.17%	-0.17%	-0.17%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.78%	0.78%	1.09%	1.09%	1.09%	1.39%	1.39%	1.39%
2021	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.45%	0.45%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.77%	0.77%	1.06%	1.06%	1.06%	1.36%	1.36%	1.36%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.76%	0.76%	1.04%	1.04%	1.04%	1.33%	1.33%	1.33%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	5,073	76,257	81,330	5,073	76,500	81,573	5,073	76,744	81,817
2016	5,112	76,463	81,575	5,128	76,938	82,066	5,143	77,415	82,558
2017	5,104	76,720	81,823	5,135	77,431	82,565	5,166	78,146	83,312
2018	5,119	76,954	82,074	5,166	77,904	83,070	5,213	78,862	84,075
2019	5,135	77,191	82,326	5,198	78,383	83,581	5,261	79,590	84,851
2020	5,175	77,402	82,577	5,254	78,837	84,092	5,334	80,294	85,629
2021	5,167	77,664	82,831	5,262	79,346	84,608	5,358	81,059	86,417
2022	5,183	77,902	83,084	5,294	79,832	85,126	5,408	81,803	87,211
2023	5,198	78,138	83,337	5,326	80,316	85,643	5,457	82,548	88,005
2024	5,239	78,351	83,590	5,384	80,779	86,163	5,532	83,274	88,807
2025	5,230	78,611	83,840	5,391	81,289	86,680	5,556	84,050	89,606
2026	5,245	78,845	84,091	5,423	81,774	87,197	5,606	84,802	90,408
2027	5,261	79,079	84,340	5,455	82,259	87,714	5,656	85,556	91,212
2028	5,301	79,286	84,587	5,513	82,716	88,228	5,732	86,282	92,015
2029	5,292	79,541	84,832	5,519	83,221	88,739	5,755	87,059	92,814
2030	5,307	79,769	85,075	5,550	83,698	89,248	5,804	87,808	93,612
2031	5,322	79,996	85,318	5,582	84,176	89,758	5,854	88,560	94,414
2032	5,362	80,198	85,560	5,640	84,626	90,267	5,932	89,285	95,217
2033	5,352	80,449	85,801	5,645	85,129	90,774	5,954	90,067	96,020
2034	5,367	80,673	86,040	5,677	85,604	91,281	6,004	90,821	96,824

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.27%	0.30%	1.08%	0.57%	0.60%	1.38%	0.87%	0.91%
2017	-0.17%	0.34%	0.30%	0.14%	0.64%	0.61%	0.44%	0.94%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.27%	0.31%	1.09%	0.58%	0.61%	1.39%	0.89%	0.92%
2021	-0.16%	0.34%	0.31%	0.14%	0.65%	0.61%	0.45%	0.95%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.27%	0.30%	1.08%	0.58%	0.61%	1.39%	0.88%	0.91%
2025	-0.17%	0.33%	0.30%	0.13%	0.63%	0.60%	0.43%	0.93%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.26%	0.29%	1.06%	0.56%	0.59%	1.36%	0.85%	0.88%
2029	-0.18%	0.32%	0.29%	0.11%	0.61%	0.58%	0.40%	0.90%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.25%	0.28%	1.04%	0.54%	0.57%	1.33%	0.82%	0.85%
2033	-0.19%	0.31%	0.28%	0.09%	0.59%	0.56%	0.37%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,721,885	2,453,845	5,175,730	2,730,038	2,461,195	5,191,234	2,738,192	2,468,546	5,206,737
2016	2,744,242	2,472,800	5,217,042	2,760,744	2,487,670	5,248,414	2,777,295	2,502,584	5,279,879
2017	2,738,409	2,468,742	5,207,150	2,763,235	2,491,123	5,254,358	2,788,210	2,513,639	5,301,849
2018	2,746,778	2,476,287	5,223,064	2,780,125	2,506,350	5,286,474	2,813,774	2,536,685	5,350,460
2019	2,755,223	2,483,900	5,239,124	2,797,221	2,521,762	5,318,983	2,839,729	2,560,084	5,399,813
2020	2,777,960	2,503,182	5,281,142	2,828,896	2,549,081	5,377,976	2,880,608	2,595,678	5,476,286
2021	2,772,121	2,499,134	5,271,256	2,831,585	2,552,742	5,384,326	2,892,138	2,607,332	5,499,469
2022	2,780,608	2,506,785	5,287,392	2,848,921	2,568,371	5,417,292	2,918,698	2,631,277	5,549,975
2023	2,789,051	2,514,397	5,303,448	2,866,223	2,583,969	5,450,192	2,945,287	2,655,247	5,600,534
2024	2,812,011	2,533,866	5,345,877	2,898,566	2,611,859	5,510,425	2,987,511	2,692,006	5,679,517
2025	2,805,912	2,529,597	5,335,509	2,900,930	2,615,258	5,516,188	2,998,864	2,703,548	5,702,412
2026	2,814,280	2,537,141	5,351,420	2,918,232	2,630,856	5,549,088	3,025,693	2,727,735	5,753,428
2027	2,822,622	2,544,662	5,367,285	2,935,534	2,646,454	5,581,988	3,052,601	2,751,994	5,804,595
2028	2,845,573	2,564,108	5,409,680	2,968,063	2,674,482	5,642,545	3,095,435	2,789,255	5,884,690
2029	2,839,103	2,559,520	5,398,623	2,969,863	2,677,403	5,647,266	3,106,227	2,800,338	5,906,565
2030	2,847,242	2,566,857	5,414,099	2,986,890	2,692,754	5,679,644	3,132,940	2,824,421	5,957,362
2031	2,855,374	2,574,188	5,429,562	3,003,952	2,708,135	5,712,087	3,159,784	2,848,622	6,008,406
2032	2,878,300	2,593,598	5,471,897	3,036,629	2,736,266	5,772,894	3,203,158	2,886,323	6,089,481
2033	2,871,520	2,588,744	5,460,264	3,037,972	2,738,805	5,776,777	3,213,537	2,897,081	6,110,619
2034	2,879,534	2,595,970	5,475,504	3,054,931	2,754,094	5,809,024	3,240,445	2,921,340	6,161,785

Annual Change

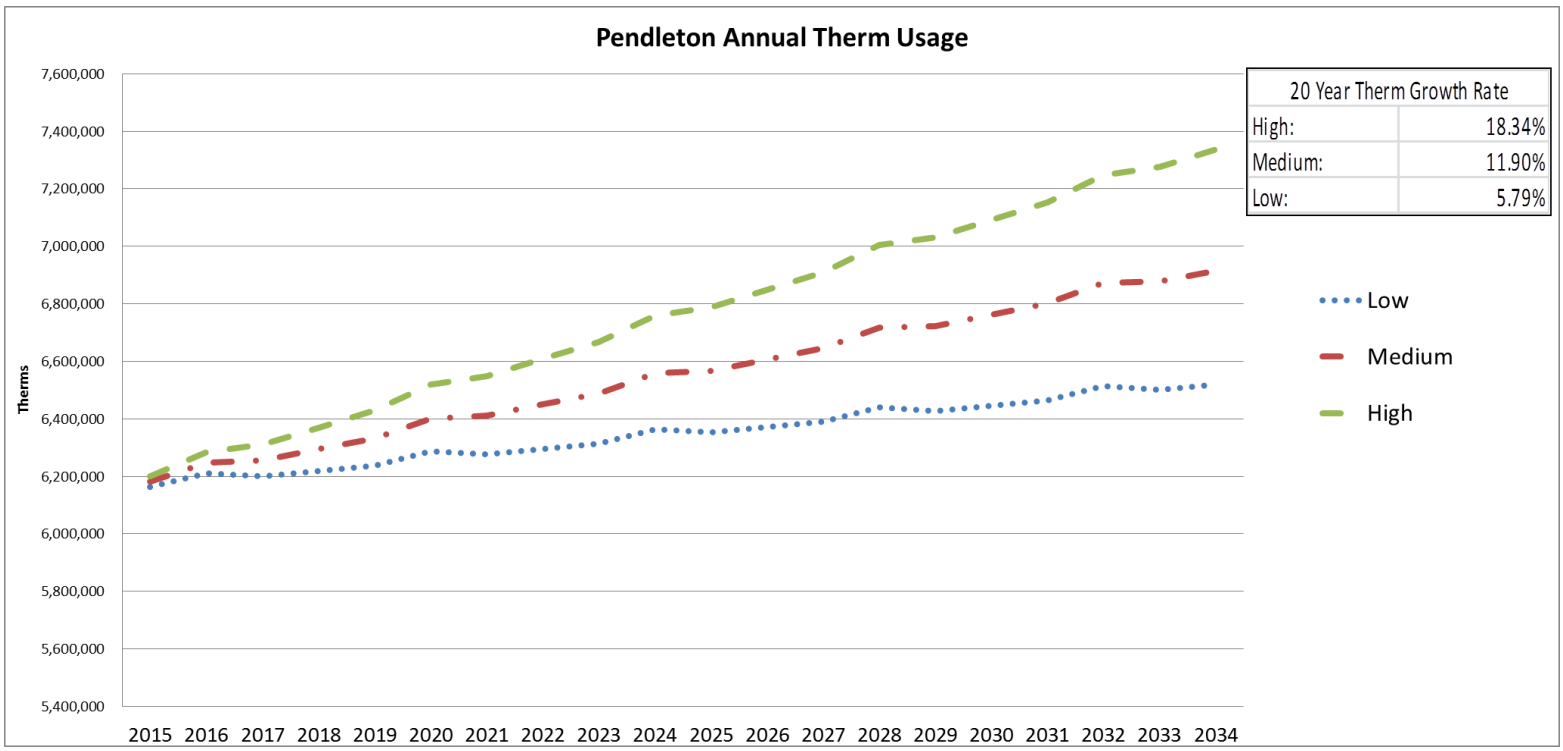
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.77%	0.80%	1.12%	1.08%	1.10%	1.43%	1.38%	1.40%
2017	-0.21%	-0.16%	-0.19%	0.09%	0.14%	0.11%	0.39%	0.44%	0.42%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.83%	0.78%	0.80%	1.13%	1.08%	1.11%	1.44%	1.39%	1.42%
2021	-0.21%	-0.16%	-0.19%	0.10%	0.14%	0.12%	0.40%	0.45%	0.42%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.82%	0.77%	0.80%	1.13%	1.08%	1.11%	1.43%	1.38%	1.41%
2025	-0.22%	-0.17%	-0.19%	0.08%	0.13%	0.10%	0.38%	0.43%	0.40%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.81%	0.76%	0.79%	1.11%	1.06%	1.08%	1.40%	1.35%	1.38%
2029	-0.23%	-0.18%	-0.20%	0.06%	0.11%	0.08%	0.35%	0.40%	0.37%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.80%	0.75%	0.78%	1.09%	1.04%	1.06%	1.37%	1.32%	1.35%
2033	-0.24%	-0.19%	-0.21%	0.04%	0.09%	0.07%	0.32%	0.37%	0.35%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

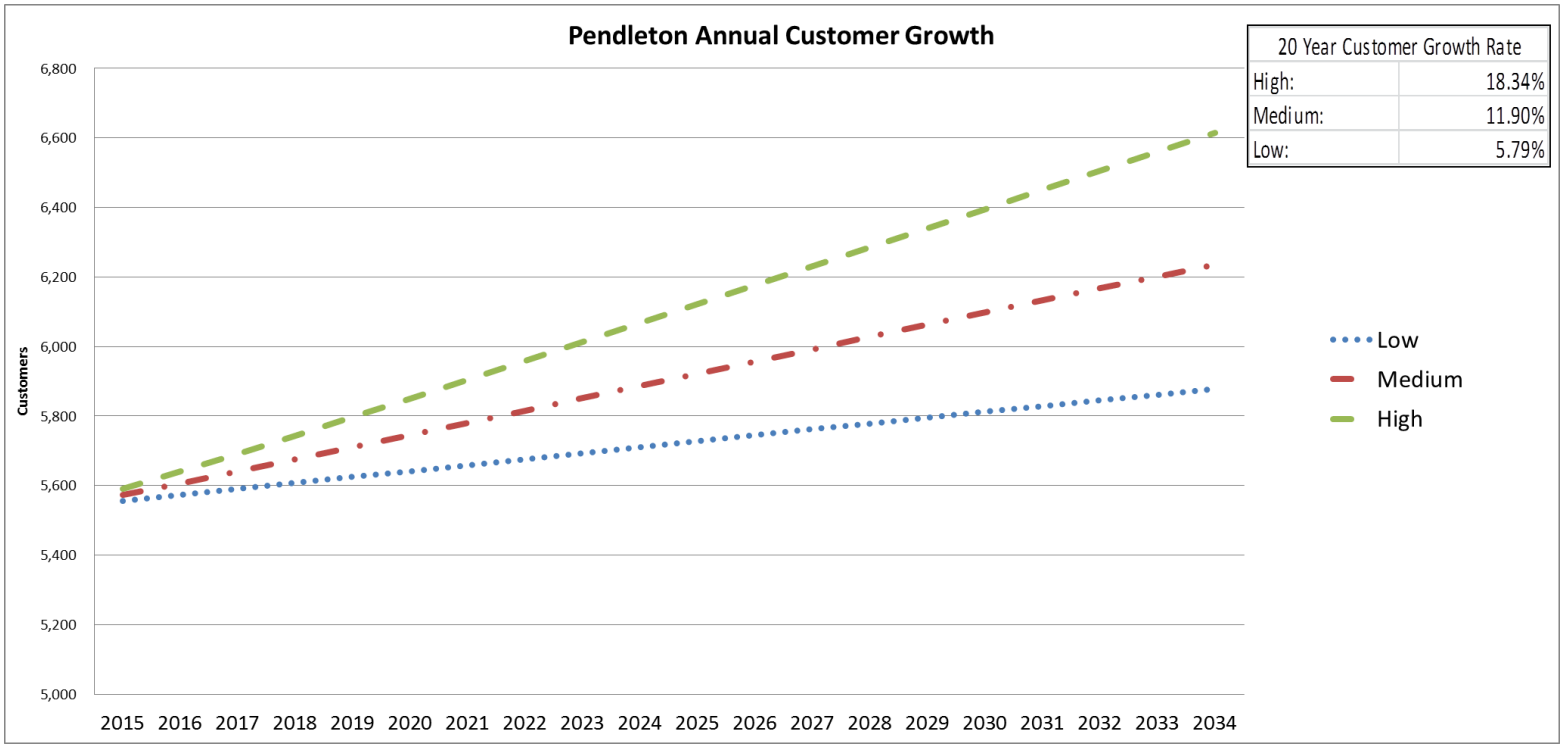
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,809	747	5,557	4,823	750	5,573	4,838	752	5,590
2016	4,824	750	5,573	4,853	754	5,607	4,882	759	5,640
2017	4,838	752	5,590	4,882	759	5,641	4,926	766	5,692
2018	4,853	754	5,607	4,912	763	5,675	4,971	773	5,744
2019	4,868	757	5,625	4,942	768	5,710	5,017	780	5,797
2020	4,883	759	5,642	4,972	773	5,745	5,063	787	5,850
2021	4,898	761	5,659	5,003	778	5,781	5,110	794	5,904
2022	4,913	764	5,676	5,034	782	5,816	5,157	802	5,958
2023	4,928	766	5,694	5,064	787	5,851	5,204	809	6,013
2024	4,943	768	5,711	5,095	792	5,887	5,251	816	6,067
2025	4,958	771	5,728	5,125	797	5,922	5,298	824	6,122
2026	4,972	773	5,745	5,156	801	5,957	5,346	831	6,177
2027	4,987	775	5,762	5,187	806	5,993	5,393	838	6,232
2028	5,002	777	5,779	5,217	811	6,028	5,441	846	6,287
2029	5,016	780	5,796	5,247	816	6,063	5,488	853	6,341
2030	5,031	782	5,812	5,277	820	6,098	5,535	860	6,396
2031	5,045	784	5,829	5,307	825	6,132	5,583	868	6,451
2032	5,059	786	5,846	5,338	830	6,167	5,630	875	6,505
2033	5,073	789	5,862	5,368	834	6,202	5,678	883	6,560
2034	5,088	791	5,878	5,398	839	6,236	5,725	890	6,615

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Pendleton Annual Therm Usage
Therms
7,600,000
7,400,000
7,200,000
7,000,000
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%


Pendleton Annual Customer Growth
Customers
6,800
6,600
6,400
6,200
6,000
5,800
5,600
5,400
5,200
5,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Prineville

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,477,707	367,275	2,844,983	2,484,333	367,275	2,851,608	2,490,958	367,275	2,858,234
2016	2,495,385	369,896	2,865,281	2,508,032	370,779	2,878,811	2,520,711	371,662	2,892,374
2017	2,489,785	369,066	2,858,850	2,508,581	370,860	2,879,442	2,527,473	372,659	2,900,132
2018	2,496,089	370,000	2,866,089	2,521,286	372,738	2,894,024	2,546,673	375,490	2,922,163
2019	2,502,550	370,958	2,873,508	2,534,338	374,668	2,909,006	2,566,448	378,406	2,944,854
2020	2,520,977	373,689	2,894,666	2,559,672	378,413	2,938,086	2,598,861	383,185	2,982,046
2021	2,515,822	372,925	2,888,747	2,561,254	378,647	2,939,901	2,607,387	384,442	2,991,829
2022	2,522,574	373,926	2,896,500	2,575,001	380,680	2,955,681	2,628,380	387,537	3,015,917
2023	2,529,364	374,933	2,904,297	2,588,865	382,729	2,971,594	2,649,606	390,667	3,040,273
2024	2,548,246	377,732	2,925,978	2,615,272	386,633	3,001,905	2,683,880	395,720	3,079,601
2025	2,543,173	376,980	2,920,153	2,617,171	386,914	3,004,085	2,693,121	397,083	3,090,204
2026	2,550,134	378,011	2,928,146	2,631,498	389,032	3,020,530	2,715,235	400,344	3,115,579
2027	2,557,076	379,040	2,936,117	2,645,825	391,150	3,036,975	2,737,409	403,613	3,141,022
2028	2,576,183	381,873	2,958,056	2,672,851	395,145	3,067,996	2,772,878	408,843	3,181,720
2029	2,571,016	381,107	2,952,122	2,674,711	395,420	3,070,131	2,782,298	410,232	3,192,530
2030	2,577,957	382,136	2,960,093	2,689,153	397,555	3,086,709	2,804,834	413,554	3,218,388
2031	2,584,991	383,178	2,968,169	2,703,828	399,725	3,103,553	2,827,793	416,939	3,244,732
2032	2,604,210	386,027	2,990,237	2,731,245	403,778	3,135,023	2,864,116	422,295	3,286,410
2033	2,598,946	385,247	2,984,193	2,733,061	404,047	3,137,108	2,873,714	423,710	3,297,425
2034	2,605,978	386,289	2,992,268	2,747,851	406,233	3,154,084	2,897,042	427,150	3,324,191

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.71%	0.71%	0.95%	0.95%	0.95%	1.19%	1.19%	1.19%
2017	-0.22%	-0.22%	-0.22%	0.02%	0.02%	0.02%	0.27%	0.27%	0.27%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.74%	0.74%	0.74%	1.00%	1.00%	1.00%	1.26%	1.26%	1.26%
2021	-0.20%	-0.20%	-0.20%	0.06%	0.06%	0.06%	0.33%	0.33%	0.33%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.75%	0.75%	0.75%	1.02%	1.02%	1.02%	1.29%	1.29%	1.29%
2025	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.75%	0.75%	0.75%	1.02%	1.02%	1.02%	1.30%	1.30%	1.30%
2029	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.74%	0.74%	0.74%	1.01%	1.01%	1.01%	1.28%	1.28%	1.28%
2033	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,006	37,741	38,748	1,006	37,832	38,838	1,006	37,922	38,928
2016	1,013	37,827	38,840	1,016	38,008	39,024	1,018	38,189	39,208
2017	1,011	37,925	38,936	1,016	38,201	39,217	1,021	38,478	39,499
2018	1,014	38,021	39,035	1,021	38,394	39,415	1,029	38,770	39,799
2019	1,016	38,120	39,136	1,026	38,593	39,619	1,037	39,071	40,108
2020	1,024	38,215	39,239	1,037	38,790	39,827	1,050	39,373	40,423
2021	1,022	38,322	39,344	1,037	39,003	40,040	1,053	39,694	40,748
2022	1,024	38,425	39,449	1,043	39,212	40,255	1,062	40,014	41,076
2023	1,027	38,528	39,555	1,049	39,423	40,472	1,070	40,337	41,407
2024	1,035	38,628	39,663	1,059	39,633	40,692	1,084	40,661	41,745
2025	1,033	38,738	39,771	1,060	39,854	40,914	1,088	40,999	42,087
2026	1,036	38,845	39,880	1,066	40,073	41,138	1,097	41,336	42,433
2027	1,038	38,950	39,989	1,072	40,291	41,362	1,106	41,674	42,779
2028	1,046	39,052	40,098	1,083	40,506	41,588	1,120	42,010	43,130
2029	1,044	39,163	40,207	1,083	40,731	41,814	1,124	42,357	43,481
2030	1,047	39,268	40,315	1,089	40,951	42,040	1,133	42,700	43,833
2031	1,050	39,375	40,425	1,095	41,174	42,269	1,142	43,050	44,192
2032	1,058	39,476	40,534	1,106	41,390	42,497	1,157	43,392	44,549
2033	1,055	39,588	40,644	1,107	41,619	42,726	1,161	43,749	44,910
2034	1,058	39,695	40,753	1,113	41,844	42,957	1,170	44,104	45,274

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.23%	0.24%	0.95%	0.47%	0.48%	1.19%	0.71%	0.72%
2017	-0.22%	0.26%	0.25%	0.02%	0.51%	0.50%	0.27%	0.76%	0.74%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.74%	0.25%	0.26%	1.00%	0.51%	0.52%	1.26%	0.77%	0.79%
2021	-0.20%	0.28%	0.27%	0.06%	0.55%	0.54%	0.33%	0.82%	0.80%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.75%	0.26%	0.27%	1.02%	0.53%	0.54%	1.29%	0.80%	0.82%
2025	-0.20%	0.29%	0.27%	0.07%	0.56%	0.55%	0.34%	0.83%	0.82%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.75%	0.26%	0.27%	1.02%	0.53%	0.55%	1.30%	0.81%	0.82%
2029	-0.20%	0.28%	0.27%	0.07%	0.56%	0.54%	0.34%	0.83%	0.81%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.74%	0.26%	0.27%	1.01%	0.53%	0.54%	1.28%	0.80%	0.81%
2033	-0.20%	0.28%	0.27%	0.07%	0.55%	0.54%	0.34%	0.82%	0.81%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,130,226	1,580,474	2,710,700	1,132,858	1,584,155	2,717,013	1,135,490	1,587,835	2,723,325
2016	1,138,453	1,591,544	2,729,997	1,143,829	1,599,059	2,742,888	1,149,217	1,606,593	2,755,810
2017	1,135,735	1,588,178	2,723,913	1,143,915	1,599,617	2,743,532	1,152,135	1,611,111	2,763,246
2018	1,138,611	1,592,199	2,730,810	1,149,709	1,607,718	2,757,427	1,160,887	1,623,350	2,784,237
2019	1,141,558	1,596,321	2,737,879	1,155,660	1,616,041	2,771,701	1,169,902	1,635,955	2,805,857
2020	1,150,128	1,607,866	2,757,995	1,167,380	1,631,984	2,799,364	1,184,847	1,656,402	2,841,249
2021	1,147,612	1,604,786	2,752,398	1,167,934	1,633,204	2,801,138	1,188,564	1,662,052	2,850,615
2022	1,150,692	1,609,093	2,759,785	1,174,203	1,641,970	2,816,173	1,198,133	1,675,433	2,873,566
2023	1,153,790	1,613,425	2,767,214	1,180,525	1,650,810	2,831,335	1,207,809	1,688,964	2,896,773
2024	1,162,569	1,625,258	2,787,828	1,192,737	1,667,433	2,860,170	1,223,608	1,710,590	2,934,197
2025	1,160,089	1,622,233	2,782,322	1,193,432	1,668,860	2,862,293	1,227,645	1,716,702	2,944,347
2026	1,163,264	1,626,673	2,789,937	1,199,966	1,677,996	2,877,961	1,237,726	1,730,798	2,968,524
2027	1,166,431	1,631,102	2,797,532	1,206,499	1,687,131	2,893,630	1,247,834	1,744,933	2,992,767
2028	1,175,315	1,643,077	2,818,391	1,218,997	1,704,144	2,923,141	1,264,183	1,767,313	3,031,495
2029	1,172,789	1,639,993	2,812,782	1,219,671	1,705,551	2,925,221	1,268,296	1,773,547	3,041,843
2030	1,175,956	1,644,421	2,820,377	1,226,256	1,714,760	2,941,017	1,278,569	1,787,912	3,066,481
2031	1,179,164	1,648,908	2,828,072	1,232,948	1,724,117	2,957,065	1,289,034	1,802,547	3,091,581
2032	1,188,101	1,660,952	2,849,053	1,245,628	1,741,374	2,987,003	1,305,779	1,825,464	3,131,242
2033	1,185,530	1,657,809	2,843,339	1,246,278	1,742,758	2,989,036	1,309,967	1,831,819	3,141,787
2034	1,188,738	1,662,295	2,851,033	1,253,023	1,752,189	3,005,212	1,320,601	1,846,689	3,167,290

Annual Change

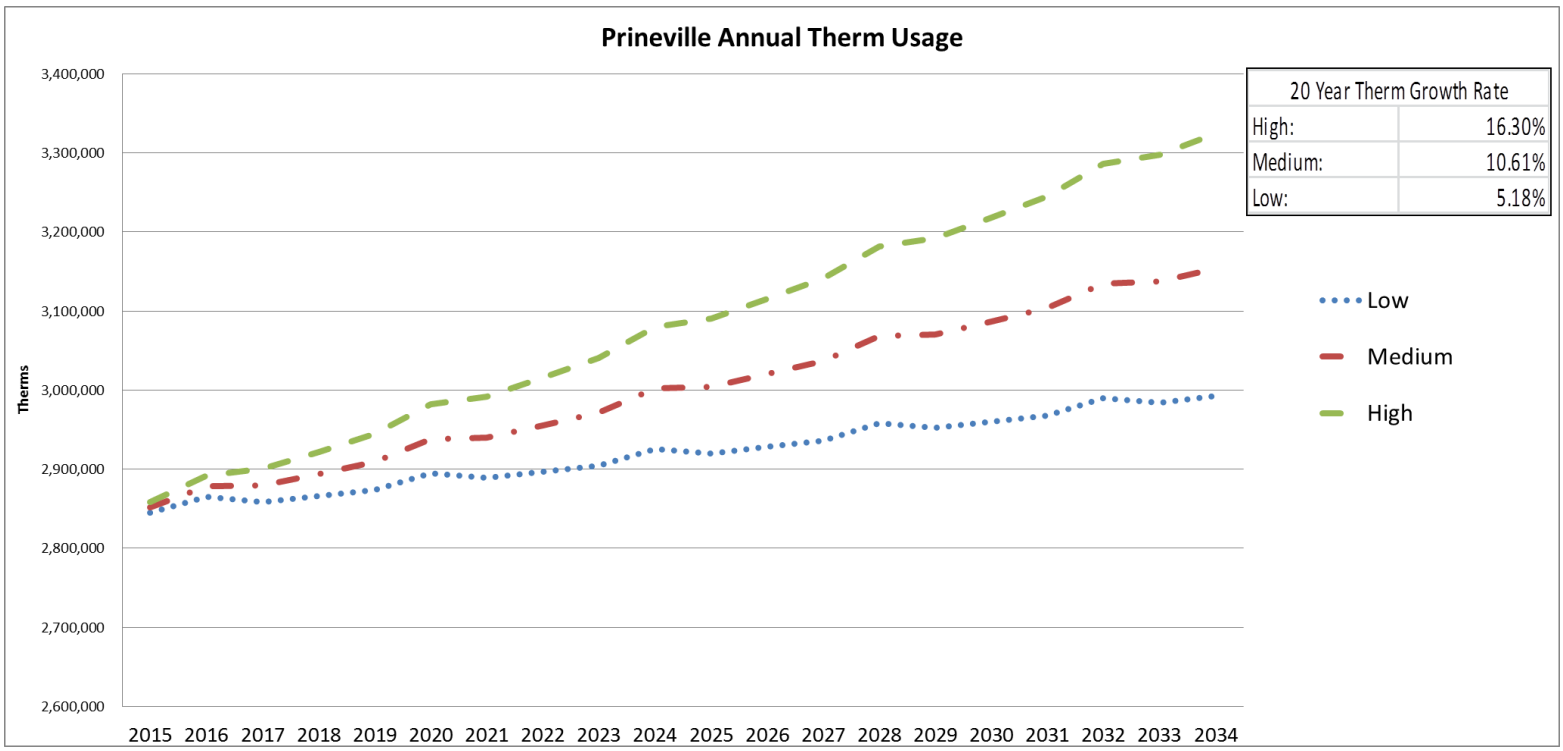
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.73%	0.70%	0.71%	0.97%	0.94%	0.95%	1.21%	1.18%	1.19%
2017	-0.24%	-0.21%	-0.22%	0.01%	0.03%	0.02%	0.25%	0.28%	0.27%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.75%	0.72%	0.73%	1.01%	0.99%	1.00%	1.28%	1.25%	1.26%
2021	-0.22%	-0.19%	-0.20%	0.05%	0.07%	0.06%	0.31%	0.34%	0.33%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.76%	0.73%	0.74%	1.03%	1.01%	1.02%	1.31%	1.28%	1.29%
2025	-0.21%	-0.19%	-0.20%	0.06%	0.09%	0.07%	0.33%	0.36%	0.35%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.76%	0.73%	0.75%	1.04%	1.01%	1.02%	1.31%	1.28%	1.29%
2029	-0.21%	-0.19%	-0.20%	0.06%	0.08%	0.07%	0.33%	0.35%	0.34%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.76%	0.73%	0.74%	1.03%	1.00%	1.01%	1.30%	1.27%	1.28%
2033	-0.22%	-0.19%	-0.20%	0.05%	0.08%	0.07%	0.32%	0.35%	0.34%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

Customer Count Forecast

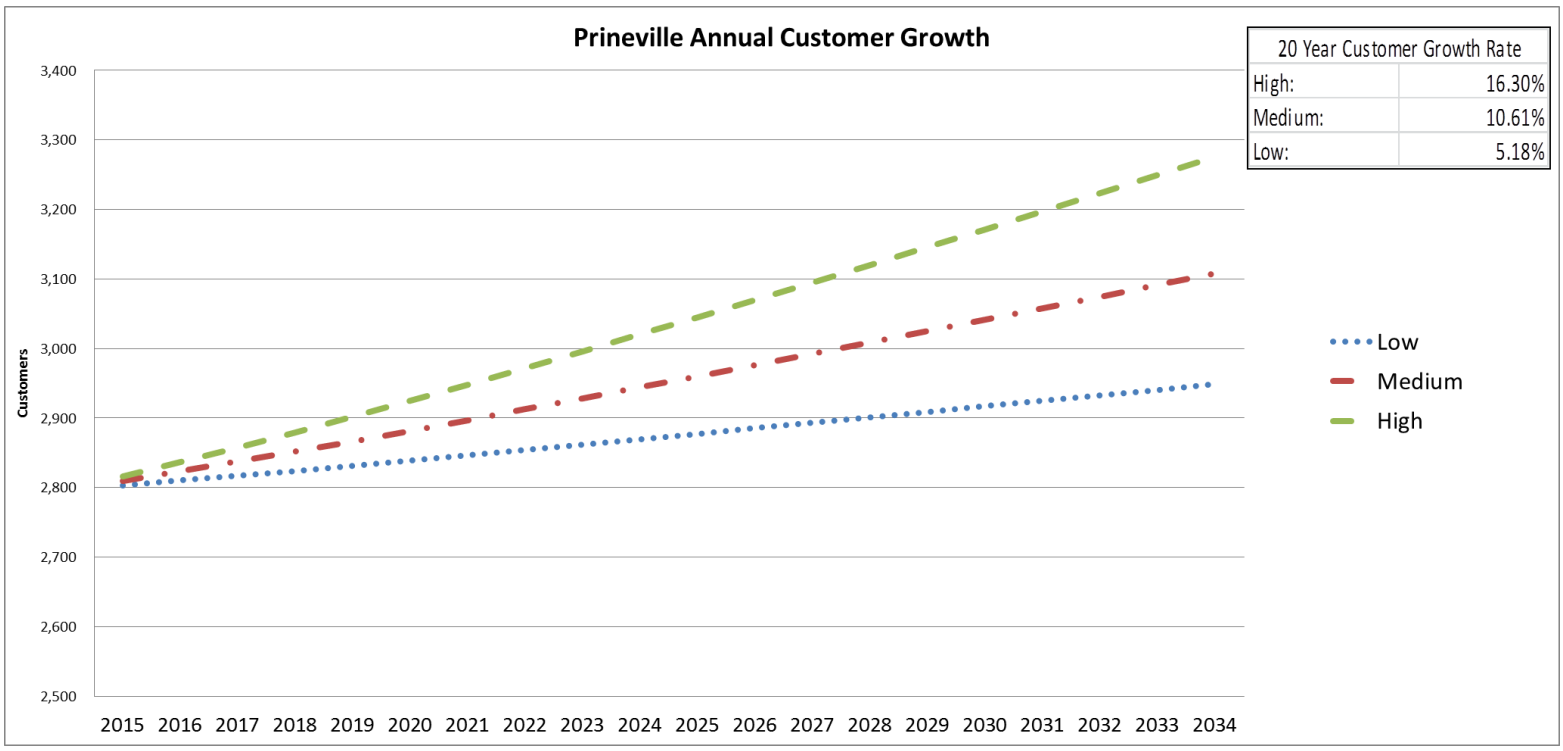
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,282	521	2,803	2,288	522	2,810	2,293	523	2,817
2016	2,288	522	2,810	2,299	525	2,823	2,309	527	2,837
2017	2,294	524	2,817	2,310	527	2,837	2,327	531	2,858
2018	2,299	525	2,824	2,322	530	2,852	2,344	535	2,879
2019	2,305	526	2,832	2,334	533	2,867	2,363	539	2,902
2020	2,311	528	2,839	2,346	536	2,882	2,381	544	2,925
2021	2,318	529	2,847	2,359	538	2,897	2,400	548	2,948
2022	2,324	530	2,854	2,371	541	2,913	2,420	552	2,972
2023	2,330	532	2,862	2,384	544	2,928	2,439	557	2,996
2024	2,336	533	2,870	2,397	547	2,944	2,459	561	3,020
2025	2,343	535	2,878	2,410	550	2,960	2,479	566	3,045
2026	2,349	536	2,885	2,423	553	2,976	2,499	571	3,070
2027	2,356	538	2,893	2,436	556	2,993	2,520	575	3,095
2028	2,362	539	2,901	2,450	559	3,009	2,541	580	3,121
2029	2,368	541	2,909	2,463	562	3,025	2,561	585	3,146
2030	2,375	542	2,917	2,476	565	3,042	2,582	589	3,171
2031	2,381	544	2,925	2,490	568	3,058	2,603	594	3,197
2032	2,388	545	2,933	2,503	571	3,075	2,624	599	3,223
2033	2,394	547	2,941	2,517	575	3,091	2,645	604	3,249
2034	2,401	548	2,949	2,530	578	3,108	2,667	609	3,276

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.79%	0.79%	0.79%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2025	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2029	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%



20 Year Therm Growth Rate	
High:	16.30%
Medium:	10.61%
Low:	5.18%



20 Year Customer Growth Rate	
High:	16.30%
Medium:	10.61%
Low:	5.18%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Redmond

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	6,140,047	1,340,620	7,480,666	6,224,692	1,340,620	7,565,311	6,309,337	1,340,620	7,649,956
2016	6,237,216	1,361,836	7,599,052	6,393,216	1,376,915	7,770,131	6,551,120	1,391,994	7,943,114
2017	6,276,889	1,370,498	7,647,387	6,503,678	1,400,705	7,904,383	6,735,831	1,431,242	8,167,073
2018	6,344,383	1,385,234	7,729,617	6,643,543	1,430,828	8,074,371	6,953,117	1,477,411	8,430,528
2019	6,411,247	1,399,833	7,811,080	6,783,576	1,460,987	8,244,563	7,172,955	1,524,123	8,697,077
2020	6,507,023	1,420,745	7,927,768	6,955,201	1,497,950	8,453,151	7,428,751	1,578,475	9,007,226
2021	6,542,972	1,428,594	7,971,566	7,063,744	1,521,327	8,585,071	7,619,577	1,619,022	9,238,599
2022	6,607,858	1,442,762	8,050,620	7,203,845	1,551,501	8,755,346	7,846,264	1,667,189	9,513,453
2023	6,672,051	1,456,778	8,128,829	7,343,810	1,581,646	8,925,456	8,074,935	1,715,777	9,790,713
2024	6,766,496	1,477,399	8,243,895	7,518,101	1,619,183	9,137,284	8,343,918	1,772,931	10,116,849
2025	6,798,527	1,484,392	8,282,920	7,623,538	1,641,891	9,265,429	8,538,456	1,814,267	10,352,723
2026	6,860,801	1,497,989	8,358,790	7,763,199	1,671,970	9,435,169	8,773,089	1,864,122	10,637,211
2027	6,922,395	1,511,438	8,433,832	7,902,589	1,701,990	9,604,579	9,009,373	1,914,328	10,923,701
2028	7,015,308	1,531,724	8,547,032	8,078,553	1,739,888	9,818,441	9,289,665	1,973,885	11,263,551
2029	7,043,569	1,537,895	8,581,464	8,180,453	1,761,834	9,942,288	9,486,596	2,015,730	11,502,325
2030	7,103,155	1,550,905	8,654,059	8,318,860	1,791,643	10,110,504	9,727,354	2,066,886	11,794,241
2031	7,162,230	1,563,803	8,726,034	8,457,233	1,821,445	10,278,678	9,970,056	2,118,456	12,088,512
2032	7,253,732	1,583,782	8,837,514	8,634,612	1,859,647	10,494,259	10,260,899	2,180,255	12,441,154
2033	7,278,644	1,589,221	8,867,865	8,733,266	1,880,894	10,614,160	10,460,130	2,222,588	12,682,718
2034	7,336,052	1,601,756	8,937,808	8,871,028	1,910,564	10,781,592	10,707,633	2,275,178	12,982,811

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.58%	1.58%	2.71%	2.71%	2.71%	3.83%	3.83%	3.83%
2017	0.64%	0.64%	0.64%	1.73%	1.73%	1.73%	2.82%	2.82%	2.82%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.49%	1.49%	2.53%	2.53%	2.53%	3.57%	3.57%	3.57%
2021	0.55%	0.55%	0.55%	1.56%	1.56%	1.56%	2.57%	2.57%	2.57%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	1.42%	1.42%	2.37%	2.37%	2.37%	3.33%	3.33%	3.33%
2025	0.47%	0.47%	0.47%	1.40%	1.40%	1.40%	2.33%	2.33%	2.33%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.11%	3.11%	3.11%
2029	0.40%	0.40%	0.40%	1.26%	1.26%	1.26%	2.12%	2.12%	2.12%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	1.28%	1.28%	2.10%	2.10%	2.10%	2.92%	2.92%	2.92%
2033	0.34%	0.34%	0.34%	1.14%	1.14%	1.14%	1.94%	1.94%	1.94%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	3,673	91,358	95,031	3,673	92,434	96,107	3,673	93,509	97,182
2016	3,731	92,364	96,095	3,772	94,486	98,259	3,814	96,633	100,446
2017	3,755	93,394	97,149	3,838	96,576	100,414	3,921	99,830	103,751
2018	3,795	94,399	98,194	3,920	98,653	102,573	4,048	103,050	107,098
2019	3,835	95,394	99,229	4,003	100,733	104,736	4,176	106,308	110,484
2020	3,892	96,360	100,252	4,104	102,792	106,896	4,325	109,578	113,903
2021	3,914	97,354	101,267	4,168	104,893	109,061	4,436	112,928	117,363
2022	3,953	98,319	102,272	4,251	106,974	111,224	4,568	116,287	120,855
2023	3,991	99,274	103,265	4,333	109,052	113,385	4,701	119,676	124,377
2024	4,048	100,202	104,250	4,436	111,111	115,547	4,857	123,077	127,935
2025	4,067	101,156	105,223	4,498	113,206	117,704	4,971	126,546	131,517
2026	4,104	102,083	106,187	4,581	115,280	119,860	5,107	130,024	135,131
2027	4,141	102,999	107,140	4,663	117,350	122,013	5,245	133,525	138,770
2028	4,197	103,887	108,083	4,767	119,394	124,161	5,408	137,028	142,435
2029	4,213	104,802	109,015	4,827	121,476	126,303	5,523	140,598	146,121
2030	4,249	105,689	109,938	4,909	123,531	128,440	5,663	144,166	149,829
2031	4,284	106,568	110,852	4,990	125,586	130,576	5,804	147,763	153,567
2032	4,339	107,417	111,757	5,095	127,612	132,707	5,973	151,354	157,327
2033	4,354	108,300	112,654	5,153	129,685	134,838	6,089	155,027	161,116
2034	4,388	109,154	113,542	5,234	131,730	136,965	6,233	158,695	164,928

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.10%	1.12%	2.71%	2.22%	2.24%	3.83%	3.34%	3.36%
2017	0.64%	1.12%	1.10%	1.73%	2.21%	2.19%	2.82%	3.31%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.01%	1.03%	2.53%	2.04%	2.06%	3.57%	3.08%	3.09%
2021	0.55%	1.03%	1.01%	1.56%	2.04%	2.03%	2.57%	3.06%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	0.93%	0.95%	2.37%	1.89%	1.91%	3.33%	2.84%	2.86%
2025	0.47%	0.95%	0.93%	1.40%	1.89%	1.87%	2.33%	2.82%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	0.86%	0.88%	2.23%	1.74%	1.76%	3.11%	2.62%	2.64%
2029	0.40%	0.88%	0.86%	1.26%	1.74%	1.72%	2.12%	2.61%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	0.80%	0.82%	2.10%	1.61%	1.63%	2.92%	2.43%	2.45%
2033	0.34%	0.82%	0.80%	1.14%	1.62%	1.61%	1.94%	2.43%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,906,472	3,295,764	7,202,236	3,950,674	3,333,056	7,283,731	3,994,877	3,370,348	7,365,225
2016	3,968,880	3,347,986	7,316,865	4,058,232	3,423,360	7,481,591	4,148,578	3,499,572	7,648,151
2017	3,993,535	3,369,216	7,362,751	4,127,741	3,482,442	7,610,182	4,264,920	3,598,175	7,863,095
2018	4,036,476	3,405,445	7,441,921	4,216,510	3,557,333	7,773,843	4,402,498	3,714,246	8,116,744
2019	4,079,017	3,441,335	7,520,352	4,305,386	3,632,315	7,937,700	4,541,693	3,831,679	8,373,372
2020	4,140,564	3,492,811	7,633,375	4,414,964	3,724,284	8,139,248	4,704,350	3,968,398	8,672,748
2021	4,162,824	3,512,040	7,674,865	4,483,202	3,782,333	8,265,535	4,824,480	4,070,258	8,894,738
2022	4,204,107	3,546,869	7,750,976	4,572,121	3,857,351	8,429,472	4,968,012	4,191,351	9,159,362
2023	4,244,948	3,581,326	7,826,274	4,660,954	3,932,296	8,593,250	5,112,799	4,313,503	9,426,302
2024	4,305,672	3,632,090	7,937,762	4,772,277	4,025,699	8,797,976	5,283,890	4,457,275	9,741,166
2025	4,325,416	3,649,214	7,974,630	4,838,491	4,082,079	8,920,570	5,406,286	4,561,109	9,967,395
2026	4,365,036	3,682,640	8,047,676	4,927,131	4,156,861	9,083,992	5,554,848	4,686,446	10,241,294
2027	4,404,224	3,715,701	8,119,925	5,015,598	4,231,498	9,247,097	5,704,456	4,812,665	10,517,121
2028	4,463,997	3,765,646	8,229,643	5,128,036	4,325,803	9,453,839	5,882,797	4,962,489	10,845,285
2029	4,481,318	3,780,743	8,262,062	5,191,953	4,380,283	9,572,236	6,006,619	5,067,590	11,074,209
2030	4,519,228	3,812,727	8,331,955	5,279,797	4,454,394	9,734,191	6,159,059	5,196,200	11,355,259
2031	4,556,814	3,844,437	8,401,251	5,367,619	4,528,487	9,896,106	6,312,731	5,325,847	11,638,578
2032	4,615,711	3,893,627	8,509,338	5,481,006	4,623,555	10,104,561	6,497,843	5,481,316	11,979,159
2033	4,630,880	3,906,924	8,537,803	5,542,811	4,676,291	10,219,101	6,623,030	5,587,637	12,210,667
2034	4,667,404	3,937,738	8,605,142	5,630,245	4,750,056	10,380,301	6,779,742	5,719,849	12,499,591

Annual Change

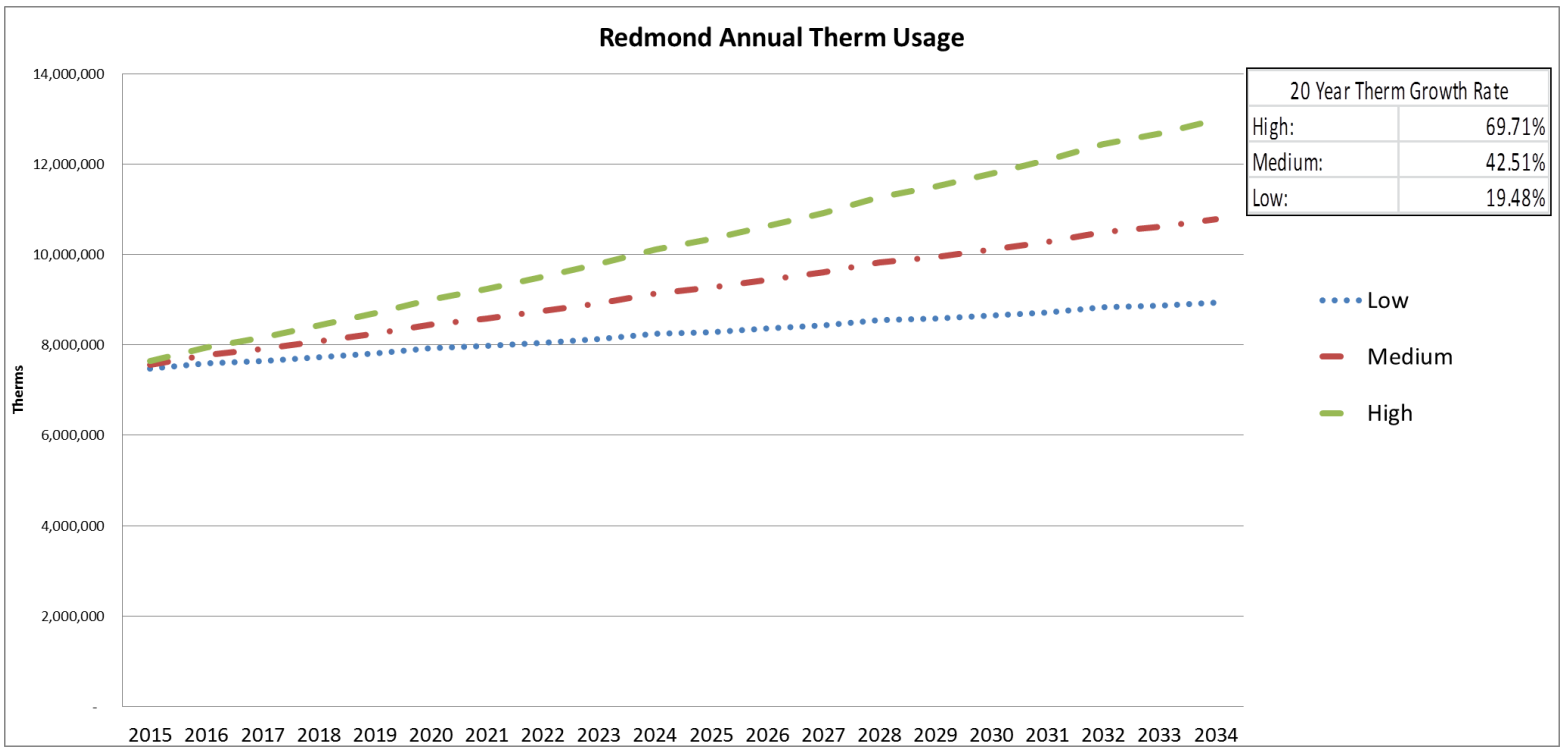
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.60%	1.58%	1.59%	2.72%	2.71%	2.72%	3.85%	3.83%	3.84%
2017	0.62%	0.63%	0.63%	1.71%	1.73%	1.72%	2.80%	2.82%	2.81%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.51%	1.50%	1.50%	2.55%	2.53%	2.54%	3.58%	3.57%	3.58%
2021	0.54%	0.55%	0.54%	1.55%	1.56%	1.55%	2.55%	2.57%	2.56%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.43%	1.42%	1.42%	2.39%	2.38%	2.38%	3.35%	3.33%	3.34%
2025	0.46%	0.47%	0.46%	1.39%	1.40%	1.39%	2.32%	2.33%	2.32%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.36%	1.34%	1.35%	2.24%	2.23%	2.24%	3.13%	3.11%	3.12%
2029	0.39%	0.40%	0.39%	1.25%	1.26%	1.25%	2.10%	2.12%	2.11%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.29%	1.28%	1.29%	2.11%	2.10%	2.11%	2.93%	2.92%	2.93%
2033	0.33%	0.34%	0.33%	1.13%	1.14%	1.13%	1.93%	1.94%	1.93%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

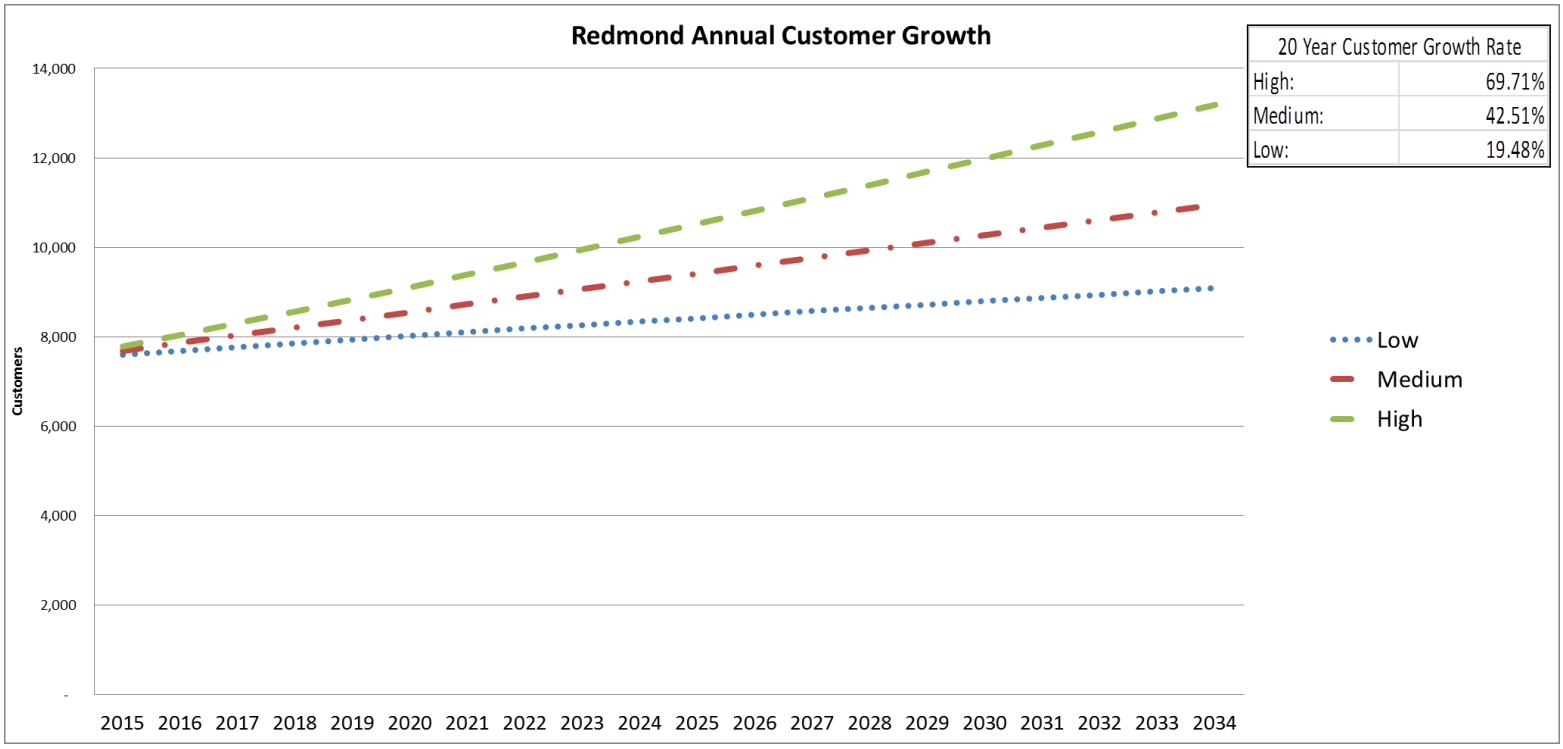
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,464	1,137	7,601	6,537	1,150	7,687	6,610	1,163	7,773
2016	6,536	1,150	7,686	6,683	1,176	7,859	6,832	1,202	8,034
2017	6,608	1,163	7,770	6,830	1,202	8,031	7,057	1,242	8,298
2018	6,679	1,175	7,854	6,977	1,227	8,204	7,284	1,282	8,566
2019	6,749	1,187	7,937	7,124	1,253	8,377	7,515	1,322	8,837
2020	6,819	1,200	8,019	7,271	1,279	8,550	7,747	1,363	9,110
2021	6,888	1,212	8,100	7,418	1,305	8,723	7,983	1,404	9,387
2022	6,956	1,224	8,180	7,565	1,331	8,896	8,220	1,446	9,666
2023	7,024	1,236	8,260	7,712	1,357	9,069	8,460	1,488	9,948
2024	7,091	1,248	8,338	7,859	1,383	9,242	8,702	1,531	10,233
2025	7,157	1,259	8,416	8,006	1,409	9,414	8,945	1,574	10,519
2026	7,222	1,271	8,493	8,153	1,434	9,587	9,191	1,617	10,808
2027	7,287	1,282	8,569	8,299	1,460	9,759	9,439	1,661	11,099
2028	7,351	1,293	8,645	8,445	1,486	9,931	9,688	1,704	11,392
2029	7,415	1,305	8,719	8,591	1,511	10,102	9,939	1,749	11,687
2030	7,478	1,316	8,793	8,736	1,537	10,273	10,191	1,793	11,984
2031	7,540	1,327	8,866	8,881	1,563	10,444	10,445	1,838	12,283
2032	7,601	1,337	8,939	9,026	1,588	10,614	10,701	1,883	12,584
2033	7,662	1,348	9,010	9,171	1,614	10,785	10,959	1,928	12,887
2034	7,723	1,359	9,081	9,316	1,639	10,955	11,218	1,974	13,192

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Redmond Annual Therm Usage
Therms
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Redmond Annual Customer Growth
Customers
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Stanfield

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	180,011	36,655	216,666	180,660	36,655	217,315	181,309	36,655	217,964
2016	181,447	36,948	218,395	182,650	37,059	219,708	183,856	37,170	221,025
2017	181,104	36,878	217,982	182,857	37,101	219,958	184,621	37,325	221,946
2018	181,657	36,990	218,648	183,975	37,328	221,302	186,314	37,667	223,981
2019	182,216	37,104	219,320	185,106	37,557	222,663	188,032	38,014	226,047
2020	183,677	37,401	221,078	187,158	37,974	225,132	190,695	38,553	229,247
2021	183,334	37,332	220,665	187,380	38,018	225,398	191,503	38,716	230,219
2022	183,895	37,446	221,341	188,527	38,251	226,778	193,261	39,071	232,333
2023	184,453	37,560	222,013	189,672	38,484	228,156	195,022	39,427	234,449
2024	185,928	37,860	223,788	191,768	38,909	230,676	197,772	39,983	237,755
2025	185,568	37,787	223,355	191,969	38,950	230,918	198,570	40,145	238,714
2026	186,122	37,899	224,021	193,114	39,182	232,296	200,346	40,504	240,850
2027	186,673	38,012	224,685	194,259	39,414	233,673	202,128	40,864	242,992
2028	188,147	38,312	226,459	196,366	39,842	236,207	204,916	41,428	246,344
2029	187,763	38,234	225,997	196,531	39,875	236,406	205,679	41,582	247,260
2030	188,302	38,343	226,645	197,657	40,104	237,761	207,447	41,939	249,387
2031	188,839	38,453	227,292	198,786	40,333	239,119	209,225	42,299	251,524
2032	190,311	38,752	229,064	200,902	40,762	241,664	212,047	42,869	254,917
2033	189,907	38,670	228,577	201,038	40,790	241,827	212,784	43,018	255,802
2034	190,437	38,778	229,215	202,160	41,017	243,177	214,566	43,379	257,944

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.40%	1.40%	1.40%
2017	-0.19%	-0.19%	-0.19%	0.11%	0.11%	0.11%	0.42%	0.42%	0.42%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.80%	0.80%	1.11%	1.11%	1.11%	1.42%	1.42%	1.42%
2021	-0.19%	-0.19%	-0.19%	0.12%	0.12%	0.12%	0.42%	0.42%	0.42%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2025	-0.19%	-0.19%	-0.19%	0.10%	0.10%	0.10%	0.40%	0.40%	0.40%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.79%	0.79%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2029	-0.20%	-0.20%	-0.20%	0.08%	0.08%	0.08%	0.37%	0.37%	0.37%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.78%	0.78%	1.06%	1.06%	1.06%	1.35%	1.35%	1.35%
2033	-0.21%	-0.21%	-0.21%	0.07%	0.07%	0.07%	0.35%	0.35%	0.35%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	100	2,928	3,028	100	2,937	3,037	100	2,946	3,046
2016	101	2,936	3,037	102	2,954	3,055	102	2,972	3,074
2017	101	2,945	3,046	102	2,972	3,074	102	3,000	3,102
2018	101	2,954	3,056	102	2,991	3,093	103	3,027	3,130
2019	102	2,964	3,065	103	3,009	3,112	104	3,055	3,159
2020	102	2,972	3,075	104	3,027	3,131	106	3,083	3,188
2021	102	2,982	3,084	104	3,046	3,150	106	3,111	3,218
2022	103	2,991	3,093	105	3,065	3,169	107	3,140	3,247
2023	103	3,000	3,103	105	3,083	3,189	108	3,169	3,277
2024	104	3,009	3,112	107	3,101	3,208	110	3,197	3,306
2025	104	3,018	3,122	107	3,121	3,227	110	3,226	3,336
2026	104	3,027	3,131	107	3,139	3,247	111	3,255	3,366
2027	104	3,036	3,140	108	3,158	3,266	112	3,284	3,396
2028	105	3,044	3,149	109	3,176	3,285	114	3,312	3,426
2029	105	3,054	3,158	109	3,195	3,304	114	3,342	3,456
2030	105	3,063	3,168	110	3,213	3,323	115	3,370	3,485
2031	105	3,071	3,177	111	3,231	3,342	116	3,399	3,515
2032	106	3,079	3,186	112	3,249	3,361	117	3,428	3,545
2033	106	3,089	3,195	112	3,268	3,380	118	3,457	3,575
2034	106	3,097	3,203	112	3,286	3,399	119	3,486	3,605

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.28%	0.30%	1.10%	0.59%	0.60%	1.40%	0.89%	0.91%
2017	-0.19%	0.32%	0.30%	0.11%	0.63%	0.61%	0.42%	0.93%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.29%	0.31%	1.11%	0.59%	0.61%	1.42%	0.90%	0.92%
2021	-0.19%	0.32%	0.31%	0.12%	0.63%	0.61%	0.42%	0.94%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.29%	0.30%	1.10%	0.59%	0.61%	1.41%	0.89%	0.91%
2025	-0.19%	0.32%	0.30%	0.10%	0.62%	0.60%	0.40%	0.92%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.28%	0.29%	1.08%	0.57%	0.59%	1.38%	0.86%	0.88%
2029	-0.20%	0.31%	0.29%	0.08%	0.60%	0.58%	0.37%	0.89%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.27%	0.28%	1.06%	0.55%	0.57%	1.35%	0.83%	0.85%
2033	-0.21%	0.30%	0.28%	0.07%	0.58%	0.56%	0.35%	0.86%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	153,417	63,249	216,666	153,877	63,438	217,315	154,337	63,628	217,964
2016	154,659	63,736	218,395	155,589	64,119	219,708	156,522	64,503	221,025
2017	154,349	63,633	217,982	155,748	64,210	219,958	157,156	64,790	221,946
2018	154,821	63,827	218,648	156,700	64,602	221,302	158,597	65,384	223,981
2019	155,297	64,023	219,320	157,664	64,999	222,663	160,060	65,987	226,047
2020	156,560	64,519	221,078	159,430	65,702	225,132	162,345	66,903	229,247
2021	156,249	64,416	220,665	159,601	65,798	225,398	163,014	67,205	230,219
2022	156,727	64,613	221,341	160,578	66,201	226,778	164,511	67,822	232,333
2023	157,203	64,809	222,013	161,553	66,603	228,156	166,009	68,440	234,449
2024	158,479	65,309	223,788	163,357	67,320	230,676	168,369	69,385	237,755
2025	158,154	65,201	223,355	163,509	67,409	230,918	169,029	69,685	238,714
2026	158,625	65,396	224,021	164,484	67,811	232,296	170,541	70,308	240,850
2027	159,095	65,590	224,685	165,460	68,213	233,673	172,058	70,934	242,992
2028	160,370	66,089	226,459	167,273	68,934	236,207	174,452	71,892	246,344
2029	160,024	65,973	225,997	167,395	69,011	236,406	175,081	72,180	247,260
2030	160,483	66,162	226,645	168,354	69,407	237,761	176,586	72,800	249,387
2031	160,941	66,351	227,292	169,316	69,803	239,119	178,099	73,424	251,524
2032	162,215	66,849	229,064	171,138	70,526	241,664	180,523	74,394	254,917
2033	161,852	66,726	228,577	171,234	70,594	241,827	181,129	74,673	255,802
2034	162,303	66,912	229,215	172,189	70,988	243,177	182,646	75,299	257,944

Annual Change

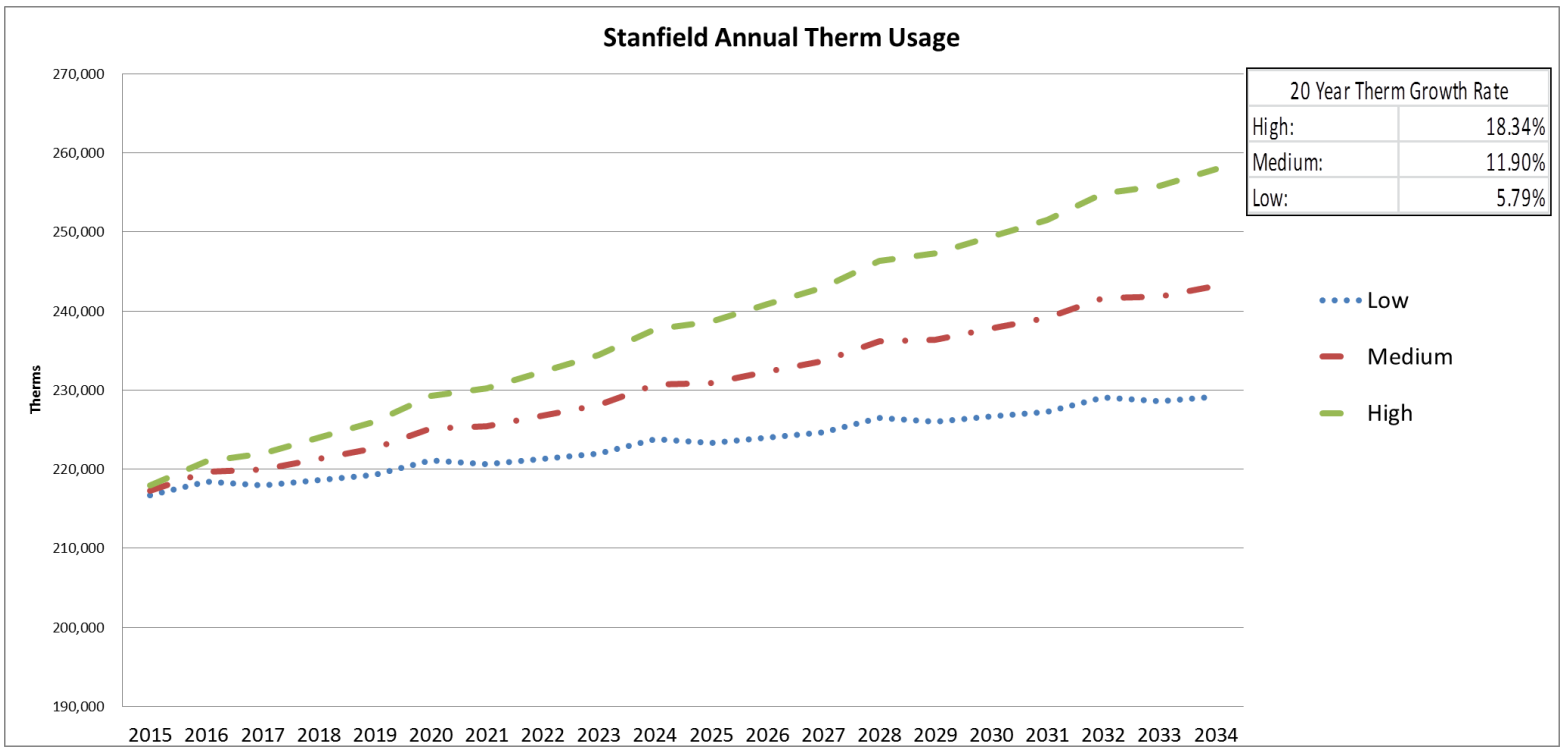
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.77%	0.80%	1.11%	1.07%	1.10%	1.42%	1.38%	1.40%
2017	-0.20%	-0.16%	-0.19%	0.10%	0.14%	0.11%	0.40%	0.44%	0.42%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.77%	0.80%	1.12%	1.08%	1.11%	1.43%	1.39%	1.42%
2021	-0.20%	-0.16%	-0.19%	0.11%	0.15%	0.12%	0.41%	0.45%	0.42%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.77%	0.80%	1.12%	1.08%	1.10%	1.42%	1.38%	1.41%
2025	-0.21%	-0.17%	-0.19%	0.09%	0.13%	0.10%	0.39%	0.43%	0.40%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.76%	0.79%	1.10%	1.06%	1.08%	1.39%	1.35%	1.38%
2029	-0.22%	-0.18%	-0.20%	0.07%	0.11%	0.08%	0.36%	0.40%	0.37%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.75%	0.78%	1.08%	1.04%	1.06%	1.36%	1.32%	1.35%
2033	-0.22%	-0.18%	-0.21%	0.06%	0.10%	0.07%	0.34%	0.38%	0.35%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

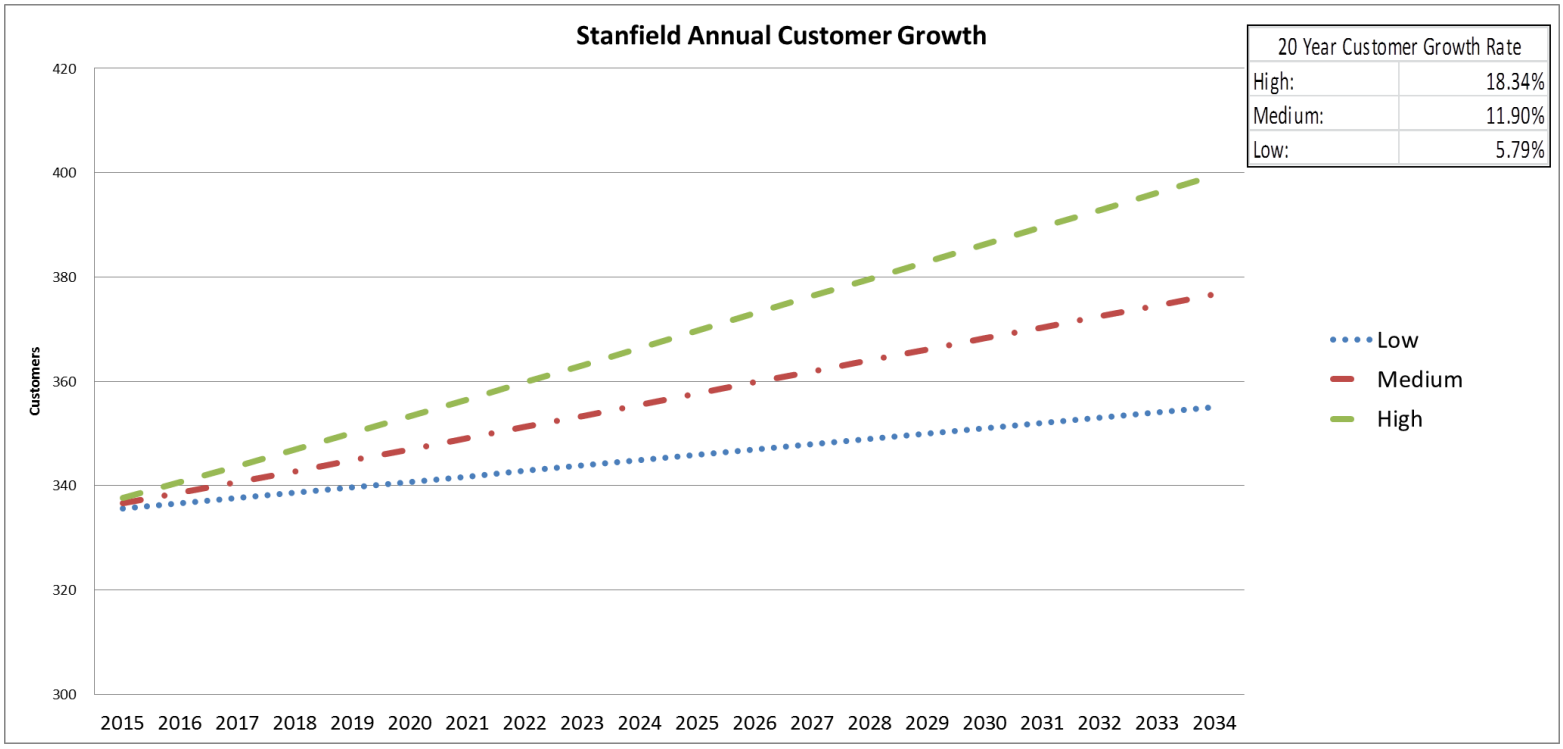
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	303	33	336	304	33	337	305	33	338
2016	304	33	337	306	33	339	307	33	341
2017	305	33	338	307	33	341	310	34	344
2018	306	33	339	309	33	343	313	34	347
2019	307	33	340	311	34	345	316	34	350
2020	307	33	341	313	34	347	319	34	353
2021	308	33	342	315	34	349	322	35	357
2022	309	33	343	317	34	351	325	35	360
2023	310	34	344	319	35	353	328	35	363
2024	311	34	345	321	35	356	331	36	366
2025	312	34	346	323	35	358	334	36	370
2026	313	34	347	325	35	360	337	36	373
2027	314	34	348	327	35	362	340	37	376
2028	315	34	349	329	36	364	343	37	380
2029	316	34	350	330	36	366	346	37	383
2030	317	34	351	332	36	368	349	38	386
2031	318	34	352	334	36	370	352	38	390
2032	319	34	353	336	36	372	355	38	393
2033	319	35	354	338	37	375	358	39	396
2034	320	35	355	340	37	377	361	39	400

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Stanfield Annual Therm Usage
Therms
270,000
260,000
250,000
240,000
230,000
220,000
210,000
200,000
190,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Stanfield Annual Customer Growth
Customers
420
400
380
360
340
320
300
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Stearns (Sunriver)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,168,327	1,252,050	4,420,378	3,218,345	1,252,050	4,470,395	3,268,362	1,252,050	4,520,412
2016	3,217,823	1,271,610	4,489,433	3,304,814	1,285,690	4,590,504	3,392,931	1,299,770	4,692,701
2017	3,238,939	1,279,955	4,518,894	3,362,589	1,308,166	4,670,755	3,489,295	1,336,686	4,825,980
2018	3,273,767	1,293,718	4,567,484	3,434,903	1,336,299	4,771,202	3,601,853	1,379,805	4,981,658
2019	3,308,269	1,307,352	4,615,621	3,507,304	1,364,466	4,871,770	3,715,733	1,423,430	5,139,163
2020	3,357,018	1,326,617	4,683,635	3,595,318	1,398,706	4,994,025	3,847,470	1,473,896	5,321,366
2021	3,376,241	1,334,213	4,710,454	3,652,159	1,420,819	5,072,978	3,947,092	1,512,060	5,459,152
2022	3,409,723	1,347,444	4,757,167	3,724,595	1,449,000	5,173,595	4,064,521	1,557,044	5,621,566
2023	3,442,847	1,360,534	4,803,381	3,796,961	1,477,153	5,274,114	4,182,977	1,602,423	5,785,400
2024	3,490,882	1,379,517	4,870,399	3,886,296	1,511,907	5,398,203	4,321,450	1,655,469	5,976,919
2025	3,508,110	1,386,325	4,894,435	3,941,589	1,533,418	5,475,006	4,423,090	1,694,406	6,117,496
2026	3,540,244	1,399,023	4,939,267	4,013,797	1,561,510	5,575,307	4,544,635	1,740,967	6,285,602
2027	3,572,027	1,411,583	4,983,610	4,085,866	1,589,547	5,675,413	4,667,034	1,787,856	6,454,891
2028	3,619,246	1,430,243	5,049,489	4,176,008	1,624,615	5,800,623	4,811,268	1,843,109	6,654,377
2029	3,634,554	1,436,292	5,070,846	4,229,530	1,645,437	5,874,967	4,914,246	1,882,558	6,796,804
2030	3,665,301	1,448,443	5,113,744	4,301,090	1,673,277	5,974,367	5,038,963	1,930,336	6,969,299
2031	3,695,785	1,460,489	5,156,274	4,372,633	1,701,109	6,073,742	5,164,688	1,978,498	7,143,186
2032	3,742,251	1,478,852	5,221,102	4,463,449	1,736,440	6,199,888	5,314,285	2,035,806	7,350,092
2033	3,755,855	1,484,228	5,240,083	4,515,350	1,756,631	6,271,981	5,418,556	2,075,750	7,494,306
2034	3,785,478	1,495,934	5,281,413	4,586,577	1,784,341	6,370,918	5,546,767	2,124,866	7,671,633

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.56%	1.56%	2.69%	2.69%	2.69%	3.81%	3.81%	3.81%
2017	0.66%	0.66%	0.66%	1.75%	1.75%	1.75%	2.84%	2.84%	2.84%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.47%	1.47%	1.47%	2.51%	2.51%	2.51%	3.55%	3.55%	3.55%
2021	0.57%	0.57%	0.57%	1.58%	1.58%	1.58%	2.59%	2.59%	2.59%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.31%	3.31%	3.31%
2025	0.49%	0.49%	0.49%	1.42%	1.42%	1.42%	2.35%	2.35%	2.35%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.32%	1.32%	1.32%	2.21%	2.21%	2.21%	3.09%	3.09%	3.09%
2029	0.42%	0.42%	0.42%	1.28%	1.28%	1.28%	2.14%	2.14%	2.14%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.26%	1.26%	1.26%	2.08%	2.08%	2.08%	2.90%	2.90%	2.90%
2033	0.36%	0.36%	0.36%	1.16%	1.16%	1.16%	1.96%	1.96%	1.96%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	3,430	48,110	51,540	3,430	48,693	52,123	3,430	49,276	52,707
2016	3,484	48,634	52,117	3,522	49,768	53,291	3,561	50,916	54,477
2017	3,507	49,182	52,689	3,584	50,876	54,460	3,662	52,607	56,270
2018	3,544	49,711	53,256	3,661	51,970	55,631	3,780	54,304	58,085
2019	3,582	50,235	53,817	3,738	53,065	56,803	3,900	56,021	59,921
2020	3,635	50,737	54,372	3,832	54,143	57,975	4,038	57,737	61,775
2021	3,655	51,267	54,923	3,893	55,257	59,149	4,143	59,509	63,652
2022	3,692	51,776	55,467	3,970	56,353	60,323	4,266	61,280	65,546
2023	3,727	52,279	56,006	4,047	57,448	61,495	4,390	63,066	67,456
2024	3,779	52,760	56,540	4,142	58,525	62,667	4,536	64,850	69,385
2025	3,798	53,270	57,068	4,201	59,636	63,837	4,642	66,686	71,328
2026	3,833	53,757	57,590	4,278	60,728	65,006	4,770	68,518	73,288
2027	3,867	54,240	58,107	4,355	61,819	66,174	4,898	70,364	75,262
2028	3,918	54,701	58,619	4,451	62,888	67,339	5,050	72,200	77,250
2029	3,935	55,190	59,125	4,508	63,992	68,500	5,158	74,091	79,249
2030	3,968	55,656	59,625	4,584	65,075	69,659	5,289	75,971	81,260
2031	4,001	56,119	60,121	4,661	66,157	70,818	5,421	77,867	83,287
2032	4,052	56,560	60,611	4,757	67,217	71,974	5,578	79,749	85,326
2033	4,066	57,031	61,098	4,813	68,317	73,129	5,687	81,694	87,381
2034	4,098	57,481	61,580	4,889	69,394	74,283	5,822	83,627	89,449

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.09%	1.12%	2.69%	2.21%	2.24%	3.81%	3.33%	3.36%
2017	0.66%	1.13%	1.10%	1.75%	2.22%	2.19%	2.84%	3.32%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.47%	1.00%	1.03%	2.51%	2.03%	2.06%	3.55%	3.06%	3.09%
2021	0.57%	1.04%	1.01%	1.58%	2.06%	2.03%	2.59%	3.07%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.40%	0.92%	0.95%	2.35%	1.88%	1.91%	3.31%	2.83%	2.86%
2025	0.49%	0.96%	0.93%	1.42%	1.90%	1.87%	2.35%	2.83%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.32%	0.85%	0.88%	2.21%	1.73%	1.76%	3.09%	2.61%	2.64%
2029	0.42%	0.89%	0.86%	1.28%	1.76%	1.72%	2.14%	2.62%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.26%	0.78%	0.82%	2.08%	1.60%	1.63%	2.90%	2.42%	2.45%
2033	0.36%	0.83%	0.80%	1.16%	1.64%	1.61%	1.96%	2.44%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,352,695	1,067,683	4,420,378	3,390,632	1,079,764	4,470,395	3,428,568	1,091,845	4,520,412
2016	3,405,797	1,083,636	4,489,433	3,482,472	1,108,032	4,590,504	3,560,001	1,132,700	4,692,701
2017	3,427,416	1,091,478	4,518,894	3,542,597	1,128,158	4,670,755	3,660,330	1,165,650	4,825,980
2018	3,464,270	1,103,214	4,567,484	3,618,782	1,152,419	4,771,202	3,778,405	1,203,252	4,981,658
2019	3,500,780	1,114,841	4,615,621	3,695,059	1,176,710	4,871,770	3,897,868	1,241,295	5,139,163
2020	3,553,123	1,130,512	4,683,635	3,788,593	1,205,432	4,994,025	4,036,922	1,284,444	5,321,366
2021	3,572,707	1,137,747	4,710,454	3,847,669	1,225,309	5,072,978	4,140,568	1,318,584	5,459,152
2022	3,608,138	1,149,029	4,757,167	3,923,983	1,249,612	5,173,595	4,263,752	1,357,813	5,621,566
2023	3,643,189	1,160,192	4,803,381	4,000,223	1,273,891	5,274,114	4,388,015	1,397,385	5,785,400
2024	3,694,807	1,175,592	4,870,399	4,095,213	1,302,990	5,398,203	4,534,241	1,442,678	5,976,919
2025	3,712,250	1,182,185	4,894,435	4,152,593	1,322,414	5,475,006	4,639,897	1,477,598	6,117,496
2026	3,746,254	1,193,013	4,939,267	4,228,667	1,346,640	5,575,307	4,767,400	1,518,202	6,285,602
2027	3,779,886	1,203,724	4,983,610	4,304,593	1,370,819	5,675,413	4,895,799	1,559,092	6,454,891
2028	3,830,669	1,218,819	5,049,489	4,400,499	1,400,124	5,800,623	5,048,178	1,606,199	6,654,377
2029	3,846,052	1,224,794	5,070,846	4,455,948	1,419,019	5,874,967	5,155,128	1,641,676	6,796,804
2030	3,878,588	1,235,156	5,113,744	4,531,339	1,443,028	5,974,367	5,285,959	1,683,340	6,969,299
2031	3,910,846	1,245,428	5,156,274	4,606,712	1,467,030	6,073,742	5,417,846	1,725,340	7,143,186
2032	3,960,860	1,260,243	5,221,102	4,703,391	1,496,497	6,199,888	5,575,965	1,774,127	7,350,092
2033	3,974,412	1,265,671	5,240,083	4,757,069	1,514,912	6,271,981	5,684,158	1,810,148	7,494,306
2034	4,005,759	1,275,654	5,281,413	4,832,109	1,538,809	6,370,918	5,818,654	1,852,979	7,671,633

Annual Change

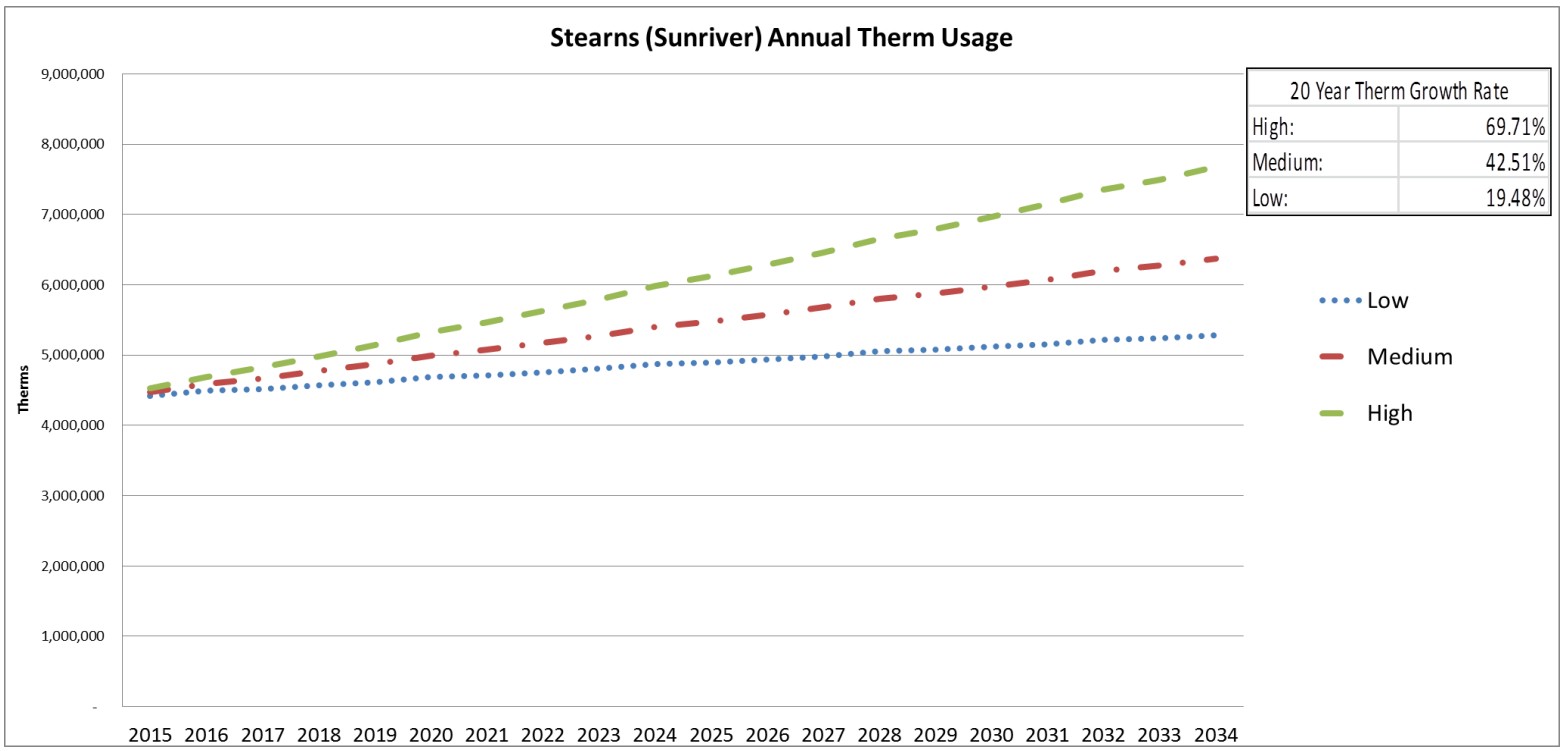
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.49%	1.56%	2.71%	2.62%	2.69%	3.83%	3.74%	3.81%
2017	0.63%	0.72%	0.66%	1.73%	1.82%	1.75%	2.82%	2.91%	2.84%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.50%	1.41%	1.47%	2.53%	2.44%	2.51%	3.57%	3.48%	3.55%
2021	0.55%	0.64%	0.57%	1.56%	1.65%	1.58%	2.57%	2.66%	2.59%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	1.33%	1.40%	2.37%	2.28%	2.35%	3.33%	3.24%	3.31%
2025	0.47%	0.56%	0.49%	1.40%	1.49%	1.42%	2.33%	2.42%	2.35%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.25%	1.32%	2.23%	2.14%	2.21%	3.11%	3.02%	3.09%
2029	0.40%	0.49%	0.42%	1.26%	1.35%	1.28%	2.12%	2.21%	2.14%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	1.19%	1.26%	2.10%	2.01%	2.08%	2.92%	2.83%	2.90%
2033	0.34%	0.43%	0.36%	1.14%	1.23%	1.16%	1.94%	2.03%	1.96%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

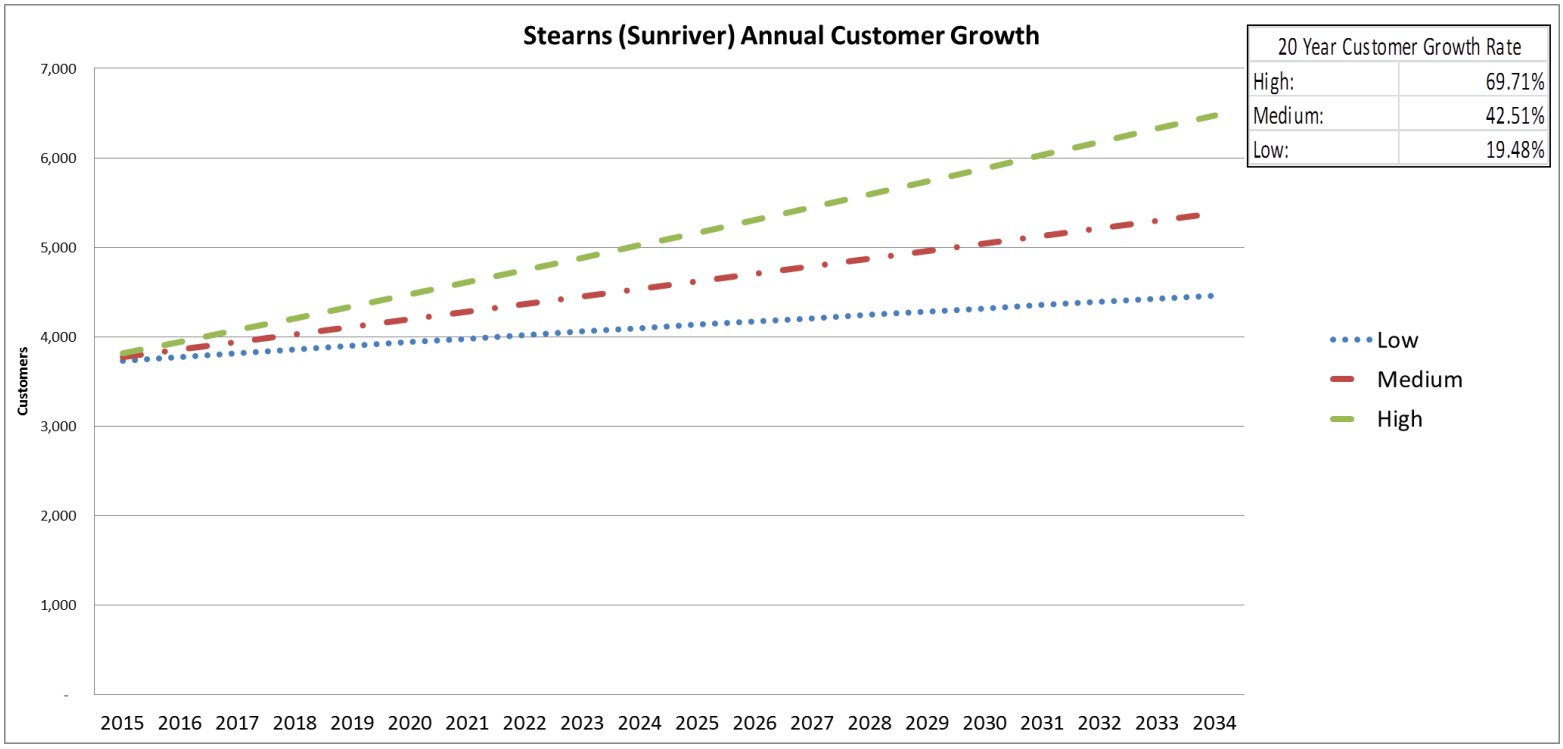
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,509	224	3,732	3,548	226	3,775	3,588	229	3,817
2016	3,548	226	3,774	3,628	231	3,859	3,709	236	3,945
2017	3,587	229	3,815	3,708	236	3,944	3,831	244	4,075
2018	3,626	231	3,857	3,787	241	4,029	3,954	252	4,206
2019	3,664	233	3,897	3,867	246	4,113	4,079	260	4,339
2020	3,702	236	3,937	3,947	251	4,198	4,206	268	4,473
2021	3,739	238	3,977	4,027	257	4,283	4,333	276	4,609
2022	3,776	241	4,017	4,107	262	4,368	4,462	284	4,747
2023	3,813	243	4,056	4,186	267	4,453	4,592	293	4,885
2024	3,849	245	4,094	4,266	272	4,538	4,724	301	5,025
2025	3,885	248	4,133	4,346	277	4,623	4,856	309	5,165
2026	3,921	250	4,170	4,426	282	4,707	4,989	318	5,307
2027	3,956	252	4,208	4,505	287	4,792	5,124	326	5,450
2028	3,991	254	4,245	4,584	292	4,876	5,259	335	5,594
2029	4,025	256	4,282	4,663	297	4,960	5,395	344	5,739
2030	4,059	259	4,318	4,742	302	5,044	5,532	352	5,884
2031	4,093	261	4,354	4,821	307	5,128	5,670	361	6,031
2032	4,126	263	4,389	4,900	312	5,212	5,809	370	6,179
2033	4,159	265	4,424	4,979	317	5,296	5,949	379	6,328
2034	4,192	267	4,459	5,057	322	5,379	6,090	388	6,477

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Stearns (Sunriver) Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Stearns (Sunriver) Annual Customer Growth
Customers
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pronghorn

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	332,507	215,778	548,285	338,711	215,778	554,489	344,915	215,778	560,693
2016	336,230	218,194	554,424	346,296	220,610	566,906	356,500	223,026	579,527
2017	339,917	220,587	560,505	353,891	225,449	579,341	368,230	230,364	598,594
2018	343,572	222,959	566,532	361,502	230,298	591,800	380,108	237,796	617,904
2019	347,193	225,309	572,502	369,122	235,152	604,274	392,126	245,314	637,440
2020	350,774	227,633	578,407	376,736	240,003	616,739	404,259	252,904	657,164
2021	354,327	229,938	584,265	384,367	244,864	629,231	416,542	260,588	677,130
2022	357,840	232,219	590,059	391,990	249,721	641,711	428,934	268,341	697,275
2023	361,317	234,474	595,791	399,606	254,572	654,179	441,435	276,162	717,597
2024	364,762	236,710	601,471	407,226	259,427	666,653	454,061	284,060	738,122
2025	368,166	238,919	607,085	414,827	264,269	679,097	466,775	292,014	758,788
2026	371,538	241,108	612,646	422,427	269,111	691,538	479,601	300,038	779,640
2027	374,874	243,272	618,146	430,012	273,942	703,954	492,518	308,119	800,637
2028	378,174	245,414	623,588	437,584	278,766	716,350	505,527	316,257	821,784
2029	381,436	247,531	628,966	445,132	283,575	728,706	518,607	324,440	843,047
2030	384,663	249,625	634,287	452,663	288,372	741,035	531,768	332,674	864,442
2031	387,862	251,701	639,562	460,192	293,169	753,361	545,036	340,974	886,011
2032	391,027	253,755	644,782	467,703	297,954	765,657	558,380	349,322	907,702
2033	394,166	255,792	649,958	475,212	302,738	777,950	571,827	357,735	929,562
2034	397,275	257,809	655,084	482,708	307,513	790,222	585,358	366,199	951,557

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	591	5,851	6,442	591	5,924	6,515	591	5,997	6,588
2016	598	5,917	6,515	604	6,057	6,661	611	6,199	6,810
2017	604	5,982	6,586	618	6,190	6,807	631	6,402	7,034
2018	611	6,046	6,657	631	6,323	6,954	651	6,609	7,261
2019	617	6,110	6,727	644	6,456	7,100	672	6,818	7,490
2020	624	6,173	6,796	658	6,589	7,247	693	7,029	7,722
2021	630	6,235	6,865	671	6,723	7,394	714	7,242	7,956
2022	636	6,297	6,933	684	6,856	7,540	735	7,458	8,193
2023	642	6,358	7,001	697	6,989	7,687	757	7,675	8,432
2024	649	6,419	7,067	711	7,123	7,833	778	7,895	8,673
2025	655	6,479	7,133	724	7,256	7,980	800	8,116	8,916
2026	661	6,538	7,199	737	7,388	8,126	822	8,339	9,161
2027	666	6,597	7,263	751	7,521	8,272	844	8,564	9,408
2028	672	6,655	7,327	764	7,654	8,417	866	8,790	9,656
2029	678	6,712	7,390	777	7,786	8,562	889	9,017	9,906
2030	684	6,769	7,453	790	7,917	8,707	911	9,246	10,157
2031	690	6,825	7,515	803	8,049	8,852	934	9,477	10,411
2032	695	6,881	7,576	816	8,180	8,997	957	9,709	10,666
2033	701	6,936	7,637	829	8,312	9,141	980	9,942	10,923
2034	706	6,991	7,697	843	8,443	9,285	1,003	10,178	11,181

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	296,169	252,116	548,285	299,521	254,968	554,489	302,872	257,821	560,693
2016	299,485	254,939	554,424	306,228	260,678	566,906	313,045	266,481	579,527
2017	302,770	257,735	560,505	312,945	266,396	579,341	323,345	275,249	598,594
2018	306,026	260,506	566,532	319,675	272,125	591,800	333,776	284,128	617,904
2019	309,251	263,251	572,502	326,413	277,861	604,274	344,329	293,112	637,440
2020	312,440	265,967	578,407	333,146	283,593	616,739	354,983	302,181	657,164
2021	315,605	268,660	584,265	339,894	289,337	629,231	365,768	311,362	677,130
2022	318,734	271,324	590,059	346,636	295,075	641,711	376,650	320,625	697,275
2023	321,831	273,960	595,791	353,370	300,808	654,179	387,627	329,970	717,597
2024	324,899	276,572	601,471	360,109	306,544	666,653	398,714	339,407	738,122
2025	327,932	279,153	607,085	366,830	312,266	679,097	409,878	348,911	758,788
2026	330,935	281,710	612,646	373,551	317,987	691,538	421,141	358,499	779,640
2027	333,906	284,240	618,146	380,258	323,696	703,954	432,484	368,154	800,637
2028	336,846	286,742	623,588	386,954	329,396	716,350	443,907	377,878	821,784
2029	339,751	289,215	628,966	393,628	335,078	728,706	455,392	387,655	843,047
2030	342,625	291,662	634,287	400,288	340,747	741,035	466,949	397,493	864,442
2031	345,475	294,087	639,562	406,946	346,415	753,361	478,600	407,411	886,011
2032	348,294	296,487	644,782	413,588	352,069	765,657	490,317	417,385	907,702
2033	351,090	298,867	649,958	420,228	357,722	777,950	502,125	427,437	929,562
2034	353,859	301,225	655,084	426,857	363,365	790,222	514,006	437,551	951,557

Annual Change

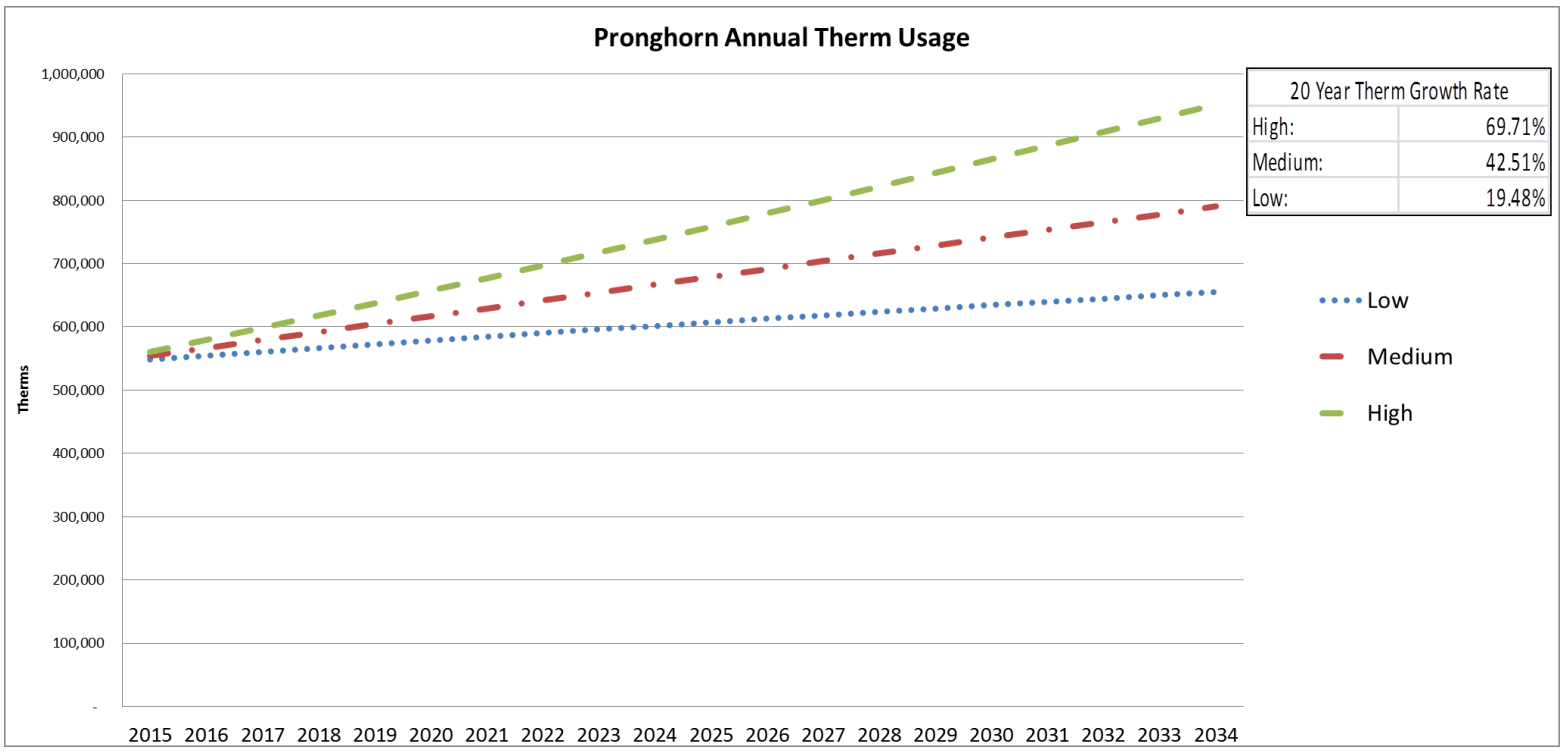
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

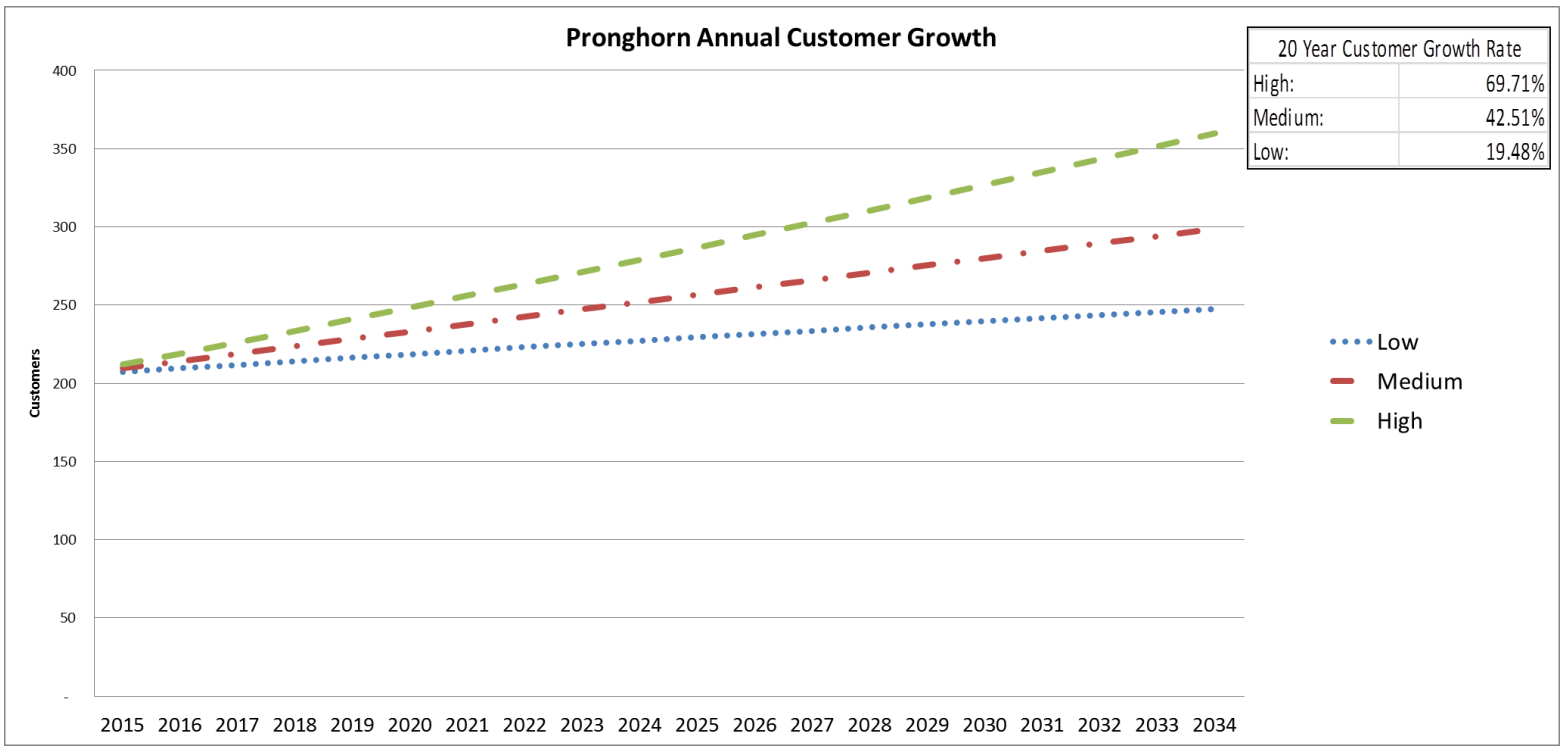
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	183	24	207	185	25	210	187	25	212
2016	185	25	210	189	25	214	193	26	219
2017	187	25	212	193	26	219	200	27	226
2018	189	25	214	198	26	224	206	27	234
2019	191	25	216	202	27	228	213	28	241
2020	193	26	219	206	27	233	219	29	248
2021	195	26	221	210	28	238	226	30	256
2022	197	26	223	214	28	243	233	31	264
2023	199	26	225	218	29	247	239	32	271
2024	201	27	227	222	30	252	246	33	279
2025	203	27	229	227	30	257	253	34	287
2026	204	27	232	231	31	261	260	35	295
2027	206	27	234	235	31	266	267	35	303
2028	208	28	236	239	32	271	274	36	311
2029	210	28	238	243	32	275	281	37	319
2030	212	28	240	247	33	280	289	38	327
2031	213	28	242	251	33	285	296	39	335
2032	215	29	244	256	34	289	303	40	343
2033	217	29	246	260	34	294	310	41	351
2034	219	29	248	264	35	299	318	42	360

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Pronghorn Annual Therm Usage
Therms
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Pronghorn Annual Customer Growth
Customers
400
350
300
250
200
150
100
50
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bend Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,458,743	6,537,097	30,995,840	24,809,467	6,537,097	31,346,564	25,160,190	6,537,097	31,697,287
2016	24,843,310	6,639,880	31,483,190	25,478,575	6,713,402	32,191,977	26,121,729	6,786,923	32,908,653
2017	25,003,852	6,682,788	31,686,640	25,921,410	6,830,085	32,751,495	26,860,952	6,978,988	33,839,940
2018	25,272,711	6,754,646	32,027,358	26,478,861	6,976,969	33,455,830	27,727,437	7,204,117	34,931,553
2019	25,539,061	6,825,834	32,364,895	27,036,985	7,124,030	34,161,015	28,604,099	7,431,890	36,035,990
2020	25,917,970	6,927,105	32,845,075	27,718,226	7,303,532	35,021,758	29,621,170	7,696,145	37,317,315
2021	26,063,787	6,966,078	33,029,865	28,153,637	7,418,259	35,571,897	30,385,126	7,894,635	38,279,761
2022	26,322,259	7,035,160	33,357,419	28,712,031	7,565,392	36,277,422	31,289,105	8,129,506	39,418,611
2023	26,577,970	7,103,504	33,681,474	29,269,885	7,712,382	36,982,267	32,200,992	8,366,432	40,567,424
2024	26,951,471	7,203,329	34,154,801	29,961,526	7,894,624	37,856,150	33,270,277	8,644,252	41,914,529
2025	27,081,787	7,238,159	34,319,946	30,384,783	8,006,149	38,390,932	34,049,406	8,846,685	42,896,091
2026	27,329,852	7,304,459	34,634,311	30,941,423	8,152,819	39,094,242	34,985,068	9,089,788	44,074,856
2027	27,575,208	7,370,036	34,945,244	31,496,983	8,299,204	39,796,188	35,927,315	9,334,601	45,261,916
2028	27,942,508	7,468,204	35,410,712	32,195,069	8,483,144	40,678,213	37,041,321	9,624,041	46,665,362
2029	28,057,904	7,499,046	35,556,949	32,604,455	8,591,015	41,195,470	37,830,371	9,829,052	47,659,423
2030	28,295,262	7,562,485	35,857,747	33,156,097	8,736,368	41,892,465	38,790,461	10,078,501	48,868,962
2031	28,530,589	7,625,381	36,155,969	33,707,603	8,881,685	42,589,288	39,758,300	10,329,964	50,088,264
2032	28,892,170	7,722,021	36,614,190	34,411,103	9,067,052	43,478,155	40,913,989	10,630,234	51,544,223
2033	28,994,320	7,749,322	36,743,642	34,807,775	9,171,572	43,979,347	41,712,602	10,837,729	52,550,331
2034	29,223,004	7,810,443	37,033,446	35,356,846	9,316,248	44,673,094	42,699,587	11,094,167	53,793,754

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.57%	1.57%	1.57%	2.70%	2.70%	2.70%	3.82%	3.82%	3.82%
2017	0.65%	0.65%	0.65%	1.74%	1.74%	1.74%	2.83%	2.83%	2.83%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.48%	1.48%	1.48%	2.52%	2.52%	2.52%	3.56%	3.56%	3.56%
2021	0.56%	0.56%	0.56%	1.57%	1.57%	1.57%	2.58%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	1.41%	1.41%	2.36%	2.36%	2.36%	3.32%	3.32%	3.32%
2025	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.33%	1.33%	1.33%	2.22%	2.22%	2.22%	3.10%	3.10%	3.10%
2029	0.41%	0.41%	0.41%	1.27%	1.27%	1.27%	2.13%	2.13%	2.13%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	1.27%	1.27%	2.09%	2.09%	2.09%	2.91%	2.91%	2.91%
2033	0.35%	0.35%	0.35%	1.15%	1.15%	1.15%	1.95%	1.95%	1.95%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	17,910	355,309	373,218	17,910	359,532	377,442	17,910	363,755	381,665
2016	18,191	359,206	377,397	18,393	367,501	385,894	18,594	375,890	394,485
2017	18,309	363,227	381,536	18,713	375,646	394,358	19,121	388,344	407,464
2018	18,506	367,133	385,639	19,115	383,724	402,839	19,737	400,871	420,608
2019	18,701	371,002	389,703	19,518	391,812	411,330	20,361	413,545	433,907
2020	18,978	374,744	393,723	20,010	399,805	419,815	21,085	426,247	447,332
2021	19,085	378,625	397,710	20,324	407,994	428,318	21,629	439,294	460,924
2022	19,274	382,380	401,654	20,727	416,086	436,814	22,273	452,364	474,636
2023	19,462	386,094	405,556	21,130	424,171	445,301	22,922	465,547	488,469
2024	19,735	389,687	409,423	21,629	432,163	453,792	23,683	478,758	502,440
2025	19,831	393,413	413,244	21,935	440,328	462,262	24,237	492,271	516,508
2026	20,012	397,017	417,029	22,336	448,394	470,731	24,904	505,798	530,702
2027	20,192	400,581	420,773	22,738	456,445	479,183	25,574	519,421	544,995
2028	20,461	404,017	424,478	23,241	464,379	487,620	26,367	533,023	559,390
2029	20,545	407,593	428,138	23,537	472,494	496,031	26,929	546,934	573,863
2030	20,719	411,041	431,760	23,935	480,489	504,424	27,612	560,815	588,427
2031	20,891	414,460	435,351	24,333	488,481	512,814	28,301	574,808	603,109
2032	21,156	417,748	438,904	24,841	496,343	521,184	29,124	588,750	617,874
2033	21,231	421,196	442,427	25,128	504,424	529,552	29,692	603,062	632,754
2034	21,398	424,518	445,917	25,524	512,381	537,905	30,395	617,331	647,726

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.57%	1.10%	1.12%	2.70%	2.22%	2.24%	3.82%	3.34%	3.36%
2017	0.65%	1.12%	1.10%	1.74%	2.22%	2.19%	2.83%	3.31%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.48%	1.01%	1.03%	2.52%	2.04%	2.06%	3.56%	3.07%	3.09%
2021	0.56%	1.04%	1.01%	1.57%	2.05%	2.03%	2.58%	3.06%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	0.93%	0.95%	2.36%	1.88%	1.91%	3.32%	2.84%	2.86%
2025	0.48%	0.96%	0.93%	1.41%	1.89%	1.87%	2.34%	2.82%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.33%	0.86%	0.88%	2.22%	1.74%	1.76%	3.10%	2.62%	2.64%
2029	0.41%	0.89%	0.86%	1.27%	1.75%	1.72%	2.13%	2.61%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	0.79%	0.82%	2.09%	1.61%	1.63%	2.91%	2.43%	2.45%
2033	0.35%	0.83%	0.80%	1.15%	1.63%	1.61%	1.95%	2.43%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	19,571,498	11,228,876	30,800,374	19,792,953	11,355,933	31,148,886	20,014,408	11,482,989	31,497,397
2016	19,880,335	11,404,597	31,284,932	20,327,904	11,661,351	31,989,255	20,780,455	11,920,962	32,701,418
2017	20,007,685	11,479,132	31,486,818	20,680,060	11,864,898	32,544,957	21,367,329	12,259,209	33,626,538
2018	20,222,822	11,602,564	31,825,387	21,124,793	12,120,058	33,244,851	22,056,600	12,654,669	34,711,268
2019	20,435,952	11,724,844	32,160,796	21,570,064	12,375,525	33,945,589	22,753,966	13,054,773	35,808,739
2020	20,740,309	11,897,932	32,638,241	22,114,794	12,686,422	34,801,216	23,564,344	13,517,974	37,082,317
2021	20,855,829	11,965,743	32,821,572	22,460,927	12,886,646	35,347,573	24,170,736	13,867,625	38,038,362
2022	21,062,654	12,084,406	33,147,060	22,906,413	13,142,237	36,048,650	24,889,832	14,280,197	39,170,029
2023	21,267,270	12,201,802	33,469,072	23,351,468	13,397,581	36,749,049	25,615,220	14,696,378	40,311,597
2024	21,567,346	12,372,372	33,939,718	23,904,596	13,713,164	37,617,760	26,467,295	15,183,287	41,650,582
2025	21,670,416	12,433,101	34,103,517	24,240,932	13,907,899	38,148,831	27,085,595	15,539,985	42,625,580
2026	21,868,914	12,546,986	34,415,900	24,685,019	14,162,688	38,847,706	27,829,894	15,967,017	43,796,911
2027	22,065,244	12,659,628	34,724,872	25,128,243	14,416,982	39,545,225	28,579,432	16,397,053	44,976,485
2028	22,360,402	12,827,318	35,187,721	25,686,612	14,735,439	40,422,051	29,467,250	16,904,248	46,371,497
2029	22,451,489	12,881,231	35,332,720	26,011,783	14,923,900	40,935,683	30,093,274	17,265,599	47,358,873
2030	22,641,420	12,990,201	35,631,621	26,451,882	15,176,401	41,628,282	30,857,005	17,703,779	48,560,784
2031	22,829,724	13,098,238	35,927,962	26,891,872	15,428,839	42,320,712	31,626,901	18,145,497	49,772,397
2032	23,120,350	13,263,271	36,383,621	27,454,660	15,749,701	43,204,361	32,548,049	18,671,586	51,219,635
2033	23,200,795	13,311,135	36,511,930	27,769,588	15,932,417	43,702,004	33,181,508	19,037,431	52,218,938
2034	23,383,784	13,416,122	36,799,906	28,207,636	16,183,741	44,391,376	33,966,634	19,487,886	53,454,520

Annual Change

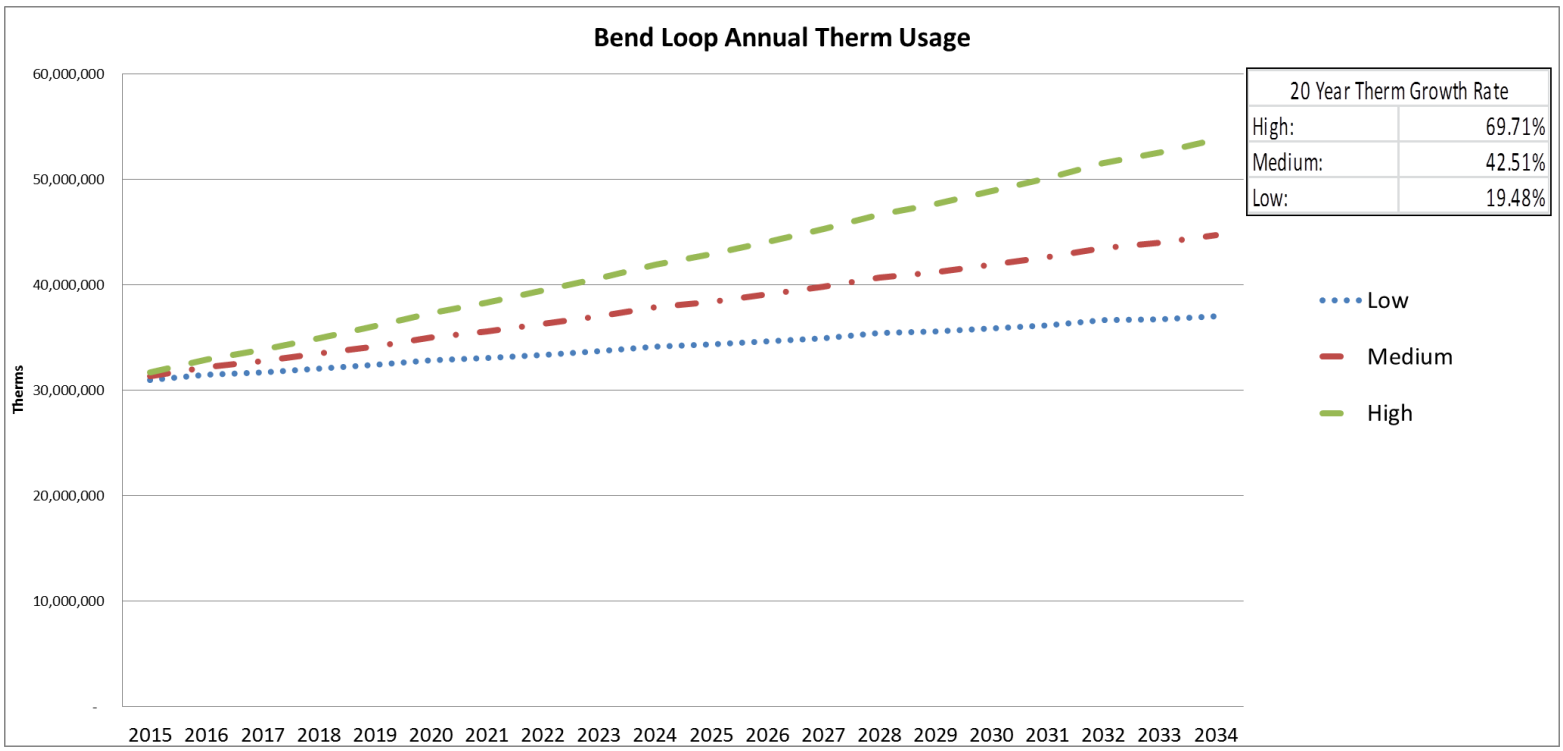
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.56%	1.57%	2.70%	2.69%	2.70%	3.83%	3.81%	3.82%
2017	0.64%	0.65%	0.65%	1.73%	1.75%	1.74%	2.82%	2.84%	2.83%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.48%	1.48%	2.53%	2.51%	2.52%	3.56%	3.55%	3.56%
2021	0.56%	0.57%	0.56%	1.57%	1.58%	1.57%	2.57%	2.59%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	1.40%	1.41%	2.37%	2.36%	2.36%	3.33%	3.31%	3.32%
2025	0.48%	0.49%	0.48%	1.41%	1.42%	1.41%	2.34%	2.35%	2.34%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.32%	1.33%	2.22%	2.21%	2.22%	3.11%	3.09%	3.10%
2029	0.41%	0.42%	0.41%	1.27%	1.28%	1.27%	2.12%	2.14%	2.13%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	1.26%	1.27%	2.09%	2.08%	2.09%	2.91%	2.90%	2.91%
2033	0.35%	0.36%	0.35%	1.15%	1.16%	1.15%	1.95%	1.96%	1.95%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Customer Count Forecast

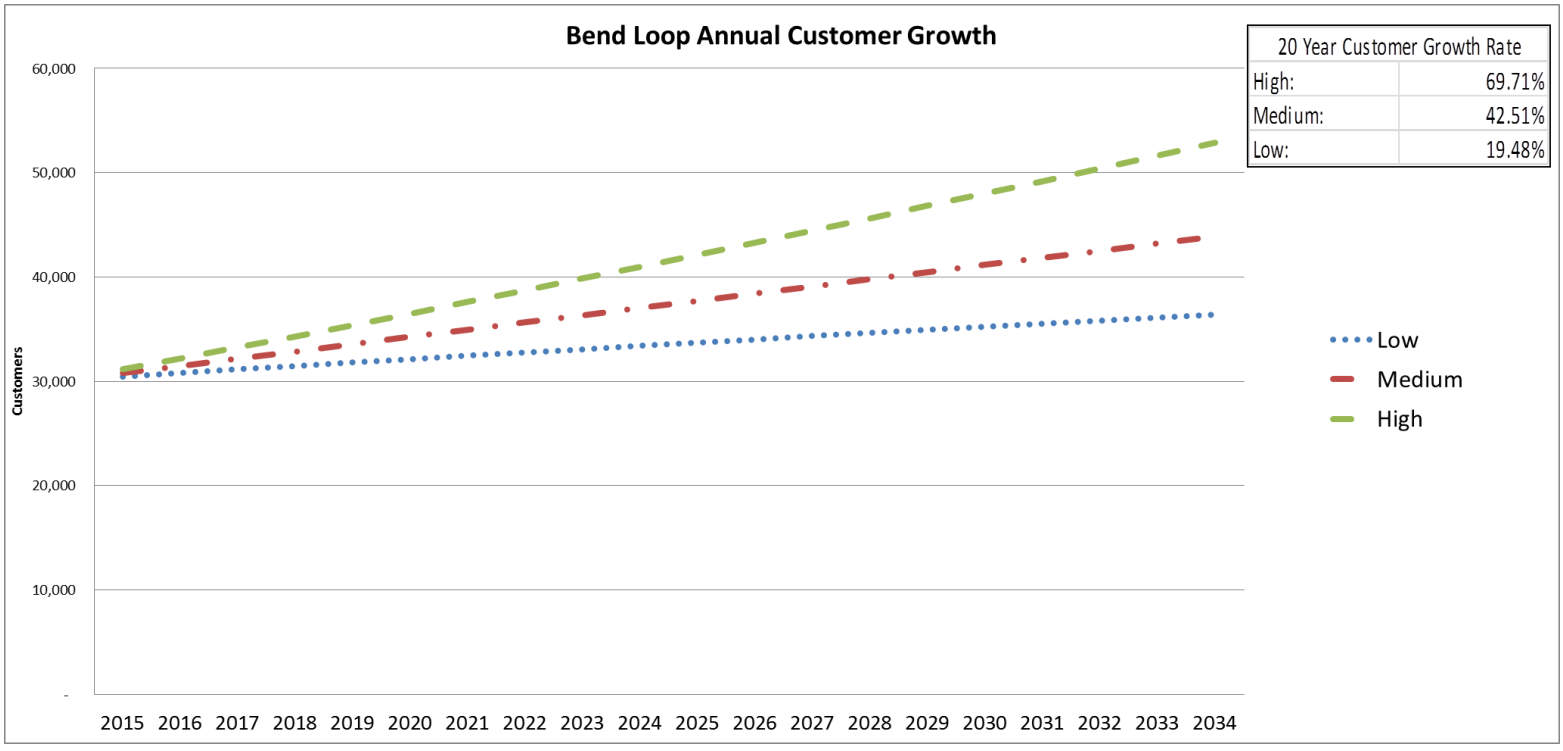
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	26,426	4,027	30,453	26,725	4,072	30,798	27,024	4,118	31,143
2016	26,722	4,072	30,794	27,324	4,164	31,488	27,932	4,256	32,189
2017	27,015	4,117	31,132	27,923	4,255	32,178	28,851	4,396	33,248
2018	27,306	4,161	31,467	28,524	4,346	32,870	29,782	4,538	34,320
2019	27,594	4,205	31,798	29,125	4,438	33,563	30,724	4,682	35,405
2020	27,878	4,248	32,126	29,726	4,530	34,255	31,674	4,827	36,501
2021	28,161	4,291	32,452	30,328	4,621	34,949	32,637	4,973	37,610
2022	28,440	4,334	32,774	30,929	4,713	35,642	33,608	5,121	38,729
2023	28,716	4,376	33,092	31,530	4,805	36,335	34,587	5,270	39,857
2024	28,990	4,418	33,407	32,132	4,896	37,028	35,576	5,421	40,997
2025	29,261	4,459	33,719	32,731	4,988	37,719	36,572	5,573	42,145
2026	29,529	4,500	34,028	33,331	5,079	38,410	37,577	5,726	43,303
2027	29,794	4,540	34,334	33,929	5,170	39,100	38,589	5,880	44,470
2028	30,056	4,580	34,636	34,527	5,261	39,788	39,609	6,036	45,644
2029	30,315	4,619	34,935	35,122	5,352	40,474	40,633	6,192	46,825
2030	30,572	4,659	35,230	35,717	5,443	41,159	41,665	6,349	48,014
2031	30,826	4,697	35,523	36,311	5,533	41,844	42,704	6,507	49,212
2032	31,077	4,736	35,813	36,903	5,623	42,527	43,750	6,667	50,416
2033	31,327	4,774	36,101	37,496	5,714	43,210	44,803	6,827	51,631
2034	31,574	4,811	36,385	38,087	5,804	43,891	45,863	6,989	52,852

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%



20 Year Therm Growth Rate	
High:	69.71%
Medium:	42.51%
Low:	19.48%



20 Year Customer Growth Rate	
High:	69.71%
Medium:	42.51%
Low:	19.48%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

McCleary (Aberdeen/Hoquiam)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,553,430	2,322,352	5,875,782	3,567,270	2,322,352	5,889,622	3,581,110	2,322,352	5,903,462
2016	3,577,128	2,337,840	5,914,968	3,599,551	2,343,368	5,942,919	3,622,041	2,348,896	5,970,936
2017	3,570,277	2,333,363	5,903,640	3,601,136	2,344,400	5,945,536	3,632,167	2,355,462	5,987,629
2018	3,578,754	2,338,903	5,917,657	3,618,237	2,355,532	5,973,769	3,658,039	2,372,240	6,030,279
2019	3,587,258	2,344,461	5,931,719	3,635,433	2,366,727	6,002,160	3,684,117	2,389,152	6,073,268
2020	3,611,093	2,360,038	5,971,131	3,668,151	2,388,027	6,056,178	3,725,950	2,416,281	6,142,231
2021	3,604,112	2,355,476	5,959,588	3,669,634	2,388,993	6,058,626	3,736,166	2,422,906	6,159,071
2022	3,612,486	2,360,949	5,973,435	3,686,686	2,400,094	6,086,780	3,762,208	2,439,794	6,202,003
2023	3,620,771	2,366,363	5,987,134	3,703,595	2,411,102	6,114,698	3,788,092	2,456,580	6,244,672
2024	3,644,601	2,381,937	6,026,539	3,736,462	2,432,499	6,168,960	3,830,392	2,484,012	6,314,404
2025	3,637,143	2,377,063	6,014,207	3,737,127	2,432,932	6,170,059	3,839,595	2,489,979	6,329,574
2026	3,645,232	2,382,350	6,027,582	3,753,749	2,443,753	6,197,502	3,865,212	2,506,592	6,371,804
2027	3,653,187	2,387,549	6,040,735	3,770,132	2,454,419	6,224,551	3,890,516	2,523,002	6,413,518
2028	3,676,733	2,402,938	6,079,671	3,802,563	2,475,532	6,278,095	3,932,373	2,550,146	6,482,519
2029	3,668,744	2,397,716	6,066,460	3,802,277	2,475,345	6,277,622	3,940,325	2,555,303	6,495,628
2030	3,676,325	2,402,670	6,078,995	3,817,990	2,485,575	6,303,565	3,964,750	2,571,143	6,535,893
2031	3,683,890	2,407,615	6,091,504	3,833,703	2,495,805	6,329,508	3,989,226	2,587,016	6,576,242
2032	3,707,156	2,422,820	6,129,977	3,865,686	2,516,626	6,382,312	4,030,592	2,613,841	6,644,433
2033	3,698,698	2,417,293	6,115,991	3,864,555	2,515,890	6,380,445	4,037,430	2,618,276	6,655,706
2034	3,706,011	2,422,072	6,128,084	3,879,838	2,525,839	6,405,677	4,061,380	2,633,807	6,695,187

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.67%	0.67%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2017	-0.19%	-0.19%	-0.19%	0.04%	0.04%	0.04%	0.28%	0.28%	0.28%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.66%	0.66%	0.66%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2021	-0.19%	-0.19%	-0.19%	0.04%	0.04%	0.04%	0.27%	0.27%	0.27%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.66%	0.66%	0.66%	0.89%	0.89%	0.89%	1.12%	1.12%	1.12%
2025	-0.20%	-0.20%	-0.20%	0.02%	0.02%	0.02%	0.24%	0.24%	0.24%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.64%	0.64%	0.64%	0.86%	0.86%	0.86%	1.08%	1.08%	1.08%
2029	-0.22%	-0.22%	-0.22%	-0.01%	-0.01%	-0.01%	0.20%	0.20%	0.20%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.63%	0.63%	0.63%	0.83%	0.83%	0.83%	1.04%	1.04%	1.04%
2033	-0.23%	-0.23%	-0.23%	-0.03%	-0.03%	-0.03%	0.17%	0.17%	0.17%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	6,363	47,063	53,425	6,363	47,189	53,551	6,363	47,315	53,677
2016	6,405	47,147	53,552	6,420	47,385	53,805	6,435	47,623	54,059
2017	6,393	47,286	53,679	6,423	47,637	54,060	6,453	47,989	54,442
2018	6,408	47,398	53,806	6,454	47,863	54,316	6,499	48,331	54,830
2019	6,423	47,511	53,934	6,484	48,090	54,575	6,546	48,675	55,221
2020	6,466	47,595	54,061	6,543	48,288	54,831	6,620	48,990	55,610
2021	6,453	47,734	54,187	6,545	48,543	55,088	6,638	49,363	56,001
2022	6,468	47,845	54,313	6,576	48,768	55,344	6,684	49,707	56,392
2023	6,483	47,955	54,438	6,606	48,992	55,598	6,730	50,049	56,780
2024	6,526	48,036	54,562	6,664	49,187	55,852	6,806	50,363	57,168
2025	6,513	48,172	54,684	6,666	49,436	56,101	6,822	50,730	57,552
2026	6,527	48,279	54,806	6,695	49,655	56,351	6,867	51,068	57,936
2027	6,541	48,384	54,925	6,724	49,872	56,597	6,912	51,402	58,315
2028	6,583	48,460	55,043	6,782	50,057	56,840	6,987	51,704	58,690
2029	6,569	48,590	55,159	6,782	50,297	57,079	7,001	52,061	59,061
2030	6,583	48,691	55,273	6,810	50,505	57,315	7,044	52,383	59,428
2031	6,596	48,791	55,387	6,838	50,713	57,551	7,088	52,707	59,794
2032	6,638	48,861	55,499	6,895	50,888	57,783	7,161	52,995	60,156
2033	6,623	48,987	55,610	6,893	51,121	58,014	7,173	53,344	60,517
2034	6,636	49,084	55,720	6,920	51,323	58,244	7,216	53,660	60,876

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.18%	0.24%	0.90%	0.42%	0.47%	1.14%	0.65%	0.71%
2017	-0.19%	0.29%	0.24%	0.04%	0.53%	0.47%	0.28%	0.77%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.66%	0.18%	0.23%	0.90%	0.41%	0.47%	1.14%	0.65%	0.70%
2021	-0.19%	0.29%	0.23%	0.04%	0.53%	0.47%	0.27%	0.76%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.66%	0.17%	0.23%	0.89%	0.40%	0.46%	1.12%	0.63%	0.68%
2025	-0.20%	0.28%	0.22%	0.02%	0.50%	0.45%	0.24%	0.73%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.64%	0.16%	0.21%	0.86%	0.37%	0.43%	1.08%	0.59%	0.64%
2029	-0.22%	0.27%	0.21%	-0.01%	0.48%	0.42%	0.20%	0.69%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.63%	0.14%	0.20%	0.83%	0.35%	0.40%	1.04%	0.55%	0.61%
2033	-0.23%	0.26%	0.20%	-0.03%	0.46%	0.40%	0.17%	0.66%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,384,966	2,427,485	4,812,451	2,390,584	2,433,203	4,823,787	2,396,202	2,438,921	4,835,122
2016	2,401,502	2,443,776	4,845,279	2,412,851	2,455,324	4,868,175	2,424,226	2,466,900	4,891,125
2017	2,396,274	2,438,994	4,835,268	2,413,279	2,456,303	4,869,582	2,430,365	2,473,693	4,904,058
2018	2,401,963	2,444,785	4,846,748	2,424,739	2,467,967	4,892,706	2,447,676	2,491,313	4,938,989
2019	2,407,671	2,450,594	4,858,266	2,436,263	2,479,696	4,915,959	2,465,126	2,509,073	4,974,199
2020	2,424,305	2,466,980	4,891,285	2,458,834	2,502,117	4,960,951	2,493,772	2,537,670	5,031,442
2021	2,418,983	2,462,108	4,881,091	2,459,183	2,503,024	4,962,207	2,499,953	2,544,521	5,044,474
2022	2,424,604	2,467,829	4,892,433	2,470,610	2,514,656	4,985,266	2,517,379	2,562,258	5,079,637
2023	2,430,164	2,473,488	4,903,652	2,481,942	2,526,189	5,008,131	2,534,698	2,579,886	5,114,584
2024	2,446,801	2,489,872	4,936,672	2,504,624	2,548,713	5,053,338	2,563,675	2,608,804	5,172,479
2025	2,441,153	2,484,673	4,925,826	2,504,413	2,549,061	5,053,473	2,569,160	2,614,962	5,184,121
2026	2,446,582	2,490,199	4,936,780	2,515,552	2,560,399	5,075,951	2,586,301	2,632,408	5,218,709
2027	2,451,921	2,495,633	4,947,553	2,526,531	2,571,573	5,098,104	2,603,232	2,649,642	5,252,874
2028	2,468,373	2,511,823	4,980,196	2,548,934	2,593,803	5,142,736	2,631,930	2,678,260	5,310,191
2029	2,462,362	2,506,260	4,968,623	2,548,072	2,593,499	5,141,571	2,636,560	2,683,564	5,320,125
2030	2,467,450	2,511,439	4,978,889	2,558,603	2,604,217	5,162,819	2,652,904	2,700,199	5,353,104
2031	2,472,528	2,516,607	4,989,135	2,569,133	2,614,934	5,184,067	2,669,282	2,716,869	5,386,150
2032	2,488,797	2,532,607	5,021,404	2,591,246	2,636,860	5,228,106	2,697,668	2,745,156	5,442,824
2033	2,482,467	2,526,723	5,009,190	2,589,808	2,635,978	5,225,787	2,701,536	2,749,698	5,451,234
2034	2,487,375	2,531,719	5,019,095	2,600,050	2,646,403	5,246,452	2,717,561	2,766,009	5,483,570

Annual Change

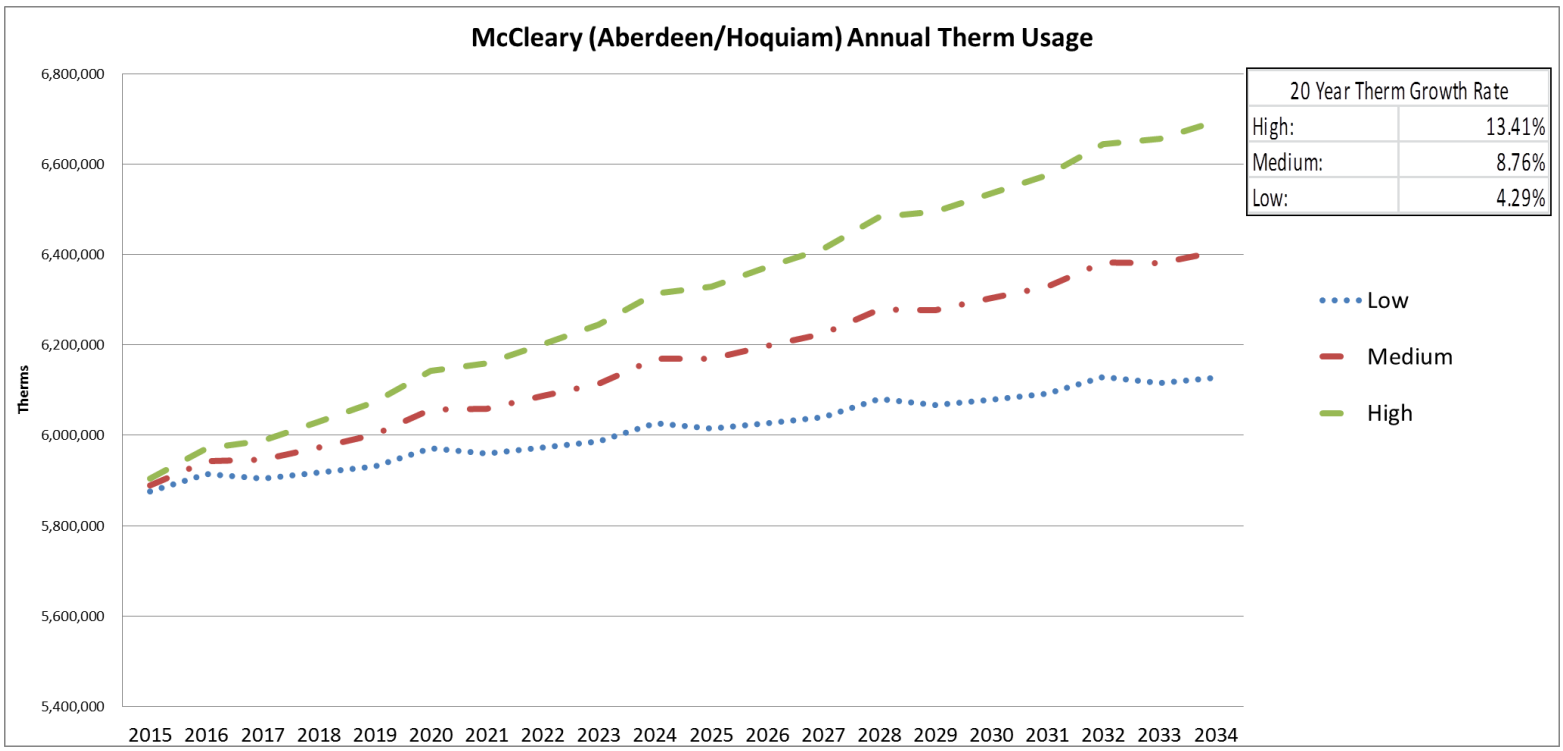
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.67%	0.68%	0.93%	0.91%	0.92%	1.17%	1.15%	1.16%
2017	-0.22%	-0.20%	-0.21%	0.02%	0.04%	0.03%	0.25%	0.28%	0.26%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.69%	0.67%	0.68%	0.93%	0.90%	0.92%	1.16%	1.14%	1.15%
2021	-0.22%	-0.20%	-0.21%	0.01%	0.04%	0.03%	0.25%	0.27%	0.26%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.68%	0.66%	0.67%	0.91%	0.89%	0.90%	1.14%	1.12%	1.13%
2025	-0.23%	-0.21%	-0.22%	-0.01%	0.01%	0.00%	0.21%	0.24%	0.23%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.67%	0.65%	0.66%	0.89%	0.86%	0.88%	1.10%	1.08%	1.09%
2029	-0.24%	-0.22%	-0.23%	-0.03%	-0.01%	-0.02%	0.18%	0.20%	0.19%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.66%	0.64%	0.65%	0.86%	0.84%	0.85%	1.06%	1.04%	1.05%
2033	-0.25%	-0.23%	-0.24%	-0.06%	-0.03%	-0.04%	0.14%	0.17%	0.15%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

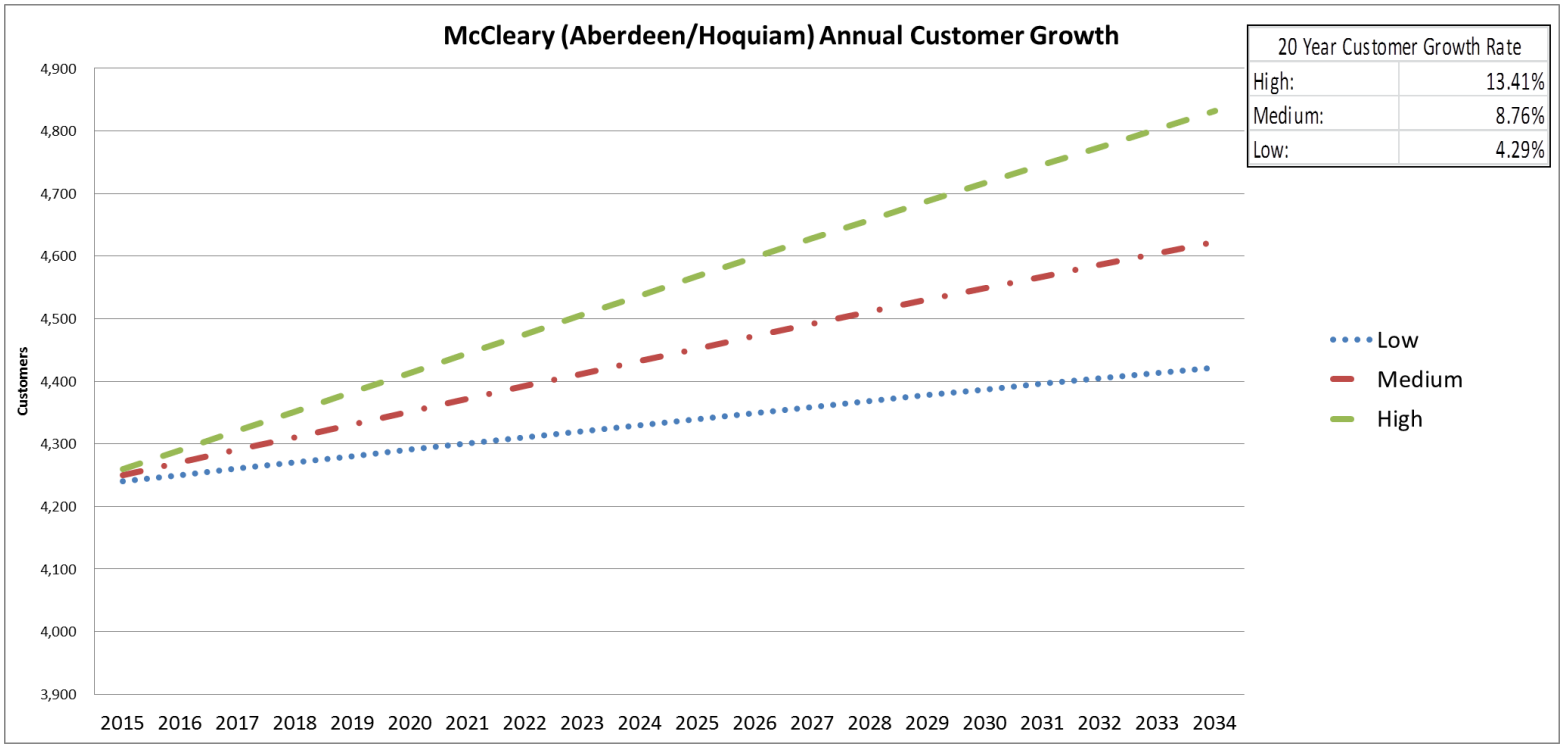
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,486	754	4,240	3,494	756	4,250	3,503	758	4,260
2016	3,494	756	4,250	3,511	759	4,270	3,528	763	4,291
2017	3,503	758	4,260	3,528	763	4,291	3,553	768	4,321
2018	3,511	759	4,270	3,544	767	4,311	3,578	774	4,352
2019	3,519	761	4,281	3,561	770	4,331	3,603	779	4,383
2020	3,528	763	4,291	3,578	774	4,352	3,629	785	4,414
2021	3,536	765	4,301	3,595	777	4,372	3,654	790	4,445
2022	3,544	767	4,311	3,611	781	4,393	3,680	796	4,476
2023	3,552	768	4,321	3,628	785	4,413	3,705	801	4,506
2024	3,560	770	4,330	3,645	788	4,433	3,730	807	4,537
2025	3,568	772	4,340	3,661	792	4,453	3,755	812	4,568
2026	3,576	774	4,350	3,677	795	4,472	3,781	818	4,598
2027	3,584	775	4,359	3,693	799	4,492	3,805	823	4,628
2028	3,592	777	4,369	3,709	802	4,511	3,830	828	4,658
2029	3,599	778	4,378	3,725	806	4,530	3,854	834	4,688
2030	3,607	780	4,387	3,740	809	4,549	3,878	839	4,717
2031	3,614	782	4,396	3,755	812	4,568	3,902	844	4,746
2032	3,622	783	4,405	3,771	816	4,586	3,925	849	4,774
2033	3,629	785	4,414	3,786	819	4,604	3,949	854	4,803
2034	3,636	786	4,422	3,801	822	4,623	3,972	859	4,832

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2017	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2021	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.68%	0.68%	0.68%
2025	0.22%	0.22%	0.22%	0.45%	0.45%	0.45%	0.67%	0.67%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.21%	0.21%	0.21%	0.43%	0.43%	0.43%	0.64%	0.64%	0.64%
2029	0.21%	0.21%	0.21%	0.42%	0.42%	0.42%	0.63%	0.63%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.61%	0.61%	0.61%
2033	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.60%	0.60%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%


McCleary (Aberdeen/Hoquiam) Annual Therm Usage
Therms
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High


McCleary (Aberdeen/Hoquiam) Annual Customer Growth
Customers
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
4,100
4,000
3,900
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Acme

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	74,371	11,093	85,464	75,184	11,093	86,276	75,996	11,093	87,089
2016	75,413	11,248	86,661	76,951	11,353	88,304	78,504	11,459	89,962
2017	75,774	11,302	87,077	78,034	11,513	89,547	80,337	11,726	92,064
2018	76,471	11,406	87,877	79,469	11,725	91,194	82,554	12,050	94,604
2019	77,165	11,509	88,674	80,910	11,938	92,848	84,800	12,378	97,177
2020	78,204	11,664	89,869	82,726	12,206	94,931	87,462	12,766	100,229
2021	78,539	11,714	90,253	83,805	12,365	96,169	89,370	13,045	102,415
2022	79,220	11,816	91,036	85,257	12,579	97,836	91,693	13,384	105,077
2023	79,895	11,917	91,812	86,711	12,794	99,504	94,038	13,726	107,765
2024	80,930	12,071	93,001	88,566	13,067	101,633	96,845	14,136	110,981
2025	81,232	12,116	93,348	89,625	13,223	102,848	98,798	14,421	113,219
2026	81,893	12,215	94,107	91,083	13,439	104,522	101,210	14,773	115,983
2027	82,548	12,312	94,861	92,541	13,654	106,195	103,640	15,128	118,768
2028	83,574	12,465	96,039	94,423	13,931	108,354	106,568	15,555	122,123
2029	83,842	12,505	96,348	95,454	14,083	109,537	108,552	15,845	124,397
2030	84,481	12,601	97,081	96,907	14,298	111,205	111,031	16,207	127,238
2031	85,115	12,695	97,810	98,363	14,513	112,875	113,533	16,572	130,104
2032	86,130	12,847	98,977	100,266	14,794	115,060	116,572	17,016	133,588
2033	86,369	12,882	99,251	101,271	14,942	116,213	118,586	17,310	135,896
2034	86,989	12,975	99,964	102,726	15,156	117,883	121,142	17,683	138,825

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.35%	1.35%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.30%	1.30%	1.30%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.30%	1.30%	2.14%	2.14%	2.14%	2.98%	2.98%	2.98%
2025	0.37%	0.37%	0.37%	1.20%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.82%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.09%	1.09%	1.09%	1.86%	1.86%	1.86%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.94%	1.94%	1.94%	2.68%	2.68%	2.68%
2033	0.28%	0.28%	0.28%	1.00%	1.00%	1.00%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	30	977	1,008	30	987	1,017	30	997	1,027
2016	31	986	1,017	31	1,005	1,037	31	1,025	1,056
2017	31	996	1,027	32	1,024	1,056	32	1,053	1,086
2018	31	1,005	1,036	32	1,043	1,075	33	1,083	1,116
2019	32	1,014	1,046	33	1,062	1,095	34	1,112	1,146
2020	32	1,023	1,055	33	1,081	1,114	35	1,142	1,177
2021	32	1,032	1,064	34	1,100	1,134	36	1,172	1,208
2022	32	1,041	1,073	34	1,119	1,154	37	1,202	1,239
2023	33	1,050	1,083	35	1,138	1,173	38	1,233	1,271
2024	33	1,059	1,092	36	1,157	1,193	39	1,264	1,303
2025	33	1,068	1,101	36	1,177	1,213	40	1,296	1,335
2026	33	1,076	1,110	37	1,196	1,232	40	1,327	1,368
2027	34	1,085	1,119	37	1,215	1,252	41	1,359	1,400
2028	34	1,093	1,127	38	1,234	1,272	43	1,391	1,434
2029	34	1,102	1,136	39	1,253	1,292	43	1,423	1,467
2030	35	1,110	1,145	39	1,272	1,311	44	1,456	1,500
2031	35	1,119	1,153	40	1,291	1,331	45	1,489	1,534
2032	35	1,127	1,162	41	1,310	1,351	47	1,522	1,568
2033	35	1,135	1,170	41	1,329	1,370	47	1,555	1,602
2034	36	1,143	1,179	42	1,348	1,390	48	1,589	1,637

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	0.93%	0.95%	2.35%	1.88%	1.89%	3.30%	2.82%	2.84%
2017	0.48%	0.95%	0.93%	1.41%	1.88%	1.86%	2.34%	2.81%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	0.88%	0.89%	2.24%	1.77%	1.78%	3.14%	2.66%	2.68%
2021	0.43%	0.89%	0.88%	1.30%	1.78%	1.76%	2.18%	2.66%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	0.83%	0.84%	2.14%	1.67%	1.68%	2.98%	2.51%	2.52%
2025	0.37%	0.84%	0.83%	1.20%	1.67%	1.65%	2.02%	2.49%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	0.77%	0.79%	2.03%	1.56%	1.58%	2.82%	2.35%	2.36%
2029	0.32%	0.79%	0.77%	1.09%	1.56%	1.55%	1.86%	2.34%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	0.72%	0.74%	1.94%	1.46%	1.48%	2.68%	2.20%	2.22%
2033	0.28%	0.74%	0.73%	1.00%	1.47%	1.46%	1.73%	2.20%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	50,740	34,724	85,464	51,222	35,054	86,276	51,704	35,384	87,089
2016	51,451	35,210	86,661	52,427	35,877	88,304	53,411	36,551	89,962
2017	51,697	35,379	87,077	53,164	36,383	89,547	54,658	37,405	92,064
2018	52,173	35,705	87,877	54,142	37,052	91,194	56,166	38,438	94,604
2019	52,646	36,028	88,674	55,124	37,724	92,848	57,694	39,483	97,177
2020	53,356	36,513	89,869	56,361	38,570	94,931	59,506	40,722	100,229
2021	53,583	36,670	90,253	57,096	39,074	96,169	60,804	41,611	102,415
2022	54,048	36,988	91,036	58,085	39,751	97,836	62,385	42,693	105,077
2023	54,509	37,303	91,812	59,076	40,429	99,504	63,980	43,785	107,765
2024	55,215	37,786	93,001	60,340	41,293	101,633	65,890	45,091	110,981
2025	55,421	37,927	93,348	61,061	41,787	102,848	67,218	46,001	113,219
2026	55,872	38,236	94,107	62,055	42,467	104,522	68,859	47,124	115,983
2027	56,319	38,542	94,861	63,048	43,147	106,195	70,513	48,255	118,768
2028	57,019	39,020	96,039	64,331	44,024	108,354	72,505	49,618	122,123
2029	57,202	39,146	96,348	65,032	44,505	109,537	73,854	50,542	124,397
2030	57,637	39,444	97,081	66,023	45,183	111,205	75,541	51,697	127,238
2031	58,070	39,740	97,810	67,014	45,861	112,875	77,243	52,861	130,104
2032	58,763	40,214	98,977	68,312	46,748	115,060	79,312	54,276	133,588
2033	58,925	40,326	99,251	68,996	47,217	116,213	80,682	55,214	135,896
2034	59,349	40,615	99,964	69,987	47,896	117,883	82,420	56,404	138,825

Annual Change

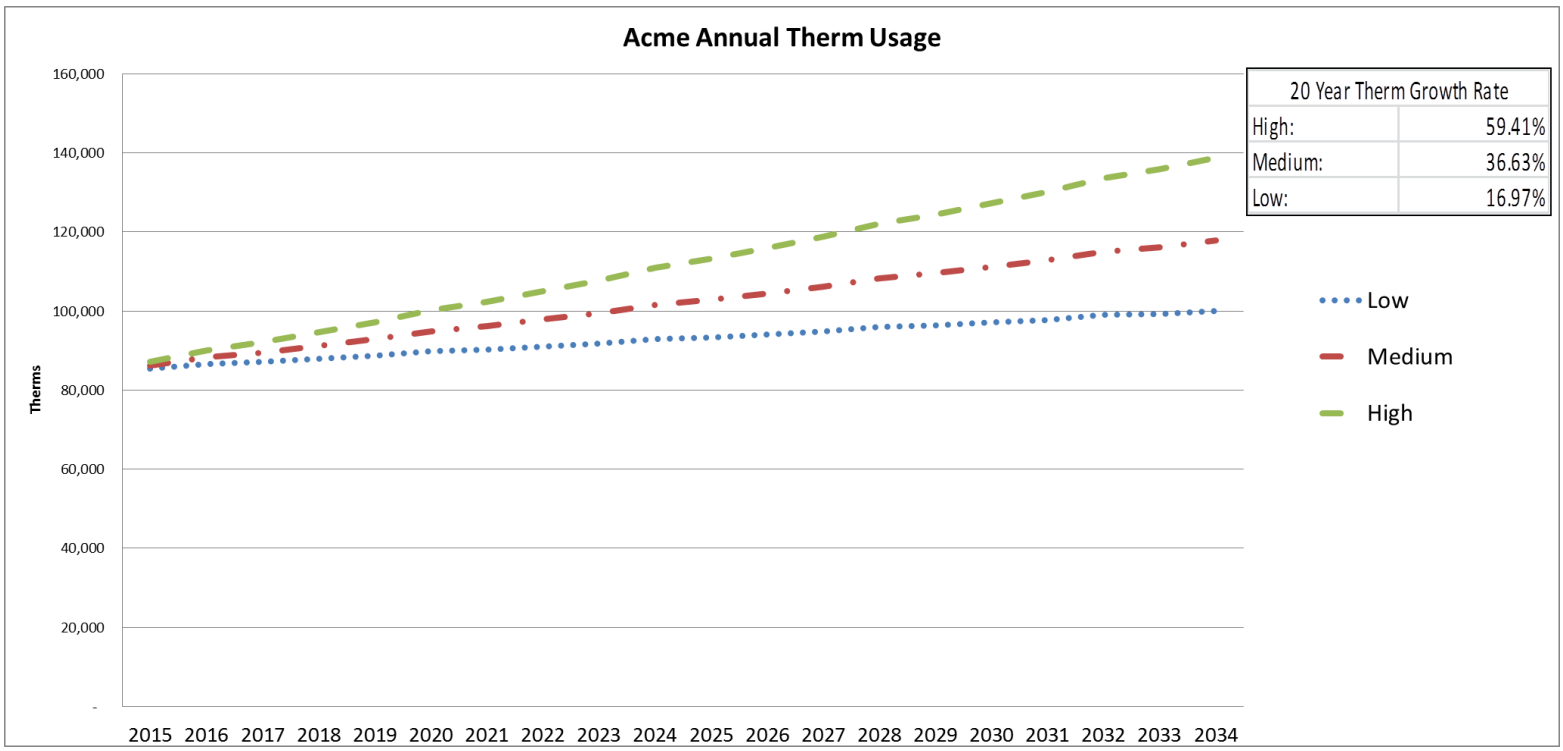
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.33%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.35%	1.35%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.30%	1.31%	1.30%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.29%	1.30%	2.14%	2.14%	2.14%	2.99%	2.98%	2.98%
2025	0.37%	0.37%	0.37%	1.19%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.83%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.09%	1.09%	1.09%	1.86%	1.86%	1.86%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.94%	1.93%	1.94%	2.68%	2.68%	2.68%
2033	0.28%	0.28%	0.28%	1.00%	1.00%	1.00%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

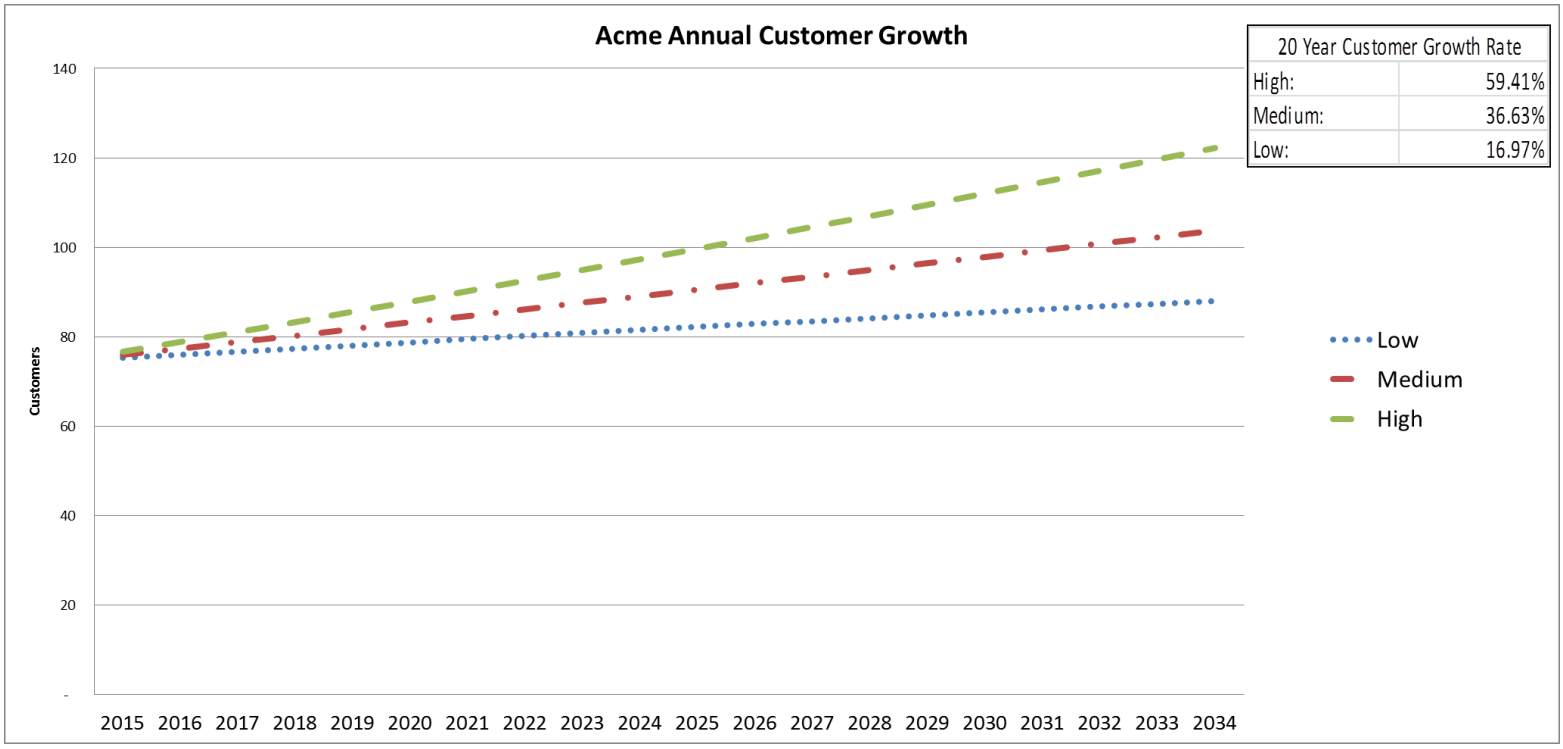
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	66	9	75	67	9	76	67	9	77
2016	67	9	76	68	9	77	69	10	79
2017	67	9	77	69	10	79	71	10	81
2018	68	9	77	71	10	80	73	10	83
2019	69	9	78	72	10	82	75	10	86
2020	69	10	79	73	10	83	77	11	88
2021	70	10	79	74	10	85	79	11	90
2022	70	10	80	76	10	86	81	11	92
2023	71	10	81	77	11	88	83	11	95
2024	72	10	81	78	11	89	85	12	97
2025	72	10	82	80	11	91	88	12	100
2026	73	10	83	81	11	92	90	12	102
2027	73	10	83	82	11	93	92	13	105
2028	74	10	84	83	11	95	94	13	107
2029	75	10	85	85	12	96	96	13	109
2030	75	10	85	86	12	98	98	14	112
2031	76	10	86	87	12	99	101	14	115
2032	76	10	87	89	12	101	103	14	117
2033	77	11	87	90	12	102	105	14	120
2034	77	11	88	91	13	104	107	15	122

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Acme Annual Therm Usage
Therms
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Acme Annual Customer Growth
Customers
140
120
100
80
60
40
20
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Arlington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,512,012	2,186,013	5,698,025	3,556,404	2,186,013	5,742,417	3,600,795	2,186,013	5,786,808
2016	3,554,660	2,212,559	5,767,219	3,627,322	2,229,605	5,856,927	3,700,677	2,246,650	5,947,327
2017	3,566,471	2,219,910	5,786,381	3,667,122	2,254,069	5,921,191	3,769,591	2,288,488	6,058,079
2018	3,593,592	2,236,792	5,830,384	3,722,896	2,288,351	6,011,247	3,855,589	2,340,696	6,196,285
2019	3,620,622	2,253,617	5,874,239	3,778,902	2,322,776	6,101,678	3,942,593	2,393,515	6,336,108
2020	3,663,336	2,280,203	5,943,540	3,851,642	2,367,487	6,219,129	4,047,861	2,457,423	6,505,285
2021	3,674,274	2,287,012	5,961,286	3,891,309	2,391,869	6,283,178	4,119,151	2,500,702	6,619,853
2022	3,700,891	2,303,579	6,004,470	3,947,687	2,426,523	6,374,209	4,208,669	2,555,048	6,763,717
2023	3,727,322	2,320,031	6,047,353	4,004,073	2,461,182	6,465,256	4,298,841	2,609,791	6,908,632
2024	3,769,952	2,346,566	6,116,518	4,078,264	2,506,785	6,585,049	4,408,978	2,676,654	7,085,632
2025	3,779,710	2,352,639	6,132,349	4,117,022	2,530,608	6,647,630	4,481,368	2,720,602	7,201,970
2026	3,805,641	2,368,779	6,174,420	4,173,512	2,565,331	6,738,843	4,573,602	2,776,596	7,350,198
2027	3,831,370	2,384,794	6,216,164	4,229,944	2,600,018	6,829,961	4,666,364	2,832,911	7,499,276
2028	3,873,662	2,411,118	6,284,780	4,304,945	2,646,119	6,951,063	4,780,334	2,902,101	7,682,435
2029	3,882,185	2,416,423	6,298,608	4,342,515	2,669,212	7,011,727	4,853,255	2,946,371	7,799,627
2030	3,907,263	2,432,033	6,339,296	4,398,620	2,703,698	7,102,317	4,947,310	3,003,471	7,950,781
2031	3,932,207	2,447,559	6,379,767	4,454,782	2,738,219	7,193,001	5,042,062	3,060,994	8,103,057
2032	3,974,143	2,473,662	6,447,805	4,530,441	2,784,724	7,315,165	5,159,555	3,132,323	8,291,878
2033	3,981,541	2,478,266	6,459,807	4,566,910	2,807,141	7,374,051	5,233,018	3,176,922	8,409,941
2034	4,005,974	2,493,474	6,499,448	4,622,960	2,841,593	7,464,553	5,329,357	3,235,408	8,564,765

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	1.21%	1.21%	1.99%	1.99%	1.99%	2.77%	2.77%	2.77%
2017	0.33%	0.33%	0.33%	1.10%	1.10%	1.10%	1.86%	1.86%	1.86%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.18%	1.18%	1.18%	1.92%	1.92%	1.92%	2.67%	2.67%	2.67%
2021	0.30%	0.30%	0.30%	1.03%	1.03%	1.03%	1.76%	1.76%	1.76%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.14%	1.14%	1.14%	1.85%	1.85%	1.85%	2.56%	2.56%	2.56%
2025	0.26%	0.26%	0.26%	0.95%	0.95%	0.95%	1.64%	1.64%	1.64%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.10%	1.10%	1.10%	1.77%	1.77%	1.77%	2.44%	2.44%	2.44%
2029	0.22%	0.22%	0.22%	0.87%	0.87%	0.87%	1.53%	1.53%	1.53%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.07%	1.07%	1.07%	1.70%	1.70%	1.70%	2.33%	2.33%	2.33%
2033	0.19%	0.19%	0.19%	0.80%	0.80%	0.80%	1.42%	1.42%	1.42%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	5,989	52,878	58,867	5,989	53,337	59,326	5,989	53,795	59,784
2016	6,062	53,262	59,324	6,109	54,139	60,247	6,155	55,022	61,177
2017	6,082	53,698	59,780	6,176	54,997	61,173	6,270	56,317	62,587
2018	6,128	54,106	60,235	6,269	55,834	62,103	6,413	57,602	64,015
2019	6,174	54,513	60,688	6,364	56,674	63,037	6,558	58,902	65,459
2020	6,247	54,891	61,138	6,486	57,487	63,973	6,733	60,184	66,916
2021	6,266	55,321	61,587	6,553	58,359	64,913	6,851	61,540	68,391
2022	6,311	55,722	62,033	6,648	59,205	65,853	7,000	62,877	69,877
2023	6,356	56,120	62,476	6,743	60,051	66,794	7,150	64,224	71,374
2024	6,429	56,488	62,917	6,868	60,869	67,737	7,333	65,553	72,886
2025	6,446	56,909	63,354	6,933	61,745	68,678	7,454	66,951	74,405
2026	6,490	57,299	63,789	7,028	62,592	69,620	7,607	68,329	75,936
2027	6,534	57,687	64,220	7,123	63,438	70,561	7,761	69,715	77,476
2028	6,606	58,042	64,648	7,250	64,252	71,502	7,951	71,074	79,025
2029	6,620	58,452	65,072	7,313	65,126	72,439	8,072	72,507	80,579
2030	6,663	58,829	65,492	7,407	65,968	73,375	8,229	73,912	82,141
2031	6,706	59,205	65,910	7,502	66,810	74,312	8,386	75,328	83,714
2032	6,777	59,548	66,325	7,629	67,618	75,247	8,582	76,712	85,294
2033	6,790	59,948	66,737	7,691	68,492	76,183	8,704	78,181	86,884
2034	6,831	60,315	67,147	7,785	69,332	77,118	8,864	79,620	88,484

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	0.73%	0.78%	1.99%	1.50%	1.55%	2.77%	2.28%	2.33%
2017	0.33%	0.82%	0.77%	1.10%	1.59%	1.54%	1.86%	2.35%	2.30%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.18%	0.69%	0.74%	1.92%	1.43%	1.48%	2.67%	2.18%	2.23%
2021	0.30%	0.78%	0.73%	1.03%	1.52%	1.47%	1.76%	2.25%	2.20%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.14%	0.66%	0.71%	1.85%	1.36%	1.41%	2.56%	2.07%	2.12%
2025	0.26%	0.74%	0.69%	0.95%	1.44%	1.39%	1.64%	2.13%	2.08%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.10%	0.62%	0.67%	1.77%	1.28%	1.33%	2.44%	1.95%	2.00%
2029	0.22%	0.71%	0.66%	0.87%	1.36%	1.31%	1.53%	2.02%	1.97%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.07%	0.58%	0.63%	1.70%	1.21%	1.26%	2.33%	1.84%	1.89%
2033	0.19%	0.67%	0.62%	0.80%	1.29%	1.24%	1.42%	1.91%	1.86%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,589,721	2,108,303	5,698,025	3,617,688	2,124,729	5,742,417	3,645,655	2,141,154	5,786,808
2016	3,633,630	2,133,589	5,767,219	3,690,150	2,166,776	5,856,927	3,747,107	2,200,220	5,947,327
2017	3,645,385	2,140,996	5,786,381	3,730,315	2,190,876	5,921,191	3,816,553	2,241,526	6,058,079
2018	3,673,107	2,157,277	5,830,384	3,787,049	2,224,197	6,011,247	3,903,622	2,292,663	6,196,285
2019	3,700,735	2,173,504	5,874,239	3,844,021	2,257,658	6,101,678	3,991,710	2,344,398	6,336,108
2020	3,744,721	2,198,819	5,943,540	3,918,355	2,300,774	6,219,129	4,098,647	2,406,637	6,505,285
2021	3,755,574	2,205,712	5,961,286	3,958,364	2,324,814	6,283,178	4,170,467	2,449,385	6,619,853
2022	3,782,780	2,221,690	6,004,470	4,015,714	2,358,496	6,374,209	4,261,101	2,502,616	6,763,717
2023	3,809,796	2,237,557	6,047,353	4,073,072	2,392,183	6,465,256	4,352,396	2,556,235	6,908,632
2024	3,853,705	2,262,813	6,116,518	4,148,903	2,436,146	6,585,049	4,464,295	2,621,337	7,085,632
2025	3,863,343	2,269,006	6,132,349	4,187,967	2,459,663	6,647,630	4,537,198	2,664,772	7,201,970
2026	3,889,848	2,284,573	6,174,420	4,245,430	2,493,412	6,738,843	4,630,581	2,719,618	7,350,198
2027	3,916,146	2,300,018	6,216,164	4,302,834	2,527,127	6,829,961	4,724,498	2,774,777	7,499,276
2028	3,959,719	2,325,061	6,284,780	4,379,510	2,571,553	6,951,063	4,840,309	2,842,125	7,682,435
2029	3,968,085	2,330,523	6,298,608	4,417,346	2,594,381	7,011,727	4,913,718	2,885,909	7,799,627
2030	3,993,718	2,345,578	6,339,296	4,474,417	2,627,900	7,102,317	5,008,944	2,941,837	7,950,781
2031	4,019,215	2,360,552	6,379,767	4,531,548	2,661,454	7,193,001	5,104,877	2,998,180	8,103,057
2032	4,062,433	2,385,373	6,447,805	4,608,911	2,706,253	7,315,165	5,224,289	3,067,589	8,291,878
2033	4,069,640	2,390,168	6,459,807	4,645,607	2,728,443	7,374,051	5,298,212	3,111,729	8,409,941
2034	4,094,613	2,404,835	6,499,448	4,702,624	2,761,930	7,464,553	5,395,751	3,169,015	8,564,765

Annual Change

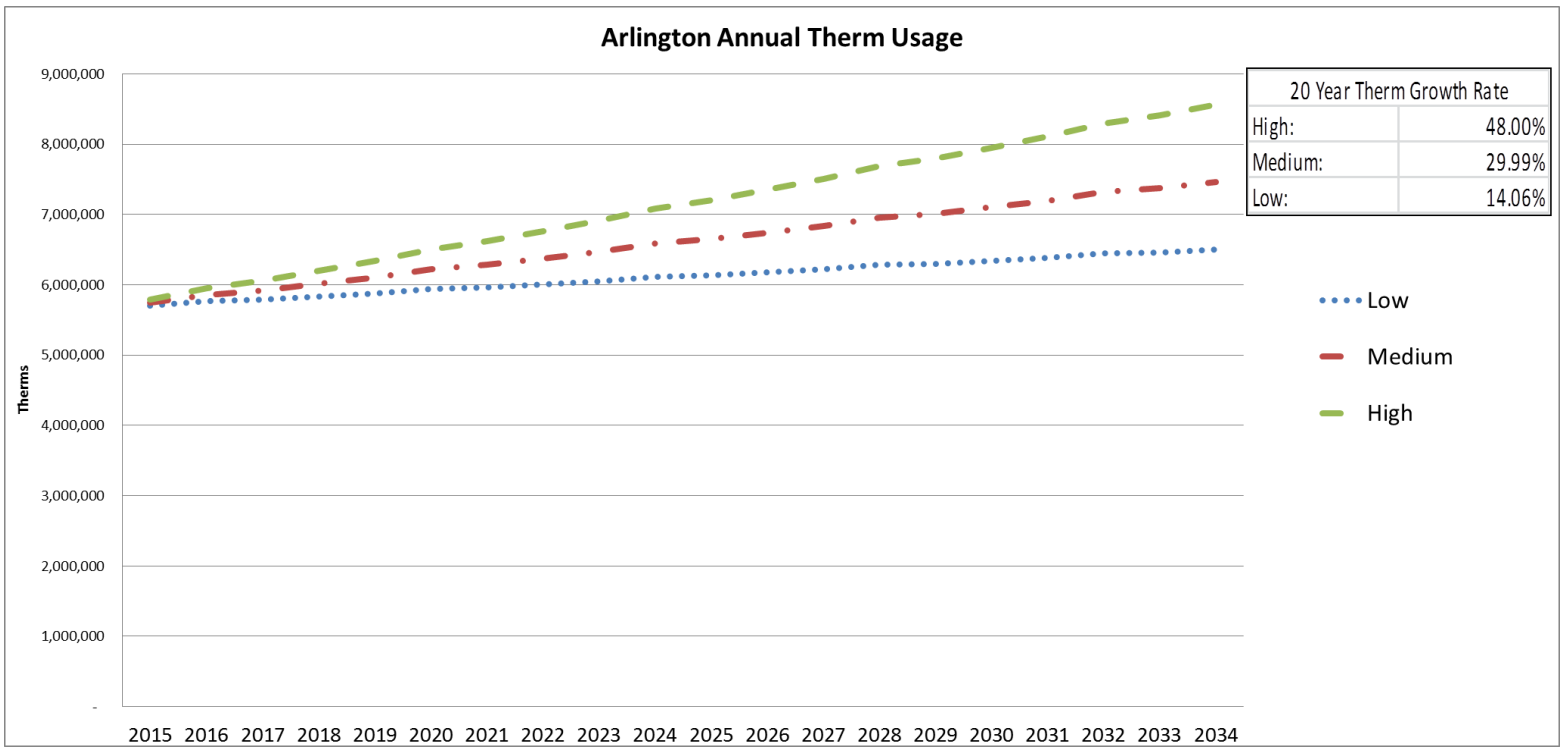
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.22%	1.20%	1.21%	2.00%	1.98%	1.99%	2.78%	2.76%	2.77%
2017	0.32%	0.35%	0.33%	1.09%	1.11%	1.10%	1.85%	1.88%	1.86%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.19%	1.16%	1.18%	1.93%	1.91%	1.92%	2.68%	2.65%	2.67%
2021	0.29%	0.31%	0.30%	1.02%	1.04%	1.03%	1.75%	1.78%	1.76%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.15%	1.13%	1.14%	1.86%	1.84%	1.85%	2.57%	2.55%	2.56%
2025	0.25%	0.27%	0.26%	0.94%	0.97%	0.95%	1.63%	1.66%	1.64%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.11%	1.09%	1.10%	1.78%	1.76%	1.77%	2.45%	2.43%	2.44%
2029	0.21%	0.23%	0.22%	0.86%	0.89%	0.87%	1.52%	1.54%	1.53%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.08%	1.05%	1.07%	1.71%	1.68%	1.70%	2.34%	2.32%	2.33%
2033	0.18%	0.20%	0.19%	0.80%	0.82%	0.80%	1.41%	1.44%	1.42%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

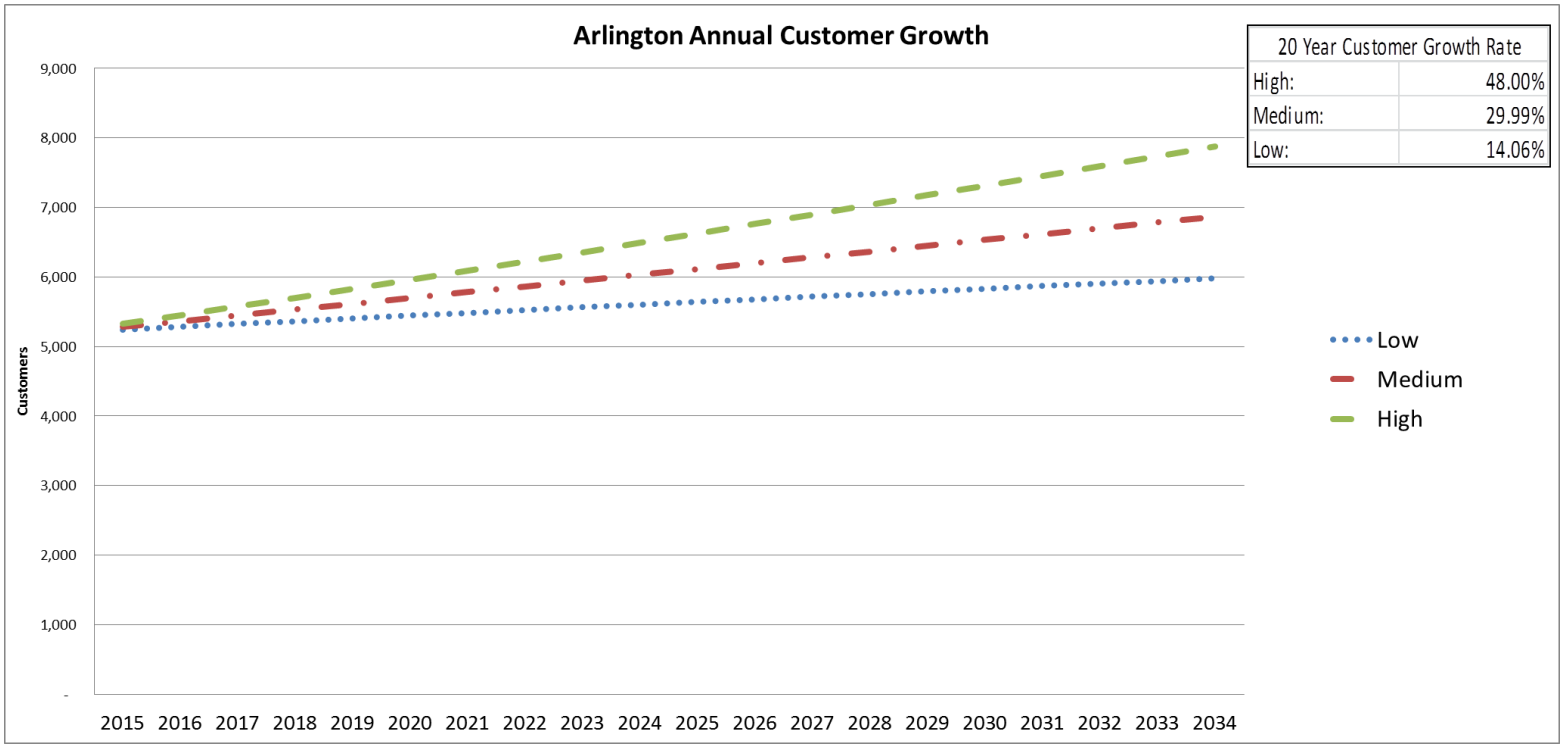
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,670	573	5,243	4,706	578	5,284	4,743	582	5,325
2016	4,706	578	5,284	4,779	587	5,366	4,853	596	5,449
2017	4,742	582	5,324	4,853	596	5,449	4,965	609	5,574
2018	4,778	587	5,365	4,927	605	5,531	5,078	623	5,702
2019	4,814	591	5,405	5,001	614	5,615	5,193	637	5,830
2020	4,850	595	5,445	5,075	623	5,698	5,309	652	5,960
2021	4,886	600	5,485	5,150	632	5,782	5,425	666	6,091
2022	4,921	604	5,525	5,224	641	5,865	5,543	680	6,224
2023	4,956	608	5,565	5,299	650	5,949	5,662	695	6,357
2024	4,991	613	5,604	5,374	660	6,033	5,782	710	6,492
2025	5,026	617	5,643	5,448	669	6,117	5,903	725	6,627
2026	5,060	621	5,682	5,523	678	6,201	6,024	739	6,763
2027	5,095	625	5,720	5,598	687	6,285	6,146	754	6,901
2028	5,129	630	5,758	5,672	696	6,369	6,269	770	7,039
2029	5,162	634	5,796	5,747	705	6,452	6,392	785	7,177
2030	5,196	638	5,833	5,821	714	6,535	6,516	800	7,316
2031	5,229	642	5,871	5,895	724	6,619	6,641	815	7,456
2032	5,262	646	5,907	5,969	733	6,702	6,766	831	7,597
2033	5,294	650	5,944	6,044	742	6,785	6,893	846	7,739
2034	5,327	654	5,981	6,118	751	6,869	7,019	862	7,881

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.78%	0.78%	1.55%	1.55%	1.55%	2.33%	2.33%	2.33%
2017	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.30%	2.30%	2.30%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.23%	2.23%	2.23%
2021	0.73%	0.73%	0.73%	1.47%	1.47%	1.47%	2.20%	2.20%	2.20%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%
2025	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	0.67%	0.67%	0.67%	1.33%	1.33%	1.33%	2.00%	2.00%	2.00%
2029	0.66%	0.66%	0.66%	1.31%	1.31%	1.31%	1.97%	1.97%	1.97%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2033	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%


Arlington Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 48.00%
Medium: 29.99%
Low: 14.06%
Low
Medium
High


Arlington Annual Customer Growth
Customers
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 48.00%
Medium: 29.99%
Low: 14.06%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bremerton (Shelton)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,277,702	8,971,425	33,249,127	24,457,667	8,971,425	33,429,092	24,637,632	8,971,425	33,609,057
2016	24,517,941	9,060,202	33,578,143	24,832,592	9,108,953	33,941,546	25,149,200	9,157,705	34,306,905
2017	24,540,350	9,068,483	33,608,833	24,988,281	9,166,062	34,154,343	25,441,561	9,264,164	34,705,725
2018	24,671,710	9,117,024	33,788,734	25,255,796	9,264,190	34,519,986	25,850,112	9,412,932	35,263,043
2019	24,802,949	9,165,522	33,968,471	25,524,488	9,362,751	34,887,238	26,262,634	9,563,145	35,825,779
2020	25,044,763	9,254,880	34,299,644	25,908,312	9,503,543	35,411,855	26,796,436	9,757,522	36,553,958
2021	25,064,105	9,262,028	34,326,133	26,063,402	9,560,432	35,623,835	27,096,556	9,866,806	36,963,361
2022	25,193,923	9,310,000	34,503,923	26,333,390	9,659,467	35,992,857	27,517,590	10,020,119	37,537,709
2023	25,322,963	9,357,684	34,680,647	26,603,141	9,758,416	36,361,557	27,940,413	10,174,084	38,114,497
2024	25,565,206	9,447,201	35,012,407	26,993,434	9,901,581	36,895,015	28,492,954	10,375,283	38,868,237
2025	25,579,117	9,452,342	35,031,459	27,142,703	9,956,335	37,099,039	28,792,573	10,484,385	39,276,958
2026	25,706,029	9,499,240	35,205,269	27,412,043	10,055,133	37,467,176	29,221,140	10,640,441	39,861,581
2027	25,832,013	9,545,796	35,377,809	27,680,734	10,153,693	37,834,427	29,650,776	10,796,887	40,447,663
2028	26,072,861	9,634,797	35,707,657	28,073,408	10,297,731	38,371,139	30,215,565	11,002,546	41,218,111
2029	26,080,816	9,637,736	35,718,552	28,215,229	10,349,753	38,564,982	30,511,632	11,110,354	41,621,986
2030	26,203,555	9,683,093	35,886,648	28,480,797	10,447,167	38,927,964	30,942,405	11,267,214	42,209,619
2031	26,325,803	9,728,268	36,054,071	28,746,541	10,544,646	39,291,188	31,375,474	11,424,910	42,800,384
2032	26,565,045	9,816,675	36,381,720	29,140,773	10,689,256	39,830,030	31,950,913	11,634,447	43,585,361
2033	26,567,672	9,817,646	36,385,318	29,275,967	10,738,847	40,014,815	32,244,216	11,741,249	43,985,465
2034	26,687,557	9,861,948	36,549,504	29,540,179	10,835,764	40,375,943	32,680,716	11,900,194	44,580,910

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.99%	0.99%	1.53%	1.53%	1.53%	2.08%	2.08%	2.08%
2017	0.09%	0.09%	0.09%	0.63%	0.63%	0.63%	1.16%	1.16%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.97%	0.97%	0.97%	1.50%	1.50%	1.50%	2.03%	2.03%	2.03%
2021	0.08%	0.08%	0.08%	0.60%	0.60%	0.60%	1.12%	1.12%	1.12%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.96%	0.96%	0.96%	1.47%	1.47%	1.47%	1.98%	1.98%	1.98%
2025	0.05%	0.05%	0.05%	0.55%	0.55%	0.55%	1.05%	1.05%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.93%	0.93%	0.93%	1.42%	1.42%	1.42%	1.90%	1.90%	1.90%
2029	0.03%	0.03%	0.03%	0.51%	0.51%	0.51%	0.98%	0.98%	0.98%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%	1.83%	1.83%	1.83%
2033	0.01%	0.01%	0.01%	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	24,579	302,613	327,192	24,579	304,384	328,963	24,579	306,155	330,734
2016	24,822	304,140	328,962	24,956	307,566	332,522	25,090	311,012	336,102
2017	24,845	305,887	330,732	25,112	310,987	336,100	25,381	316,145	341,526
2018	24,978	307,524	332,502	25,381	314,317	339,698	25,789	321,221	347,010
2019	25,111	309,160	334,271	25,651	317,661	343,312	26,200	326,348	352,548
2020	25,356	310,675	336,031	26,037	320,890	346,927	26,733	331,383	358,116
2021	25,375	312,415	337,790	26,193	324,368	350,561	27,032	336,710	363,742
2022	25,507	314,033	339,540	26,464	327,728	354,192	27,452	341,942	369,394
2023	25,637	315,642	341,279	26,735	331,085	357,820	27,874	347,196	375,070
2024	25,883	317,131	343,014	27,128	334,330	361,457	28,425	352,363	380,789
2025	25,897	318,834	344,731	27,278	337,800	365,078	28,724	357,785	386,510
2026	26,025	320,416	346,442	27,548	341,152	368,700	29,152	363,111	392,263
2027	26,153	321,987	348,140	27,818	344,496	372,314	29,581	368,450	398,030
2028	26,397	323,428	349,825	28,213	347,706	375,919	30,144	373,666	403,810
2029	26,405	325,088	351,493	28,355	351,148	379,503	30,439	379,147	409,586
2030	26,529	326,618	353,147	28,622	354,453	383,075	30,869	384,500	415,369
2031	26,653	328,142	354,794	28,889	357,760	386,650	31,301	389,881	421,182
2032	26,895	329,534	356,429	29,286	360,926	390,211	31,875	395,127	427,002
2033	26,898	331,156	358,054	29,421	364,349	393,771	32,168	400,676	432,844
2034	27,019	332,651	359,670	29,687	367,637	397,324	32,603	406,101	438,704

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.50%	0.54%	1.53%	1.05%	1.08%	2.08%	1.59%	1.62%
2017	0.09%	0.57%	0.54%	0.63%	1.11%	1.08%	1.16%	1.65%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.97%	0.49%	0.53%	1.50%	1.02%	1.05%	2.03%	1.54%	1.58%
2021	0.08%	0.56%	0.52%	0.60%	1.08%	1.05%	1.12%	1.61%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.96%	0.47%	0.51%	1.47%	0.98%	1.02%	1.98%	1.49%	1.52%
2025	0.05%	0.54%	0.50%	0.55%	1.04%	1.00%	1.05%	1.54%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.93%	0.45%	0.48%	1.42%	0.93%	0.97%	1.90%	1.42%	1.45%
2029	0.03%	0.51%	0.48%	0.51%	0.99%	0.95%	0.98%	1.47%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.91%	0.42%	0.46%	1.37%	0.88%	0.92%	1.83%	1.35%	1.38%
2033	0.01%	0.49%	0.46%	0.46%	0.95%	0.91%	0.92%	1.40%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	20,246,951	10,518,755	30,765,707	20,356,541	10,575,689	30,932,230	20,466,130	10,632,623	31,098,753
2016	20,449,351	10,622,467	31,071,818	20,670,666	10,737,429	31,408,096	20,893,173	10,853,011	31,746,184
2017	20,465,993	10,632,552	31,098,545	20,798,180	10,805,131	31,603,311	21,133,942	10,979,567	32,113,509
2018	20,575,543	10,689,466	31,265,010	21,020,837	10,920,806	31,941,643	21,473,319	11,155,881	32,629,201
2019	20,684,993	10,746,328	31,431,321	21,244,474	11,036,991	32,281,465	21,815,996	11,333,910	33,149,905
2020	20,888,751	10,850,714	31,739,465	21,566,096	11,202,562	32,768,658	22,261,646	11,563,868	33,825,513
2021	20,902,791	10,859,479	31,762,269	21,693,022	11,270,022	32,963,044	22,508,723	11,693,797	34,202,520
2022	21,011,055	10,915,725	31,926,780	21,917,737	11,386,767	33,304,504	22,858,470	11,875,499	34,733,968
2023	21,118,671	10,971,633	32,090,304	22,142,256	11,503,409	33,645,665	23,209,703	12,057,973	35,267,676
2024	21,322,829	11,076,197	32,399,026	22,469,352	11,671,761	34,141,113	23,671,060	12,295,991	35,967,051
2025	21,332,297	11,082,617	32,414,913	22,591,343	11,736,720	34,328,063	23,917,580	12,425,731	36,343,311
2026	21,438,138	11,137,604	32,575,741	22,815,519	11,853,185	34,668,703	24,273,584	12,610,683	36,884,268
2027	21,543,205	11,192,189	32,735,394	23,039,155	11,969,369	35,008,524	24,630,477	12,796,097	37,426,574
2028	21,746,242	11,296,140	33,042,382	23,368,323	12,138,734	35,507,057	25,102,152	13,039,375	38,141,527
2029	21,750,700	11,299,987	33,050,687	23,484,025	12,200,489	35,684,514	25,345,578	13,167,608	38,513,186
2030	21,853,061	11,353,166	33,206,227	23,705,061	12,315,323	36,020,384	25,703,415	13,353,513	39,056,927
2031	21,955,013	11,406,132	33,361,145	23,926,245	12,430,233	36,356,478	26,063,159	13,540,408	39,603,568
2032	22,156,752	11,509,380	33,666,132	24,256,799	12,600,255	36,857,054	26,543,825	13,788,256	40,332,081
2033	22,156,725	11,510,926	33,667,651	24,366,896	12,659,161	37,026,056	26,784,811	13,915,323	40,700,134
2034	22,256,706	11,562,869	33,819,574	24,586,804	12,773,408	37,360,211	27,147,405	14,103,699	41,251,104

Annual Change

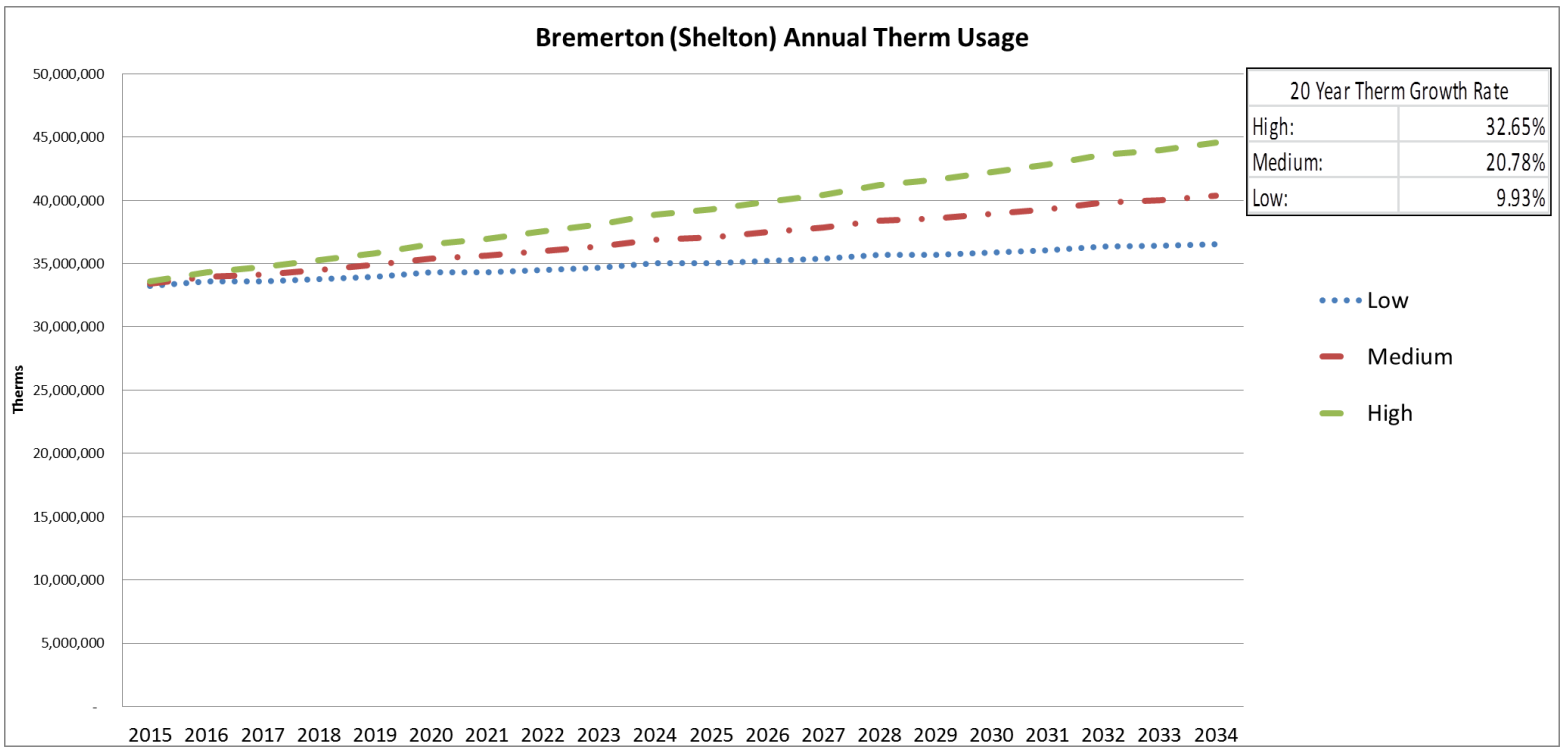
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.00%	0.99%	0.99%	1.54%	1.53%	1.54%	2.09%	2.07%	2.08%
2017	0.08%	0.09%	0.09%	0.62%	0.63%	0.62%	1.15%	1.17%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.99%	0.97%	0.98%	1.51%	1.50%	1.51%	2.04%	2.03%	2.04%
2021	0.07%	0.08%	0.07%	0.59%	0.60%	0.59%	1.11%	1.12%	1.11%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.97%	0.95%	0.96%	1.48%	1.46%	1.47%	1.99%	1.97%	1.98%
2025	0.04%	0.06%	0.05%	0.54%	0.56%	0.55%	1.04%	1.06%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.94%	0.93%	0.94%	1.43%	1.41%	1.42%	1.92%	1.90%	1.91%
2029	0.02%	0.03%	0.03%	0.50%	0.51%	0.50%	0.97%	0.98%	0.97%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.92%	0.91%	0.91%	1.38%	1.37%	1.38%	1.84%	1.83%	1.84%
2033	0.00%	0.01%	0.00%	0.45%	0.47%	0.46%	0.91%	0.92%	0.91%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

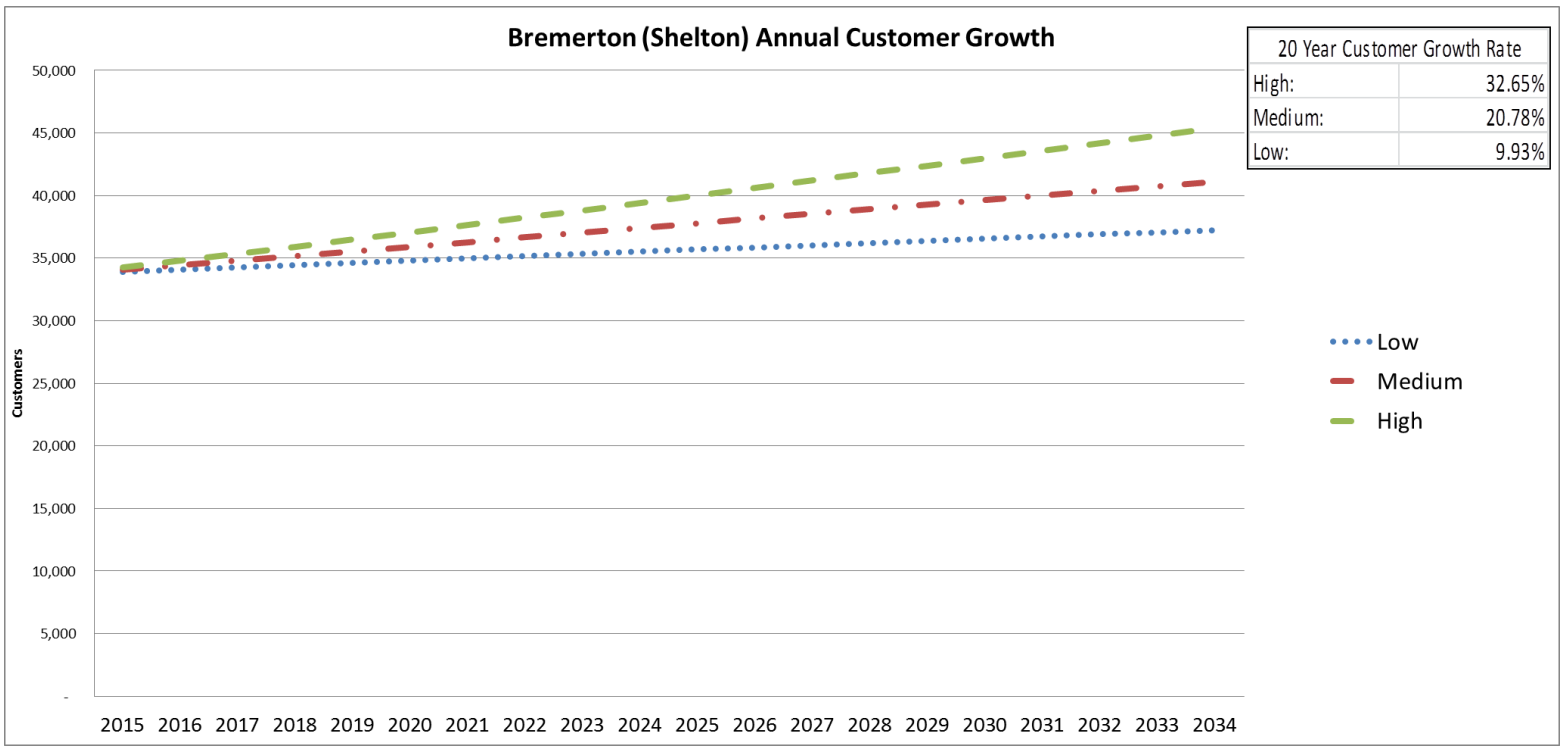
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,924	2,947	33,871	31,091	2,963	34,054	31,258	2,979	34,237
2016	31,091	2,963	34,054	31,427	2,995	34,422	31,766	3,027	34,793
2017	31,258	2,979	34,237	31,765	3,027	34,793	32,278	3,076	35,354
2018	31,425	2,995	34,420	32,106	3,060	35,165	32,797	3,126	35,922
2019	31,593	3,011	34,603	32,447	3,092	35,539	33,320	3,176	36,495
2020	31,759	3,027	34,786	32,789	3,125	35,914	33,846	3,226	37,072
2021	31,925	3,043	34,968	33,132	3,158	36,290	34,378	3,276	37,654
2022	32,091	3,058	35,149	33,475	3,190	36,666	34,912	3,327	38,239
2023	32,255	3,074	35,329	33,818	3,223	37,041	35,449	3,378	38,827
2024	32,419	3,090	35,508	34,162	3,256	37,418	35,989	3,430	39,419
2025	32,581	3,105	35,686	34,504	3,288	37,793	36,530	3,481	40,011
2026	32,743	3,121	35,863	34,847	3,321	38,168	37,073	3,533	40,607
2027	32,903	3,136	36,039	35,188	3,354	38,542	37,619	3,585	41,204
2028	33,063	3,151	36,214	35,529	3,386	38,915	38,165	3,637	41,802
2029	33,220	3,166	36,386	35,868	3,418	39,286	38,711	3,689	42,400
2030	33,377	3,181	36,557	36,205	3,450	39,656	39,257	3,741	42,999
2031	33,532	3,196	36,728	36,543	3,483	40,026	39,807	3,794	43,600
2032	33,687	3,210	36,897	36,880	3,515	40,394	40,357	3,846	44,203
2033	33,840	3,225	37,065	37,216	3,547	40,763	40,909	3,899	44,808
2034	33,993	3,240	37,233	37,552	3,579	41,131	41,463	3,952	45,414

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2017	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.61%	1.61%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2021	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2025	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.48%	0.48%	0.48%	0.97%	0.97%	0.97%	1.45%	1.45%	1.45%
2029	0.48%	0.48%	0.48%	0.95%	0.95%	0.95%	1.43%	1.43%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%	1.38%	1.38%	1.38%
2033	0.46%	0.46%	0.46%	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%


Bremerton (Shelton) Annual Therm Usage
Therms
50,000,000
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High


Bremerton (Shelton) Annual Customer Growth
Customers
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Castle Rock

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	94,658	59,378	154,037	95,030	59,378	154,408	95,401	59,378	154,779
2016	95,284	59,771	155,055	95,892	59,917	155,809	96,501	60,063	156,564
2017	95,125	59,671	154,796	95,968	59,965	155,933	96,816	60,259	157,075
2018	95,364	59,821	155,184	96,450	60,265	156,715	97,544	60,712	158,256
2019	95,605	59,972	155,576	96,937	60,570	157,507	98,284	61,172	159,457
2020	96,245	60,373	156,619	97,833	61,130	158,962	99,442	61,893	161,335
2021	96,091	60,277	156,368	97,924	61,187	159,111	99,788	62,108	161,896
2022	96,336	60,430	156,766	98,423	61,498	159,922	100,550	62,583	163,133
2023	96,580	60,584	157,164	98,923	61,811	160,734	101,316	63,059	164,376
2024	97,228	60,990	158,219	99,839	62,383	162,223	102,513	63,805	166,318
2025	97,070	60,891	157,961	99,927	62,438	162,365	102,860	64,021	166,881
2026	97,314	61,044	158,358	100,430	62,752	163,183	103,637	64,504	168,141
2027	97,558	61,197	158,754	100,933	63,066	163,999	104,415	64,988	169,403
2028	98,206	61,604	159,810	101,855	63,643	165,498	105,629	65,744	171,374
2029	98,040	61,499	159,539	101,931	63,690	165,622	105,967	65,954	171,921
2030	98,278	61,649	159,927	102,427	64,000	166,427	106,739	66,435	173,175
2031	98,517	61,798	160,315	102,924	64,311	167,235	107,516	66,919	174,435
2032	99,164	62,204	161,368	103,848	64,888	168,737	108,742	67,681	176,423
2033	98,989	62,095	161,084	103,913	64,929	168,842	109,068	67,885	176,953
2034	99,225	62,243	161,468	104,408	65,238	169,645	109,847	68,369	178,216

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.66%	0.66%	0.66%	0.91%	0.91%	0.91%	1.15%	1.15%	1.15%
2017	-0.17%	-0.17%	-0.17%	0.08%	0.08%	0.08%	0.33%	0.33%	0.33%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.67%	0.67%	0.67%	0.92%	0.92%	0.92%	1.18%	1.18%	1.18%
2021	-0.16%	-0.16%	-0.16%	0.09%	0.09%	0.09%	0.35%	0.35%	0.35%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.67%	0.67%	0.67%	0.93%	0.93%	0.93%	1.18%	1.18%	1.18%
2025	-0.16%	-0.16%	-0.16%	0.09%	0.09%	0.09%	0.34%	0.34%	0.34%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.66%	0.66%	0.66%	0.91%	0.91%	0.91%	1.16%	1.16%	1.16%
2029	-0.17%	-0.17%	-0.17%	0.07%	0.07%	0.07%	0.32%	0.32%	0.32%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.66%	0.66%	0.66%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2033	-0.18%	-0.18%	-0.18%	0.06%	0.06%	0.06%	0.30%	0.30%	0.30%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	163	1,190	1,353	163	1,193	1,356	163	1,197	1,359
2016	164	1,192	1,356	164	1,198	1,363	165	1,205	1,369
2017	163	1,196	1,359	164	1,205	1,369	165	1,214	1,379
2018	164	1,199	1,363	165	1,211	1,376	166	1,223	1,390
2019	164	1,202	1,366	166	1,217	1,383	168	1,233	1,400
2020	165	1,204	1,370	167	1,223	1,390	170	1,241	1,411
2021	165	1,208	1,373	168	1,230	1,397	170	1,252	1,422
2022	166	1,211	1,377	168	1,236	1,404	171	1,261	1,433
2023	166	1,214	1,380	169	1,242	1,412	173	1,271	1,444
2024	167	1,217	1,384	171	1,248	1,419	175	1,280	1,455
2025	167	1,220	1,387	171	1,255	1,426	175	1,290	1,466
2026	167	1,223	1,391	172	1,261	1,433	177	1,300	1,477
2027	168	1,226	1,394	173	1,267	1,440	178	1,310	1,488
2028	169	1,229	1,398	174	1,273	1,447	180	1,319	1,499
2029	168	1,233	1,401	174	1,280	1,454	181	1,329	1,510
2030	169	1,236	1,404	175	1,286	1,462	182	1,339	1,521
2031	169	1,239	1,408	176	1,292	1,469	183	1,349	1,532
2032	170	1,241	1,411	178	1,298	1,476	185	1,357	1,543
2033	170	1,244	1,415	178	1,305	1,483	186	1,368	1,554
2034	171	1,247	1,418	179	1,311	1,490	187	1,378	1,565

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.66%	0.19%	0.24%	0.91%	0.43%	0.49%	1.15%	0.68%	0.73%
2017	-0.17%	0.30%	0.25%	0.08%	0.55%	0.50%	0.33%	0.80%	0.74%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.67%	0.20%	0.25%	0.92%	0.45%	0.51%	1.18%	0.70%	0.76%
2021	-0.16%	0.31%	0.25%	0.09%	0.57%	0.51%	0.35%	0.82%	0.76%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.67%	0.20%	0.25%	0.93%	0.45%	0.51%	1.18%	0.71%	0.76%
2025	-0.16%	0.31%	0.25%	0.09%	0.56%	0.50%	0.34%	0.81%	0.76%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.66%	0.19%	0.25%	0.91%	0.44%	0.50%	1.16%	0.69%	0.74%
2029	-0.17%	0.30%	0.25%	0.07%	0.55%	0.49%	0.32%	0.79%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.66%	0.18%	0.24%	0.90%	0.42%	0.48%	1.14%	0.66%	0.72%
2033	-0.18%	0.30%	0.24%	0.06%	0.54%	0.48%	0.30%	0.77%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	34,940	119,097	154,037	35,024	119,384	154,408	35,108	119,671	154,779
2016	35,194	119,861	155,055	35,365	120,443	155,809	35,537	121,027	156,564
2017	35,112	119,684	154,796	35,370	120,563	155,933	35,629	121,446	157,075
2018	35,200	119,984	155,184	35,547	121,167	156,715	35,897	122,360	158,256
2019	35,289	120,287	155,576	35,727	121,780	157,507	36,169	123,287	159,457
2020	35,549	121,069	156,619	36,081	122,881	158,962	36,620	124,716	161,335
2021	35,469	120,899	156,368	36,091	123,020	159,111	36,722	125,173	161,896
2022	35,559	121,207	156,766	36,275	123,647	159,922	37,003	126,130	163,133
2023	35,649	121,515	157,164	36,459	124,275	160,734	37,285	127,091	164,376
2024	35,912	122,306	158,219	36,821	125,401	162,223	37,751	128,567	166,318
2025	35,830	122,131	157,961	36,829	125,536	162,365	37,853	129,028	166,881
2026	35,920	122,438	158,358	37,014	126,168	163,183	38,139	130,002	168,141
2027	36,010	122,745	158,754	37,200	126,799	163,999	38,425	130,978	169,403
2028	36,274	123,536	159,810	37,565	127,933	165,498	38,898	132,475	171,374
2029	36,188	123,351	159,539	37,568	128,054	165,622	38,996	132,924	171,921
2030	36,276	123,651	159,927	37,750	128,677	166,427	39,281	133,894	173,175
2031	36,364	123,951	160,315	37,933	129,301	167,235	39,567	134,868	174,435
2032	36,627	124,741	161,368	38,300	130,437	168,737	40,044	136,378	176,423
2033	36,538	124,546	161,084	38,298	130,544	168,842	40,138	136,815	176,953
2034	36,625	124,842	161,468	38,480	131,165	169,645	40,424	137,792	178,216

Annual Change

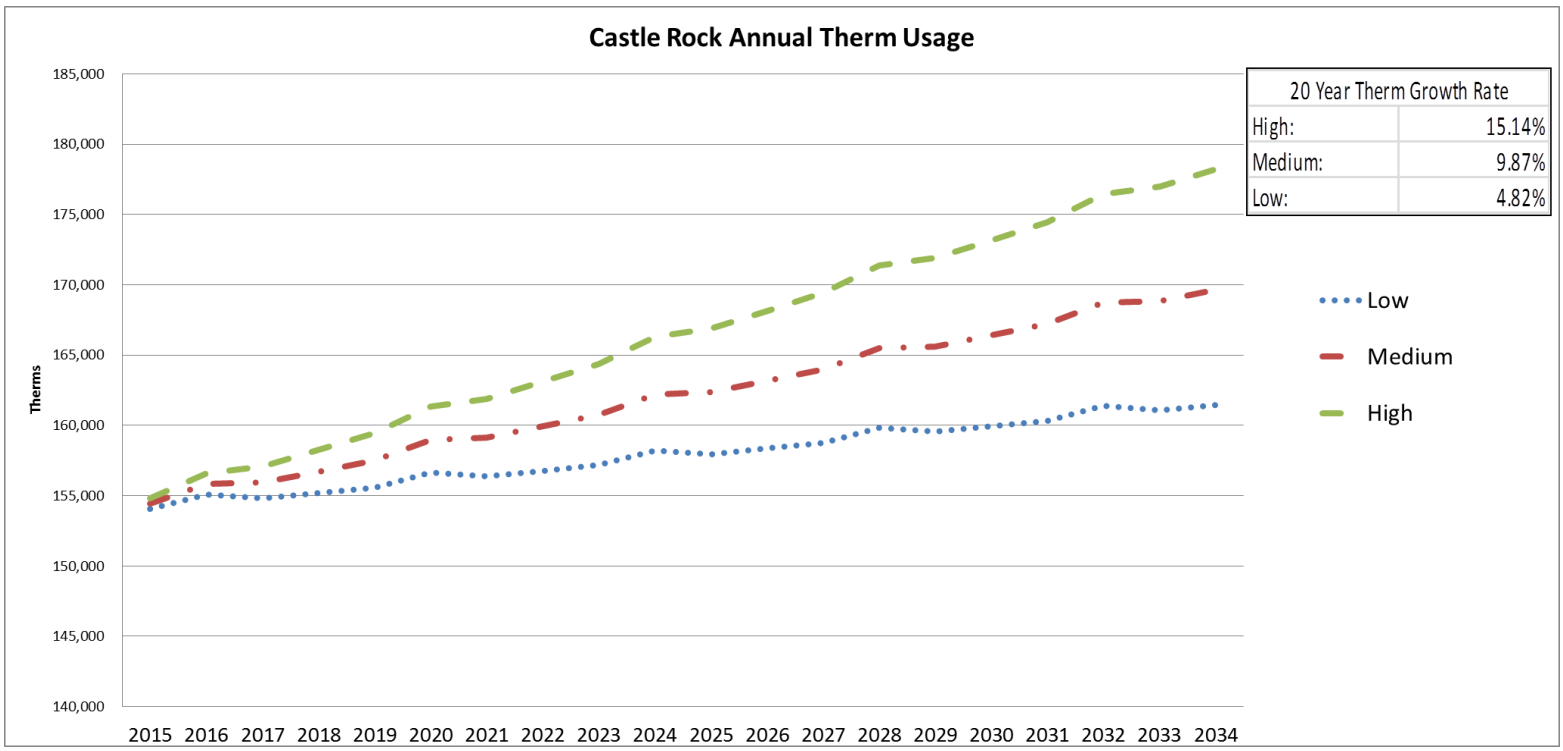
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.73%	0.64%	0.66%	0.97%	0.89%	0.91%	1.22%	1.13%	1.15%
2017	-0.23%	-0.15%	-0.17%	0.01%	0.10%	0.08%	0.26%	0.35%	0.33%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.74%	0.65%	0.67%	0.99%	0.90%	0.92%	1.25%	1.16%	1.18%
2021	-0.23%	-0.14%	-0.16%	0.03%	0.11%	0.09%	0.28%	0.37%	0.35%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.74%	0.65%	0.67%	0.99%	0.91%	0.93%	1.25%	1.16%	1.18%
2025	-0.23%	-0.14%	-0.16%	0.02%	0.11%	0.09%	0.27%	0.36%	0.34%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.73%	0.65%	0.66%	0.98%	0.89%	0.91%	1.23%	1.14%	1.16%
2029	-0.24%	-0.15%	-0.17%	0.01%	0.09%	0.07%	0.25%	0.34%	0.32%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.72%	0.64%	0.66%	0.97%	0.88%	0.90%	1.21%	1.12%	1.14%
2033	-0.24%	-0.16%	-0.18%	0.00%	0.08%	0.06%	0.23%	0.32%	0.30%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

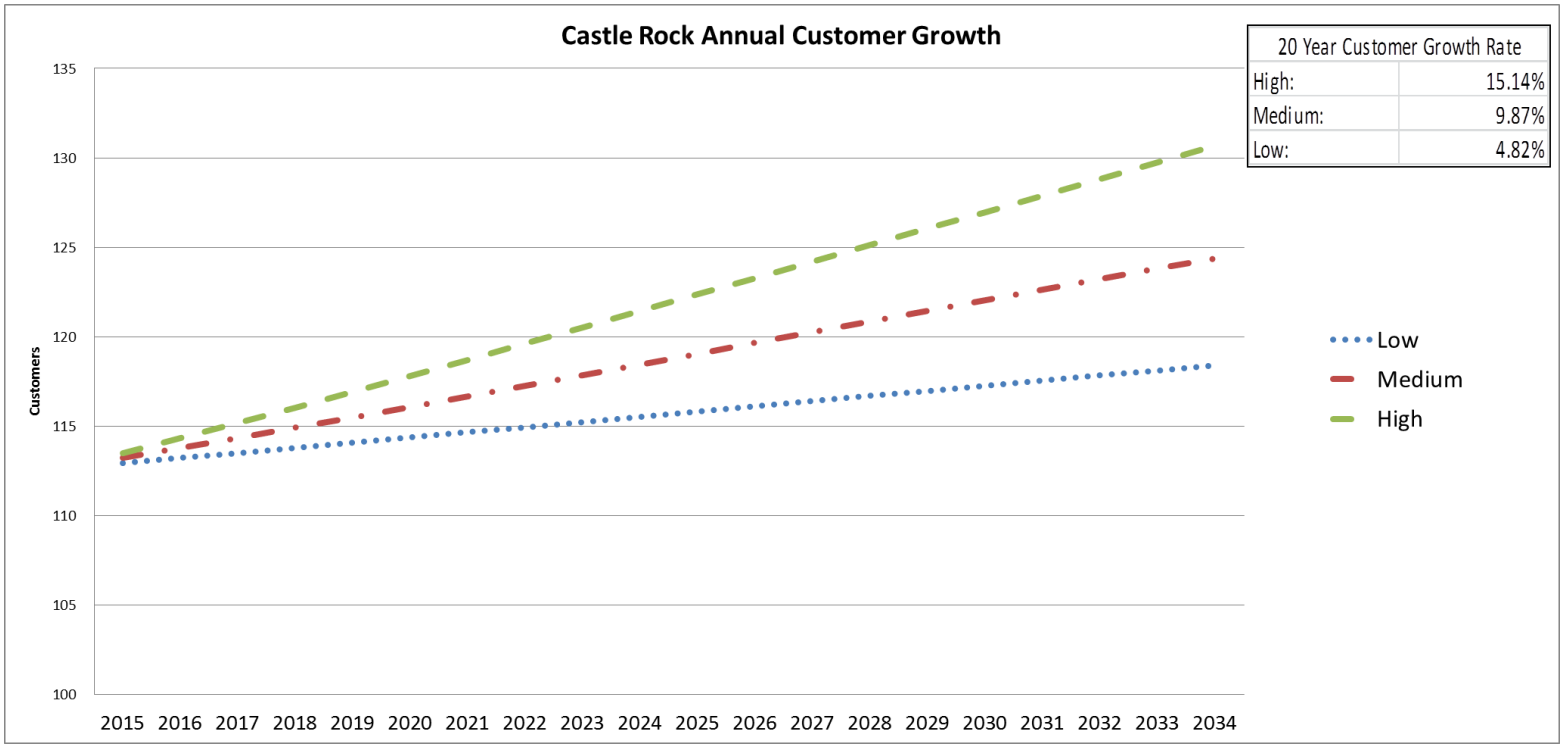
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	64	49	113	64	49	113	65	49	113
2016	64	49	113	65	49	114	65	49	114
2017	65	49	113	65	49	114	66	50	115
2018	65	49	114	65	49	115	66	50	116
2019	65	49	114	66	50	115	67	50	117
2020	65	49	114	66	50	116	67	51	118
2021	65	49	115	66	50	117	68	51	119
2022	65	49	115	67	50	117	68	51	120
2023	66	50	115	67	51	118	69	52	121
2024	66	50	116	67	51	118	69	52	121
2025	66	50	116	68	51	119	70	53	122
2026	66	50	116	68	52	120	70	53	123
2027	66	50	116	68	52	120	71	53	124
2028	66	50	117	69	52	121	71	54	125
2029	67	50	117	69	52	121	72	54	126
2030	67	50	117	69	53	122	72	55	127
2031	67	51	118	70	53	123	73	55	128
2032	67	51	118	70	53	123	73	55	129
2033	67	51	118	71	53	124	74	56	130
2034	67	51	118	71	54	124	74	56	131

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2021	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2025	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2029	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%


Castle Rock Annual Therm Usage
Therms
185,000
180,000
175,000
170,000
165,000
160,000
155,000
150,000
145,000
140,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.14%
Medium: 9.87%
Low: 4.82%
Low
Medium
High


Castle Rock Annual Customer Growth
Customers
135
130
125
120
115
110
105
100
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.14%
Medium: 9.87%
Low: 4.82%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Walla Walla

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,747,482	4,043,380	12,790,863	8,751,579	4,043,380	12,794,960	8,755,676	4,043,380	12,799,057
2016	8,782,050	4,059,359	12,841,409	8,788,534	4,060,454	12,848,988	8,795,020	4,061,550	12,856,570
2017	8,734,660	4,037,454	12,772,114	8,743,026	4,039,429	12,782,455	8,751,397	4,041,404	12,792,801
2018	8,730,241	4,035,411	12,765,652	8,740,077	4,038,066	12,778,144	8,749,921	4,040,723	12,790,644
2019	8,726,928	4,033,879	12,760,807	8,737,866	4,037,045	12,774,911	8,748,814	4,040,212	12,789,026
2020	8,765,622	4,051,765	12,817,387	8,777,571	4,055,389	12,832,961	8,789,534	4,059,016	12,848,550
2021	8,722,511	4,031,838	12,754,349	8,734,918	4,035,682	12,770,600	8,747,338	4,039,530	12,786,868
2022	8,721,186	4,031,225	12,752,412	8,734,033	4,035,274	12,769,307	8,746,895	4,039,325	12,786,221
2023	8,720,082	4,030,715	12,750,797	8,733,296	4,034,933	12,768,229	8,746,526	4,039,155	12,785,681
2024	8,761,407	4,049,817	12,811,224	8,774,757	4,054,089	12,828,847	8,788,125	4,058,365	12,846,490
2025	8,719,420	4,030,409	12,749,829	8,732,854	4,034,729	12,767,583	8,746,305	4,039,053	12,785,358
2026	8,719,199	4,030,307	12,749,506	8,732,706	4,034,661	12,767,367	8,746,231	4,039,019	12,785,250
2027	8,719,199	4,030,307	12,749,506	8,732,706	4,034,661	12,767,367	8,746,231	4,039,019	12,785,250
2028	8,760,742	4,049,509	12,810,251	8,774,313	4,053,884	12,828,197	8,787,902	4,058,262	12,846,165
2029	8,718,758	4,030,103	12,748,861	8,732,412	4,034,525	12,766,936	8,746,083	4,038,950	12,785,034
2030	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2031	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2032	8,759,854	4,049,099	12,808,954	8,773,721	4,053,610	12,827,331	8,787,606	4,058,125	12,845,731
2033	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2034	8,718,390	4,029,933	12,748,323	8,732,264	4,034,457	12,766,721	8,746,157	4,038,985	12,785,142

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.40%	0.40%	0.40%	0.42%	0.42%	0.42%	0.45%	0.45%	0.45%
2017	-0.54%	-0.54%	-0.54%	-0.52%	-0.52%	-0.52%	-0.50%	-0.50%	-0.50%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.44%	0.44%	0.44%	0.45%	0.45%	0.45%	0.47%	0.47%	0.47%
2021	-0.49%	-0.49%	-0.49%	-0.49%	-0.49%	-0.49%	-0.48%	-0.48%	-0.48%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.48%	0.48%	0.48%
2025	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%
2029	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%
2033	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	11,078	159,821	170,899	11,078	159,876	170,954	11,078	159,931	171,008
2016	11,122	159,639	170,761	11,125	159,737	170,861	11,128	159,835	170,962
2017	11,062	159,587	170,648	11,067	159,720	170,786	11,072	159,852	170,925
2018	11,056	159,506	170,562	11,063	159,666	170,729	11,070	159,825	170,896
2019	11,052	159,446	170,497	11,060	159,625	170,686	11,069	159,805	170,874
2020	11,101	159,340	170,441	11,111	159,538	170,648	11,121	159,735	170,856
2021	11,046	159,365	170,411	11,057	159,571	170,628	11,067	159,778	170,845
2022	11,044	159,341	170,385	11,056	159,555	170,611	11,067	159,770	170,837
2023	11,043	159,320	170,363	11,055	159,542	170,596	11,066	159,763	170,830
2024	11,095	159,264	170,359	11,107	159,486	170,594	11,119	159,709	170,828
2025	11,042	159,308	170,351	11,054	159,534	170,588	11,066	159,759	170,825
2026	11,042	159,304	170,346	11,054	159,531	170,585	11,066	159,758	170,824
2027	11,042	159,304	170,346	11,054	159,531	170,585	11,066	159,758	170,824
2028	11,095	159,252	170,346	11,107	159,478	170,585	11,119	159,705	170,824
2029	11,041	159,296	170,338	11,053	159,526	170,579	11,066	159,755	170,821
2030	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2031	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2032	11,093	159,236	170,329	11,106	159,468	170,573	11,118	159,700	170,818
2033	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2034	11,041	159,290	170,330	11,053	159,523	170,576	11,066	159,757	170,822

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.40%	-0.11%	-0.08%	0.42%	-0.09%	-0.05%	0.45%	-0.06%	-0.03%
2017	-0.54%	-0.03%	-0.07%	-0.52%	-0.01%	-0.04%	-0.50%	0.01%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.44%	-0.07%	-0.03%	0.45%	-0.05%	-0.02%	0.47%	-0.04%	-0.01%
2021	-0.49%	0.02%	-0.02%	-0.49%	0.02%	-0.01%	-0.48%	0.03%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.47%	-0.04%	0.00%	0.47%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2025	-0.48%	0.03%	-0.01%	-0.48%	0.03%	0.00%	-0.48%	0.03%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2029	-0.48%	0.03%	-0.01%	-0.48%	0.03%	0.00%	-0.48%	0.03%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2033	-0.47%	0.03%	0.00%	-0.47%	0.03%	0.00%	-0.47%	0.03%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,487,729	4,350,219	10,837,948	6,489,808	4,351,612	10,841,420	6,491,886	4,353,005	10,844,891
2016	6,514,667	4,367,392	10,882,060	6,518,513	4,369,970	10,888,483	6,522,359	4,372,549	10,894,907
2017	6,478,220	4,343,842	10,822,062	6,483,465	4,347,359	10,830,824	6,488,713	4,350,878	10,839,591
2018	6,474,942	4,341,645	10,816,587	6,481,278	4,345,893	10,827,171	6,487,619	4,350,144	10,837,763
2019	6,472,485	4,339,997	10,812,482	6,479,638	4,344,793	10,824,432	6,486,798	4,349,594	10,836,392
2020	6,502,481	4,359,223	10,861,703	6,510,381	4,364,519	10,874,901	6,518,290	4,369,821	10,888,111
2021	6,469,209	4,337,800	10,807,009	6,477,452	4,343,327	10,820,779	6,485,703	4,348,860	10,834,563
2022	6,468,227	4,337,141	10,805,368	6,476,796	4,342,887	10,819,683	6,485,375	4,348,640	10,834,015
2023	6,467,408	4,336,592	10,804,000	6,476,249	4,342,521	10,818,770	6,485,101	4,348,456	10,833,558
2024	6,499,354	4,357,126	10,856,480	6,508,294	4,363,120	10,871,414	6,517,245	4,369,120	10,886,365
2025	6,466,917	4,336,263	10,803,180	6,475,922	4,342,301	10,818,223	6,484,937	4,348,346	10,833,284
2026	6,466,753	4,336,153	10,802,906	6,475,812	4,342,228	10,818,040	6,484,883	4,348,310	10,833,192
2027	6,466,753	4,336,153	10,802,906	6,475,812	4,342,228	10,818,040	6,484,883	4,348,310	10,833,192
2028	6,498,860	4,356,795	10,855,656	6,507,965	4,362,899	10,870,864	6,517,080	4,369,010	10,886,090
2029	6,466,425	4,335,934	10,802,359	6,475,594	4,342,081	10,817,675	6,484,773	4,348,236	10,833,009
2030	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2031	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2032	6,498,202	4,356,354	10,854,556	6,507,525	4,362,604	10,870,130	6,516,860	4,368,862	10,885,722
2033	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2034	6,466,153	4,335,751	10,801,903	6,475,484	4,342,008	10,817,492	6,484,828	4,348,273	10,833,101

Annual Change

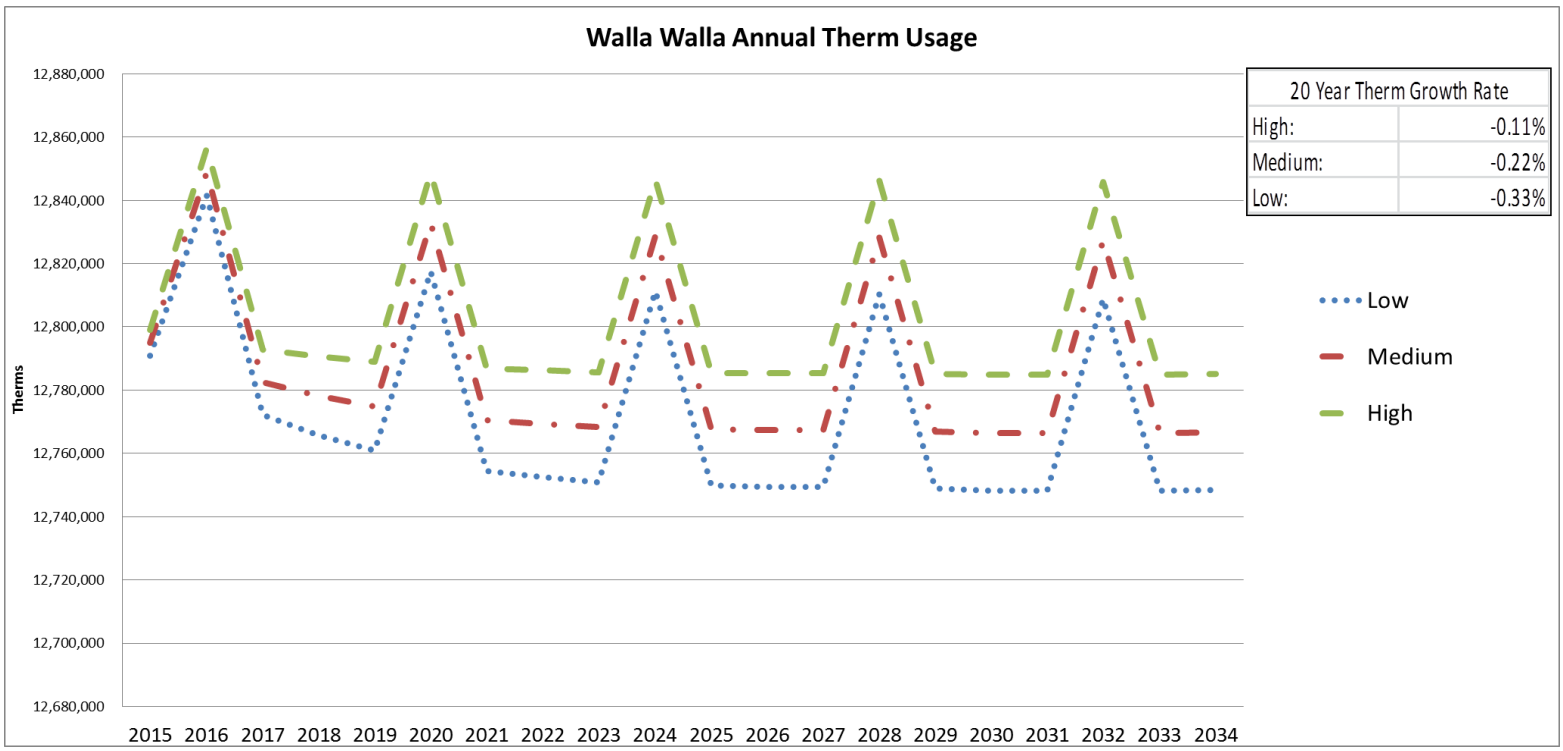
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.42%	0.39%	0.41%	0.44%	0.42%	0.43%	0.47%	0.45%	0.46%
2017	-0.56%	-0.54%	-0.55%	-0.54%	-0.52%	-0.53%	-0.52%	-0.50%	-0.51%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.46%	0.44%	0.46%	0.47%	0.45%	0.47%	0.49%	0.47%	0.48%
2021	-0.51%	-0.49%	-0.50%	-0.51%	-0.49%	-0.50%	-0.50%	-0.48%	-0.49%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.49%	0.47%	0.49%	0.49%	0.47%	0.49%	0.50%	0.48%	0.49%
2025	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%
2029	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%
2033	-0.49%	-0.47%	-0.49%	-0.49%	-0.47%	-0.49%	-0.49%	-0.47%	-0.49%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

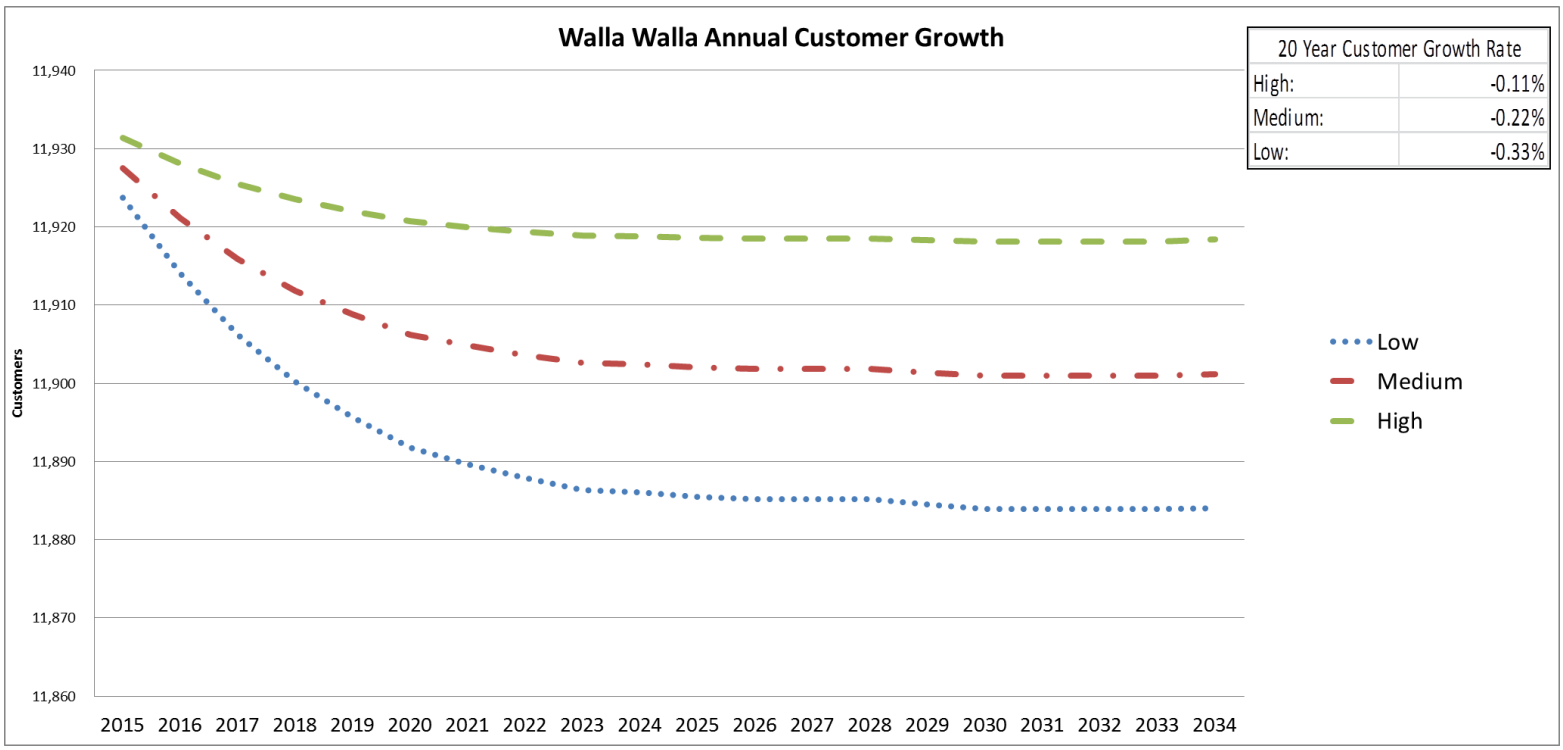
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,654	1,269	11,924	10,658	1,270	11,928	10,661	1,270	11,931
2016	10,646	1,268	11,914	10,652	1,269	11,921	10,658	1,270	11,928
2017	10,639	1,268	11,906	10,647	1,269	11,916	10,656	1,270	11,926
2018	10,633	1,267	11,900	10,644	1,268	11,912	10,654	1,269	11,924
2019	10,629	1,266	11,896	10,641	1,268	11,909	10,653	1,269	11,922
2020	10,626	1,266	11,892	10,639	1,268	11,906	10,652	1,269	11,921
2021	10,624	1,266	11,890	10,637	1,267	11,905	10,651	1,269	11,920
2022	10,622	1,266	11,888	10,636	1,267	11,904	10,650	1,269	11,919
2023	10,621	1,265	11,886	10,635	1,267	11,903	10,650	1,269	11,919
2024	10,621	1,265	11,886	10,635	1,267	11,902	10,650	1,269	11,919
2025	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,919
2026	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2027	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2028	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2029	10,619	1,265	11,885	10,634	1,267	11,901	10,649	1,269	11,918
2030	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2031	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2032	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2033	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2034	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.08%	-0.08%	-0.08%	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%
2017	-0.07%	-0.07%	-0.07%	-0.04%	-0.04%	-0.04%	-0.02%	-0.02%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
2021	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%


Walla Walla Annual Therm Usage
Therms
12,880,000
12,860,000
12,840,000
12,820,000
12,800,000
12,780,000
12,760,000
12,740,000
12,720,000
12,700,000
12,680,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High


Walla Walla Annual Customer Growth
Customers
11,940
11,930
11,920
11,910
11,900
11,890
11,880
11,870
11,860
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Deming

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	109,683	33,799	143,482	111,030	33,799	144,829	112,378	33,799	146,177
2016	111,210	34,269	145,479	113,619	34,587	148,206	116,053	34,904	150,957
2017	111,728	34,429	146,158	115,191	35,066	150,257	118,724	35,708	154,432
2018	112,745	34,743	147,488	117,288	35,704	152,991	121,965	36,682	158,647
2019	113,757	35,054	148,811	119,392	36,344	155,736	125,248	37,670	162,918
2020	115,282	35,524	150,806	122,053	37,154	159,207	129,150	38,843	167,994
2021	115,762	35,672	151,434	123,620	37,631	161,252	131,930	39,679	171,610
2022	116,756	35,979	152,735	125,743	38,278	164,021	135,328	40,701	176,030
2023	117,743	36,282	154,025	127,868	38,924	166,792	138,758	41,733	180,491
2024	119,262	36,751	156,013	130,589	39,753	170,341	142,873	42,970	185,843
2025	119,696	36,884	156,581	132,128	40,221	172,350	145,722	43,827	189,549
2026	120,663	37,182	157,845	134,262	40,871	175,133	149,252	44,889	194,141
2027	121,621	37,478	159,099	136,396	41,520	177,916	152,810	45,959	198,769
2028	123,129	37,942	161,071	139,158	42,361	181,519	157,105	47,251	204,356
2029	123,515	38,061	161,576	140,660	42,818	183,478	160,003	48,123	208,125
2030	124,450	38,349	162,799	142,789	43,466	186,255	163,635	49,215	212,850
2031	125,379	38,636	164,015	144,921	44,116	189,037	167,301	50,318	217,619
2032	126,873	39,096	165,970	147,719	44,967	192,686	171,766	51,660	223,426
2033	127,217	39,202	166,419	149,185	45,414	194,599	174,711	52,546	227,257
2034	128,127	39,482	167,609	151,319	46,063	197,382	178,460	53,674	232,133

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	1.39%	1.39%	2.33%	2.33%	2.33%	3.27%	3.27%	3.27%
2017	0.47%	0.47%	0.47%	1.38%	1.38%	1.38%	2.30%	2.30%	2.30%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.12%	3.12%	3.12%
2021	0.42%	0.42%	0.42%	1.28%	1.28%	1.28%	2.15%	2.15%	2.15%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.29%	1.29%	1.29%	2.13%	2.13%	2.13%	2.97%	2.97%	2.97%
2025	0.36%	0.36%	0.36%	1.18%	1.18%	1.18%	1.99%	1.99%	1.99%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.81%	2.81%	2.81%
2029	0.31%	0.31%	0.31%	1.08%	1.08%	1.08%	1.84%	1.84%	1.84%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.19%	1.19%	1.19%	1.93%	1.93%	1.93%	2.67%	2.67%	2.67%
2033	0.27%	0.27%	0.27%	0.99%	0.99%	0.99%	1.71%	1.71%	1.71%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	93	1,578	1,670	93	1,594	1,686	93	1,609	1,702
2016	94	1,592	1,686	95	1,623	1,718	96	1,654	1,750
2017	94	1,607	1,702	96	1,653	1,749	98	1,700	1,798
2018	95	1,622	1,717	98	1,683	1,781	100	1,747	1,847
2019	96	1,636	1,732	100	1,714	1,813	103	1,794	1,897
2020	97	1,650	1,748	102	1,743	1,845	106	1,841	1,947
2021	98	1,665	1,763	103	1,774	1,877	109	1,889	1,998
2022	99	1,680	1,778	105	1,805	1,910	112	1,938	2,049
2023	99	1,694	1,793	107	1,835	1,942	114	1,987	2,101
2024	101	1,707	1,808	109	1,865	1,974	118	2,036	2,154
2025	101	1,722	1,823	110	1,896	2,007	120	2,087	2,207
2026	102	1,736	1,838	112	1,927	2,039	123	2,137	2,260
2027	103	1,750	1,852	114	1,958	2,071	126	2,188	2,314
2028	104	1,763	1,867	116	1,988	2,104	129	2,239	2,368
2029	104	1,777	1,881	117	2,019	2,136	132	2,291	2,423
2030	105	1,790	1,895	119	2,049	2,168	135	2,343	2,478
2031	106	1,804	1,910	121	2,080	2,201	138	2,396	2,534
2032	107	1,816	1,924	123	2,110	2,233	142	2,448	2,589
2033	107	1,830	1,937	124	2,141	2,266	144	2,502	2,646
2034	108	1,843	1,951	126	2,172	2,298	147	2,556	2,703

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	0.91%	0.93%	2.33%	1.84%	1.87%	3.27%	2.78%	2.80%
2017	0.47%	0.95%	0.92%	1.38%	1.87%	1.84%	2.30%	2.79%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.34%	0.86%	0.88%	2.23%	1.74%	1.77%	3.12%	2.62%	2.65%
2021	0.42%	0.90%	0.87%	1.28%	1.77%	1.74%	2.15%	2.64%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.29%	0.81%	0.83%	2.13%	1.64%	1.67%	2.97%	2.47%	2.50%
2025	0.36%	0.85%	0.82%	1.18%	1.66%	1.64%	1.99%	2.48%	2.46%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.24%	0.76%	0.78%	2.03%	1.54%	1.56%	2.81%	2.32%	2.35%
2029	0.31%	0.80%	0.77%	1.08%	1.56%	1.54%	1.84%	2.33%	2.31%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.19%	0.71%	0.74%	1.93%	1.44%	1.47%	2.67%	2.18%	2.21%
2033	0.27%	0.75%	0.73%	0.99%	1.48%	1.45%	1.71%	2.20%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,096	62,742	75,837	13,219	63,331	76,550	13,342	63,920	77,262
2016	13,281	63,585	76,866	13,530	64,777	78,307	13,781	65,979	79,760
2017	13,340	63,912	77,252	13,714	65,704	79,418	14,095	67,530	81,625
2018	13,461	64,493	77,955	13,964	66,900	80,864	14,480	69,373	83,853
2019	13,582	65,072	78,654	14,214	68,101	82,315	14,870	71,241	86,110
2020	13,767	65,913	79,681	14,534	69,585	84,119	15,336	73,426	88,762
2021	13,822	66,219	80,041	14,718	70,512	85,230	15,663	75,042	90,705
2022	13,940	66,788	80,728	14,970	71,723	86,693	16,066	76,974	93,041
2023	14,058	67,352	81,410	15,223	72,935	88,158	16,474	78,925	95,399
2024	14,243	68,189	82,432	15,551	74,452	90,002	16,966	81,227	98,193
2025	14,291	68,470	82,761	15,731	75,365	91,096	17,300	82,886	100,187
2026	14,407	69,022	83,429	15,985	76,582	92,567	17,719	84,894	102,613
2027	14,521	69,571	84,092	16,239	77,799	94,038	18,142	86,918	105,059
2028	14,704	70,400	85,104	16,571	79,337	95,908	18,656	89,319	107,975
2029	14,747	70,654	85,401	16,746	80,231	96,978	18,996	91,009	110,005
2030	14,859	71,189	86,048	17,000	81,446	98,445	19,427	93,075	112,502
2031	14,970	71,720	86,690	17,254	82,662	99,916	19,862	95,160	115,023
2032	15,152	72,541	87,693	17,591	84,218	101,808	20,397	97,654	118,051
2033	15,189	72,772	87,961	17,761	85,094	102,855	20,742	99,375	120,117
2034	15,298	73,292	88,590	18,015	86,311	104,326	21,187	101,507	122,694

Annual Change

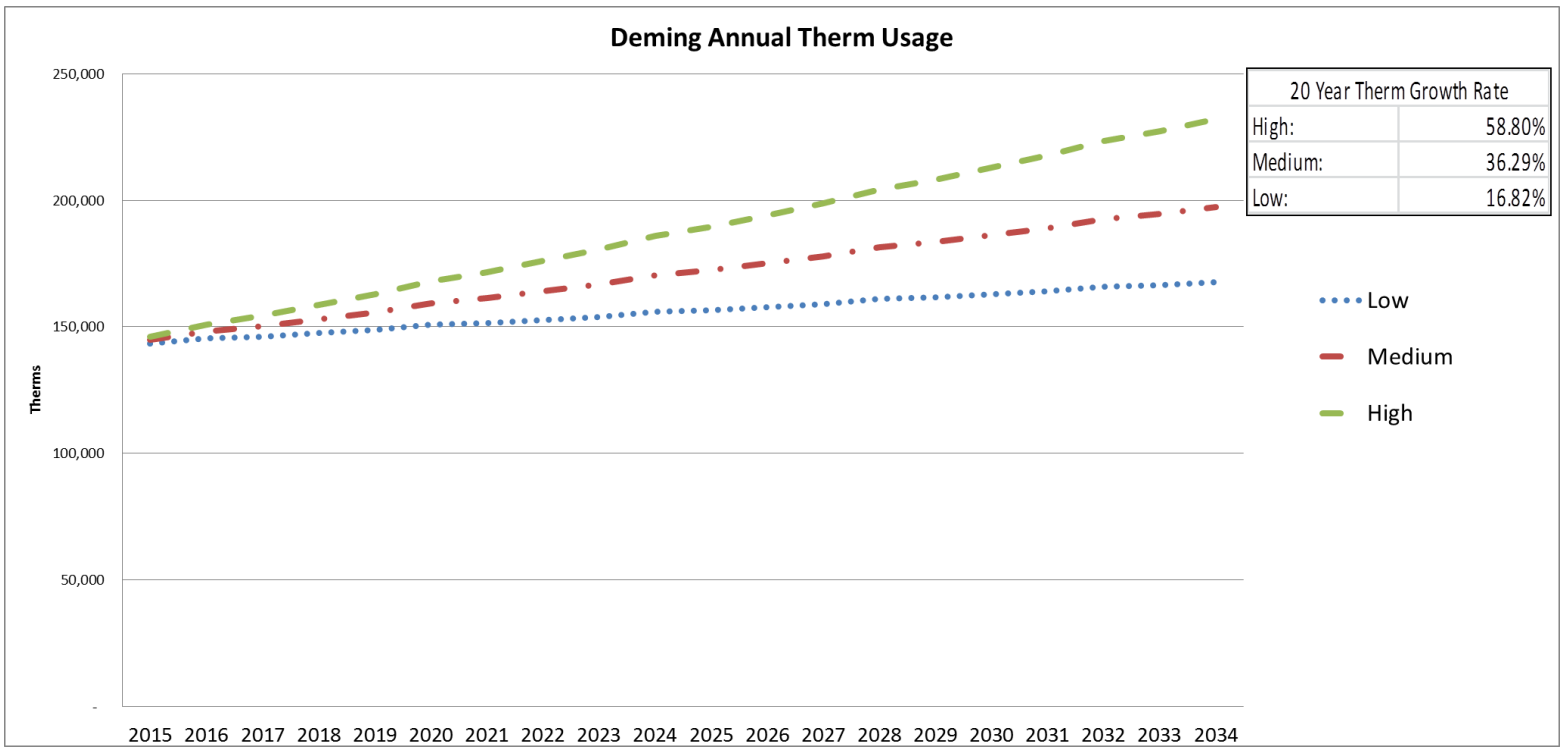
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.42%	1.34%	1.36%	2.35%	2.28%	2.30%	3.29%	3.22%	3.23%
2017	0.44%	0.51%	0.50%	1.36%	1.43%	1.42%	2.28%	2.35%	2.34%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.36%	1.29%	1.31%	2.25%	2.18%	2.19%	3.14%	3.07%	3.08%
2021	0.39%	0.46%	0.45%	1.26%	1.33%	1.32%	2.13%	2.20%	2.19%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.31%	1.24%	1.25%	2.15%	2.08%	2.09%	2.99%	2.92%	2.93%
2025	0.34%	0.41%	0.40%	1.16%	1.23%	1.21%	1.97%	2.04%	2.03%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.26%	1.19%	1.20%	2.05%	1.98%	1.99%	2.83%	2.76%	2.77%
2029	0.29%	0.36%	0.35%	1.06%	1.13%	1.11%	1.82%	1.89%	1.88%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.21%	1.14%	1.16%	1.95%	1.88%	1.89%	2.69%	2.62%	2.63%
2033	0.25%	0.32%	0.31%	0.97%	1.04%	1.03%	1.69%	1.76%	1.75%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

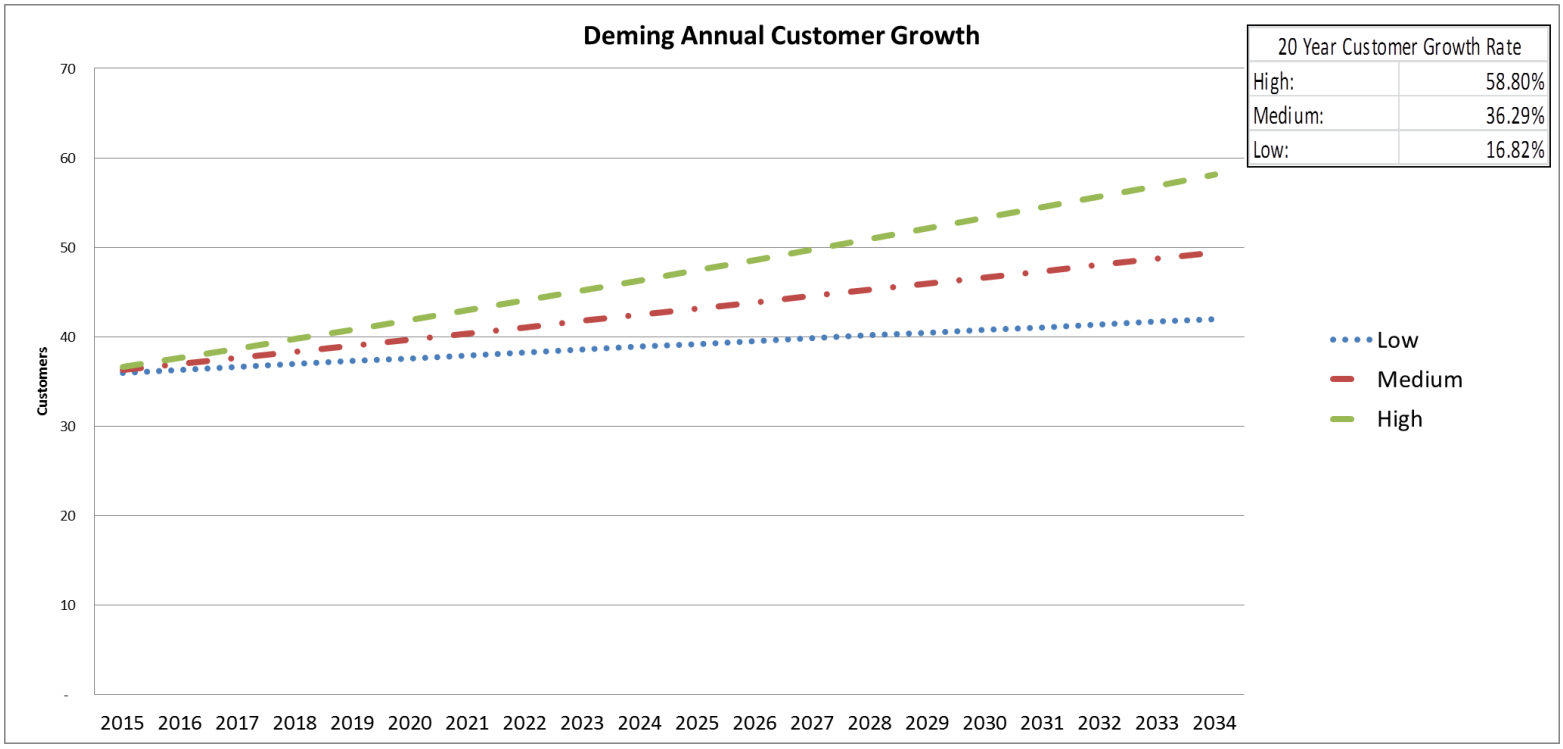
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24	12	36	24	12	36	25	12	37
2016	24	12	36	25	12	37	25	12	38
2017	25	12	37	25	12	38	26	13	39
2018	25	12	37	26	13	38	27	13	40
2019	25	12	37	26	13	39	27	13	41
2020	25	12	38	27	13	40	28	14	42
2021	25	12	38	27	13	40	29	14	43
2022	26	13	38	28	13	41	30	14	44
2023	26	13	39	28	14	42	30	15	45
2024	26	13	39	29	14	42	31	15	46
2025	26	13	39	29	14	43	32	16	47
2026	27	13	40	29	14	44	33	16	49
2027	27	13	40	30	15	45	33	16	50
2028	27	13	40	30	15	45	34	17	51
2029	27	13	40	31	15	46	35	17	52
2030	27	13	41	31	15	47	36	17	53
2031	28	13	41	32	16	47	37	18	54
2032	28	14	41	32	16	48	37	18	56
2033	28	14	42	33	16	49	38	19	57
2034	28	14	42	33	16	49	39	19	58

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2017	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.77%	2.77%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	0.88%	0.88%	0.88%	1.77%	1.77%	1.77%	2.65%	2.65%	2.65%
2021	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.62%	2.62%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	0.83%	0.83%	0.83%	1.67%	1.67%	1.67%	2.50%	2.50%	2.50%
2025	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.35%	2.35%	2.35%
2029	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.31%	2.31%	2.31%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2033	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%


Deming Annual Therm Usage
Therms
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 58.80%
Medium: 36.29%
Low: 16.82%
Low
Medium
High


Deming Annual Customer Growth
Customers
70
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 58.80%
Medium: 36.29%
Low: 16.82%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Wenatchee

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,049,850	1,599,156	4,649,006	3,077,154	1,599,156	4,676,310	3,104,458	1,599,156	4,703,614
2016	3,081,082	1,615,532	4,696,614	3,126,818	1,624,965	4,751,783	3,172,876	1,634,399	4,807,274
2017	3,085,667	1,617,936	4,703,602	3,149,639	1,636,825	4,786,465	3,214,470	1,655,824	4,870,294
2018	3,103,595	1,627,336	4,730,930	3,186,238	1,655,845	4,842,083	3,270,498	1,684,685	4,955,184
2019	3,121,500	1,636,724	4,758,225	3,223,003	1,674,951	4,897,955	3,327,104	1,713,844	5,040,948
2020	3,152,953	1,653,216	4,806,169	3,273,962	1,701,434	4,975,396	3,398,789	1,750,770	5,149,558
2021	3,157,150	1,655,417	4,812,567	3,296,831	1,713,318	5,010,149	3,441,746	1,772,898	5,214,643
2022	3,174,885	1,664,716	4,839,601	3,333,869	1,732,567	5,066,437	3,499,746	1,802,775	5,302,521
2023	3,192,518	1,673,962	4,866,480	3,370,902	1,751,812	5,122,715	3,558,059	1,832,812	5,390,871
2024	3,224,058	1,690,500	4,914,558	3,422,872	1,778,821	5,201,693	3,632,618	1,871,219	5,503,838
2025	3,227,580	1,692,346	4,919,926	3,445,145	1,790,396	5,235,541	3,675,927	1,893,528	5,569,455
2026	3,244,964	1,701,461	4,946,425	3,482,257	1,809,682	5,291,939	3,735,323	1,924,124	5,659,447
2027	3,262,241	1,710,520	4,972,761	3,519,338	1,828,953	5,348,291	3,794,987	1,954,858	5,749,845
2028	3,293,639	1,726,984	5,020,623	3,571,805	1,856,219	5,428,023	3,871,613	1,994,329	5,865,942
2029	3,296,402	1,728,432	5,024,834	3,593,237	1,867,357	5,460,593	3,914,828	2,016,590	5,931,417
2030	3,313,267	1,737,275	5,050,543	3,630,005	1,886,465	5,516,469	3,974,916	2,047,542	6,022,458
2031	3,330,089	1,746,096	5,076,185	3,666,864	1,905,620	5,572,484	4,035,459	2,078,729	6,114,187
2032	3,361,320	1,762,471	5,123,791	3,719,723	1,933,090	5,652,813	4,113,956	2,119,164	6,233,121
2033	3,363,415	1,763,570	5,126,985	3,740,440	1,943,856	5,684,296	4,157,217	2,141,449	6,298,666
2034	3,379,934	1,772,231	5,152,165	3,777,181	1,962,950	5,740,131	4,218,470	2,173,001	6,391,470

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	1.02%	1.02%	1.61%	1.61%	1.61%	2.20%	2.20%	2.20%
2017	0.15%	0.15%	0.15%	0.73%	0.73%	0.73%	1.31%	1.31%	1.31%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.01%	1.01%	1.01%	1.58%	1.58%	1.58%	2.15%	2.15%	2.15%
2021	0.13%	0.13%	0.13%	0.70%	0.70%	0.70%	1.26%	1.26%	1.26%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.99%	0.99%	0.99%	1.54%	1.54%	1.54%	2.10%	2.10%	2.10%
2025	0.11%	0.11%	0.11%	0.65%	0.65%	0.65%	1.19%	1.19%	1.19%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.96%	0.96%	0.96%	1.49%	1.49%	1.49%	2.02%	2.02%	2.02%
2029	0.08%	0.08%	0.08%	0.60%	0.60%	0.60%	1.12%	1.12%	1.12%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.94%	0.94%	0.94%	1.44%	1.44%	1.44%	1.95%	1.95%	1.95%
2033	0.06%	0.06%	0.06%	0.56%	0.56%	0.56%	1.05%	1.05%	1.05%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	4,381	45,002	49,383	4,381	45,292	49,673	4,381	45,582	49,963
2016	4,426	45,247	49,673	4,452	45,805	50,257	4,478	46,366	50,844
2017	4,433	45,531	49,963	4,484	46,359	50,843	4,537	47,197	51,734
2018	4,458	45,795	50,254	4,537	46,898	51,434	4,616	48,020	52,636
2019	4,484	46,059	50,543	4,589	47,439	52,028	4,695	48,851	53,547
2020	4,529	46,303	50,832	4,661	47,960	52,622	4,797	49,667	54,464
2021	4,535	46,585	51,121	4,694	48,526	53,220	4,857	50,534	55,392
2022	4,561	46,847	51,408	4,747	49,071	53,817	4,939	51,386	56,325
2023	4,586	47,107	51,693	4,799	49,616	54,415	5,021	52,242	57,264
2024	4,632	47,347	51,978	4,873	50,142	55,015	5,127	53,084	58,211
2025	4,637	47,625	52,261	4,905	50,709	55,614	5,188	53,973	59,161
2026	4,662	47,881	52,543	4,958	51,255	56,213	5,272	54,845	60,117
2027	4,686	48,136	52,822	5,011	51,801	56,811	5,356	55,721	61,077
2028	4,731	48,369	53,100	5,086	52,324	57,409	5,464	56,577	62,041
2029	4,735	48,640	53,376	5,116	52,888	58,004	5,525	57,481	63,006
2030	4,760	48,889	53,649	5,168	53,429	58,598	5,610	58,363	63,973
2031	4,784	49,137	53,921	5,221	53,972	59,193	5,695	59,252	64,947
2032	4,829	49,363	54,191	5,296	54,490	59,787	5,806	60,118	65,924
2033	4,832	49,629	54,461	5,326	55,055	60,381	5,867	61,040	66,907
2034	4,855	49,873	54,728	5,378	55,596	60,974	5,953	61,939	67,892

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.54%	0.59%	1.61%	1.13%	1.17%	2.20%	1.72%	1.76%
2017	0.15%	0.63%	0.58%	0.73%	1.21%	1.17%	1.31%	1.79%	1.75%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.01%	0.53%	0.57%	1.58%	1.10%	1.14%	2.15%	1.67%	1.71%
2021	0.13%	0.61%	0.57%	0.70%	1.18%	1.14%	1.26%	1.75%	1.70%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.99%	0.51%	0.55%	1.54%	1.06%	1.10%	2.10%	1.61%	1.65%
2025	0.11%	0.59%	0.54%	0.65%	1.13%	1.09%	1.19%	1.67%	1.63%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.96%	0.48%	0.53%	1.49%	1.01%	1.05%	2.02%	1.54%	1.58%
2029	0.08%	0.56%	0.52%	0.60%	1.08%	1.04%	1.12%	1.60%	1.56%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.94%	0.46%	0.50%	1.44%	0.96%	1.00%	1.95%	1.46%	1.50%
2033	0.06%	0.54%	0.50%	0.56%	1.04%	0.99%	1.05%	1.53%	1.49%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	654,992	3,729,635	4,384,627	658,839	3,751,539	4,410,378	662,686	3,773,443	4,436,129
2016	661,807	3,767,486	4,429,293	669,581	3,811,741	4,481,322	677,400	3,856,254	4,533,655
2017	662,684	3,773,434	4,436,119	674,359	3,839,910	4,514,269	686,169	3,907,162	4,593,331
2018	666,535	3,795,358	4,461,893	682,195	3,884,530	4,566,725	698,129	3,975,264	4,673,393
2019	670,380	3,817,255	4,487,635	690,066	3,929,352	4,619,419	710,213	4,044,068	4,754,281
2020	677,245	3,855,368	4,532,613	701,090	3,991,116	4,692,207	725,632	4,130,825	4,856,457
2021	678,036	3,860,851	4,538,887	705,873	4,019,359	4,725,233	734,684	4,183,414	4,918,098
2022	681,845	3,882,538	4,564,383	713,804	4,064,516	4,778,319	747,065	4,253,912	5,000,978
2023	685,632	3,904,102	4,589,734	721,733	4,109,664	4,831,397	759,513	4,324,791	5,084,304
2024	692,518	3,942,314	4,634,832	732,978	4,172,645	4,905,624	775,554	4,415,017	5,190,571
2025	693,162	3,946,978	4,640,140	737,629	4,200,179	4,937,807	784,673	4,468,059	5,252,732
2026	696,895	3,968,237	4,665,132	745,574	4,245,423	4,990,998	797,352	4,540,255	5,337,607
2027	700,606	3,989,365	4,689,971	753,514	4,290,631	5,044,145	810,088	4,612,776	5,422,864
2028	707,463	4,027,396	4,734,860	764,871	4,354,201	5,119,072	826,579	4,705,487	5,532,066
2029	707,942	4,031,140	4,739,083	769,336	4,380,725	5,150,061	835,670	4,758,441	5,594,110
2030	711,564	4,051,765	4,763,329	777,208	4,425,551	5,202,760	848,496	4,831,477	5,679,974
2031	715,177	4,072,336	4,787,513	785,100	4,470,489	5,255,589	861,420	4,905,067	5,766,487
2032	722,001	4,110,155	4,832,156	796,546	4,534,521	5,331,067	878,318	5,000,026	5,878,345
2033	722,334	4,113,090	4,835,425	800,853	4,560,190	5,361,043	887,411	5,053,064	5,940,475
2034	725,882	4,133,291	4,859,173	808,720	4,604,983	5,413,702	900,486	5,127,515	6,028,001

Annual Change

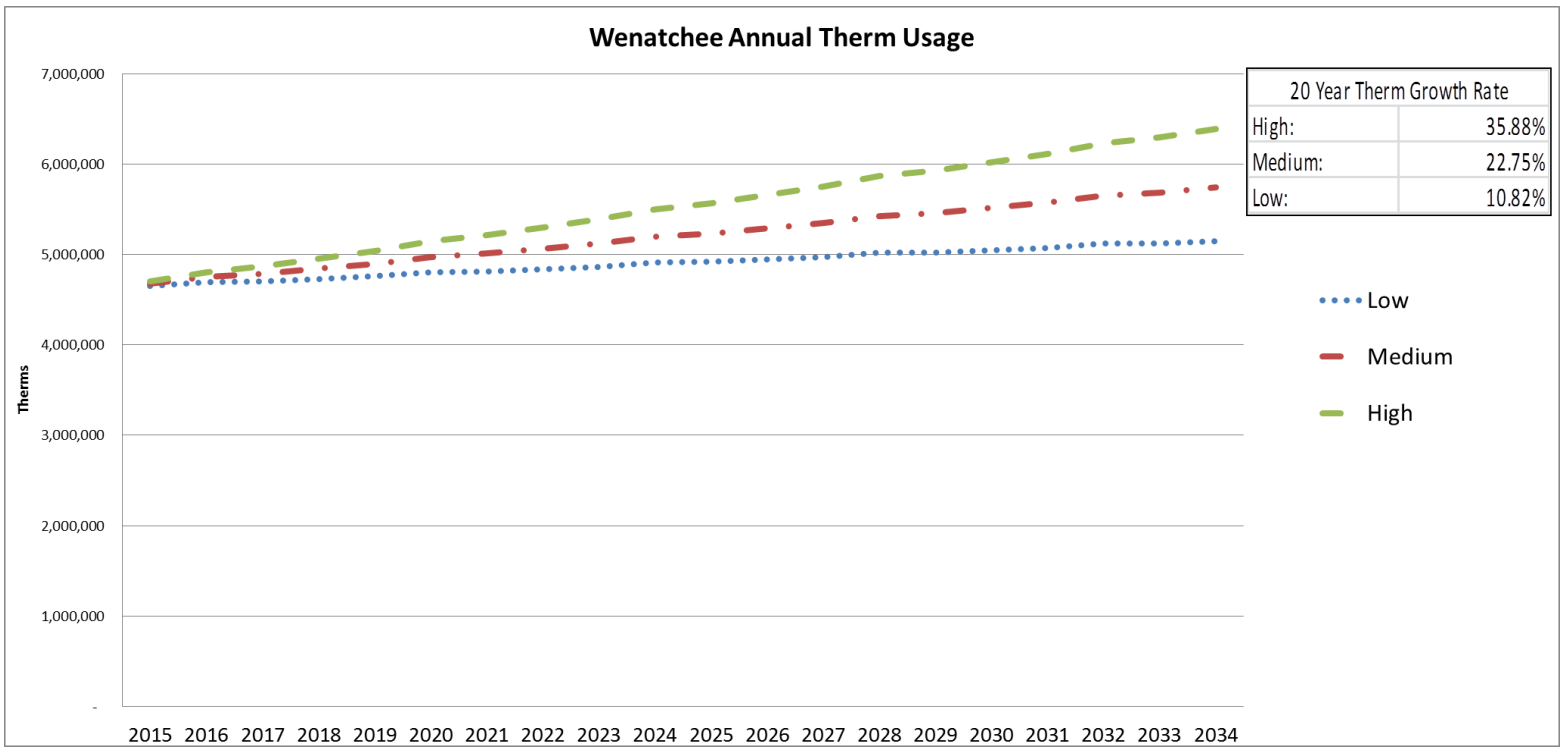
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	1.01%	1.02%	1.63%	1.60%	1.61%	2.22%	2.19%	2.20%
2017	0.13%	0.16%	0.15%	0.71%	0.74%	0.74%	1.29%	1.32%	1.32%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.02%	1.00%	1.00%	1.60%	1.57%	1.58%	2.17%	2.15%	2.15%
2021	0.12%	0.14%	0.14%	0.68%	0.71%	0.70%	1.25%	1.27%	1.27%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	1.00%	0.98%	0.98%	1.56%	1.53%	1.54%	2.11%	2.09%	2.09%
2025	0.09%	0.12%	0.11%	0.63%	0.66%	0.66%	1.18%	1.20%	1.20%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.98%	0.95%	0.96%	1.51%	1.48%	1.49%	2.04%	2.01%	2.01%
2029	0.07%	0.09%	0.09%	0.58%	0.61%	0.61%	1.10%	1.13%	1.12%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.95%	0.93%	0.93%	1.46%	1.43%	1.44%	1.96%	1.94%	1.94%
2033	0.05%	0.07%	0.07%	0.54%	0.57%	0.56%	1.04%	1.06%	1.06%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

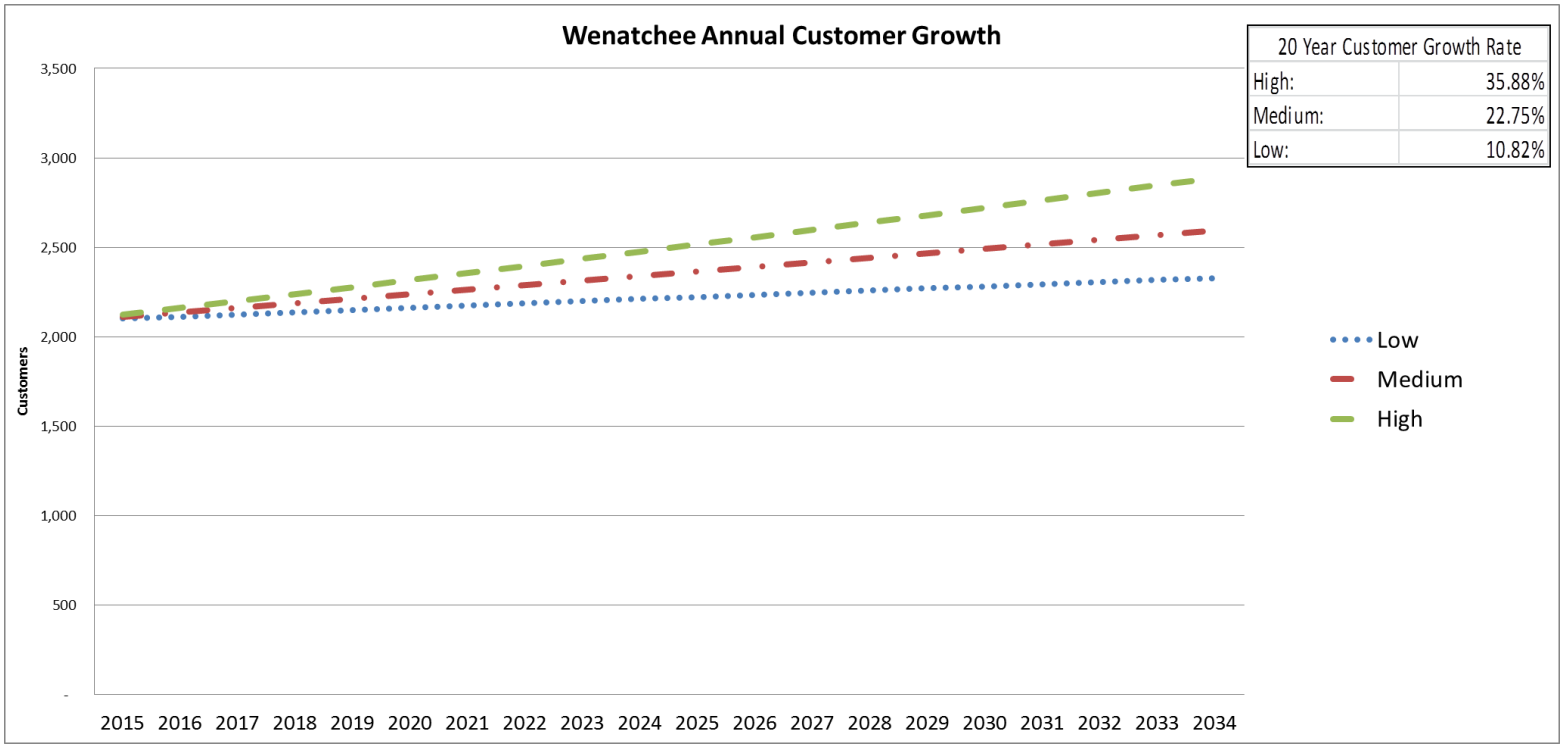
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,397	703	2,100	1,405	707	2,113	1,413	712	2,125
2016	1,405	707	2,113	1,422	716	2,137	1,438	724	2,162
2017	1,413	712	2,125	1,438	724	2,162	1,463	737	2,200
2018	1,421	716	2,137	1,455	733	2,187	1,489	750	2,238
2019	1,430	720	2,150	1,472	741	2,213	1,515	763	2,277
2020	1,438	724	2,162	1,488	749	2,238	1,541	776	2,316
2021	1,446	728	2,174	1,505	758	2,263	1,567	789	2,356
2022	1,454	732	2,186	1,522	766	2,289	1,593	802	2,395
2023	1,462	736	2,198	1,539	775	2,314	1,620	816	2,435
2024	1,470	740	2,211	1,556	784	2,340	1,647	829	2,476
2025	1,478	744	2,223	1,573	792	2,365	1,673	843	2,516
2026	1,486	748	2,235	1,590	801	2,391	1,700	856	2,557
2027	1,494	752	2,246	1,607	809	2,416	1,728	870	2,597
2028	1,502	756	2,258	1,624	818	2,441	1,755	884	2,638
2029	1,510	760	2,270	1,641	826	2,467	1,782	897	2,679
2030	1,518	764	2,282	1,658	835	2,492	1,810	911	2,721
2031	1,525	768	2,293	1,674	843	2,517	1,837	925	2,762
2032	1,533	772	2,305	1,691	851	2,543	1,865	939	2,804
2033	1,540	776	2,316	1,708	860	2,568	1,893	953	2,845
2034	1,548	779	2,327	1,725	868	2,593	1,920	967	2,887

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2017	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2021	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.70%	1.70%	1.70%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.65%	1.65%	1.65%
2025	0.54%	0.54%	0.54%	1.09%	1.09%	1.09%	1.63%	1.63%	1.63%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2029	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.56%	1.56%	1.56%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2033	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%


Wenatchee Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 35.88%
Medium: 22.75%
Low: 10.82%
Low
Medium
High


Wenatchee Annual Customer Growth
Customers
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 35.88%
Medium: 22.75%
Low: 10.82%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Finley

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	91,201	10,272	101,473	91,845	10,272	102,117	92,489	10,272	102,761
2016	92,270	10,393	102,663	93,506	10,458	103,964	94,751	10,524	105,274
2017	92,355	10,402	102,757	94,176	10,533	104,709	96,022	10,665	106,686
2018	92,930	10,467	103,398	95,350	10,664	106,015	97,817	10,864	108,681
2019	93,504	10,532	104,036	96,528	10,796	107,324	99,629	11,065	110,695
2020	94,579	10,653	105,232	98,230	10,986	109,216	101,997	11,328	113,326
2021	94,645	10,660	105,305	98,890	11,060	109,950	103,297	11,473	114,770
2022	95,211	10,724	105,935	100,073	11,193	111,266	105,151	11,679	116,830
2023	95,773	10,787	106,561	101,255	11,325	112,580	107,014	11,886	118,900
2024	96,850	10,909	107,759	102,989	11,519	114,508	109,476	12,159	121,635
2025	96,889	10,913	107,802	103,620	11,589	115,210	110,774	12,303	123,078
2026	97,441	10,975	108,416	104,801	11,721	116,523	112,668	12,514	125,182
2027	97,989	11,037	109,026	105,981	11,853	117,834	114,570	12,725	127,295
2028	99,061	11,158	110,218	107,731	12,049	119,780	117,101	13,006	130,107
2029	99,071	11,159	110,230	108,328	12,116	120,444	118,387	13,149	131,535
2030	99,605	11,219	110,824	109,496	12,246	121,742	120,301	13,361	133,662
2031	100,137	11,279	111,415	110,664	12,377	123,041	122,226	13,575	135,802
2032	101,203	11,399	112,602	112,429	12,574	125,003	124,822	13,863	138,686
2033	101,188	11,397	112,585	112,994	12,638	125,631	126,096	14,005	140,101
2034	101,709	11,456	113,165	114,157	12,768	126,925	128,044	14,221	142,265

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	1.17%	1.17%	1.81%	1.81%	1.81%	2.45%	2.45%	2.45%
2017	0.09%	0.09%	0.09%	0.72%	0.72%	0.72%	1.34%	1.34%	1.34%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.15%	1.15%	1.15%	1.76%	1.76%	1.76%	2.38%	2.38%	2.38%
2021	0.07%	0.07%	0.07%	0.67%	0.67%	0.67%	1.27%	1.27%	1.27%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.12%	1.12%	1.12%	1.71%	1.71%	1.71%	2.30%	2.30%	2.30%
2025	0.04%	0.04%	0.04%	0.61%	0.61%	0.61%	1.19%	1.19%	1.19%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.09%	1.09%	1.09%	1.65%	1.65%	1.65%	2.21%	2.21%	2.21%
2029	0.01%	0.01%	0.01%	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.07%	1.07%	1.07%	1.59%	1.59%	1.59%	2.12%	2.12%	2.12%
2033	-0.02%	-0.02%	-0.02%	0.50%	0.50%	0.50%	1.02%	1.02%	1.02%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	28	1,620	1,648	28	1,631	1,659	28	1,641	1,669
2016	28	1,630	1,659	29	1,651	1,680	29	1,672	1,701
2017	28	1,641	1,669	29	1,672	1,701	29	1,704	1,733
2018	29	1,651	1,680	29	1,693	1,722	30	1,736	1,766
2019	29	1,661	1,690	30	1,714	1,744	30	1,768	1,798
2020	29	1,671	1,700	30	1,735	1,765	31	1,800	1,831
2021	29	1,682	1,711	30	1,756	1,786	31	1,833	1,864
2022	29	1,692	1,721	31	1,777	1,808	32	1,866	1,898
2023	30	1,702	1,731	31	1,798	1,829	33	1,899	1,932
2024	30	1,711	1,741	32	1,819	1,850	33	1,932	1,965
2025	30	1,721	1,751	32	1,840	1,872	34	1,966	1,999
2026	30	1,731	1,761	32	1,861	1,893	34	1,999	2,034
2027	30	1,741	1,771	32	1,882	1,914	35	2,033	2,068
2028	31	1,750	1,781	33	1,902	1,935	36	2,067	2,102
2029	31	1,760	1,791	33	1,923	1,957	36	2,101	2,137
2030	31	1,770	1,800	34	1,944	1,978	37	2,135	2,171
2031	31	1,779	1,810	34	1,965	1,999	37	2,169	2,206
2032	31	1,788	1,820	34	1,985	2,020	38	2,203	2,241
2033	31	1,798	1,829	35	2,006	2,041	38	2,238	2,276
2034	31	1,807	1,838	35	2,027	2,062	39	2,272	2,311

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	0.62%	0.63%	1.81%	1.26%	1.27%	2.45%	1.89%	1.90%
2017	0.09%	0.64%	0.63%	0.72%	1.27%	1.26%	1.34%	1.89%	1.88%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.15%	0.60%	0.61%	1.76%	1.21%	1.22%	2.38%	1.82%	1.83%
2021	0.07%	0.62%	0.61%	0.67%	1.22%	1.21%	1.27%	1.83%	1.82%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.12%	0.58%	0.59%	1.71%	1.16%	1.17%	2.30%	1.75%	1.76%
2025	0.04%	0.59%	0.58%	0.61%	1.16%	1.15%	1.19%	1.74%	1.73%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.09%	0.55%	0.55%	1.65%	1.10%	1.11%	2.21%	1.66%	1.66%
2029	0.01%	0.56%	0.55%	0.55%	1.10%	1.09%	1.10%	1.65%	1.64%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.07%	0.52%	0.53%	1.59%	1.04%	1.05%	2.12%	1.57%	1.58%
2033	-0.02%	0.53%	0.52%	0.50%	1.05%	1.04%	1.02%	1.57%	1.56%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	14,605	86,868	101,473	14,698	87,420	102,117	14,790	87,971	102,761
2016	14,779	87,884	102,663	14,966	88,998	103,964	15,155	90,119	105,274
2017	14,790	87,967	102,757	15,071	89,639	104,709	15,355	91,331	106,686
2018	14,882	88,516	103,398	15,259	90,756	106,015	15,642	93,039	108,681
2019	14,974	89,062	104,036	15,447	91,877	107,324	15,932	94,763	110,695
2020	15,149	90,083	105,232	15,723	93,494	109,216	16,314	97,012	113,326
2021	15,157	90,149	105,305	15,825	94,125	109,950	16,519	98,251	114,770
2022	15,247	90,688	105,935	16,014	95,251	111,266	16,815	100,014	116,830
2023	15,337	91,223	106,561	16,204	96,376	112,580	17,113	101,787	118,900
2024	15,513	92,246	107,759	16,484	98,024	114,508	17,510	104,125	121,635
2025	15,516	92,286	107,802	16,582	98,628	115,210	17,714	105,363	123,078
2026	15,604	92,812	108,416	16,771	99,752	116,523	18,017	107,165	125,182
2027	15,692	93,334	109,026	16,960	100,874	117,834	18,321	108,973	127,295
2028	15,867	94,352	110,218	17,243	102,537	119,780	18,730	111,377	130,107
2029	15,865	94,365	110,230	17,335	103,108	120,444	18,932	112,604	131,535
2030	15,951	94,873	110,824	17,522	104,220	121,742	19,238	114,424	133,662
2031	16,036	95,379	111,415	17,709	105,332	123,041	19,546	116,256	135,802
2032	16,210	96,392	112,602	17,995	107,008	125,003	19,965	118,721	138,686
2033	16,204	96,381	112,585	18,082	107,549	125,631	20,165	119,936	140,101
2034	16,288	96,877	113,165	18,268	108,657	126,925	20,476	121,789	142,265

Annual Change

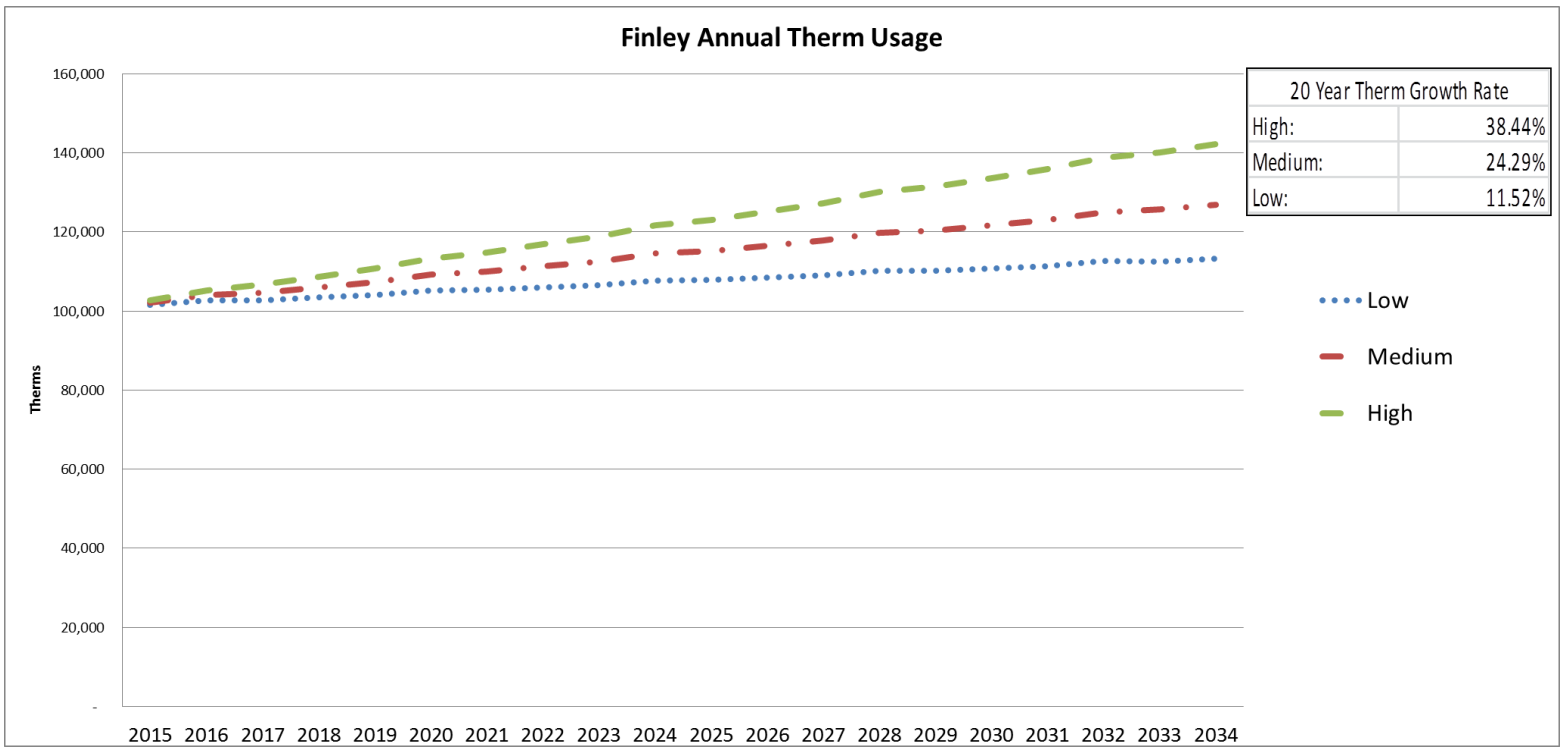
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.19%	1.17%	1.17%	1.83%	1.81%	1.81%	2.47%	2.44%	2.45%
2017	0.07%	0.10%	0.09%	0.70%	0.72%	0.72%	1.32%	1.34%	1.34%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.17%	1.15%	1.15%	1.78%	1.76%	1.76%	2.40%	2.37%	2.38%
2021	0.05%	0.07%	0.07%	0.65%	0.68%	0.67%	1.25%	1.28%	1.27%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.14%	1.12%	1.12%	1.73%	1.71%	1.71%	2.32%	2.30%	2.30%
2025	0.02%	0.04%	0.04%	0.59%	0.62%	0.61%	1.17%	1.19%	1.19%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.11%	1.09%	1.09%	1.67%	1.65%	1.65%	2.23%	2.21%	2.21%
2029	-0.01%	0.01%	0.01%	0.53%	0.56%	0.55%	1.08%	1.10%	1.10%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.09%	1.06%	1.07%	1.61%	1.59%	1.59%	2.14%	2.12%	2.12%
2033	-0.03%	-0.01%	-0.02%	0.48%	0.51%	0.50%	1.00%	1.02%	1.02%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

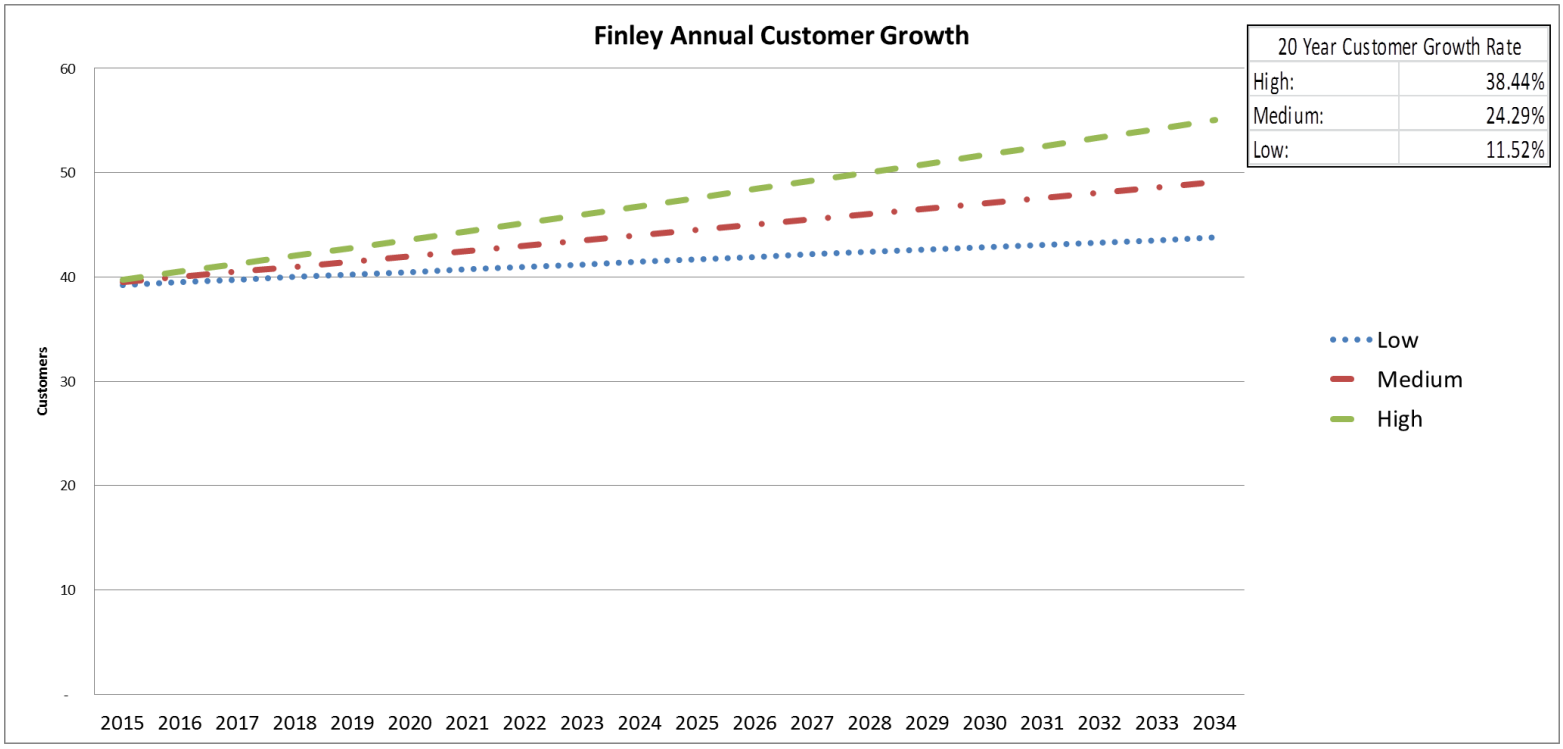
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	26	13	39	26	13	39	26	13	40
2016	26	13	39	27	13	40	27	14	41
2017	26	13	40	27	14	41	28	14	41
2018	27	13	40	27	14	41	28	14	42
2019	27	13	40	28	14	42	29	14	43
2020	27	13	40	28	14	42	29	15	44
2021	27	14	41	28	14	43	30	15	44
2022	27	14	41	29	14	43	30	15	45
2023	27	14	41	29	15	44	31	15	46
2024	28	14	41	29	15	44	31	16	47
2025	28	14	42	30	15	45	32	16	48
2026	28	14	42	30	15	45	32	16	48
2027	28	14	42	30	15	46	33	16	49
2028	28	14	42	31	15	46	33	17	50
2029	28	14	43	31	16	47	34	17	51
2030	29	14	43	31	16	47	34	17	52
2031	29	14	43	32	16	48	35	18	53
2032	29	14	43	32	16	48	36	18	53
2033	29	15	44	32	16	49	36	18	54
2034	29	15	44	33	16	49	37	18	55

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2017	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.88%	1.88%	1.88%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2021	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2025	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2029	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2033	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.56%	1.56%	1.56%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%


Finley Annual Therm Usage
Therms
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 38.44%
Medium: 24.29%
Low: 11.52%
Low
Medium
High


Finley Annual Customer Growth
Customers
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 38.44%
Medium: 24.29%
Low: 11.52%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Grandview

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,419,130	406,706	1,825,836	1,420,299	406,706	1,827,005	1,421,468	406,706	1,828,174
2016	1,426,133	408,713	1,834,846	1,428,283	408,993	1,837,276	1,430,436	409,272	1,839,708
2017	1,421,139	407,282	1,828,421	1,424,322	407,858	1,832,181	1,427,510	408,435	1,835,945
2018	1,422,245	407,599	1,829,844	1,426,539	408,493	1,835,032	1,430,843	409,389	1,840,232
2019	1,423,404	407,931	1,831,336	1,428,865	409,159	1,838,024	1,434,342	410,390	1,844,731
2020	1,430,637	410,004	1,840,641	1,437,315	411,579	1,848,894	1,444,020	413,159	1,857,178
2021	1,425,822	408,624	1,834,446	1,433,721	410,550	1,844,270	1,441,657	412,483	1,854,139
2022	1,427,075	408,983	1,836,058	1,436,240	411,271	1,847,511	1,445,457	413,570	1,859,027
2023	1,428,338	409,345	1,837,683	1,438,782	411,999	1,850,781	1,449,294	414,668	1,863,962
2024	1,435,707	411,457	1,847,163	1,447,516	414,500	1,862,015	1,459,412	417,563	1,876,975
2025	1,430,909	410,082	1,840,990	1,443,964	413,483	1,857,446	1,457,127	416,909	1,874,035
2026	1,432,208	410,454	1,842,662	1,446,585	414,234	1,860,819	1,461,095	418,044	1,879,140
2027	1,433,500	410,825	1,844,325	1,449,196	414,981	1,864,177	1,465,051	419,176	1,884,227
2028	1,440,886	412,941	1,853,827	1,457,974	417,495	1,875,468	1,475,249	422,094	1,897,343
2029	1,436,056	411,557	1,847,613	1,454,366	416,461	1,870,827	1,472,894	421,420	1,894,314
2030	1,437,311	411,917	1,849,228	1,456,908	417,189	1,874,097	1,476,755	422,525	1,899,280
2031	1,438,587	412,283	1,850,870	1,459,496	417,930	1,877,426	1,480,690	423,651	1,904,341
2032	1,445,965	414,397	1,860,362	1,468,266	420,442	1,888,707	1,490,891	426,569	1,917,460
2033	1,441,120	413,008	1,854,128	1,464,637	419,403	1,884,040	1,488,517	425,890	1,914,408
2034	1,442,399	413,375	1,855,774	1,467,236	420,147	1,887,383	1,492,480	427,024	1,919,504

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.49%	0.49%	0.49%	0.56%	0.56%	0.56%	0.63%	0.63%	0.63%
2017	-0.35%	-0.35%	-0.35%	-0.28%	-0.28%	-0.28%	-0.20%	-0.20%	-0.20%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.51%	0.51%	0.51%	0.59%	0.59%	0.59%	0.67%	0.67%	0.67%
2021	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.52%	0.52%	0.52%	0.61%	0.61%	0.61%	0.70%	0.70%	0.70%
2025	-0.33%	-0.33%	-0.33%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.52%	0.52%	0.52%	0.61%	0.61%	0.61%	0.70%	0.70%	0.70%
2029	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.51%	0.51%	0.51%	0.60%	0.60%	0.60%	0.69%	0.69%	0.69%
2033	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,114	17,632	18,747	1,114	17,644	18,759	1,114	17,656	18,771
2016	1,120	17,640	18,759	1,121	17,664	18,784	1,121	17,688	18,809
2017	1,116	17,657	18,773	1,117	17,694	18,812	1,119	17,731	18,850
2018	1,117	17,671	18,788	1,119	17,722	18,841	1,122	17,773	18,894
2019	1,118	17,685	18,803	1,121	17,751	18,872	1,124	17,816	18,941
2020	1,123	17,695	18,819	1,128	17,775	18,903	1,132	17,856	18,988
2021	1,120	17,715	18,835	1,125	17,811	18,936	1,130	17,907	19,037
2022	1,121	17,731	18,852	1,127	17,842	18,969	1,133	17,954	19,087
2023	1,121	17,747	18,868	1,129	17,874	19,003	1,136	18,002	19,138
2024	1,127	17,758	18,885	1,136	17,902	19,037	1,144	18,046	19,190
2025	1,124	17,779	18,902	1,133	17,938	19,071	1,142	18,099	19,241
2026	1,125	17,795	18,919	1,135	17,971	19,106	1,145	18,149	19,294
2027	1,126	17,811	18,936	1,137	18,003	19,140	1,148	18,198	19,346
2028	1,131	17,822	18,953	1,144	18,031	19,175	1,156	18,242	19,398
2029	1,128	17,843	18,970	1,141	18,068	19,208	1,155	18,295	19,450
2030	1,129	17,858	18,987	1,143	18,099	19,242	1,158	18,343	19,501
2031	1,130	17,874	19,004	1,145	18,131	19,276	1,161	18,392	19,553
2032	1,135	17,885	19,020	1,152	18,158	19,310	1,169	18,435	19,604
2033	1,132	17,906	19,037	1,149	18,195	19,344	1,167	18,489	19,656
2034	1,133	17,921	19,054	1,151	18,227	19,378	1,170	18,538	19,708

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.49%	0.04%	0.07%	0.56%	0.11%	0.14%	0.63%	0.18%	0.21%
2017	-0.35%	0.10%	0.07%	-0.28%	0.17%	0.15%	-0.20%	0.25%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.51%	0.06%	0.08%	0.59%	0.14%	0.17%	0.67%	0.22%	0.25%
2021	-0.34%	0.11%	0.09%	-0.25%	0.20%	0.17%	-0.16%	0.29%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.52%	0.06%	0.09%	0.61%	0.15%	0.18%	0.70%	0.25%	0.27%
2025	-0.33%	0.12%	0.09%	-0.25%	0.21%	0.18%	-0.16%	0.29%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.52%	0.06%	0.09%	0.61%	0.15%	0.18%	0.70%	0.24%	0.27%
2029	-0.34%	0.12%	0.09%	-0.25%	0.20%	0.18%	-0.16%	0.29%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.51%	0.06%	0.09%	0.60%	0.15%	0.18%	0.69%	0.24%	0.26%
2033	-0.34%	0.12%	0.09%	-0.25%	0.20%	0.18%	-0.16%	0.29%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	584,079	1,241,758	1,825,836	584,452	1,242,553	1,827,005	584,826	1,243,348	1,828,174
2016	587,346	1,247,501	1,834,846	588,124	1,249,153	1,837,276	588,902	1,250,806	1,839,708
2017	584,905	1,243,516	1,828,421	586,108	1,246,072	1,832,181	587,312	1,248,633	1,835,945
2018	585,361	1,244,484	1,829,844	587,020	1,248,012	1,835,032	588,684	1,251,548	1,840,232
2019	585,838	1,245,498	1,831,336	587,977	1,250,046	1,838,024	590,123	1,254,608	1,844,731
2020	589,201	1,251,440	1,840,641	591,843	1,257,052	1,848,894	594,494	1,262,684	1,857,178
2021	586,833	1,247,614	1,834,446	589,976	1,254,295	1,844,270	593,133	1,261,007	1,854,139
2022	587,348	1,248,710	1,836,058	591,012	1,256,499	1,847,511	594,696	1,264,331	1,859,027
2023	587,868	1,249,815	1,837,683	592,058	1,258,723	1,850,781	596,275	1,267,687	1,863,962
2024	591,289	1,255,875	1,847,163	596,043	1,265,973	1,862,015	600,831	1,276,143	1,876,975
2025	588,926	1,252,064	1,840,990	594,190	1,263,256	1,857,446	599,497	1,274,538	1,874,035
2026	589,461	1,253,201	1,842,662	595,269	1,265,550	1,860,819	601,130	1,278,010	1,879,140
2027	589,993	1,254,332	1,844,325	596,344	1,267,834	1,864,177	602,757	1,281,469	1,884,227
2028	593,422	1,260,406	1,853,827	600,349	1,275,119	1,875,468	607,351	1,289,992	1,897,343
2029	591,045	1,256,568	1,847,613	598,471	1,272,356	1,870,827	605,984	1,288,329	1,894,314
2030	591,561	1,257,666	1,849,228	599,517	1,274,580	1,874,097	607,573	1,291,707	1,899,280
2031	592,087	1,258,783	1,850,870	600,582	1,276,844	1,877,426	609,192	1,295,149	1,904,341
2032	595,513	1,264,848	1,860,362	604,587	1,284,120	1,888,707	613,791	1,303,669	1,917,460
2033	593,129	1,260,999	1,854,128	602,698	1,281,342	1,884,040	612,412	1,301,995	1,914,408
2034	593,655	1,262,118	1,855,774	603,767	1,283,616	1,887,383	614,042	1,305,461	1,919,504

Annual Change

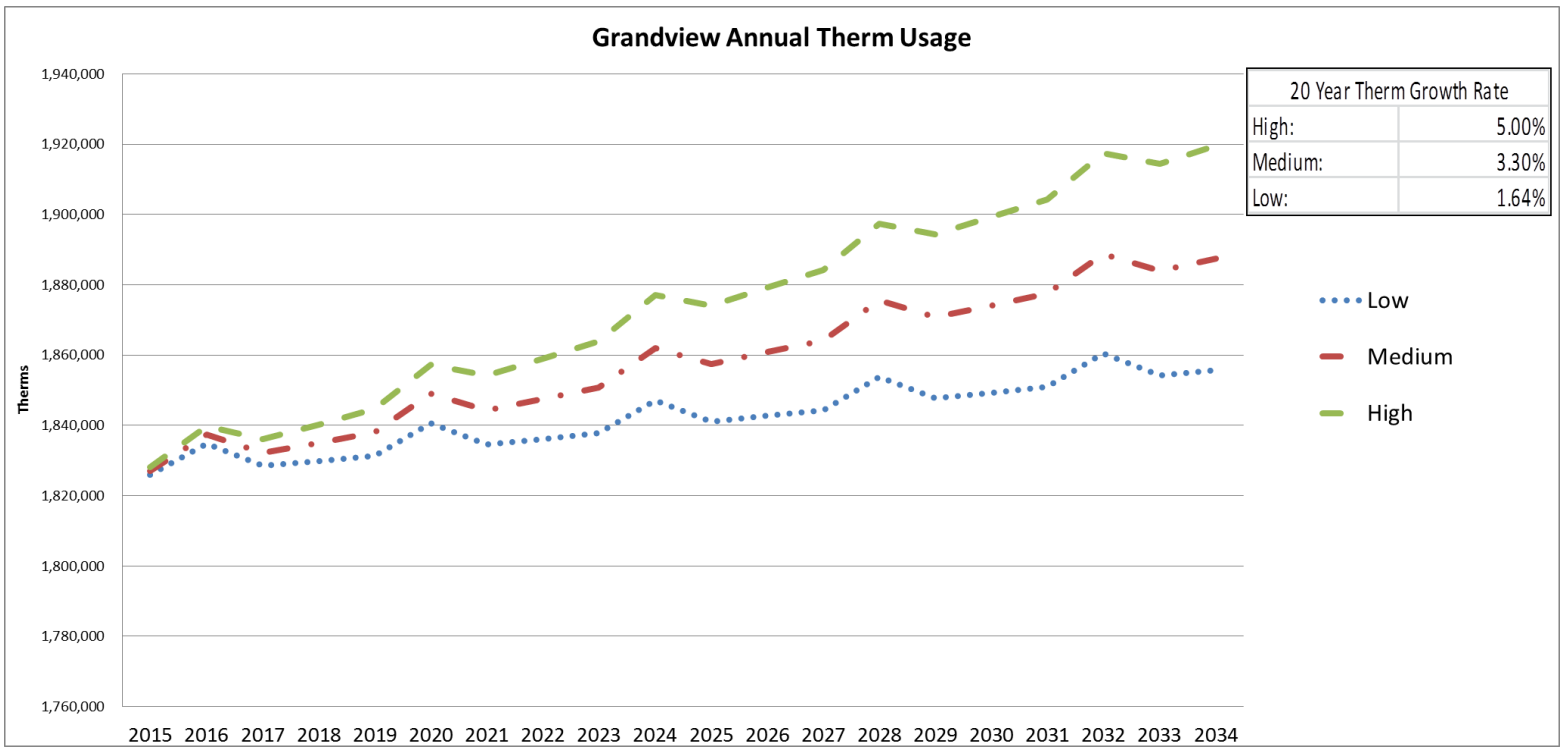
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.46%	0.49%	0.63%	0.53%	0.56%	0.70%	0.60%	0.63%
2017	-0.42%	-0.32%	-0.35%	-0.34%	-0.25%	-0.28%	-0.27%	-0.17%	-0.20%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.57%	0.48%	0.51%	0.66%	0.56%	0.59%	0.74%	0.64%	0.67%
2021	-0.40%	-0.31%	-0.34%	-0.32%	-0.22%	-0.25%	-0.23%	-0.13%	-0.16%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.58%	0.48%	0.52%	0.67%	0.58%	0.61%	0.76%	0.67%	0.70%
2025	-0.40%	-0.30%	-0.33%	-0.31%	-0.21%	-0.25%	-0.22%	-0.13%	-0.16%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.58%	0.48%	0.52%	0.67%	0.57%	0.61%	0.76%	0.67%	0.70%
2029	-0.40%	-0.30%	-0.34%	-0.31%	-0.22%	-0.25%	-0.23%	-0.13%	-0.16%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.58%	0.48%	0.51%	0.67%	0.57%	0.60%	0.75%	0.66%	0.69%
2033	-0.40%	-0.30%	-0.34%	-0.31%	-0.22%	-0.25%	-0.22%	-0.13%	-0.16%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

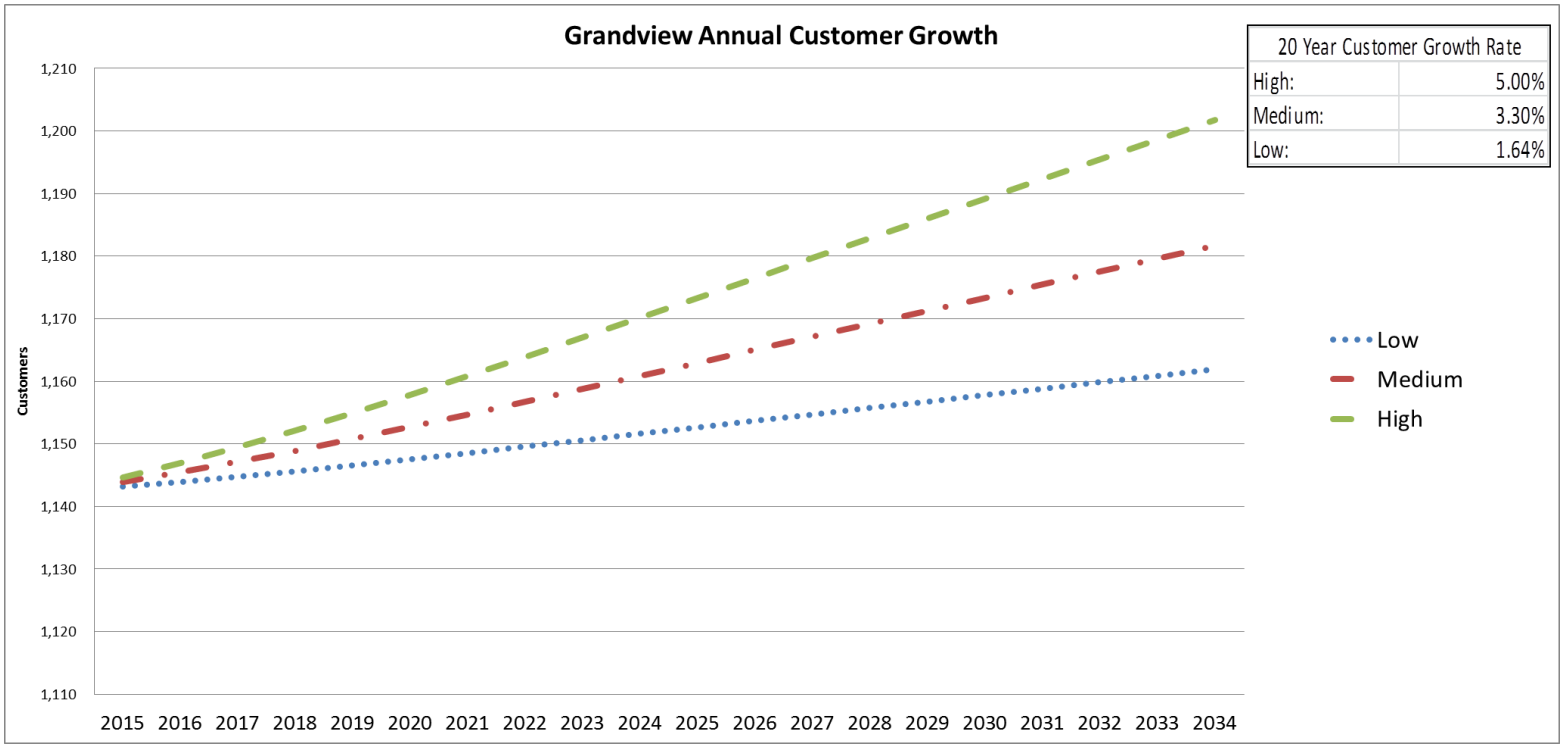
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	951	192	1,143	952	192	1,144	952	192	1,145
2016	952	192	1,144	953	193	1,145	954	193	1,147
2017	952	192	1,145	954	193	1,147	956	193	1,149
2018	953	193	1,146	956	193	1,149	958	194	1,152
2019	954	193	1,147	957	193	1,151	961	194	1,155
2020	955	193	1,148	959	194	1,153	963	195	1,158
2021	955	193	1,149	961	194	1,155	966	195	1,161
2022	956	193	1,150	962	194	1,157	968	196	1,164
2023	957	193	1,151	964	195	1,159	971	196	1,167
2024	958	194	1,152	966	195	1,161	973	197	1,170
2025	959	194	1,153	967	196	1,163	976	197	1,173
2026	960	194	1,154	969	196	1,165	979	198	1,177
2027	961	194	1,155	971	196	1,167	981	198	1,180
2028	961	194	1,156	973	197	1,169	984	199	1,183
2029	962	194	1,157	974	197	1,171	987	199	1,186
2030	963	195	1,158	976	197	1,173	989	200	1,189
2031	964	195	1,159	978	198	1,175	992	200	1,192
2032	965	195	1,160	980	198	1,178	994	201	1,195
2033	966	195	1,161	981	198	1,180	997	202	1,199
2034	967	195	1,162	983	199	1,182	1,000	202	1,202

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


Grandview Annual Therm Usage
Therms
1,940,000
1,920,000
1,900,000
1,880,000
1,860,000
1,840,000
1,820,000
1,800,000
1,780,000
1,760,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


Grandview Annual Customer Growth
Customers
1,210
1,200
1,190
1,180
1,170
1,160
1,150
1,140
1,130
1,120
1,110
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zillah (Toppenish)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,825,230	1,060,423	3,885,653	2,828,488	1,060,423	3,888,911	2,831,746	1,060,423	3,892,170
2016	2,840,263	1,066,066	3,906,329	2,846,037	1,067,002	3,913,040	2,851,817	1,067,939	3,919,756
2017	2,830,326	1,062,336	3,892,662	2,838,697	1,064,250	3,902,948	2,847,084	1,066,167	3,913,251
2018	2,833,064	1,063,364	3,896,428	2,844,189	1,066,309	3,910,499	2,855,347	1,069,261	3,924,607
2019	2,835,901	1,064,428	3,900,329	2,849,885	1,068,445	3,918,329	2,863,923	1,072,473	3,936,396
2020	2,851,373	1,070,236	3,921,608	2,868,335	1,075,362	3,943,697	2,885,381	1,080,508	3,965,889
2021	2,841,755	1,066,625	3,908,380	2,861,656	1,072,858	3,934,514	2,881,677	1,079,121	3,960,797
2022	2,844,761	1,067,754	3,912,514	2,867,710	1,075,128	3,942,838	2,890,821	1,082,545	3,973,366
2023	2,847,783	1,068,888	3,916,671	2,873,803	1,077,412	3,951,215	2,900,034	1,085,995	3,986,029
2024	2,863,515	1,074,793	3,938,308	2,892,803	1,084,535	3,977,338	2,922,360	1,094,356	4,016,716
2025	2,853,902	1,071,185	3,925,087	2,886,161	1,082,045	3,968,206	2,918,750	1,093,004	4,011,754
2026	2,856,984	1,072,341	3,929,325	2,892,393	1,084,381	3,976,774	2,928,204	1,096,544	4,024,748
2027	2,860,048	1,073,492	3,933,540	2,898,598	1,086,708	3,985,306	2,937,627	1,100,073	4,037,699
2028	2,875,812	1,079,408	3,955,220	2,917,688	1,093,865	4,011,553	2,960,129	1,108,499	4,068,629
2029	2,866,111	1,075,767	3,941,878	2,910,893	1,091,317	4,002,210	2,956,328	1,107,076	4,063,403
2030	2,869,093	1,076,886	3,945,979	2,916,950	1,093,588	4,010,538	2,965,555	1,110,531	4,076,086
2031	2,872,112	1,078,020	3,950,132	2,923,090	1,095,890	4,018,981	2,974,919	1,114,038	4,088,957
2032	2,887,858	1,083,930	3,971,788	2,942,169	1,103,043	4,045,211	2,997,443	1,122,473	4,119,916
2033	2,878,102	1,080,268	3,958,371	2,935,289	1,100,464	4,035,753	2,993,551	1,121,015	4,114,567
2034	2,881,116	1,081,399	3,962,515	2,941,436	1,102,768	4,044,205	3,002,955	1,124,537	4,127,492

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.53%	0.53%	0.62%	0.62%	0.62%	0.71%	0.71%	0.71%
2017	-0.35%	-0.35%	-0.35%	-0.26%	-0.26%	-0.26%	-0.17%	-0.17%	-0.17%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.55%	0.55%	0.55%	0.65%	0.65%	0.65%	0.75%	0.75%	0.75%
2021	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.55%	0.55%	0.55%	0.66%	0.66%	0.66%	0.77%	0.77%	0.77%
2025	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.12%	-0.12%	-0.12%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.55%	0.55%	0.55%	0.66%	0.66%	0.66%	0.77%	0.77%	0.77%
2029	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.55%	0.55%	0.55%	0.65%	0.65%	0.65%	0.76%	0.76%	0.76%
2033	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,905	41,633	44,539	2,905	41,671	44,576	2,905	41,708	44,613
2016	2,921	41,657	44,578	2,923	41,731	44,654	2,926	41,805	44,731
2017	2,911	41,708	44,619	2,916	41,821	44,737	2,921	41,934	44,855
2018	2,913	41,749	44,662	2,921	41,902	44,823	2,929	42,056	44,985
2019	2,916	41,791	44,707	2,927	41,986	44,913	2,938	42,182	45,120
2020	2,932	41,820	44,752	2,946	42,058	45,004	2,960	42,297	45,258
2021	2,922	41,877	44,799	2,939	42,159	45,099	2,956	42,443	45,400
2022	2,925	41,921	44,847	2,946	42,249	45,194	2,966	42,578	45,544
2023	2,928	41,966	44,894	2,952	42,338	45,290	2,975	42,714	45,689
2024	2,945	41,998	44,943	2,971	42,417	45,388	2,998	42,839	45,838
2025	2,935	42,056	44,991	2,965	42,520	45,485	2,995	42,990	45,984
2026	2,938	42,101	45,039	2,971	42,612	45,583	3,004	43,129	46,133
2027	2,941	42,146	45,088	2,977	42,704	45,681	3,014	43,268	46,281
2028	2,957	42,178	45,136	2,997	42,782	45,779	3,037	43,393	46,430
2029	2,947	42,236	45,183	2,990	42,885	45,875	3,033	43,543	46,576
2030	2,950	42,280	45,230	2,996	42,974	45,970	3,043	43,679	46,721
2031	2,953	42,324	45,278	3,002	43,064	46,067	3,052	43,817	46,869
2032	2,970	42,355	45,325	3,022	43,141	46,163	3,075	43,940	47,015
2033	2,960	42,413	45,372	3,015	43,244	46,259	3,071	44,091	47,163
2034	2,963	42,457	45,420	3,021	43,335	46,356	3,081	44,230	47,311

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.06%	0.09%	0.62%	0.14%	0.18%	0.71%	0.23%	0.26%
2017	-0.35%	0.12%	0.09%	-0.26%	0.22%	0.18%	-0.17%	0.31%	0.28%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.55%	0.07%	0.10%	0.65%	0.17%	0.20%	0.75%	0.27%	0.30%
2021	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.35%	0.31%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.55%	0.08%	0.11%	0.66%	0.19%	0.22%	0.77%	0.29%	0.32%
2025	-0.34%	0.14%	0.11%	-0.23%	0.24%	0.21%	-0.12%	0.35%	0.32%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.55%	0.08%	0.11%	0.66%	0.18%	0.21%	0.77%	0.29%	0.32%
2029	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.35%	0.31%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.55%	0.07%	0.10%	0.65%	0.18%	0.21%	0.76%	0.28%	0.31%
2033	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.34%	0.31%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,135,542	2,663,106	3,798,648	1,136,494	2,665,339	3,801,834	1,137,446	2,667,572	3,805,019
2016	1,142,233	2,676,829	3,819,062	1,144,195	2,681,428	3,825,624	1,146,159	2,686,031	3,832,190
2017	1,137,590	2,667,910	3,805,501	1,140,596	2,674,959	3,815,556	1,143,607	2,682,021	3,825,628
2018	1,138,691	2,670,491	3,809,182	1,142,803	2,680,135	3,822,937	1,146,926	2,689,804	3,836,730
2019	1,139,831	2,673,165	3,812,996	1,145,091	2,685,502	3,830,593	1,150,371	2,697,884	3,848,255
2020	1,146,701	2,687,300	3,834,001	1,153,160	2,702,436	3,855,596	1,159,649	2,717,643	3,877,292
2021	1,142,184	2,678,683	3,820,866	1,149,821	2,696,594	3,846,415	1,157,502	2,714,608	3,872,110
2022	1,143,392	2,681,516	3,824,908	1,152,254	2,702,299	3,854,552	1,161,175	2,723,222	3,884,397
2023	1,144,607	2,684,365	3,828,971	1,154,702	2,708,040	3,862,742	1,164,876	2,731,901	3,896,777
2024	1,151,584	2,698,744	3,850,328	1,162,997	2,725,489	3,888,486	1,174,511	2,752,473	3,926,984
2025	1,147,066	2,690,133	3,837,200	1,159,667	2,719,685	3,879,353	1,172,394	2,749,532	3,921,926
2026	1,148,305	2,693,038	3,841,342	1,162,171	2,725,558	3,887,729	1,176,191	2,758,438	3,934,629
2027	1,149,536	2,695,926	3,845,463	1,164,664	2,731,405	3,896,069	1,179,976	2,767,314	3,947,290
2028	1,156,529	2,710,333	3,866,862	1,173,001	2,748,935	3,921,936	1,189,691	2,788,046	3,977,737
2029	1,151,973	2,701,641	3,853,614	1,169,605	2,742,991	3,912,596	1,187,488	2,784,931	3,972,419
2030	1,153,172	2,704,452	3,857,624	1,172,038	2,748,699	3,920,737	1,191,194	2,793,623	3,984,818
2031	1,154,385	2,707,298	3,861,684	1,174,506	2,754,485	3,928,991	1,194,955	2,802,444	3,997,400
2032	1,161,374	2,721,685	3,883,059	1,182,843	2,772,000	3,954,843	1,204,687	2,823,191	4,027,878
2033	1,156,793	2,712,945	3,869,738	1,179,407	2,765,980	3,945,387	1,202,440	2,819,997	4,022,436
2034	1,158,004	2,715,785	3,873,790	1,181,877	2,771,773	3,953,650	1,206,217	2,828,855	4,035,072

Annual Change

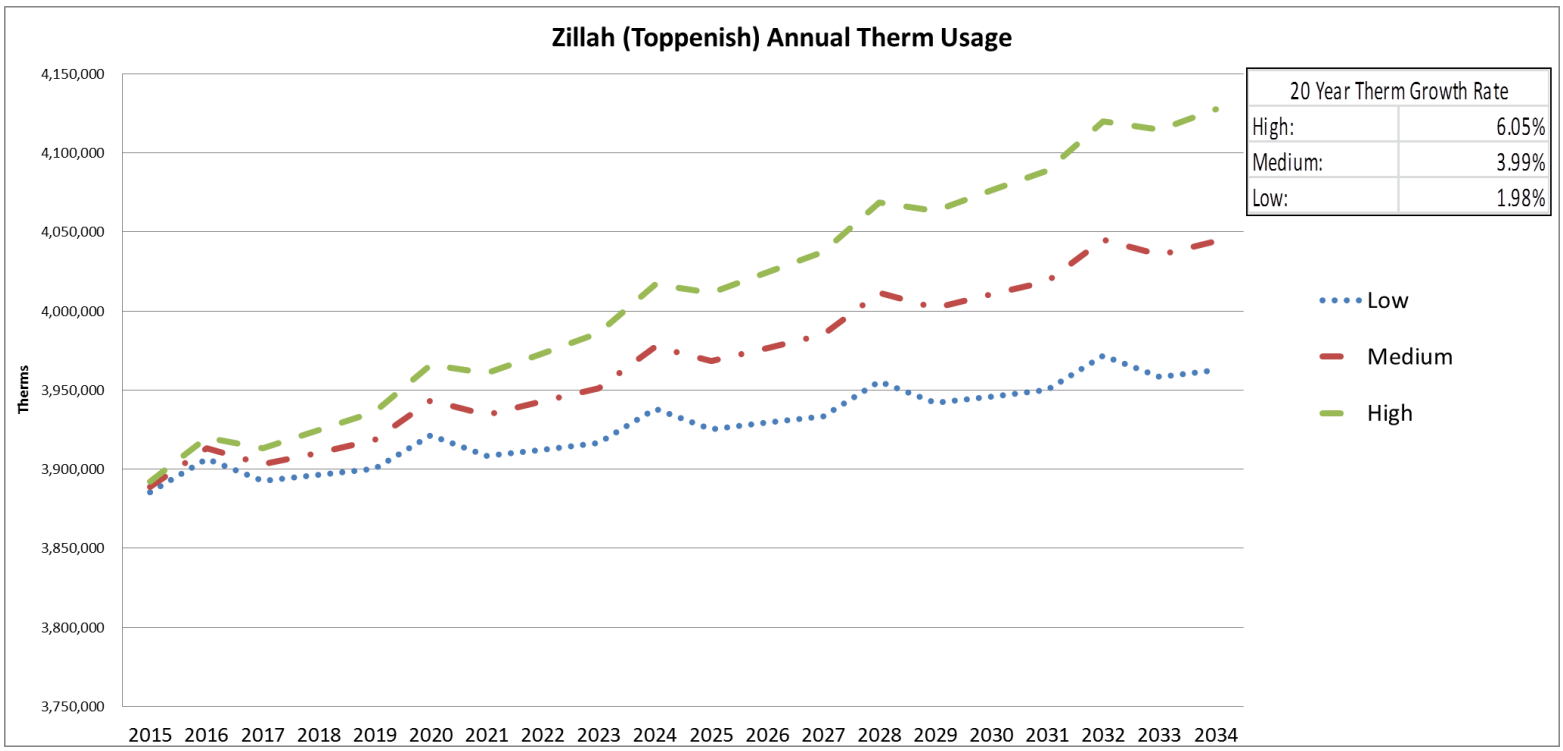
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.52%	0.54%	0.68%	0.60%	0.63%	0.77%	0.69%	0.71%
2017	-0.41%	-0.33%	-0.36%	-0.31%	-0.24%	-0.26%	-0.22%	-0.15%	-0.17%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.60%	0.53%	0.55%	0.70%	0.63%	0.65%	0.81%	0.73%	0.75%
2021	-0.39%	-0.32%	-0.34%	-0.29%	-0.22%	-0.24%	-0.19%	-0.11%	-0.13%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.61%	0.54%	0.56%	0.72%	0.64%	0.67%	0.83%	0.75%	0.78%
2025	-0.39%	-0.32%	-0.34%	-0.29%	-0.21%	-0.23%	-0.18%	-0.11%	-0.13%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.61%	0.53%	0.56%	0.72%	0.64%	0.66%	0.82%	0.75%	0.77%
2029	-0.39%	-0.32%	-0.34%	-0.29%	-0.22%	-0.24%	-0.19%	-0.11%	-0.13%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.61%	0.53%	0.55%	0.71%	0.64%	0.66%	0.81%	0.74%	0.76%
2033	-0.39%	-0.32%	-0.34%	-0.29%	-0.22%	-0.24%	-0.19%	-0.11%	-0.14%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

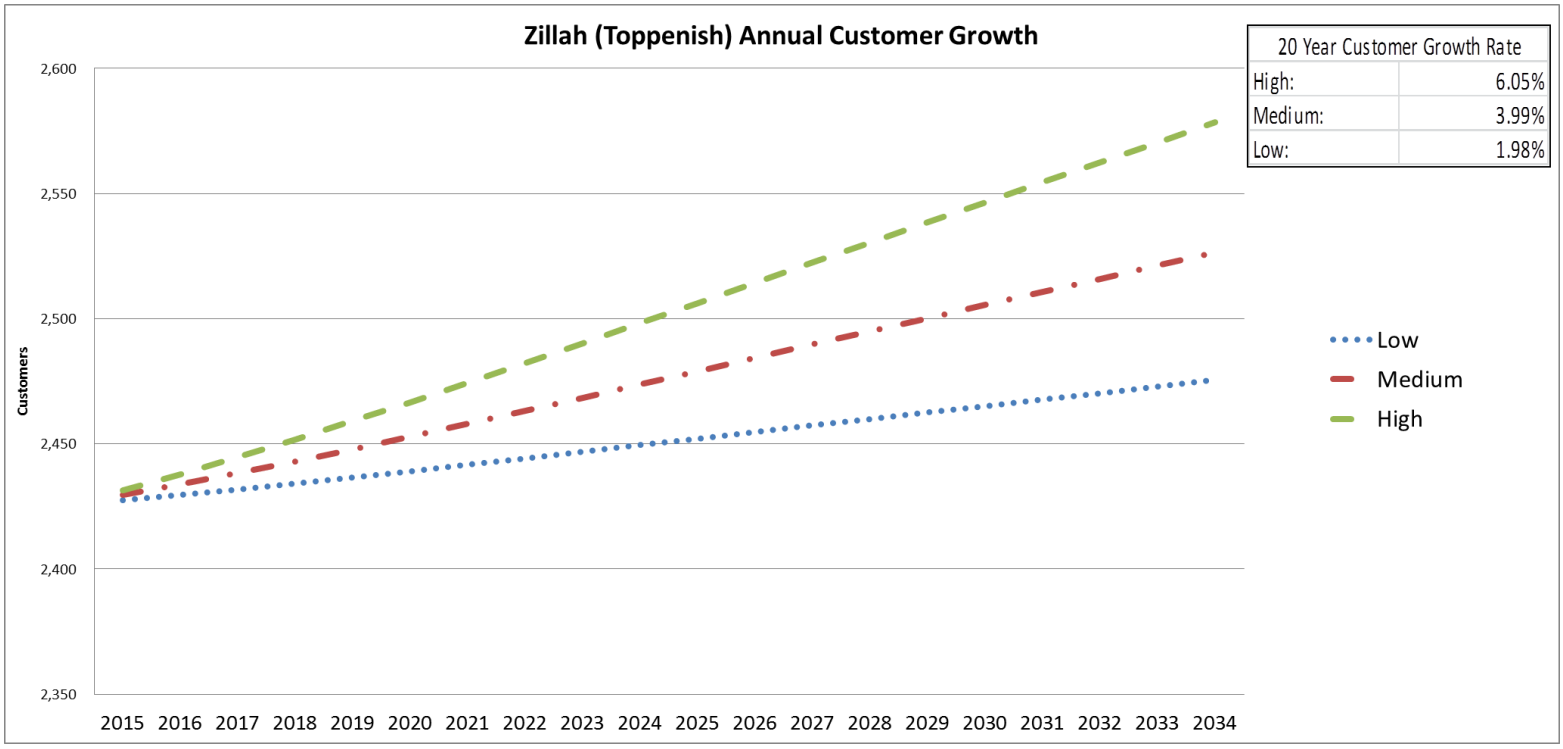
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,907	520	2,427	1,909	521	2,430	1,910	521	2,432
2016	1,909	521	2,430	1,912	522	2,434	1,915	523	2,438
2017	1,911	521	2,432	1,916	523	2,438	1,921	524	2,445
2018	1,912	522	2,434	1,919	524	2,443	1,926	526	2,452
2019	1,914	522	2,437	1,923	525	2,448	1,932	527	2,459
2020	1,916	523	2,439	1,927	526	2,453	1,938	529	2,467
2021	1,918	523	2,442	1,931	527	2,458	1,944	530	2,474
2022	1,920	524	2,444	1,935	528	2,463	1,950	532	2,482
2023	1,922	525	2,447	1,939	529	2,468	1,956	534	2,490
2024	1,924	525	2,449	1,943	530	2,474	1,963	536	2,498
2025	1,926	526	2,452	1,948	531	2,479	1,969	537	2,506
2026	1,929	526	2,455	1,952	533	2,484	1,975	539	2,514
2027	1,931	527	2,457	1,956	534	2,490	1,982	541	2,522
2028	1,933	527	2,460	1,960	535	2,495	1,988	542	2,531
2029	1,935	528	2,463	1,964	536	2,500	1,994	544	2,539
2030	1,937	528	2,465	1,968	537	2,505	2,001	546	2,546
2031	1,939	529	2,468	1,973	538	2,511	2,007	548	2,554
2032	1,941	530	2,470	1,977	539	2,516	2,013	549	2,562
2033	1,943	530	2,473	1,981	540	2,521	2,019	551	2,570
2034	1,945	531	2,475	1,985	542	2,527	2,026	553	2,579

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2017	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.28%	0.28%	0.28%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2021	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2025	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2029	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2033	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%


Zillah (Toppenish) Annual Therm Usage
Therms
4,150,000
4,100,000
4,050,000
4,000,000
3,950,000
3,900,000
3,850,000
3,800,000
3,750,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.05%
Medium: 3.99%
Low: 1.98%
Low
Medium
High


Zillah (Toppenish) Annual Customer Growth
Customers
2,600
2,550
2,500
2,450
2,400
2,350
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.05%
Medium: 3.99%
Low: 1.98%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kalama #2

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	265,679	327,113	592,793	267,270	327,113	594,384	268,861	327,113	595,974
2016	266,396	327,996	594,392	268,712	328,878	597,591	271,037	329,761	600,798
2017	267,116	328,883	595,999	270,165	330,657	600,822	273,235	332,436	605,671
2018	267,840	329,774	597,615	271,630	332,449	604,079	275,457	335,139	610,596
2019	268,566	330,668	599,234	273,102	334,251	607,353	277,696	337,863	615,559
2020	269,290	331,559	600,850	274,575	336,054	610,628	279,943	340,596	620,539
2021	270,016	332,452	602,468	276,053	337,863	613,917	282,204	343,348	625,552
2022	270,738	333,342	604,081	277,531	339,672	617,204	284,470	346,105	630,575
2023	271,457	334,227	605,684	279,005	341,475	620,480	286,735	348,861	635,596
2024	272,174	335,110	607,283	280,478	343,279	623,757	289,007	351,625	640,632
2025	272,883	335,983	608,866	281,940	345,069	627,009	291,267	354,375	645,642
2026	273,590	336,853	610,443	283,401	346,856	630,257	293,530	357,128	650,658
2027	274,291	337,716	612,007	284,853	348,634	633,487	295,787	359,873	655,660
2028	274,985	338,571	613,557	286,295	350,398	636,693	298,033	362,606	660,638
2029	275,671	339,416	615,087	287,723	352,146	639,869	300,263	365,319	665,582
2030	276,350	340,251	616,600	289,139	353,879	643,019	302,479	368,016	670,495
2031	277,024	341,082	618,106	290,551	355,607	646,159	304,695	370,712	675,407
2032	277,691	341,903	619,595	291,951	357,320	649,271	306,896	373,390	680,286
2033	278,353	342,718	621,071	293,343	359,024	652,366	309,091	376,060	685,151
2034	279,010	343,526	622,536	294,726	360,717	655,444	311,278	378,721	689,999

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	896	5,550	6,446	896	5,568	6,464	896	5,585	6,481
2016	899	5,565	6,464	901	5,598	6,499	903	5,630	6,534
2017	901	5,580	6,481	906	5,628	6,534	911	5,676	6,587
2018	903	5,595	6,499	911	5,658	6,569	918	5,722	6,640
2019	906	5,611	6,517	916	5,689	6,605	926	5,768	6,694
2020	908	5,626	6,534	921	5,720	6,640	933	5,815	6,748
2021	911	5,641	6,552	926	5,751	6,676	941	5,862	6,803
2022	913	5,656	6,569	931	5,781	6,712	948	5,909	6,857
2023	916	5,671	6,587	936	5,812	6,748	956	5,956	6,912
2024	918	5,686	6,604	940	5,843	6,783	963	6,003	6,967
2025	921	5,701	6,621	945	5,873	6,819	971	6,050	7,021
2026	923	5,716	6,638	950	5,904	6,854	978	6,097	7,076
2027	925	5,730	6,655	955	5,934	6,889	986	6,144	7,130
2028	928	5,745	6,672	960	5,964	6,924	993	6,191	7,184
2029	930	5,759	6,689	965	5,994	6,958	1,001	6,237	7,238
2030	932	5,773	6,705	970	6,023	6,993	1,008	6,283	7,291
2031	934	5,787	6,722	974	6,053	7,027	1,016	6,329	7,345
2032	937	5,801	6,738	979	6,082	7,061	1,023	6,375	7,398
2033	939	5,815	6,754	984	6,111	7,094	1,030	6,421	7,451
2034	941	5,829	6,770	988	6,140	7,128	1,038	6,466	7,504

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	189,048	403,745	592,793	189,556	404,828	594,384	190,063	405,911	595,974
2016	189,558	404,834	594,392	190,578	407,012	597,591	191,601	409,197	600,798
2017	190,071	405,928	595,999	191,609	409,213	600,822	193,155	412,516	605,671
2018	190,586	407,029	597,615	192,648	411,431	604,079	194,726	415,870	610,596
2019	191,102	408,132	599,234	193,692	413,661	607,353	196,309	419,251	615,559
2020	191,618	409,232	600,850	194,736	415,892	610,628	197,897	422,642	620,539
2021	192,134	410,334	602,468	195,785	418,132	613,917	199,495	426,056	625,552
2022	192,648	411,433	604,081	196,833	420,370	617,204	201,098	429,478	630,575
2023	193,159	412,525	605,684	197,878	422,602	620,480	202,699	432,898	635,596
2024	193,669	413,614	607,283	198,923	424,834	623,757	204,305	436,327	640,632
2025	194,174	414,692	608,866	199,960	427,049	627,009	205,902	439,739	645,642
2026	194,677	415,766	610,443	200,996	429,261	630,257	207,502	443,156	650,658
2027	195,176	416,831	612,007	202,026	431,461	633,487	209,097	446,563	655,660
2028	195,670	417,887	613,557	203,049	433,645	636,693	210,685	449,953	660,638
2029	196,158	418,929	615,087	204,062	435,808	639,869	212,261	453,320	665,582
2030	196,641	419,960	616,600	205,066	437,953	643,019	213,828	456,667	670,495
2031	197,121	420,985	618,106	206,067	440,092	646,159	215,395	460,012	675,407
2032	197,596	421,999	619,595	207,060	442,211	649,271	216,951	463,335	680,286
2033	198,067	423,005	621,071	208,047	444,319	652,366	218,502	466,649	685,151
2034	198,534	424,003	622,536	209,028	446,415	655,444	220,048	469,951	689,999

Annual Change

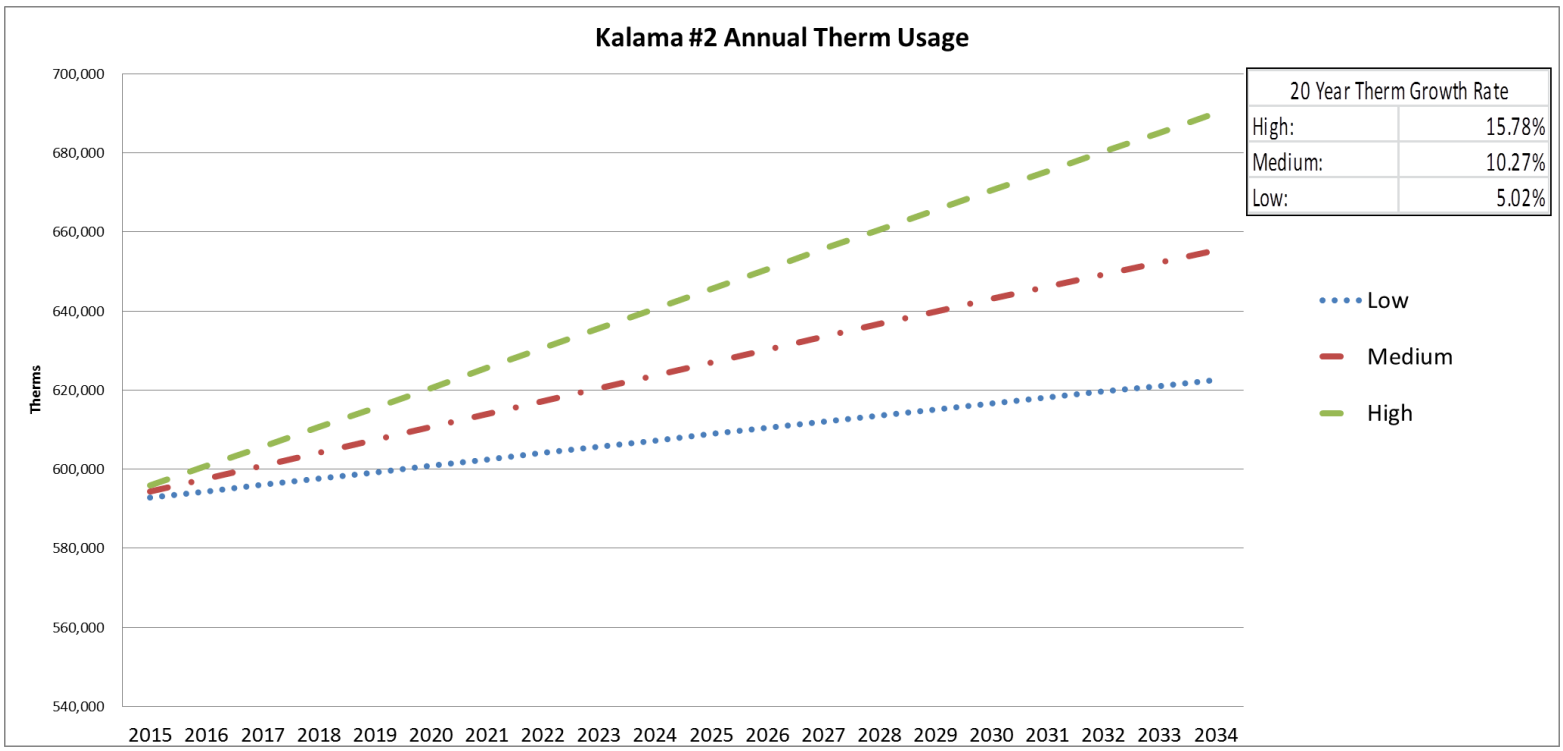
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

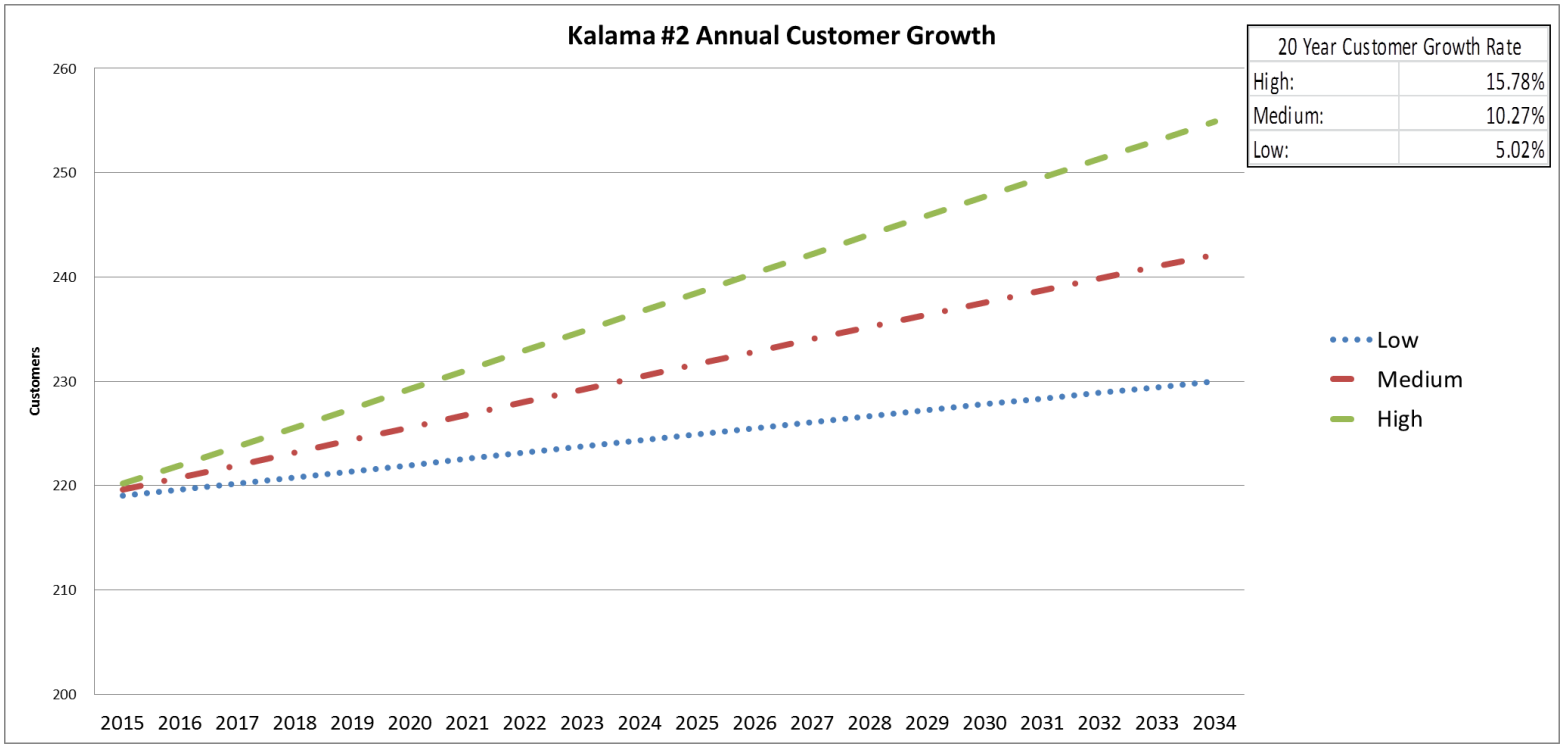
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	169	50	219	169	50	220	170	50	220
2016	169	50	220	170	51	221	171	51	222
2017	170	50	220	171	51	222	172	51	224
2018	170	51	221	172	51	223	174	52	226
2019	171	51	221	173	51	224	175	52	227
2020	171	51	222	174	52	226	177	53	229
2021	172	51	223	175	52	227	178	53	231
2022	172	51	223	176	52	228	180	53	233
2023	172	51	224	177	53	229	181	54	235
2024	173	51	224	178	53	230	182	54	237
2025	173	52	225	179	53	232	184	55	239
2026	174	52	226	179	53	233	185	55	240
2027	174	52	226	180	54	234	187	56	242
2028	175	52	227	181	54	235	188	56	244
2029	175	52	227	182	54	236	190	56	246
2030	176	52	228	183	54	238	191	57	248
2031	176	52	228	184	55	239	192	57	250
2032	176	52	229	185	55	240	194	58	251
2033	177	53	229	186	55	241	195	58	253
2034	177	53	230	187	56	242	196	58	255

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%


Kalama #2 Annual Therm Usage
Therms
700,000
680,000
660,000
640,000
620,000
600,000
580,000
560,000
540,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.78%
Medium: 10.27%
Low: 5.02%
Low
Medium
High


Kalama #2 Annual Customer Growth
Customers
260
250
240
230
220
210
200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.78%
Medium: 10.27%
Low: 5.02%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Lawrence

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	54,962	10,497	65,459	55,578	10,497	66,075	56,195	10,497	66,692
2016	55,737	10,645	66,382	56,886	10,744	67,629	58,045	10,843	68,888
2017	55,990	10,693	66,683	57,666	10,891	68,558	59,376	11,091	70,467
2018	56,500	10,791	67,291	58,718	11,090	69,808	61,000	11,394	72,395
2019	57,008	10,888	67,896	59,774	11,289	71,063	62,646	11,702	74,348
2020	57,783	11,036	68,819	61,118	11,543	72,661	64,612	12,069	76,681
2021	58,016	11,080	69,096	61,896	11,690	73,585	65,996	12,328	78,323
2022	58,515	11,175	69,690	62,961	11,891	74,852	67,699	12,646	80,344
2023	59,010	11,270	70,280	64,026	12,092	76,119	69,418	12,967	82,385
2024	59,782	11,417	71,199	65,401	12,352	77,753	71,491	13,354	84,845
2025	59,991	11,457	71,448	66,164	12,496	78,660	72,908	13,619	86,527
2026	60,476	11,550	72,026	67,234	12,698	79,932	74,677	13,949	88,626
2027	60,957	11,642	72,599	68,304	12,900	81,204	76,460	14,282	90,742
2028	61,723	11,788	73,511	69,700	13,164	82,864	78,624	14,686	93,310
2029	61,908	11,823	73,731	70,442	13,304	83,746	80,064	14,955	95,020
2030	62,377	11,913	74,290	71,510	13,506	85,015	81,884	15,295	97,179
2031	62,843	12,002	74,845	72,579	13,708	86,287	83,721	15,638	99,359
2032	63,603	12,147	75,750	73,993	13,975	87,968	85,971	16,059	102,029
2033	63,765	12,178	75,943	74,717	14,111	88,828	87,433	16,332	103,765
2034	64,222	12,265	76,487	75,786	14,313	90,100	89,310	16,683	105,993

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	1.41%	1.41%	2.35%	2.35%	2.35%	3.29%	3.29%	3.29%
2017	0.45%	0.45%	0.45%	1.37%	1.37%	1.37%	2.29%	2.29%	2.29%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.36%	1.36%	1.36%	2.25%	2.25%	2.25%	3.14%	3.14%	3.14%
2021	0.40%	0.40%	0.40%	1.27%	1.27%	1.27%	2.14%	2.14%	2.14%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.31%	1.31%	1.31%	2.15%	2.15%	2.15%	2.99%	2.99%	2.99%
2025	0.35%	0.35%	0.35%	1.17%	1.17%	1.17%	1.98%	1.98%	1.98%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.26%	1.26%	1.26%	2.04%	2.04%	2.04%	2.83%	2.83%	2.83%
2029	0.30%	0.30%	0.30%	1.07%	1.07%	1.07%	1.83%	1.83%	1.83%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.21%	1.21%	1.21%	1.95%	1.95%	1.95%	2.69%	2.69%	2.69%
2033	0.26%	0.26%	0.26%	0.98%	0.98%	0.98%	1.70%	1.70%	1.70%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	29	787	816	29	795	824	29	803	832
2016	29	795	824	29	810	839	30	825	855
2017	29	802	832	30	825	855	30	848	879
2018	30	810	839	30	840	870	31	872	903
2019	30	817	847	31	855	886	32	895	927
2020	30	824	854	32	870	902	33	919	952
2021	30	831	862	32	886	918	34	943	977
2022	31	838	869	33	901	933	35	967	1,002
2023	31	845	876	33	916	949	36	992	1,027
2024	31	852	884	34	931	965	37	1,016	1,053
2025	31	860	891	34	947	981	37	1,042	1,079
2026	32	866	898	35	962	997	38	1,067	1,105
2027	32	873	905	35	977	1,013	39	1,092	1,132
2028	32	880	912	36	992	1,028	40	1,118	1,158
2029	32	887	919	36	1,008	1,044	41	1,144	1,185
2030	33	894	926	37	1,023	1,060	42	1,170	1,212
2031	33	900	933	38	1,038	1,076	43	1,196	1,239
2032	33	907	940	38	1,054	1,092	44	1,222	1,266
2033	33	914	947	39	1,069	1,108	45	1,249	1,294
2034	34	920	954	39	1,084	1,124	46	1,276	1,322

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	0.92%	0.94%	2.35%	1.86%	1.87%	3.29%	2.79%	2.81%
2017	0.45%	0.94%	0.92%	1.37%	1.87%	1.85%	2.29%	2.79%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.36%	0.87%	0.89%	2.25%	1.75%	1.77%	3.14%	2.64%	2.66%
2021	0.40%	0.89%	0.87%	1.27%	1.76%	1.75%	2.14%	2.64%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.31%	0.82%	0.83%	2.15%	1.65%	1.67%	2.99%	2.49%	2.50%
2025	0.35%	0.84%	0.82%	1.17%	1.66%	1.64%	1.98%	2.48%	2.46%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.26%	0.77%	0.78%	2.04%	1.55%	1.57%	2.83%	2.33%	2.35%
2029	0.30%	0.79%	0.77%	1.07%	1.56%	1.54%	1.83%	2.33%	2.31%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.21%	0.72%	0.74%	1.95%	1.45%	1.47%	2.69%	2.19%	2.21%
2033	0.26%	0.74%	0.73%	0.98%	1.47%	1.45%	1.70%	2.20%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	44,096	21,363	65,459	44,511	21,564	66,075	44,926	21,765	66,692
2016	44,715	21,667	66,382	45,555	22,074	67,629	46,403	22,485	68,888
2017	44,920	21,762	66,683	46,183	22,374	68,558	47,470	22,997	70,467
2018	45,330	21,961	67,291	47,026	22,782	69,808	48,768	23,627	72,395
2019	45,738	22,158	67,896	47,871	23,192	71,063	50,084	24,264	74,348
2020	46,356	22,462	68,819	48,944	23,717	72,661	51,652	25,029	76,681
2021	46,546	22,550	69,096	49,570	24,015	73,585	52,762	25,561	78,323
2022	46,946	22,744	69,690	50,423	24,428	74,852	54,123	26,221	80,344
2023	47,344	22,936	70,280	51,277	24,842	76,119	55,498	26,887	82,385
2024	47,960	23,240	71,199	52,374	25,379	77,753	57,151	27,693	84,845
2025	48,130	23,318	71,448	52,988	25,671	78,660	58,288	28,239	86,527
2026	48,520	23,506	72,026	53,845	26,086	79,932	59,702	28,924	88,626
2027	48,906	23,693	72,599	54,703	26,502	81,204	61,128	29,614	90,742
2028	49,517	23,994	73,511	55,817	27,047	82,864	62,854	30,457	93,310
2029	49,668	24,063	73,731	56,415	27,331	83,746	64,009	31,010	95,020
2030	50,045	24,245	74,290	57,270	27,745	85,015	65,464	31,715	97,179
2031	50,419	24,426	74,845	58,126	28,160	86,287	66,933	32,427	99,359
2032	51,025	24,725	75,750	59,255	28,713	87,968	68,727	33,303	102,029
2033	51,159	24,785	75,943	59,838	28,990	88,828	69,900	33,864	103,765
2034	51,525	24,962	76,487	60,695	29,405	90,100	71,401	34,592	105,993

Annual Change

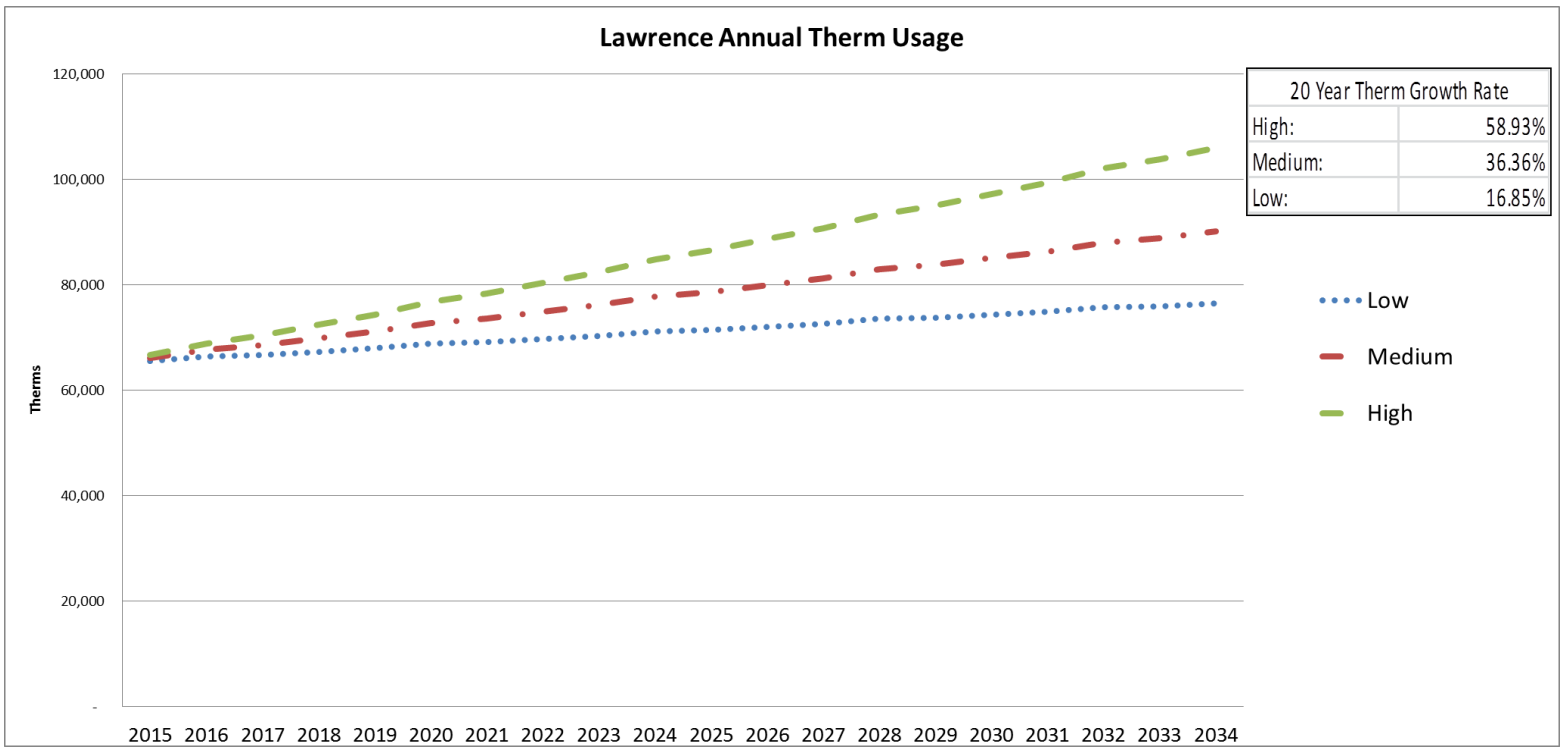
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.42%	1.41%	2.35%	2.37%	2.35%	3.29%	3.31%	3.29%
2017	0.46%	0.44%	0.45%	1.38%	1.36%	1.37%	2.30%	2.28%	2.29%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.35%	1.37%	1.36%	2.24%	2.26%	2.25%	3.13%	3.15%	3.14%
2021	0.41%	0.39%	0.40%	1.28%	1.26%	1.27%	2.15%	2.13%	2.14%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.30%	1.32%	1.31%	2.14%	2.16%	2.15%	2.98%	3.00%	2.99%
2025	0.36%	0.34%	0.35%	1.17%	1.15%	1.17%	1.99%	1.97%	1.98%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.25%	1.27%	1.26%	2.04%	2.06%	2.04%	2.82%	2.84%	2.83%
2029	0.31%	0.29%	0.30%	1.07%	1.05%	1.07%	1.84%	1.82%	1.83%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.20%	1.22%	1.21%	1.94%	1.96%	1.95%	2.68%	2.70%	2.69%
2033	0.26%	0.24%	0.26%	0.98%	0.96%	0.98%	1.71%	1.69%	1.70%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

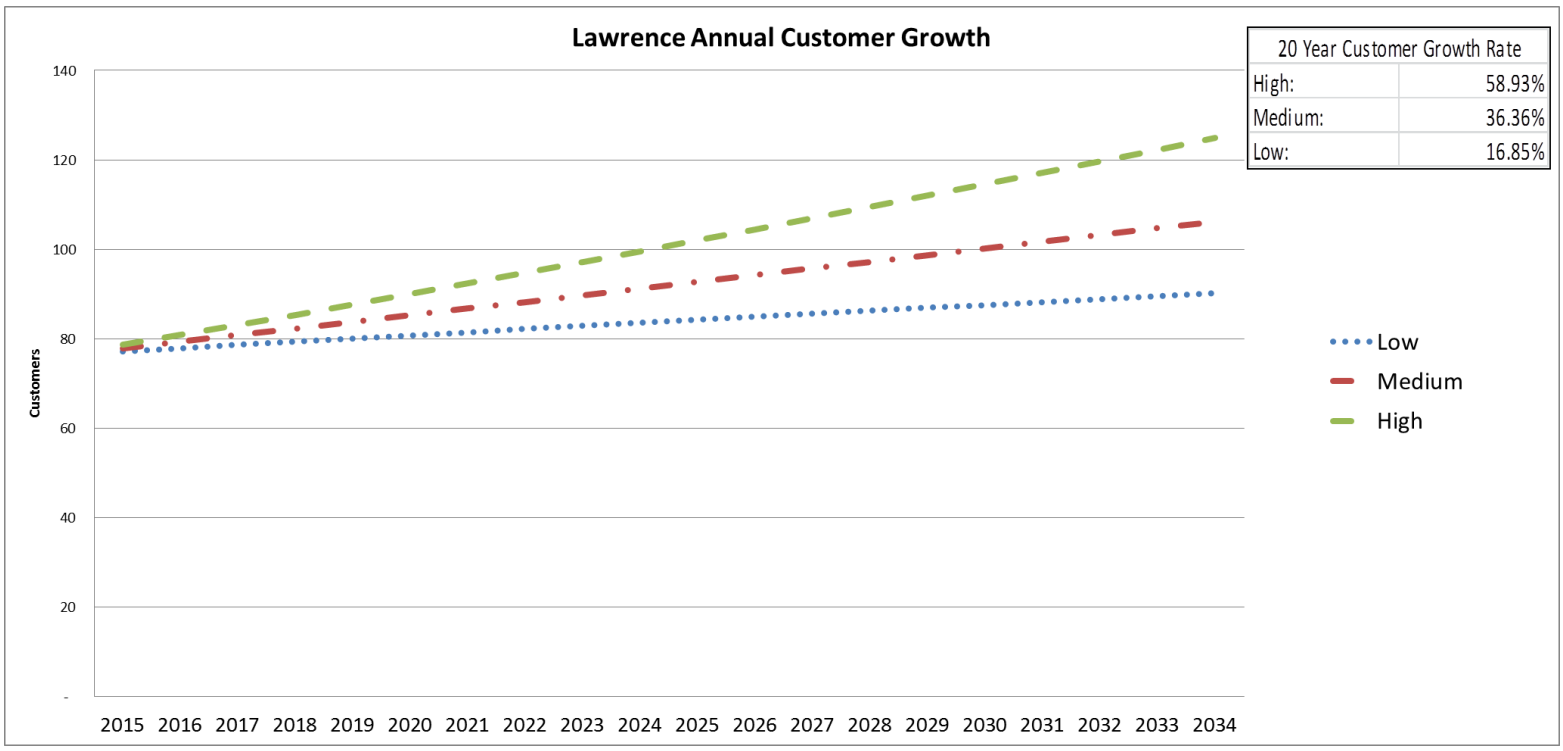
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	60	17	77	61	17	78	62	17	79
2016	61	17	78	62	17	79	63	18	81
2017	62	17	79	63	18	81	65	18	83
2018	62	17	79	64	18	82	67	19	85
2019	63	17	80	66	18	84	69	19	88
2020	63	18	81	67	18	85	70	20	90
2021	64	18	81	68	19	87	72	20	92
2022	64	18	82	69	19	88	74	21	95
2023	65	18	83	70	19	90	76	21	97
2024	65	18	84	71	20	91	78	22	100
2025	66	18	84	73	20	93	80	22	102
2026	66	18	85	74	20	94	82	23	104
2027	67	19	86	75	21	96	84	23	107
2028	68	19	86	76	21	97	86	24	109
2029	68	19	87	77	21	99	88	24	112
2030	69	19	88	78	22	100	90	25	115
2031	69	19	88	80	22	102	92	25	117
2032	70	19	89	81	22	103	94	26	120
2033	70	19	89	82	23	105	96	27	122
2034	71	20	90	83	23	106	98	27	125

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.94%	0.94%	0.94%	1.87%	1.87%	1.87%	2.81%	2.81%	2.81%
2017	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.77%	1.77%	1.77%	2.66%	2.66%	2.66%
2021	0.87%	0.87%	0.87%	1.75%	1.75%	1.75%	2.62%	2.62%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	0.83%	0.83%	0.83%	1.67%	1.67%	1.67%	2.50%	2.50%	2.50%
2025	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	0.78%	0.78%	0.78%	1.57%	1.57%	1.57%	2.35%	2.35%	2.35%
2029	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.31%	2.31%	2.31%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2033	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%


Lawrence Annual Therm Usage
Therms
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Therm Growth Rate
High: 58.93%
Medium: 36.36%
Low: 16.85%


Lawrence Annual Customer Growth
Customers
140
120
100
80
60
40
20
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Customer Growth Rate
High: 58.93%
Medium: 36.36%
Low: 16.85%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Moxee (Beauchene)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,336,957	213,091	1,550,049	1,340,756	213,091	1,553,847	1,344,554	213,091	1,557,645
2016	1,344,784	214,339	1,559,123	1,351,946	214,870	1,566,815	1,359,125	215,401	1,574,526
2017	1,343,645	214,157	1,557,803	1,354,186	215,226	1,569,413	1,364,783	216,297	1,581,080
2018	1,347,062	214,702	1,561,764	1,361,074	216,321	1,577,394	1,375,194	217,947	1,593,142
2019	1,350,516	215,253	1,565,769	1,368,055	217,430	1,585,485	1,385,774	219,624	1,605,399
2020	1,358,535	216,531	1,575,065	1,379,698	219,281	1,598,979	1,401,136	222,059	1,623,195
2021	1,357,487	216,364	1,573,850	1,382,194	219,677	1,601,872	1,407,286	223,034	1,630,320
2022	1,360,997	216,923	1,577,920	1,389,342	220,814	1,610,156	1,418,203	224,764	1,642,967
2023	1,364,508	217,483	1,581,991	1,396,512	221,953	1,618,465	1,429,180	226,503	1,655,684
2024	1,372,641	218,779	1,591,420	1,408,462	223,852	1,632,314	1,445,121	229,030	1,674,151
2025	1,371,549	218,605	1,590,154	1,410,941	224,246	1,635,187	1,451,359	230,018	1,681,378
2026	1,375,069	219,166	1,594,235	1,418,184	225,397	1,643,581	1,462,535	231,790	1,694,324
2027	1,378,577	219,725	1,598,302	1,425,419	226,547	1,651,967	1,473,727	233,563	1,707,291
2028	1,386,726	221,024	1,607,749	1,437,477	228,464	1,665,940	1,489,948	236,134	1,726,082
2029	1,385,547	220,836	1,606,382	1,439,851	228,841	1,668,692	1,496,136	237,115	1,733,251
2030	1,389,002	221,387	1,610,388	1,447,032	229,982	1,677,015	1,507,329	238,889	1,746,218
2031	1,392,465	221,939	1,614,404	1,454,249	231,129	1,685,378	1,518,605	240,676	1,759,281
2032	1,400,606	223,236	1,623,842	1,466,362	233,055	1,699,416	1,535,025	243,278	1,778,303
2033	1,399,359	223,037	1,622,396	1,468,665	233,421	1,702,086	1,541,215	244,259	1,785,474
2034	1,402,804	223,587	1,626,391	1,475,898	234,570	1,710,468	1,552,599	246,063	1,798,663

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.59%	0.59%	0.83%	0.83%	0.83%	1.08%	1.08%	1.08%
2017	-0.08%	-0.08%	-0.08%	0.17%	0.17%	0.17%	0.42%	0.42%	0.42%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.59%	0.59%	0.59%	0.85%	0.85%	0.85%	1.11%	1.11%	1.11%
2021	-0.08%	-0.08%	-0.08%	0.18%	0.18%	0.18%	0.44%	0.44%	0.44%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.60%	0.60%	0.60%	0.86%	0.86%	0.86%	1.12%	1.12%	1.12%
2025	-0.08%	-0.08%	-0.08%	0.18%	0.18%	0.18%	0.43%	0.43%	0.43%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.59%	0.59%	0.59%	0.85%	0.85%	0.85%	1.10%	1.10%	1.10%
2029	-0.09%	-0.09%	-0.09%	0.17%	0.17%	0.17%	0.42%	0.42%	0.42%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.58%	0.58%	0.58%	0.83%	0.83%	0.83%	1.08%	1.08%	1.08%
2033	-0.09%	-0.09%	-0.09%	0.16%	0.16%	0.16%	0.40%	0.40%	0.40%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	584	13,304	13,888	584	13,339	13,922	584	13,373	13,956
2016	587	13,336	13,923	589	13,403	13,991	590	13,470	14,060
2017	587	13,371	13,958	590	13,472	14,062	593	13,574	14,166
2018	588	13,405	13,993	593	13,541	14,133	597	13,677	14,274
2019	590	13,439	14,029	596	13,610	14,206	602	13,782	14,384
2020	593	13,472	14,065	601	13,678	14,279	608	13,887	14,495
2021	593	13,509	14,102	602	13,751	14,353	611	13,996	14,607
2022	594	13,544	14,138	605	13,822	14,427	616	14,105	14,721
2023	596	13,579	14,174	608	13,893	14,501	621	14,214	14,835
2024	599	13,612	14,211	613	13,963	14,576	627	14,322	14,950
2025	599	13,649	14,248	614	14,037	14,651	630	14,435	15,065
2026	600	13,684	14,284	618	14,109	14,726	635	14,546	15,181
2027	602	13,719	14,321	621	14,181	14,801	640	14,657	15,297
2028	606	13,751	14,357	626	14,251	14,877	647	14,767	15,414
2029	605	13,788	14,393	627	14,324	14,951	650	14,880	15,530
2030	607	13,822	14,429	630	14,396	15,026	654	14,991	15,646
2031	608	13,857	14,465	633	14,468	15,101	659	15,104	15,763
2032	612	13,889	14,501	639	14,537	15,176	667	15,213	15,880
2033	611	13,925	14,537	640	14,611	15,251	669	15,328	15,998
2034	613	13,960	14,572	643	14,683	15,326	674	15,442	16,116

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.23%	0.25%	0.83%	0.48%	0.50%	1.08%	0.73%	0.74%
2017	-0.08%	0.27%	0.25%	0.17%	0.52%	0.50%	0.42%	0.77%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.59%	0.24%	0.26%	0.85%	0.50%	0.51%	1.11%	0.75%	0.77%
2021	-0.08%	0.27%	0.26%	0.18%	0.53%	0.52%	0.44%	0.79%	0.78%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.60%	0.24%	0.26%	0.86%	0.50%	0.52%	1.12%	0.76%	0.78%
2025	-0.08%	0.27%	0.26%	0.18%	0.53%	0.51%	0.43%	0.78%	0.77%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.59%	0.24%	0.25%	0.85%	0.49%	0.51%	1.10%	0.75%	0.76%
2029	-0.09%	0.27%	0.25%	0.17%	0.52%	0.50%	0.42%	0.77%	0.75%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.58%	0.23%	0.25%	0.83%	0.48%	0.49%	1.08%	0.73%	0.74%
2033	-0.09%	0.26%	0.25%	0.16%	0.51%	0.49%	0.40%	0.76%	0.74%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	262,354	1,048,799	1,311,153	262,997	1,051,369	1,314,366	263,640	1,053,939	1,317,579
2016	264,168	1,054,368	1,318,536	265,471	1,059,569	1,325,041	266,778	1,064,784	1,331,562
2017	263,666	1,054,045	1,317,712	265,631	1,061,901	1,327,532	267,606	1,069,795	1,337,401
2018	264,337	1,056,726	1,321,062	266,982	1,067,302	1,334,284	269,648	1,077,957	1,347,604
2019	265,015	1,059,436	1,324,450	268,352	1,072,776	1,341,127	271,722	1,086,250	1,357,972
2020	266,869	1,065,149	1,332,018	270,921	1,081,320	1,352,241	275,024	1,097,696	1,372,720
2021	266,382	1,064,904	1,331,286	271,125	1,083,864	1,354,989	275,940	1,103,112	1,379,052
2022	267,071	1,067,657	1,334,728	272,527	1,089,469	1,361,996	278,081	1,111,670	1,389,750
2023	267,760	1,070,412	1,338,172	273,934	1,095,091	1,369,024	280,233	1,120,274	1,400,507
2024	269,640	1,076,208	1,345,848	276,569	1,103,863	1,380,432	283,657	1,132,156	1,415,813
2025	269,142	1,075,935	1,345,077	276,764	1,106,406	1,383,170	284,582	1,137,659	1,422,241
2026	269,833	1,078,696	1,348,529	278,185	1,112,085	1,390,270	286,773	1,146,419	1,433,192
2027	270,521	1,081,448	1,351,969	279,604	1,117,759	1,397,363	288,968	1,155,193	1,444,160
2028	272,407	1,087,251	1,359,658	282,266	1,126,603	1,408,869	292,456	1,167,274	1,459,731
2029	271,889	1,086,916	1,358,804	282,435	1,129,076	1,411,510	293,362	1,172,758	1,466,120
2030	272,567	1,089,626	1,362,193	283,843	1,134,707	1,418,550	295,557	1,181,532	1,477,088
2031	273,246	1,092,343	1,365,589	285,259	1,140,366	1,425,625	297,767	1,190,370	1,488,138
2032	275,133	1,098,134	1,373,268	287,938	1,149,242	1,437,180	301,304	1,202,589	1,503,894
2033	274,599	1,097,751	1,372,350	288,087	1,151,671	1,439,758	302,201	1,208,093	1,510,294
2034	275,275	1,100,454	1,375,729	289,506	1,157,342	1,446,848	304,433	1,217,017	1,521,450

Annual Change

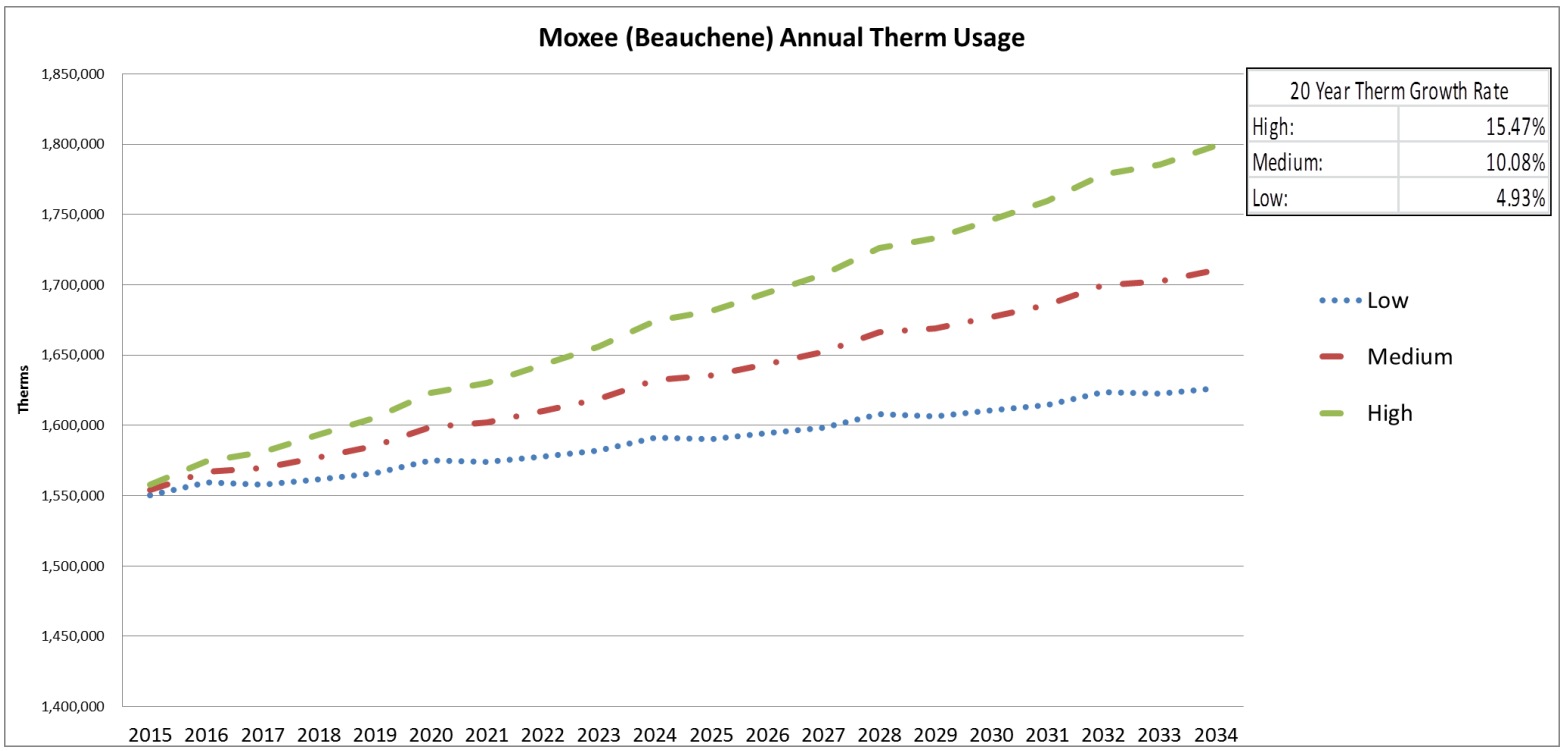
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.53%	0.56%	0.94%	0.78%	0.81%	1.19%	1.03%	1.06%
2017	-0.19%	-0.03%	-0.06%	0.06%	0.22%	0.19%	0.31%	0.47%	0.44%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.70%	0.54%	0.57%	0.96%	0.80%	0.83%	1.22%	1.05%	1.09%
2021	-0.18%	-0.02%	-0.05%	0.08%	0.24%	0.20%	0.33%	0.49%	0.46%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.70%	0.54%	0.57%	0.96%	0.80%	0.83%	1.22%	1.06%	1.09%
2025	-0.18%	-0.03%	-0.06%	0.07%	0.23%	0.20%	0.33%	0.49%	0.45%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.70%	0.54%	0.57%	0.95%	0.79%	0.82%	1.21%	1.05%	1.08%
2029	-0.19%	-0.03%	-0.06%	0.06%	0.22%	0.19%	0.31%	0.47%	0.44%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.69%	0.53%	0.56%	0.94%	0.78%	0.81%	1.19%	1.03%	1.06%
2033	-0.19%	-0.03%	-0.07%	0.05%	0.21%	0.18%	0.30%	0.46%	0.43%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

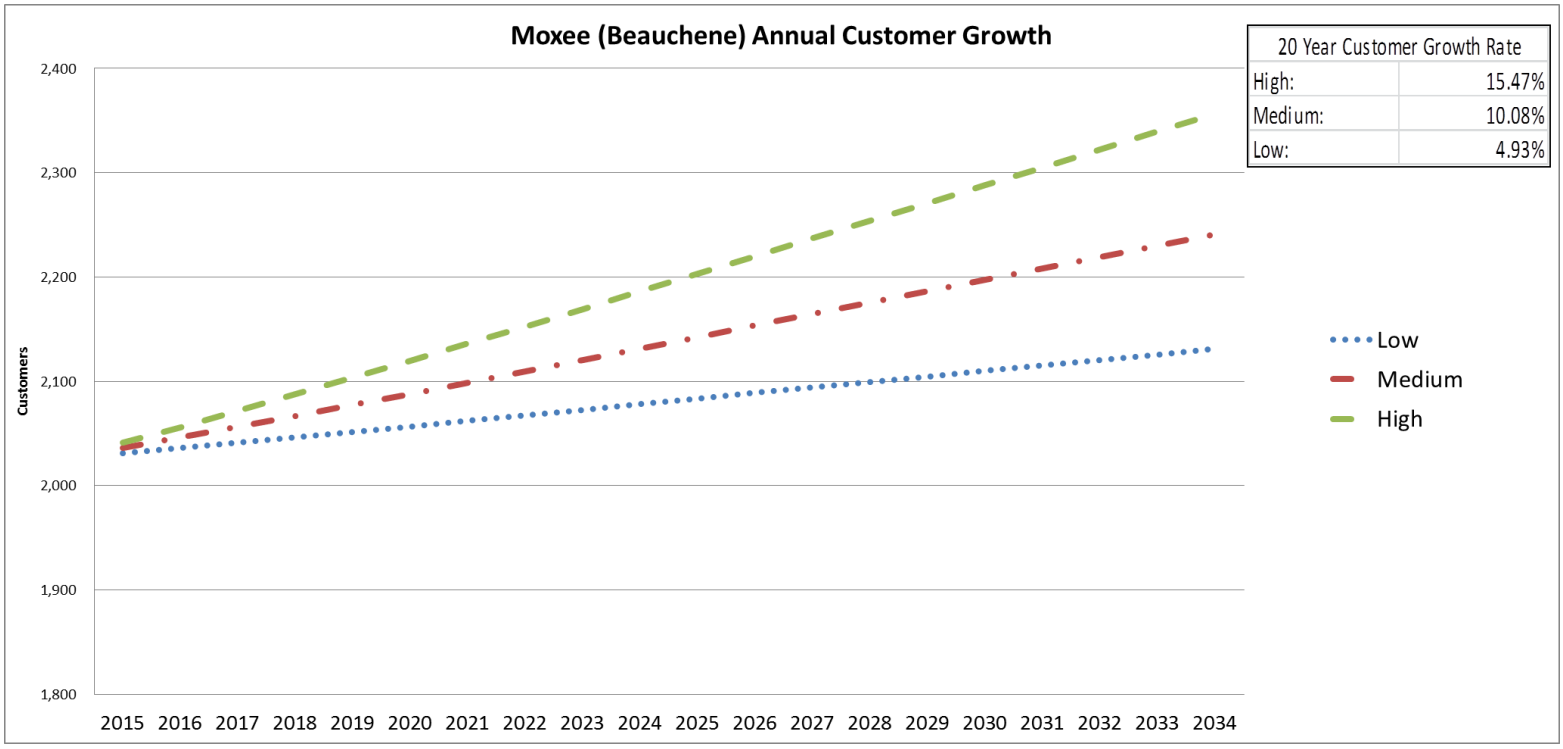
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,614	417	2,031	1,618	418	2,036	1,622	419	2,041
2016	1,618	418	2,036	1,626	420	2,046	1,634	422	2,056
2017	1,622	419	2,041	1,634	422	2,056	1,646	425	2,072
2018	1,626	420	2,046	1,643	424	2,067	1,659	428	2,087
2019	1,631	421	2,052	1,651	426	2,077	1,672	432	2,103
2020	1,635	422	2,057	1,660	428	2,088	1,685	435	2,120
2021	1,639	423	2,062	1,668	431	2,099	1,698	438	2,136
2022	1,643	424	2,067	1,677	433	2,110	1,711	442	2,153
2023	1,647	425	2,073	1,685	435	2,121	1,724	445	2,169
2024	1,652	426	2,078	1,694	437	2,132	1,738	449	2,186
2025	1,656	428	2,083	1,703	440	2,142	1,751	452	2,203
2026	1,660	429	2,089	1,712	442	2,153	1,764	456	2,220
2027	1,664	430	2,094	1,720	444	2,164	1,778	459	2,237
2028	1,669	431	2,099	1,729	446	2,175	1,791	463	2,254
2029	1,673	432	2,105	1,738	449	2,186	1,805	466	2,271
2030	1,677	433	2,110	1,746	451	2,197	1,818	470	2,288
2031	1,681	434	2,115	1,755	453	2,208	1,832	473	2,305
2032	1,685	435	2,120	1,764	455	2,219	1,846	477	2,322
2033	1,690	436	2,126	1,772	458	2,230	1,859	480	2,339
2034	1,694	437	2,131	1,781	460	2,241	1,873	484	2,357

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2021	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2025	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2033	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%


Moxee (Beauchene) Annual Therm Usage
Therms
1,850,000
1,800,000
1,750,000
1,700,000
1,650,000
1,600,000
1,550,000
1,500,000
1,450,000
1,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.47%
Medium: 10.08%
Low: 4.93%
Low
Medium
High


Moxee (Beauchene) Annual Customer Growth
Customers
2,400
2,300
2,200
2,100
2,000
1,900
1,800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.47%
Medium: 10.08%
Low: 4.93%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Othello

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,137,738	741,254	1,878,991	1,144,626	741,254	1,885,879	1,151,514	741,254	1,892,767
2016	1,141,931	743,986	1,885,917	1,153,064	746,718	1,899,782	1,164,247	749,450	1,913,697
2017	1,146,184	746,757	1,892,941	1,161,653	752,280	1,913,933	1,177,256	757,824	1,935,080
2018	1,150,446	749,533	1,899,980	1,170,292	757,875	1,928,166	1,190,388	766,278	1,956,665
2019	1,154,767	752,348	1,907,115	1,179,082	763,567	1,942,649	1,203,800	774,911	1,978,711
2020	1,159,073	755,154	1,914,227	1,187,875	769,262	1,957,137	1,217,266	783,580	2,000,846
2021	1,163,438	757,998	1,921,436	1,196,823	775,056	1,971,878	1,231,019	792,433	2,023,452
2022	1,167,788	760,832	1,928,619	1,205,771	780,851	1,986,623	1,244,826	801,320	2,046,147
2023	1,172,133	763,663	1,935,796	1,214,745	786,662	2,001,408	1,258,723	810,266	2,068,989
2024	1,176,521	766,522	1,943,043	1,223,841	792,553	2,016,393	1,272,860	819,366	2,092,226
2025	1,180,873	769,357	1,950,229	1,232,893	798,415	2,031,308	1,286,982	828,457	2,115,440
2026	1,185,263	772,217	1,957,480	1,242,061	804,352	2,046,413	1,301,337	837,698	2,139,035
2027	1,189,631	775,063	1,964,694	1,251,215	810,280	2,061,495	1,315,724	846,959	2,162,683
2028	1,193,978	777,895	1,971,873	1,260,359	816,202	2,076,561	1,330,147	856,243	2,186,390
2029	1,198,332	780,731	1,979,063	1,269,551	822,154	2,091,705	1,344,698	865,610	2,210,308
2030	1,202,680	783,564	1,986,244	1,278,764	828,121	2,106,884	1,359,336	875,033	2,234,368
2031	1,207,007	786,384	1,993,391	1,287,967	834,080	2,122,047	1,374,010	884,479	2,258,489
2032	1,211,357	789,218	2,000,575	1,297,249	840,092	2,137,341	1,388,864	894,041	2,282,904
2033	1,215,685	792,037	2,007,722	1,306,518	846,094	2,152,612	1,403,749	903,622	2,307,371
2034	1,220,034	794,871	2,014,905	1,315,868	852,149	2,168,017	1,418,817	913,322	2,332,139

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,031	18,636	20,667	2,031	18,712	20,743	2,031	18,788	20,819
2016	2,038	18,705	20,743	2,046	18,850	20,896	2,053	18,996	21,049
2017	2,046	18,775	20,821	2,061	18,990	21,052	2,076	19,208	21,284
2018	2,054	18,845	20,898	2,076	19,132	21,208	2,099	19,422	21,522
2019	2,061	18,915	20,977	2,092	19,275	21,367	2,123	19,641	21,764
2020	2,069	18,986	21,055	2,108	19,419	21,527	2,147	19,861	22,007
2021	2,077	19,057	21,134	2,123	19,565	21,689	2,171	20,085	22,256
2022	2,084	19,129	21,213	2,139	19,712	21,851	2,195	20,310	22,506
2023	2,092	19,200	21,292	2,155	19,858	22,014	2,220	20,537	22,757
2024	2,100	19,272	21,372	2,171	20,007	22,178	2,245	20,768	23,013
2025	2,108	19,343	21,451	2,187	20,155	22,343	2,270	20,998	23,268
2026	2,116	19,415	21,530	2,204	20,305	22,509	2,295	21,232	23,527
2027	2,123	19,486	21,610	2,220	20,455	22,675	2,320	21,467	23,788
2028	2,131	19,558	21,689	2,236	20,604	22,840	2,346	21,702	24,048
2029	2,139	19,629	21,768	2,252	20,754	23,007	2,372	21,940	24,311
2030	2,147	19,700	21,847	2,269	20,905	23,174	2,397	22,179	24,576
2031	2,154	19,771	21,925	2,285	21,055	23,341	2,423	22,418	24,841
2032	2,162	19,842	22,004	2,302	21,207	23,509	2,449	22,660	25,110
2033	2,170	19,913	22,083	2,318	21,359	23,677	2,476	22,903	25,379
2034	2,178	19,984	22,162	2,335	21,512	23,846	2,502	23,149	25,651

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	628,393	1,042,238	1,670,631	630,697	1,046,059	1,676,755	633,000	1,049,879	1,682,880
2016	630,709	1,046,080	1,676,789	635,346	1,053,770	1,689,116	640,000	1,061,489	1,701,488
2017	633,058	1,049,976	1,683,034	640,079	1,061,620	1,701,698	647,151	1,073,349	1,720,500
2018	635,412	1,053,880	1,689,292	644,839	1,069,515	1,714,353	654,370	1,085,322	1,739,692
2019	637,799	1,057,838	1,695,637	649,682	1,077,548	1,727,230	661,743	1,097,551	1,759,293
2020	640,177	1,061,783	1,701,959	654,527	1,085,584	1,740,112	669,145	1,109,829	1,778,974
2021	642,588	1,065,781	1,708,369	659,457	1,093,761	1,753,218	676,705	1,122,367	1,799,073
2022	644,990	1,069,766	1,714,756	664,388	1,101,939	1,766,327	684,295	1,134,956	1,819,251
2023	647,390	1,073,746	1,721,137	669,333	1,110,140	1,779,473	691,934	1,147,626	1,839,560
2024	649,814	1,077,766	1,727,580	674,345	1,118,452	1,792,797	699,705	1,160,515	1,860,220
2025	652,217	1,081,752	1,733,970	679,333	1,126,725	1,806,058	707,469	1,173,391	1,880,860
2026	654,642	1,085,774	1,740,416	684,384	1,135,103	1,819,487	715,360	1,186,479	1,901,839
2027	657,055	1,089,775	1,746,830	689,428	1,143,469	1,832,897	723,268	1,199,596	1,922,864
2028	659,455	1,093,758	1,753,213	694,466	1,151,826	1,846,292	731,197	1,212,746	1,943,943
2029	661,860	1,097,746	1,759,606	699,531	1,160,226	1,859,757	739,196	1,226,013	1,965,208
2030	664,262	1,101,729	1,765,991	704,608	1,168,646	1,873,253	747,242	1,239,359	1,986,601
2031	666,652	1,105,693	1,772,345	709,678	1,177,056	1,886,735	755,309	1,252,738	2,008,046
2032	669,054	1,109,678	1,778,732	714,793	1,185,539	1,900,333	763,474	1,266,280	2,029,755
2033	671,445	1,113,642	1,785,087	719,900	1,194,010	1,913,911	771,657	1,279,852	2,051,509
2034	673,847	1,117,627	1,791,474	725,052	1,202,555	1,927,607	779,940	1,293,590	2,073,530

Annual Change

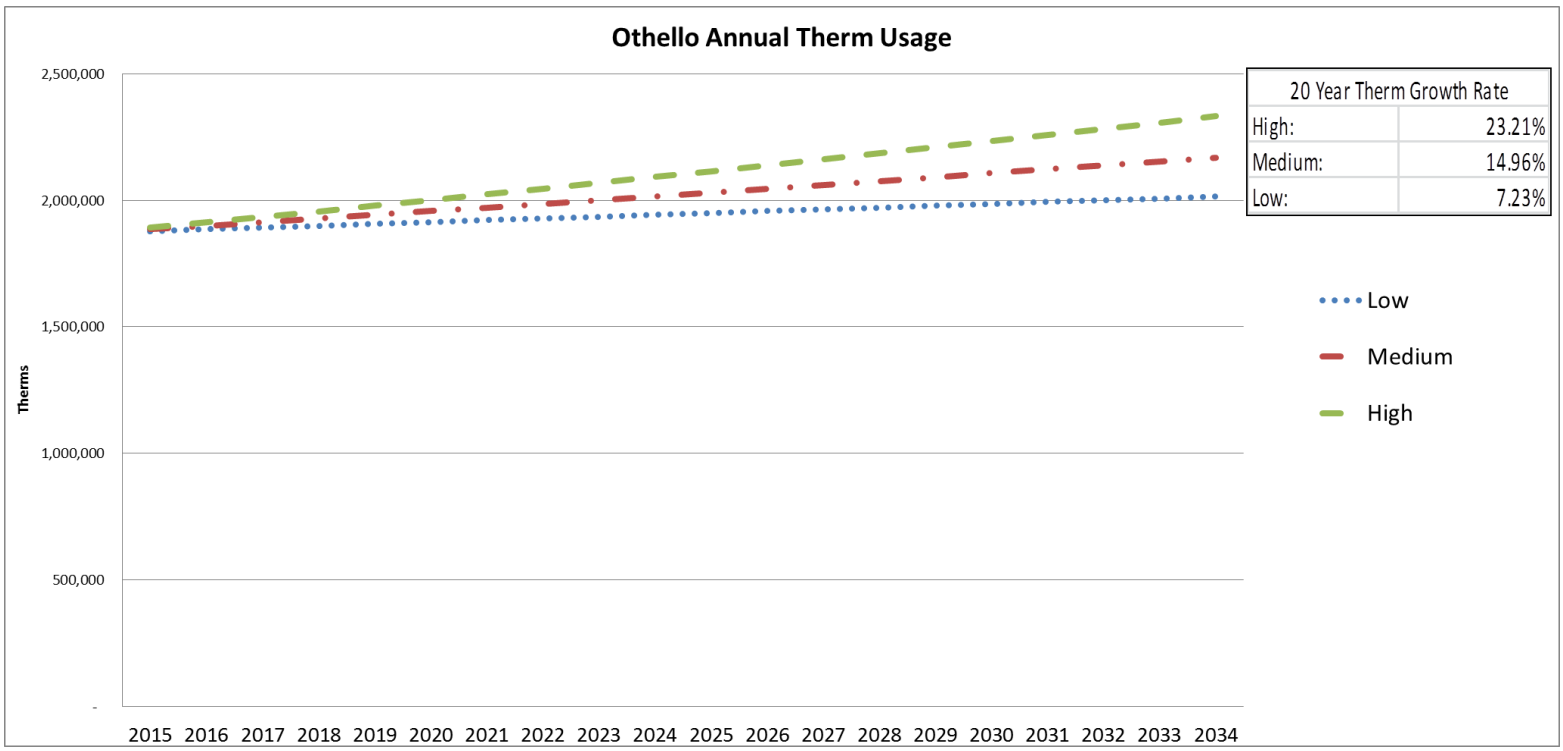
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

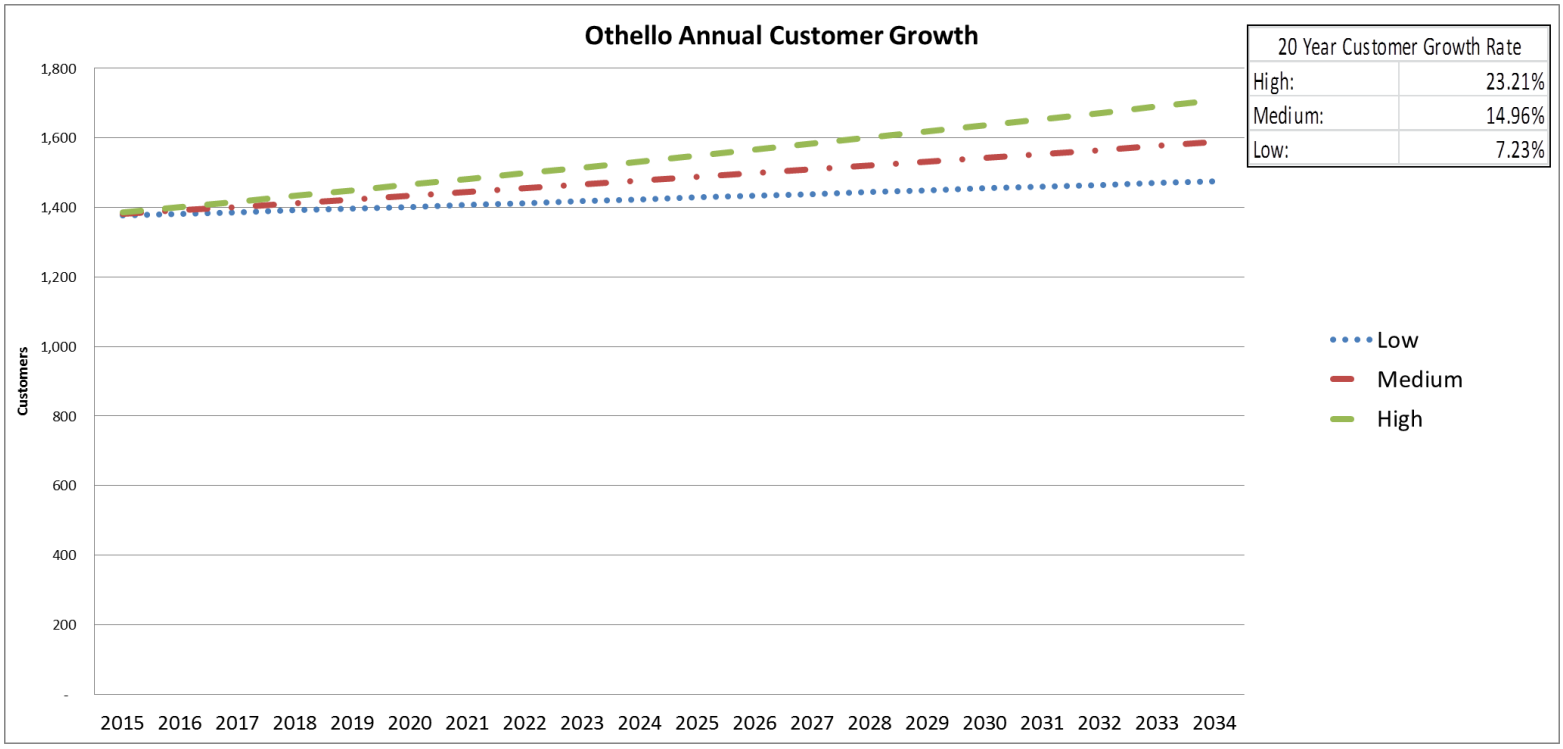
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,083	293	1,376	1,087	294	1,381	1,091	295	1,386
2016	1,087	294	1,381	1,095	296	1,392	1,103	298	1,402
2017	1,091	295	1,387	1,104	298	1,402	1,116	302	1,417
2018	1,095	296	1,392	1,112	301	1,412	1,128	305	1,433
2019	1,100	297	1,397	1,120	303	1,423	1,141	309	1,449
2020	1,104	298	1,402	1,128	305	1,434	1,154	312	1,466
2021	1,108	300	1,407	1,137	307	1,444	1,167	316	1,482
2022	1,112	301	1,413	1,145	310	1,455	1,180	319	1,499
2023	1,116	302	1,418	1,154	312	1,466	1,193	323	1,516
2024	1,120	303	1,423	1,163	314	1,477	1,206	326	1,533
2025	1,124	304	1,429	1,171	317	1,488	1,220	330	1,550
2026	1,129	305	1,434	1,180	319	1,499	1,233	334	1,567
2027	1,133	306	1,439	1,189	321	1,510	1,247	337	1,584
2028	1,137	307	1,444	1,197	324	1,521	1,261	341	1,602
2029	1,141	309	1,450	1,206	326	1,532	1,274	345	1,619
2030	1,145	310	1,455	1,215	329	1,543	1,288	348	1,637
2031	1,149	311	1,460	1,224	331	1,554	1,302	352	1,654
2032	1,153	312	1,465	1,232	333	1,566	1,316	356	1,672
2033	1,158	313	1,471	1,241	336	1,577	1,330	360	1,690
2034	1,162	314	1,476	1,250	338	1,588	1,345	364	1,708

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%


Othello Annual Therm Usage
Therms
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 23.21%
Medium: 14.96%
Low: 7.23%
Low
Medium
High


Othello Annual Customer Growth
Customers
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 23.21%
Medium: 14.96%
Low: 7.23%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

North Pasco

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,891,372	632,066	4,523,439	3,924,786	632,066	4,556,852	3,958,199	632,066	4,590,265
2016	3,940,319	640,016	4,580,335	4,003,167	644,689	4,647,856	4,066,508	649,362	4,715,870
2017	3,948,466	641,340	4,589,806	4,040,373	650,681	4,691,053	4,133,690	660,089	4,793,779
2018	3,976,842	645,949	4,622,791	4,098,445	660,033	4,758,478	4,222,811	674,321	4,897,131
2019	4,005,058	650,532	4,655,590	4,156,604	669,399	4,826,003	4,312,696	688,674	5,001,370
2020	4,053,971	658,477	4,712,448	4,236,576	682,278	4,918,854	4,425,976	706,763	5,132,740
2021	4,060,945	659,609	4,720,554	4,273,007	688,145	4,961,153	4,494,483	717,703	5,212,186
2022	4,088,601	664,102	4,752,703	4,331,209	697,519	5,028,728	4,586,311	732,366	5,318,677
2023	4,116,011	668,554	4,784,565	4,389,282	706,871	5,096,153	4,678,550	747,096	5,425,646
2024	4,164,766	676,473	4,841,238	4,470,503	719,951	5,190,455	4,796,281	765,896	5,562,177
2025	4,170,250	677,364	4,847,614	4,505,341	725,562	5,230,903	4,864,718	776,824	5,641,542
2026	4,197,047	681,716	4,878,764	4,563,242	734,886	5,298,128	4,958,496	791,799	5,750,295
2027	4,223,575	686,025	4,909,601	4,620,927	744,176	5,365,103	5,052,519	806,813	5,859,332
2028	4,271,917	693,877	4,965,794	4,702,744	757,352	5,460,096	5,173,607	826,149	5,999,756
2029	4,275,884	694,521	4,970,405	4,735,738	762,666	5,498,403	5,241,398	836,974	6,078,372
2030	4,301,634	698,704	5,000,338	4,792,777	771,852	5,564,628	5,336,092	852,095	6,188,187
2031	4,327,231	702,862	5,030,093	4,849,816	781,037	5,630,853	5,431,350	867,307	6,298,657
2032	4,375,133	710,642	5,085,775	4,932,040	794,279	5,726,320	5,555,393	887,115	6,442,508
2033	4,377,728	711,064	5,088,791	4,963,334	799,319	5,762,653	5,622,596	897,846	6,520,442
2034	4,402,711	715,122	5,117,833	5,019,985	808,442	5,828,428	5,718,860	913,218	6,632,078

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.26%	1.26%	1.26%	2.00%	2.00%	2.00%	2.74%	2.74%	2.74%
2017	0.21%	0.21%	0.21%	0.93%	0.93%	0.93%	1.65%	1.65%	1.65%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.22%	1.22%	1.22%	1.92%	1.92%	1.92%	2.63%	2.63%	2.63%
2021	0.17%	0.17%	0.17%	0.86%	0.86%	0.86%	1.55%	1.55%	1.55%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.18%	1.18%	1.18%	1.85%	1.85%	1.85%	2.52%	2.52%	2.52%
2025	0.13%	0.13%	0.13%	0.78%	0.78%	0.78%	1.43%	1.43%	1.43%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.14%	1.14%	1.14%	1.77%	1.77%	1.77%	2.40%	2.40%	2.40%
2029	0.09%	0.09%	0.09%	0.70%	0.70%	0.70%	1.31%	1.31%	1.31%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	1.11%	1.11%	1.70%	1.70%	1.70%	2.28%	2.28%	2.28%
2033	0.06%	0.06%	0.06%	0.63%	0.63%	0.63%	1.21%	1.21%	1.21%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1,732	70,628	72,360	1,732	71,163	72,894	1,732	71,697	73,429
2016	1,753	71,138	72,892	1,766	72,200	73,966	1,779	73,270	75,049
2017	1,757	71,664	73,421	1,783	73,258	75,041	1,808	74,876	76,684
2018	1,770	72,179	73,949	1,808	74,311	76,120	1,847	76,490	78,338
2019	1,782	72,691	74,474	1,834	75,366	77,200	1,887	78,118	80,005
2020	1,804	73,190	74,994	1,869	76,410	78,279	1,936	79,747	81,683
2021	1,807	73,706	75,513	1,885	77,476	79,362	1,966	81,411	83,377
2022	1,819	74,208	76,027	1,911	78,532	80,443	2,006	83,074	85,081
2023	1,832	74,705	76,537	1,937	79,585	81,521	2,047	84,745	86,792
2024	1,853	75,191	77,044	1,972	80,629	82,601	2,098	86,419	88,517
2025	1,856	75,690	77,545	1,988	81,689	83,677	2,128	88,117	90,246
2026	1,868	76,176	78,044	2,013	82,739	84,752	2,169	89,816	91,985
2027	1,880	76,657	78,537	2,039	83,785	85,824	2,210	91,519	93,730
2028	1,901	77,125	79,026	2,075	84,818	86,892	2,263	93,217	95,481
2029	1,903	77,607	79,510	2,089	85,866	87,956	2,293	94,940	97,233
2030	1,914	78,074	79,989	2,115	86,901	89,015	2,335	96,656	98,990
2031	1,926	78,539	80,464	2,140	87,935	90,075	2,376	98,381	100,757
2032	1,947	78,989	80,936	2,176	88,953	91,129	2,430	100,096	102,527
2033	1,948	79,455	81,403	2,190	89,993	92,183	2,460	101,845	104,305
2034	1,959	79,909	81,868	2,215	91,020	93,235	2,502	103,589	106,091

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.26%	0.72%	0.74%	2.00%	1.46%	1.47%	2.74%	2.19%	2.21%
2017	0.21%	0.74%	0.73%	0.93%	1.47%	1.45%	1.65%	2.19%	2.18%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.22%	0.69%	0.70%	1.92%	1.39%	1.40%	2.63%	2.08%	2.10%
2021	0.17%	0.70%	0.69%	0.86%	1.40%	1.38%	1.55%	2.09%	2.07%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.18%	0.65%	0.66%	1.85%	1.31%	1.33%	2.52%	1.97%	1.99%
2025	0.13%	0.66%	0.65%	0.78%	1.31%	1.30%	1.43%	1.97%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.14%	0.61%	0.62%	1.77%	1.23%	1.25%	2.40%	1.86%	1.87%
2029	0.09%	0.62%	0.61%	0.70%	1.24%	1.22%	1.31%	1.85%	1.84%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	0.57%	0.59%	1.70%	1.16%	1.17%	2.28%	1.74%	1.76%
2033	0.06%	0.59%	0.58%	0.63%	1.17%	1.16%	1.21%	1.75%	1.73%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,511,740	1,823,792	4,335,532	2,530,293	1,837,264	4,367,557	2,548,847	1,850,736	4,399,583
2016	2,543,520	1,846,559	4,390,079	2,581,015	1,873,780	4,454,795	2,618,784	1,901,200	4,519,984
2017	2,548,592	1,850,550	4,399,142	2,604,812	1,891,372	4,496,184	2,661,853	1,932,790	4,594,642
2018	2,566,907	1,863,850	4,430,757	2,642,251	1,918,557	4,560,808	2,719,241	1,974,460	4,693,701
2019	2,585,120	1,877,074	4,462,194	2,679,746	1,945,782	4,625,528	2,777,122	2,016,488	4,793,610
2020	2,616,884	1,899,820	4,516,704	2,731,504	1,983,033	4,714,537	2,850,278	2,069,260	4,919,538
2021	2,621,193	1,903,266	4,524,459	2,754,791	2,000,273	4,755,063	2,894,182	2,101,486	4,995,669
2022	2,639,044	1,916,228	4,555,272	2,792,313	2,027,518	4,819,831	2,953,314	2,144,422	5,097,736
2023	2,656,736	1,929,075	4,585,811	2,829,752	2,054,703	4,884,455	3,012,711	2,187,551	5,200,261
2024	2,688,403	1,951,742	4,640,145	2,882,328	2,092,528	4,974,856	3,088,750	2,242,388	5,331,138
2025	2,691,746	1,954,495	4,646,241	2,904,575	2,109,032	5,013,608	3,132,592	2,274,597	5,407,188
2026	2,709,042	1,967,055	4,676,097	2,941,903	2,136,137	5,078,040	3,192,979	2,318,445	5,511,424
2027	2,726,165	1,979,488	4,705,653	2,979,093	2,163,140	5,142,233	3,253,525	2,362,407	5,615,932
2028	2,757,571	2,001,957	4,759,528	3,032,063	2,201,234	5,233,297	3,331,743	2,418,797	5,750,541
2029	2,759,928	2,004,003	4,763,931	3,053,111	2,216,885	5,269,996	3,375,151	2,450,721	5,825,872
2030	2,776,549	2,016,072	4,792,621	3,089,884	2,243,586	5,333,470	3,436,129	2,494,997	5,931,126
2031	2,793,071	2,028,068	4,821,139	3,126,657	2,270,287	5,396,944	3,497,469	2,539,537	6,037,006
2032	2,824,198	2,050,327	4,874,525	3,179,901	2,308,562	5,488,463	3,577,609	2,597,293	6,174,902
2033	2,825,665	2,051,735	4,877,400	3,199,841	2,323,427	5,523,269	3,620,621	2,628,958	6,249,579
2034	2,841,791	2,063,444	4,905,235	3,236,364	2,349,947	5,586,311	3,682,609	2,673,968	6,356,578

Annual Change

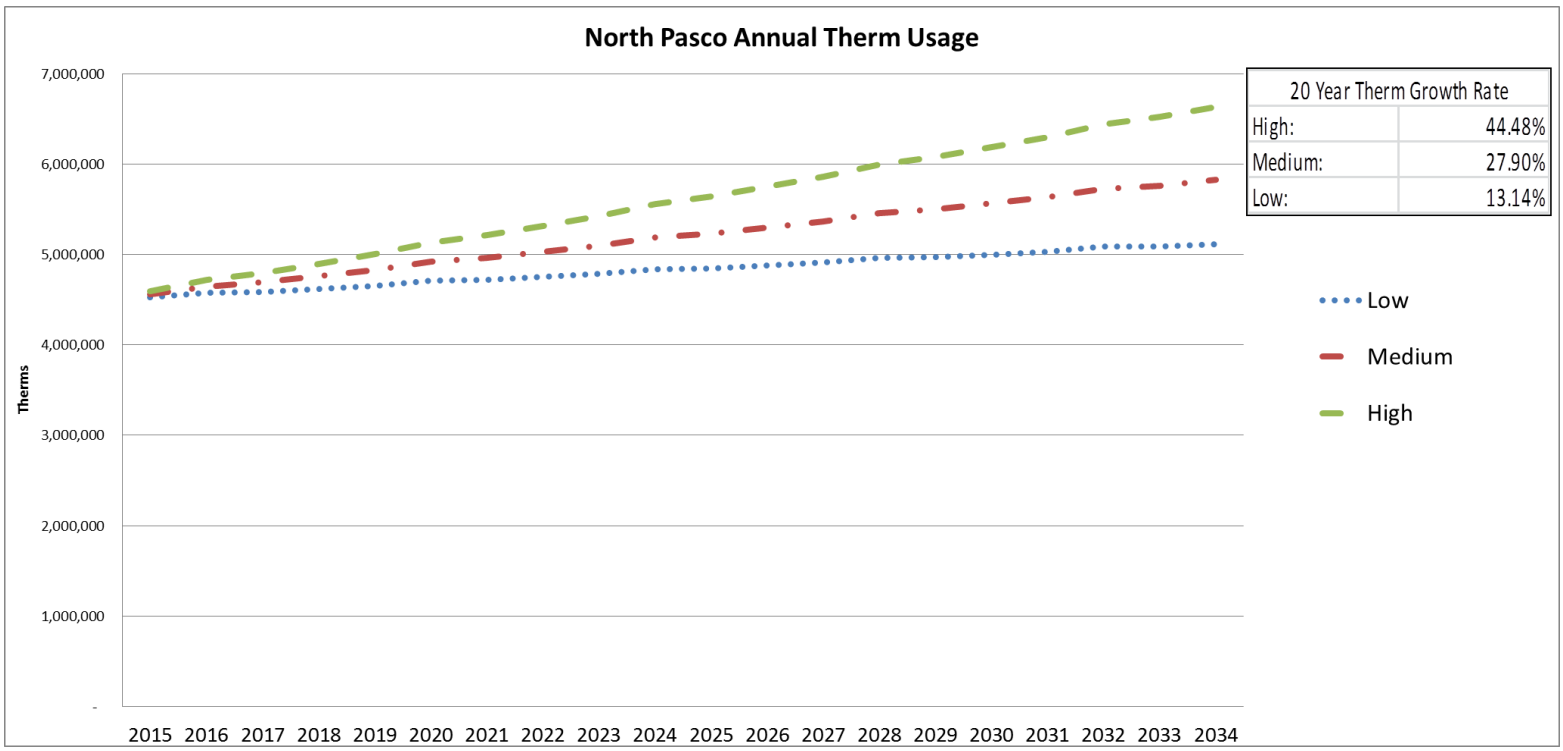
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.27%	1.25%	1.26%	2.00%	1.99%	2.00%	2.74%	2.73%	2.74%
2017	0.20%	0.22%	0.21%	0.92%	0.94%	0.93%	1.64%	1.66%	1.65%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.23%	1.21%	1.22%	1.93%	1.91%	1.92%	2.63%	2.62%	2.63%
2021	0.16%	0.18%	0.17%	0.85%	0.87%	0.86%	1.54%	1.56%	1.55%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.19%	1.18%	1.18%	1.86%	1.84%	1.85%	2.52%	2.51%	2.52%
2025	0.12%	0.14%	0.13%	0.77%	0.79%	0.78%	1.42%	1.44%	1.43%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.15%	1.14%	1.14%	1.78%	1.76%	1.77%	2.40%	2.39%	2.40%
2029	0.09%	0.10%	0.09%	0.69%	0.71%	0.70%	1.30%	1.32%	1.31%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	1.10%	1.11%	1.70%	1.69%	1.70%	2.29%	2.27%	2.28%
2033	0.05%	0.07%	0.06%	0.63%	0.64%	0.63%	1.20%	1.22%	1.21%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

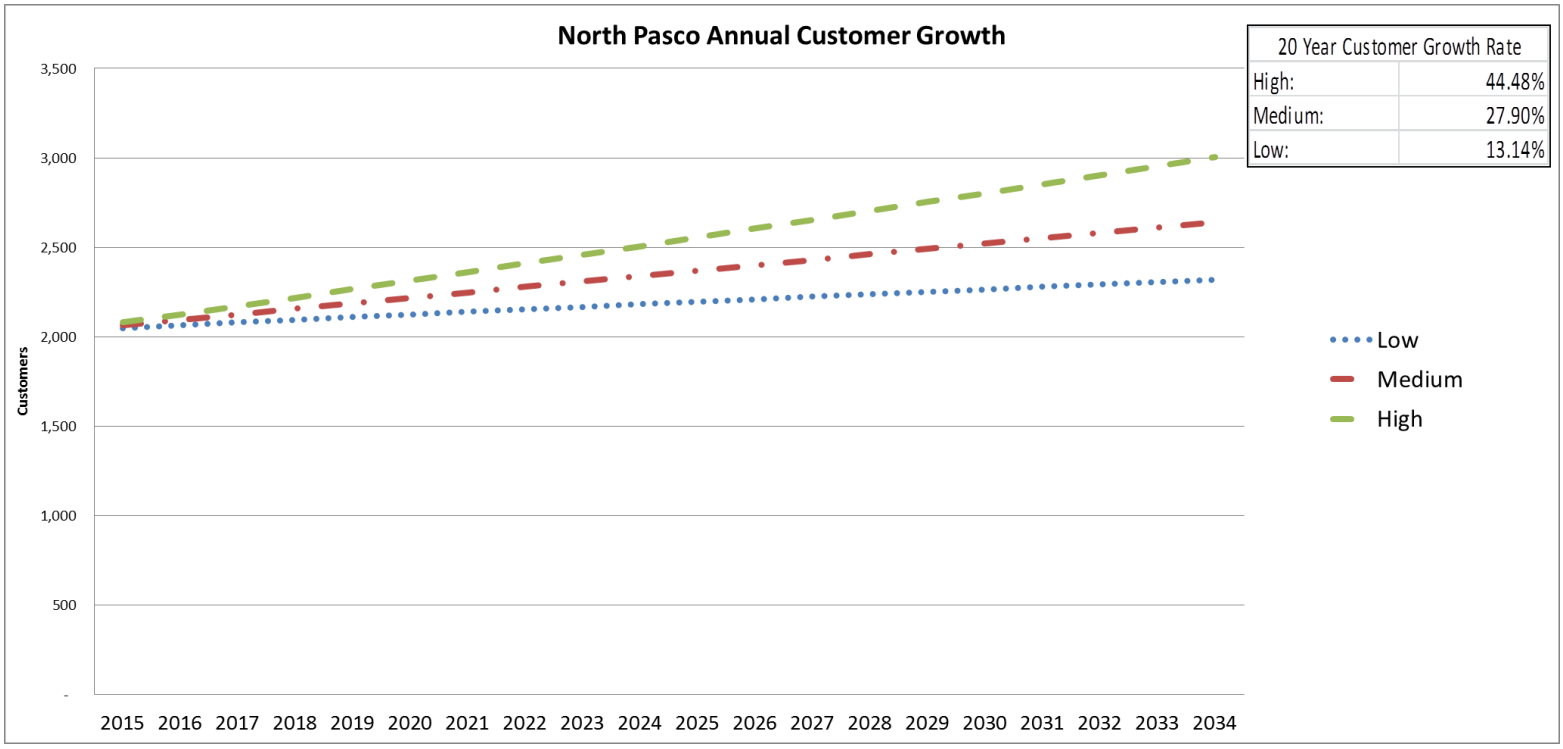
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,851	198	2,049	1,864	200	2,064	1,878	201	2,079
2016	1,864	200	2,064	1,892	203	2,094	1,919	206	2,125
2017	1,878	201	2,079	1,919	206	2,125	1,961	210	2,171
2018	1,891	203	2,094	1,947	209	2,155	2,004	215	2,218
2019	1,905	204	2,109	1,974	211	2,186	2,046	219	2,265
2020	1,918	205	2,123	2,002	214	2,216	2,089	224	2,313
2021	1,931	207	2,138	2,030	217	2,247	2,132	228	2,361
2022	1,944	208	2,153	2,057	220	2,278	2,176	233	2,409
2023	1,958	210	2,167	2,085	223	2,308	2,220	238	2,458
2024	1,970	211	2,182	2,113	226	2,339	2,264	242	2,506
2025	1,983	212	2,196	2,140	229	2,369	2,308	247	2,555
2026	1,996	214	2,210	2,168	232	2,400	2,353	252	2,605
2027	2,009	215	2,224	2,195	235	2,430	2,397	257	2,654
2028	2,021	216	2,238	2,222	238	2,460	2,442	262	2,704
2029	2,034	218	2,251	2,250	241	2,490	2,487	266	2,753
2030	2,046	219	2,265	2,277	244	2,520	2,532	271	2,803
2031	2,058	220	2,278	2,304	247	2,550	2,577	276	2,853
2032	2,070	222	2,292	2,331	250	2,580	2,622	281	2,903
2033	2,082	223	2,305	2,358	253	2,610	2,668	286	2,953
2034	2,094	224	2,318	2,385	255	2,640	2,713	291	3,004

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2017	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.10%	2.10%	2.10%
2021	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2025	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.95%	1.95%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2029	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.84%	1.84%	1.84%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2033	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.73%	1.73%	1.73%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%


North Pasco Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 44.48%
Medium: 27.90%
Low: 13.14%
Low
Medium
High


North Pasco Annual Customer Growth
Customers
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 44.48%
Medium: 27.90%
Low: 13.14%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Patterson

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	114,014	115,449	229,463	116,120	115,449	231,568	118,225	115,449	233,674
2016	115,063	116,510	231,573	118,256	117,572	235,828	121,488	118,634	240,122
2017	116,114	117,575	233,689	120,417	119,721	240,138	124,818	121,886	246,704
2018	117,167	118,642	235,809	122,601	121,893	244,494	128,214	125,203	253,417
2019	118,223	119,710	237,933	124,811	124,089	248,900	131,680	128,587	260,267
2020	119,281	120,781	240,062	127,044	126,309	253,353	135,214	132,038	267,252
2021	120,340	121,854	242,194	129,301	128,553	257,854	138,817	135,556	274,373
2022	121,401	122,929	244,330	131,581	130,821	262,402	142,490	139,143	281,633
2023	122,465	124,005	246,470	133,886	133,112	266,998	146,234	142,799	289,032
2024	123,529	125,084	248,613	136,214	135,427	271,641	150,048	146,523	296,571
2025	124,596	126,163	250,759	138,566	137,765	276,331	153,933	150,318	304,251
2026	125,663	127,244	252,908	140,941	140,126	281,066	157,890	154,182	312,072
2027	126,732	128,327	255,059	143,338	142,510	285,848	161,920	158,116	320,036
2028	127,802	129,410	257,213	145,759	144,916	290,675	166,021	162,121	328,142
2029	128,874	130,495	259,369	148,202	147,346	295,548	170,196	166,198	336,394
2030	129,946	131,581	261,526	150,668	149,797	300,465	174,443	170,346	344,789
2031	131,019	132,667	263,686	153,156	152,271	305,427	178,765	174,566	353,331
2032	132,092	133,754	265,847	155,667	154,767	310,433	183,160	178,858	362,018
2033	133,167	134,842	268,009	158,198	157,284	315,482	187,628	183,221	370,850
2034	134,241	135,930	270,172	160,752	159,823	320,575	192,171	187,658	379,829

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2017	0.91%	0.91%	0.91%	1.83%	1.83%	1.83%	2.74%	2.74%	2.74%
2018	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2021	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.66%	2.66%	2.66%
2022	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2023	0.88%	0.88%	0.88%	1.75%	1.75%	1.75%	2.63%	2.63%	2.63%
2024	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2025	0.86%	0.86%	0.86%	1.73%	1.73%	1.73%	2.59%	2.59%	2.59%
2026	0.86%	0.86%	0.86%	1.71%	1.71%	1.71%	2.57%	2.57%	2.57%
2027	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.55%	2.55%	2.55%
2028	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2029	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.51%	2.51%	2.51%
2030	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2031	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2032	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2033	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	316	2,171	2,488	316	2,194	2,510	316	2,217	2,533
2016	319	2,191	2,511	322	2,235	2,557	325	2,278	2,603
2017	322	2,211	2,533	328	2,275	2,603	334	2,341	2,675
2018	325	2,231	2,556	334	2,317	2,651	343	2,404	2,747
2019	328	2,252	2,580	340	2,358	2,698	352	2,469	2,822
2020	331	2,272	2,603	346	2,401	2,747	362	2,536	2,897
2021	334	2,292	2,626	352	2,443	2,795	371	2,603	2,975
2022	337	2,312	2,649	358	2,486	2,845	381	2,672	3,053
2023	340	2,332	2,672	365	2,530	2,895	391	2,742	3,133
2024	343	2,353	2,695	371	2,574	2,945	401	2,814	3,215
2025	346	2,373	2,719	377	2,618	2,996	412	2,887	3,298
2026	349	2,393	2,742	384	2,663	3,047	422	2,961	3,383
2027	352	2,414	2,765	390	2,709	3,099	433	3,036	3,470
2028	355	2,434	2,789	397	2,754	3,151	444	3,113	3,557
2029	358	2,454	2,812	404	2,800	3,204	455	3,192	3,647
2030	360	2,475	2,835	410	2,847	3,257	467	3,271	3,738
2031	363	2,495	2,859	417	2,894	3,311	478	3,352	3,831
2032	366	2,516	2,882	424	2,941	3,365	490	3,435	3,925
2033	369	2,536	2,906	431	2,989	3,420	502	3,519	4,020
2034	372	2,557	2,929	438	3,038	3,475	514	3,604	4,118

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2017	0.91%	0.91%	0.91%	1.83%	1.83%	1.83%	2.74%	2.74%	2.74%
2018	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2021	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.66%	2.66%	2.66%
2022	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2023	0.88%	0.88%	0.88%	1.75%	1.75%	1.75%	2.63%	2.63%	2.63%
2024	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2025	0.86%	0.86%	0.86%	1.73%	1.73%	1.73%	2.59%	2.59%	2.59%
2026	0.86%	0.86%	0.86%	1.71%	1.71%	1.71%	2.57%	2.57%	2.57%
2027	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.55%	2.55%	2.55%
2028	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2029	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.51%	2.51%	2.51%
2030	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2031	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2032	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2033	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	10,173	10,173	-	10,267	10,267	-	10,360	10,360
2016	-	10,267	10,267	-	10,455	10,455	-	10,646	10,646
2017	-	10,361	10,361	-	10,646	10,646	-	10,938	10,938
2018	-	10,455	10,455	-	10,840	10,840	-	11,235	11,235
2019	-	10,549	10,549	-	11,035	11,035	-	11,539	11,539
2020	-	10,643	10,643	-	11,232	11,232	-	11,849	11,849
2021	-	10,738	10,738	-	11,432	11,432	-	12,164	12,164
2022	-	10,832	10,832	-	11,634	11,634	-	12,486	12,486
2023	-	10,927	10,927	-	11,837	11,837	-	12,814	12,814
2024	-	11,022	11,022	-	12,043	12,043	-	13,148	13,148
2025	-	11,117	11,117	-	12,251	12,251	-	13,489	13,489
2026	-	11,213	11,213	-	12,461	12,461	-	13,836	13,836
2027	-	11,308	11,308	-	12,673	12,673	-	14,189	14,189
2028	-	11,404	11,404	-	12,887	12,887	-	14,548	14,548
2029	-	11,499	11,499	-	13,103	13,103	-	14,914	14,914
2030	-	11,595	11,595	-	13,321	13,321	-	15,286	15,286
2031	-	11,690	11,690	-	13,541	13,541	-	15,665	15,665
2032	-	11,786	11,786	-	13,763	13,763	-	16,050	16,050
2033	-	11,882	11,882	-	13,987	13,987	-	16,442	16,442
2034	-	11,978	11,978	-	14,213	14,213	-	16,840	16,840

Annual Change

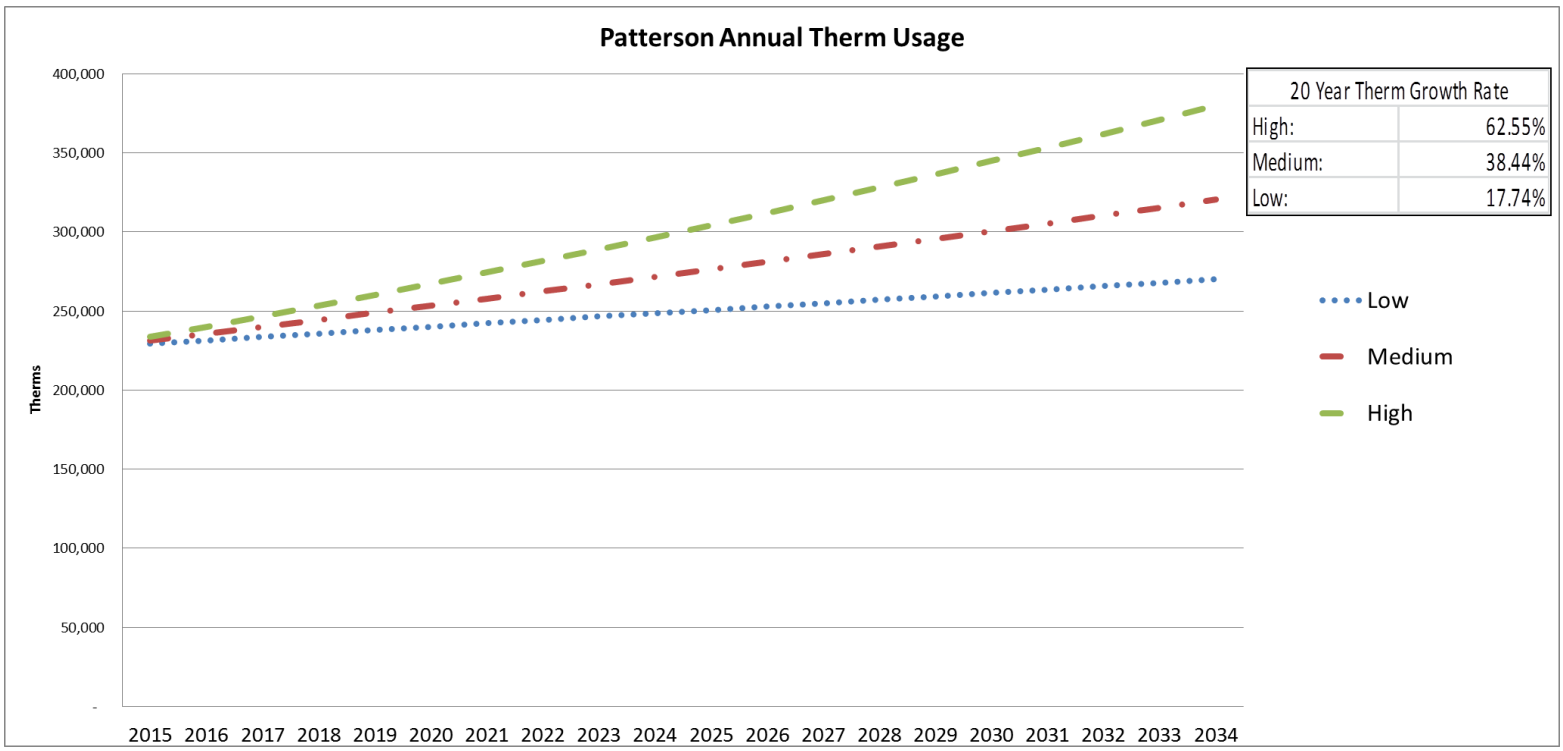
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.92%	0.92%	#DIV/0!	1.84%	1.84%	#DIV/0!	2.76%	2.76%
2017	#DIV/0!	0.91%	0.91%	#DIV/0!	1.83%	1.83%	#DIV/0!	2.74%	2.74%
2018	#DIV/0!	0.91%	0.91%	#DIV/0!	1.81%	1.81%	#DIV/0!	2.72%	2.72%
2019	#DIV/0!	0.90%	0.90%	#DIV/0!	1.80%	1.80%	#DIV/0!	2.70%	2.70%
2020	#DIV/0!	0.89%	0.89%	#DIV/0!	1.79%	1.79%	#DIV/0!	2.68%	2.68%
2021	#DIV/0!	0.89%	0.89%	#DIV/0!	1.78%	1.78%	#DIV/0!	2.66%	2.66%
2022	#DIV/0!	0.88%	0.88%	#DIV/0!	1.76%	1.76%	#DIV/0!	2.65%	2.65%
2023	#DIV/0!	0.88%	0.88%	#DIV/0!	1.75%	1.75%	#DIV/0!	2.63%	2.63%
2024	#DIV/0!	0.87%	0.87%	#DIV/0!	1.74%	1.74%	#DIV/0!	2.61%	2.61%
2025	#DIV/0!	0.86%	0.86%	#DIV/0!	1.73%	1.73%	#DIV/0!	2.59%	2.59%
2026	#DIV/0!	0.86%	0.86%	#DIV/0!	1.71%	1.71%	#DIV/0!	2.57%	2.57%
2027	#DIV/0!	0.85%	0.85%	#DIV/0!	1.70%	1.70%	#DIV/0!	2.55%	2.55%
2028	#DIV/0!	0.84%	0.84%	#DIV/0!	1.69%	1.69%	#DIV/0!	2.53%	2.53%
2029	#DIV/0!	0.84%	0.84%	#DIV/0!	1.68%	1.68%	#DIV/0!	2.51%	2.51%
2030	#DIV/0!	0.83%	0.83%	#DIV/0!	1.66%	1.66%	#DIV/0!	2.50%	2.50%
2031	#DIV/0!	0.83%	0.83%	#DIV/0!	1.65%	1.65%	#DIV/0!	2.48%	2.48%
2032	#DIV/0!	0.82%	0.82%	#DIV/0!	1.64%	1.64%	#DIV/0!	2.46%	2.46%
2033	#DIV/0!	0.81%	0.81%	#DIV/0!	1.63%	1.63%	#DIV/0!	2.44%	2.44%
2034	#DIV/0!	0.81%	0.81%	#DIV/0!	1.61%	1.61%	#DIV/0!	2.42%	2.42%

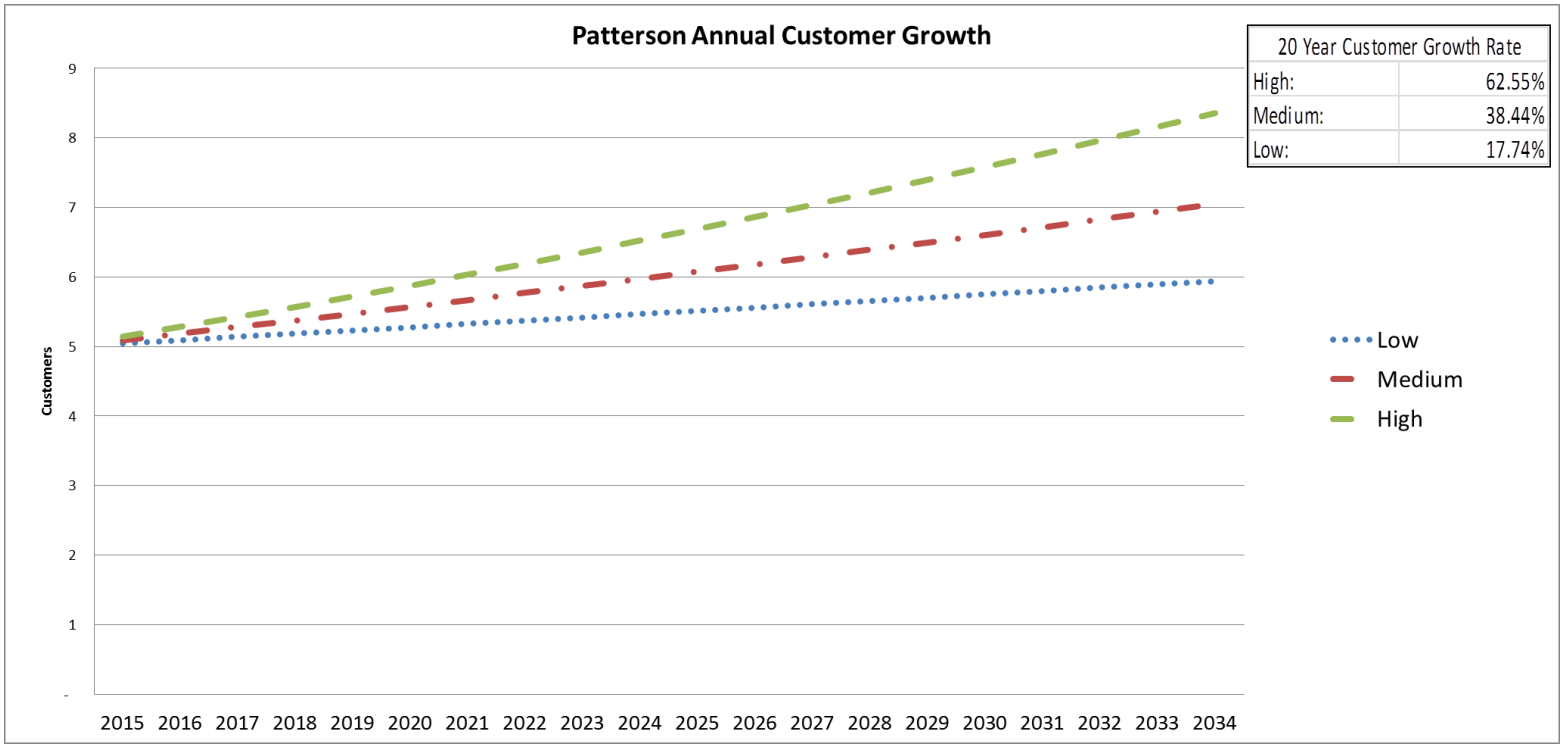
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	5	5	-	5	5	-	5	5
2016	-	5	5	-	5	5	-	5	5
2017	-	5	5	-	5	5	-	5	5
2018	-	5	5	-	5	5	-	6	6
2019	-	5	5	-	5	5	-	6	6
2020	-	5	5	-	6	6	-	6	6
2021	-	5	5	-	6	6	-	6	6
2022	-	5	5	-	6	6	-	6	6
2023	-	5	5	-	6	6	-	6	6
2024	-	5	5	-	6	6	-	7	7
2025	-	6	6	-	6	6	-	7	7
2026	-	6	6	-	6	6	-	7	7
2027	-	6	6	-	6	6	-	7	7
2028	-	6	6	-	6	6	-	7	7
2029	-	6	6	-	6	6	-	7	7
2030	-	6	6	-	7	7	-	8	8
2031	-	6	6	-	7	7	-	8	8
2032	-	6	6	-	7	7	-	8	8
2033	-	6	6	-	7	7	-	8	8
2034	-	6	6	-	7	7	-	8	8

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.92%	0.92%	#DIV/0!	1.84%	1.84%	#DIV/0!	2.76%	2.76%
2017	#DIV/0!	0.91%	0.91%	#DIV/0!	1.83%	1.83%	#DIV/0!	2.74%	2.74%
2018	#DIV/0!	0.91%	0.91%	#DIV/0!	1.81%	1.81%	#DIV/0!	2.72%	2.72%
2019	#DIV/0!	0.90%	0.90%	#DIV/0!	1.80%	1.80%	#DIV/0!	2.70%	2.70%
2020	#DIV/0!	0.89%	0.89%	#DIV/0!	1.79%	1.79%	#DIV/0!	2.68%	2.68%
2021	#DIV/0!	0.89%	0.89%	#DIV/0!	1.78%	1.78%	#DIV/0!	2.66%	2.66%
2022	#DIV/0!	0.88%	0.88%	#DIV/0!	1.76%	1.76%	#DIV/0!	2.65%	2.65%
2023	#DIV/0!	0.88%	0.88%	#DIV/0!	1.75%	1.75%	#DIV/0!	2.63%	2.63%
2024	#DIV/0!	0.87%	0.87%	#DIV/0!	1.74%	1.74%	#DIV/0!	2.61%	2.61%
2025	#DIV/0!	0.86%	0.86%	#DIV/0!	1.73%	1.73%	#DIV/0!	2.59%	2.59%
2026	#DIV/0!	0.86%	0.86%	#DIV/0!	1.71%	1.71%	#DIV/0!	2.57%	2.57%
2027	#DIV/0!	0.85%	0.85%	#DIV/0!	1.70%	1.70%	#DIV/0!	2.55%	2.55%
2028	#DIV/0!	0.84%	0.84%	#DIV/0!	1.69%	1.69%	#DIV/0!	2.53%	2.53%
2029	#DIV/0!	0.84%	0.84%	#DIV/0!	1.68%	1.68%	#DIV/0!	2.51%	2.51%
2030	#DIV/0!	0.83%	0.83%	#DIV/0!	1.66%	1.66%	#DIV/0!	2.50%	2.50%
2031	#DIV/0!	0.83%	0.83%	#DIV/0!	1.65%	1.65%	#DIV/0!	2.48%	2.48%
2032	#DIV/0!	0.82%	0.82%	#DIV/0!	1.64%	1.64%	#DIV/0!	2.46%	2.46%
2033	#DIV/0!	0.81%	0.81%	#DIV/0!	1.63%	1.63%	#DIV/0!	2.44%	2.44%
2034	#DIV/0!	0.81%	0.81%	#DIV/0!	1.61%	1.61%	#DIV/0!	2.42%	2.42%


Patterson Annual Therm Usage
Therms
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 62.55%
Medium: 38.44%
Low: 17.74%
Low
Medium
High


Patterson Annual Customer Growth
Customers
9
8
7
6
5
4
3
2
1
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2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 62.55%
Medium: 38.44%
Low: 17.74%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Prosser

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	720,255	152,750	873,005	725,775	152,750	878,525	731,295	152,750	884,044
2016	728,155	154,425	882,580	738,333	155,393	893,726	748,582	156,361	904,942
2017	729,332	154,675	884,006	744,125	156,612	900,736	759,115	158,561	917,676
2018	733,860	155,635	889,495	753,365	158,556	911,921	773,255	161,514	934,769
2019	738,374	156,592	894,966	762,632	160,507	923,138	787,522	164,494	952,016
2020	746,303	158,274	904,577	775,479	163,211	938,690	805,599	168,270	973,868
2021	747,344	158,495	905,838	781,217	164,418	945,635	816,397	170,525	986,922
2022	751,796	159,439	911,234	790,525	166,377	956,902	830,987	173,573	1,004,560
2023	756,217	160,376	916,594	799,823	168,334	968,158	845,649	176,635	1,022,284
2024	764,147	162,058	926,205	812,892	171,085	983,977	864,417	180,556	1,044,973
2025	764,985	162,236	927,221	818,424	172,249	990,674	875,234	182,815	1,058,049
2026	769,326	163,157	932,483	827,713	174,204	1,001,916	890,133	185,927	1,076,060
2027	773,635	164,070	937,705	836,984	176,155	1,013,139	905,089	189,051	1,094,140
2028	781,512	165,741	947,252	850,151	178,926	1,029,077	924,350	193,074	1,117,424
2029	782,140	165,874	948,014	855,437	180,039	1,035,475	935,101	195,320	1,130,421
2030	786,335	166,764	953,099	864,614	181,970	1,046,584	950,149	198,463	1,148,612
2031	790,510	167,649	958,160	873,796	183,903	1,057,698	965,284	201,624	1,166,909
2032	798,333	169,308	967,641	887,042	186,691	1,073,733	985,000	205,742	1,190,742
2033	798,769	169,401	968,169	892,100	187,755	1,079,855	995,694	207,976	1,203,670
2034	802,860	170,268	973,129	901,240	189,679	1,090,918	1,010,996	211,172	1,222,168

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	1.10%	1.10%	1.73%	1.73%	1.73%	2.36%	2.36%	2.36%
2017	0.16%	0.16%	0.16%	0.78%	0.78%	0.78%	1.41%	1.41%	1.41%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.07%	1.07%	1.07%	1.68%	1.68%	1.68%	2.30%	2.30%	2.30%
2021	0.14%	0.14%	0.14%	0.74%	0.74%	0.74%	1.34%	1.34%	1.34%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.05%	1.05%	1.05%	1.63%	1.63%	1.63%	2.22%	2.22%	2.22%
2025	0.11%	0.11%	0.11%	0.68%	0.68%	0.68%	1.25%	1.25%	1.25%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.02%	1.02%	1.02%	1.57%	1.57%	1.57%	2.13%	2.13%	2.13%
2029	0.08%	0.08%	0.08%	0.62%	0.62%	0.62%	1.16%	1.16%	1.16%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.99%	0.99%	0.99%	1.52%	1.52%	1.52%	2.04%	2.04%	2.04%
2033	0.05%	0.05%	0.05%	0.57%	0.57%	0.57%	1.09%	1.09%	1.09%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	418	10,196	10,614	418	10,263	10,681	418	10,330	10,749
2016	423	10,258	10,681	426	10,390	10,816	428	10,524	10,952
2017	424	10,324	10,748	429	10,522	10,952	434	10,723	11,157
2018	426	10,388	10,815	434	10,653	11,088	443	10,923	11,365
2019	429	10,452	10,881	440	10,784	11,224	451	11,124	11,575
2020	434	10,514	10,948	447	10,913	11,360	461	11,325	11,786
2021	434	10,579	11,014	450	11,047	11,497	467	11,532	11,999
2022	437	10,642	11,079	456	11,179	11,634	476	11,738	12,214
2023	439	10,705	11,144	461	11,310	11,771	484	11,945	12,429
2024	444	10,765	11,209	469	11,440	11,908	495	12,152	12,647
2025	444	10,829	11,274	472	11,573	12,045	501	12,363	12,864
2026	447	10,891	11,338	477	11,704	12,182	509	12,574	13,083
2027	450	10,952	11,401	483	11,836	12,318	518	12,785	13,303
2028	454	11,010	11,464	490	11,964	12,454	529	12,995	13,523
2029	454	11,072	11,526	493	12,096	12,590	535	13,209	13,744
2030	457	11,131	11,588	499	12,226	12,725	544	13,422	13,965
2031	459	11,190	11,650	504	12,356	12,860	552	13,635	14,188
2032	464	11,247	11,711	511	12,483	12,995	564	13,847	14,411
2033	464	11,307	11,771	514	12,615	13,129	570	14,065	14,635
2034	466	11,365	11,832	520	12,744	13,264	579	14,281	14,860

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.61%	0.63%	1.73%	1.24%	1.26%	2.36%	1.87%	1.89%
2017	0.16%	0.64%	0.63%	0.78%	1.27%	1.25%	1.41%	1.90%	1.88%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.07%	0.59%	0.61%	1.68%	1.20%	1.22%	2.30%	1.80%	1.82%
2021	0.14%	0.62%	0.60%	0.74%	1.23%	1.21%	1.34%	1.83%	1.81%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.05%	0.56%	0.58%	1.63%	1.15%	1.17%	2.22%	1.73%	1.75%
2025	0.11%	0.59%	0.57%	0.68%	1.17%	1.15%	1.25%	1.74%	1.72%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.02%	0.53%	0.55%	1.57%	1.09%	1.10%	2.13%	1.64%	1.66%
2029	0.08%	0.56%	0.54%	0.62%	1.11%	1.09%	1.16%	1.65%	1.63%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.99%	0.50%	0.52%	1.52%	1.03%	1.05%	2.04%	1.55%	1.57%
2033	0.05%	0.54%	0.52%	0.57%	1.06%	1.04%	1.09%	1.57%	1.55%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	264,868	608,137	873,005	266,543	611,982	878,525	268,218	615,827	884,044
2016	267,901	614,679	882,580	271,284	622,442	893,726	274,689	630,254	904,942
2017	268,206	615,800	884,006	273,282	627,454	900,736	278,421	639,255	917,676
2018	269,871	619,624	889,495	276,675	635,246	911,921	283,607	651,161	934,769
2019	271,531	623,435	894,966	280,079	643,060	923,138	288,840	663,176	952,016
2020	274,578	629,999	904,577	284,933	653,757	938,690	295,611	678,258	973,868
2021	274,830	631,008	905,838	286,904	658,731	945,635	299,431	687,492	986,922
2022	276,467	634,767	911,234	290,323	666,580	956,902	304,782	699,778	1,004,560
2023	278,093	638,501	916,594	293,737	674,420	968,158	310,159	712,125	1,022,284
2024	281,143	645,062	926,205	298,679	685,298	983,977	317,194	727,779	1,044,973
2025	281,317	645,904	927,221	300,569	690,105	990,674	321,010	737,038	1,058,049
2026	282,914	649,569	932,483	303,980	697,937	1,001,916	326,475	749,585	1,076,060
2027	284,498	653,207	937,705	307,385	705,754	1,013,139	331,960	762,179	1,094,140
2028	287,532	659,721	947,252	312,369	716,708	1,029,077	339,186	778,238	1,117,424
2029	287,626	660,388	948,014	314,162	721,314	1,035,475	342,968	787,453	1,130,421
2030	289,169	663,930	953,099	317,532	729,052	1,046,584	348,487	800,125	1,148,612
2031	290,704	667,455	958,160	320,904	736,794	1,057,698	354,038	812,871	1,166,909
2032	293,721	673,921	967,641	325,924	747,809	1,073,733	361,441	829,301	1,190,742
2033	293,741	674,428	968,169	327,626	752,229	1,079,855	365,191	838,478	1,203,670
2034	295,246	677,883	973,129	330,983	759,936	1,090,918	370,804	851,364	1,222,168

Annual Change

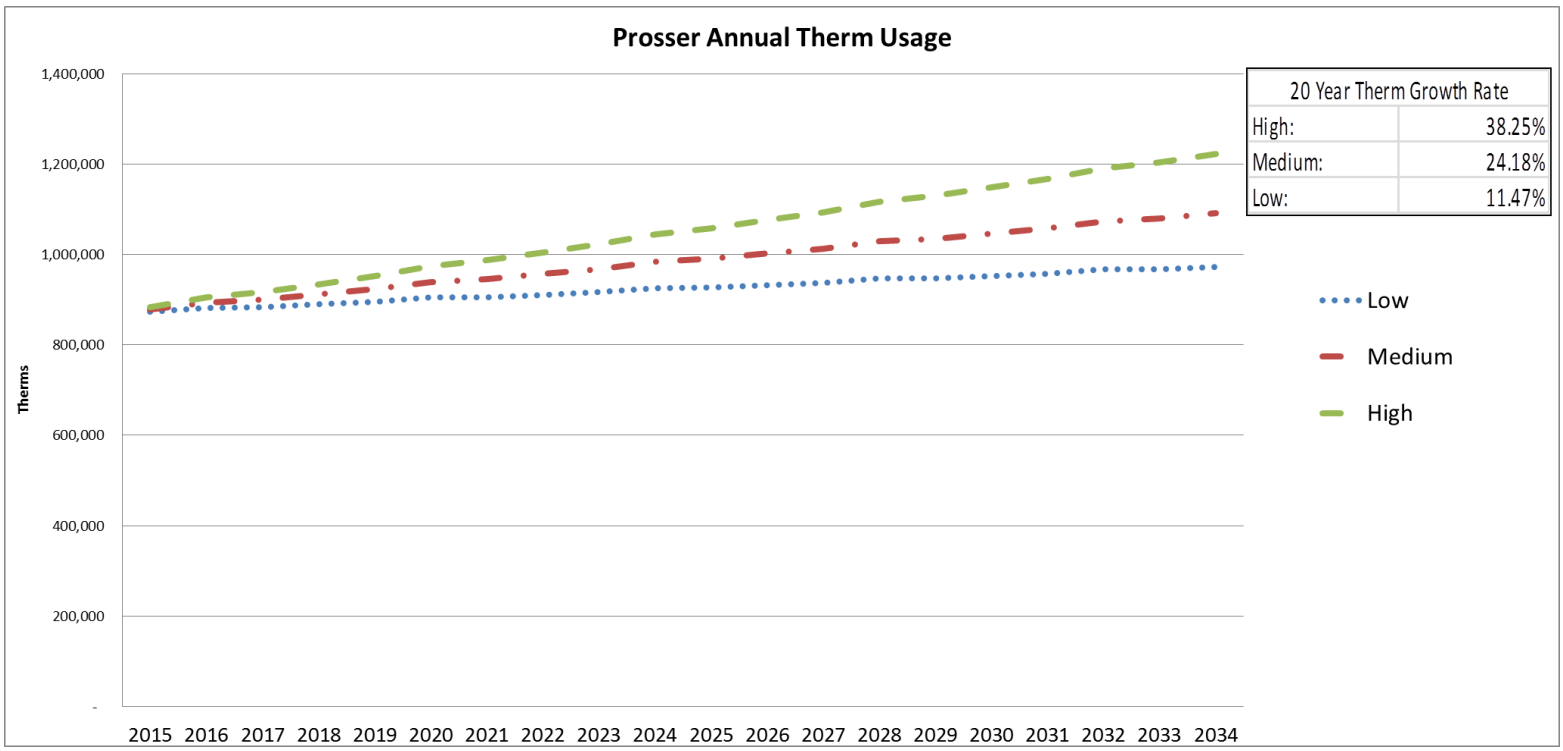
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.14%	1.08%	1.10%	1.78%	1.71%	1.73%	2.41%	2.34%	2.36%
2017	0.11%	0.18%	0.16%	0.74%	0.81%	0.78%	1.36%	1.43%	1.41%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.12%	1.05%	1.07%	1.73%	1.66%	1.68%	2.34%	2.27%	2.30%
2021	0.09%	0.16%	0.14%	0.69%	0.76%	0.74%	1.29%	1.36%	1.34%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.10%	1.03%	1.05%	1.68%	1.61%	1.63%	2.27%	2.20%	2.22%
2025	0.06%	0.13%	0.11%	0.63%	0.70%	0.68%	1.20%	1.27%	1.25%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.07%	1.00%	1.02%	1.62%	1.55%	1.57%	2.18%	2.11%	2.13%
2029	0.03%	0.10%	0.08%	0.57%	0.64%	0.62%	1.11%	1.18%	1.16%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	1.04%	0.97%	0.99%	1.56%	1.49%	1.52%	2.09%	2.02%	2.04%
2033	0.01%	0.08%	0.05%	0.52%	0.59%	0.57%	1.04%	1.11%	1.09%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

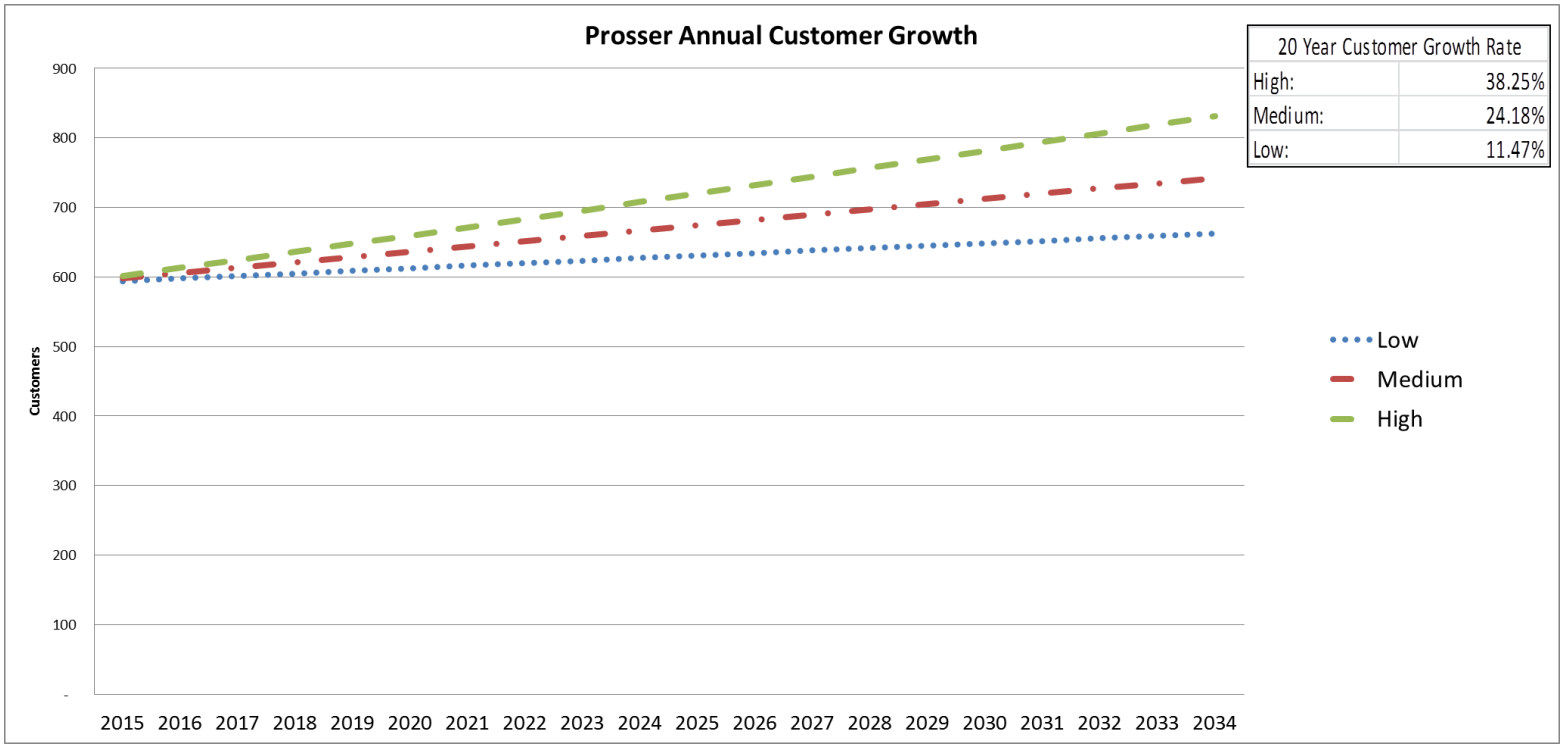
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	451	143	594	454	144	598	457	145	602
2016	454	144	598	460	146	605	465	148	613
2017	457	145	602	465	148	613	474	150	624
2018	460	146	605	471	149	621	483	153	636
2019	462	147	609	477	151	628	492	156	648
2020	465	148	613	483	153	636	501	159	660
2021	468	148	616	489	155	644	510	162	672
2022	471	149	620	494	157	651	519	165	684
2023	474	150	624	500	159	659	528	168	696
2024	476	151	627	506	161	667	537	170	708
2025	479	152	631	512	162	674	547	173	720
2026	482	153	635	518	164	682	556	176	732
2027	484	154	638	523	166	689	565	179	745
2028	487	155	642	529	168	697	575	182	757
2029	490	155	645	535	170	705	584	185	769
2030	492	156	649	541	172	712	593	188	782
2031	495	157	652	546	173	720	603	191	794
2032	498	158	655	552	175	727	612	194	807
2033	500	159	659	558	177	735	622	197	819
2034	503	159	662	564	179	742	631	200	832

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2017	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2021	0.60%	0.60%	0.60%	1.21%	1.21%	1.21%	1.81%	1.81%	1.81%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2025	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.66%	1.66%	1.66%
2029	0.54%	0.54%	0.54%	1.09%	1.09%	1.09%	1.63%	1.63%	1.63%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2033	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%


Prosser Annual Therm Usage
Therms
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 38.25%
Medium: 24.18%
Low: 11.47%
Low
Medium
High


Prosser Annual Customer Growth
Customers
900
800
700
600
500
400
300
200
100
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 38.25%
Medium: 24.18%
Low: 11.47%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Quincy

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	604,318	230,937	835,254	609,677	230,937	840,614	615,036	230,937	845,973
2016	608,209	232,423	840,632	617,528	233,910	851,438	626,916	235,397	862,313
2017	612,115	233,916	846,031	625,460	236,915	862,375	638,995	239,933	878,928
2018	616,037	235,415	851,452	633,475	239,951	873,425	651,277	244,544	895,822
2019	619,972	236,919	856,890	641,567	243,016	884,583	663,757	249,231	912,988
2020	623,909	238,423	862,332	649,716	246,103	895,819	676,404	253,979	930,383
2021	627,862	239,934	867,796	657,949	249,221	907,170	689,260	258,806	948,066
2022	631,815	241,444	873,259	666,234	252,359	918,593	702,278	263,695	965,973
2023	635,768	242,955	878,723	674,571	255,517	930,089	715,461	268,645	984,106
2024	639,728	244,469	884,197	682,975	258,701	941,676	728,831	273,665	1,002,496
2025	643,682	245,980	889,662	691,418	261,899	953,316	742,345	278,739	1,021,085
2026	647,639	247,492	895,131	699,918	265,119	965,037	756,036	283,880	1,039,915
2027	651,593	249,002	900,595	708,463	268,355	976,819	769,881	289,078	1,058,959
2028	655,544	250,513	906,057	717,057	271,610	988,667	783,888	294,338	1,078,226
2029	659,484	252,018	911,502	725,676	274,875	1,000,551	798,021	299,645	1,097,666
2030	663,421	253,522	916,943	734,339	278,157	1,012,496	812,312	305,011	1,117,323
2031	667,358	255,027	922,385	743,056	281,458	1,024,514	826,775	310,441	1,137,216
2032	671,292	256,530	927,822	751,816	284,777	1,036,592	841,396	315,931	1,157,327
2033	675,227	258,034	933,261	760,630	288,115	1,048,745	856,192	321,487	1,177,679
2034	679,161	259,537	938,698	769,493	291,472	1,060,965	871,157	327,106	1,198,263

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	633	8,840	9,473	633	8,901	9,534	633	8,962	9,594
2016	637	8,897	9,534	641	9,015	9,656	645	9,135	9,780
2017	641	8,954	9,595	649	9,131	9,780	657	9,311	9,968
2018	645	9,011	9,656	657	9,248	9,906	670	9,490	10,160
2019	649	9,069	9,718	666	9,366	10,032	683	9,672	10,354
2020	653	9,127	9,780	674	9,485	10,160	696	9,856	10,552
2021	657	9,184	9,842	683	9,606	10,288	709	10,043	10,752
2022	661	9,242	9,904	691	9,727	10,418	722	10,233	10,955
2023	666	9,300	9,966	700	9,848	10,548	736	10,425	11,161
2024	670	9,358	10,028	709	9,971	10,680	750	10,620	11,369
2025	674	9,416	10,090	718	10,094	10,812	764	10,817	11,580
2026	678	9,474	10,152	726	10,218	10,945	778	11,016	11,794
2027	682	9,532	10,214	735	10,343	11,078	792	11,218	12,010
2028	686	9,589	10,276	744	10,469	11,213	806	11,422	12,228
2029	690	9,647	10,338	753	10,594	11,347	821	11,628	12,449
2030	695	9,705	10,399	762	10,721	11,483	836	11,836	12,672
2031	699	9,762	10,461	771	10,848	11,619	851	12,047	12,897
2032	703	9,820	10,523	780	10,976	11,756	866	12,260	13,125
2033	707	9,877	10,584	789	11,105	11,894	881	12,475	13,356
2034	711	9,935	10,646	799	11,234	12,033	896	12,694	13,590

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	43,416	736,230	779,646	43,694	740,954	784,648	43,973	745,678	789,651
2016	43,695	740,970	784,665	44,257	750,495	794,752	44,822	760,080	804,903
2017	43,976	745,729	789,705	44,826	760,135	804,961	45,686	774,725	820,411
2018	44,258	750,507	794,765	45,400	769,875	815,275	46,564	789,616	836,181
2019	44,541	755,301	799,841	45,980	779,711	825,691	47,456	804,748	852,204
2020	44,823	760,098	804,921	46,564	789,614	836,178	48,361	820,080	868,441
2021	45,107	764,913	810,021	47,154	799,620	846,774	49,280	835,667	884,947
2022	45,391	769,729	815,120	47,748	809,688	857,436	50,211	851,451	901,661
2023	45,675	774,545	820,221	48,345	819,821	868,166	51,153	867,434	918,587
2024	45,960	779,370	825,330	48,948	830,034	878,982	52,109	883,644	935,753
2025	46,244	784,187	830,431	49,553	840,295	889,848	53,075	900,029	953,104
2026	46,528	789,008	835,536	50,162	850,626	900,788	54,054	916,627	970,681
2027	46,812	793,824	840,636	50,774	861,011	911,785	55,044	933,413	988,457
2028	47,096	798,638	845,735	51,390	871,454	922,845	56,045	950,395	1,006,441
2029	47,379	803,438	850,817	52,008	881,929	933,937	57,056	967,531	1,024,587
2030	47,662	808,234	855,896	52,629	892,458	945,087	58,078	984,857	1,042,935
2031	47,945	813,031	860,976	53,253	903,051	956,305	59,112	1,002,392	1,061,504
2032	48,228	817,823	866,051	53,881	913,698	967,579	60,157	1,020,119	1,080,276
2033	48,510	822,617	871,128	54,513	924,410	978,923	61,215	1,038,058	1,099,273
2034	48,793	827,410	876,203	55,148	935,181	990,329	62,285	1,056,201	1,118,486

Annual Change

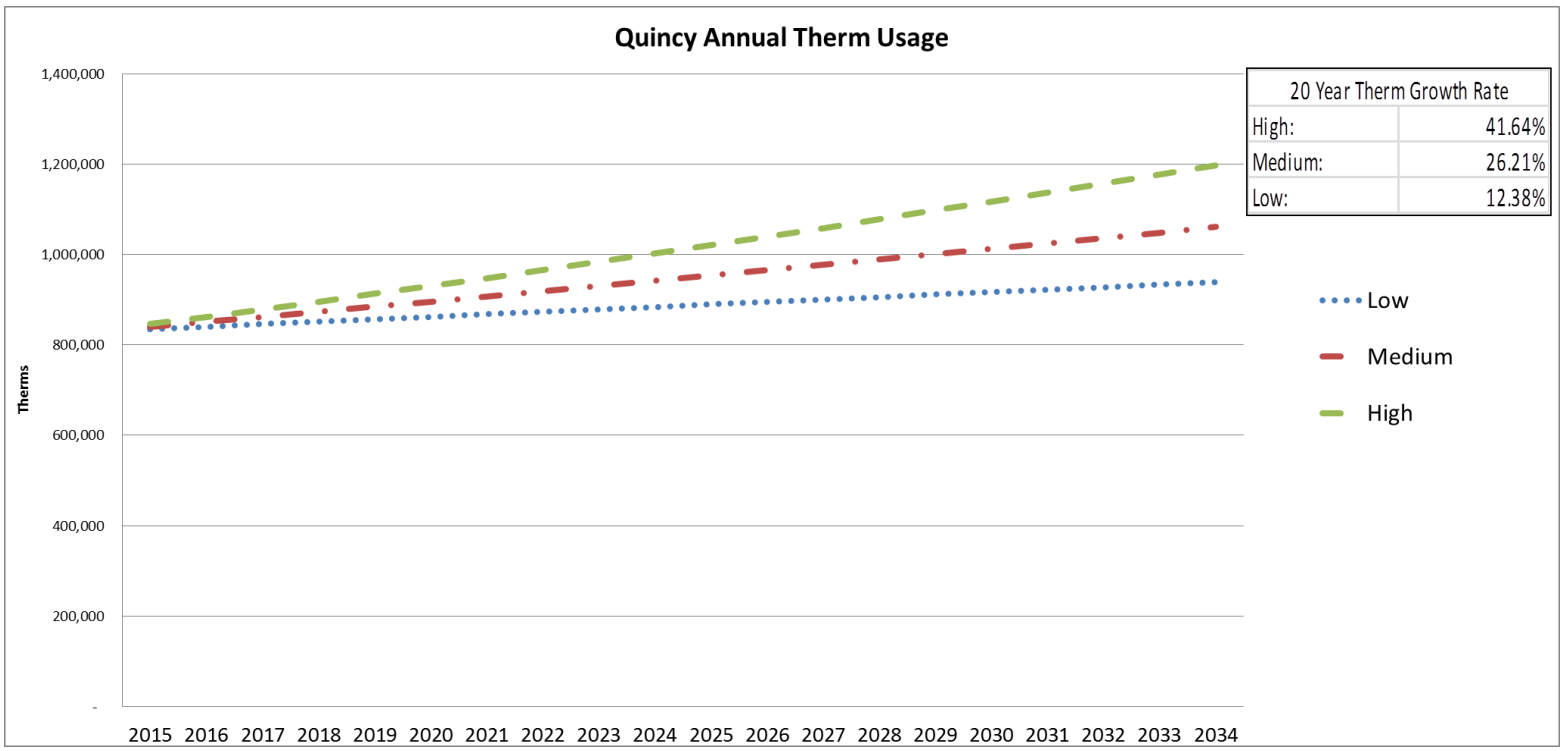
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

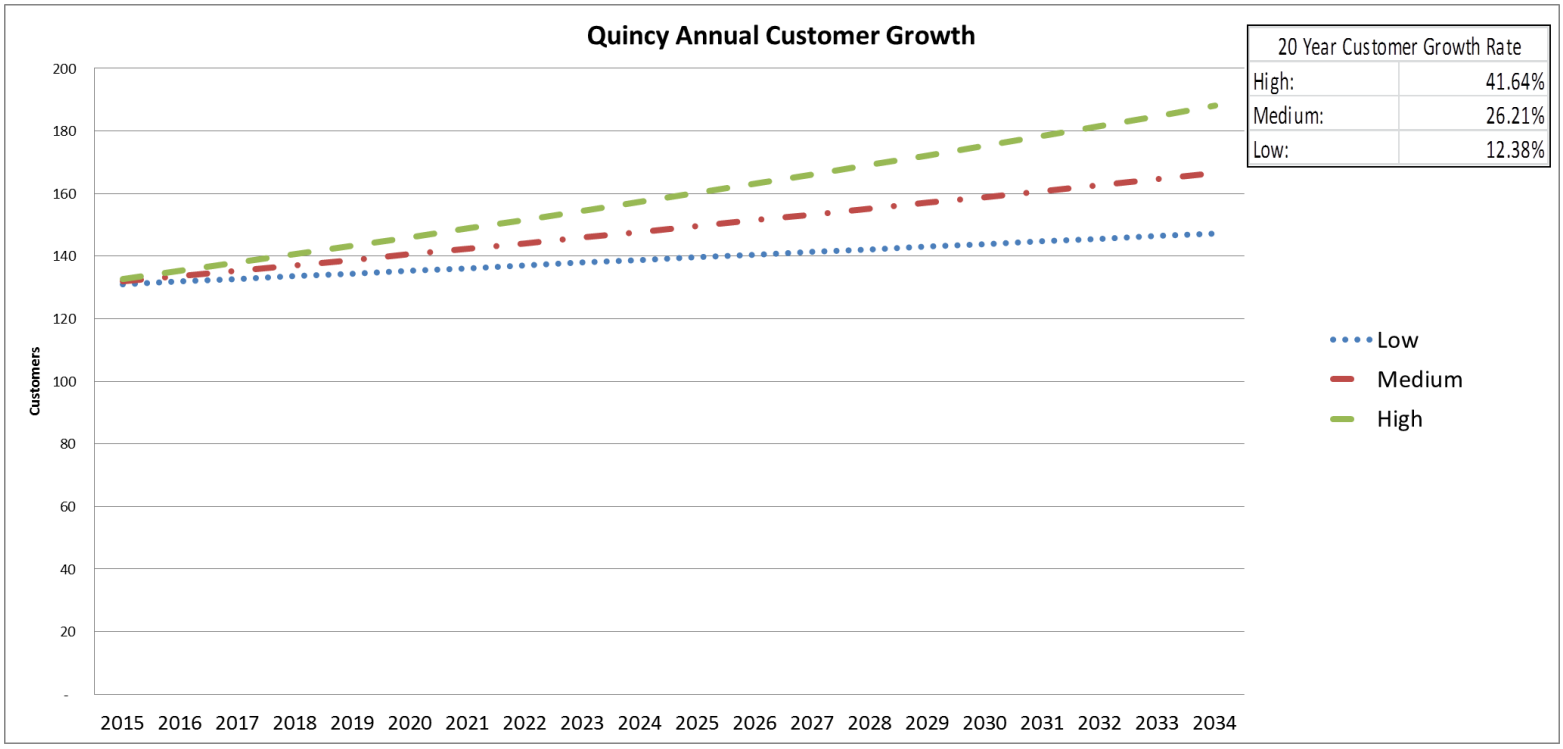
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	61	70	131	62	70	132	62	71	133
2016	62	70	132	62	71	134	63	72	135
2017	62	71	133	63	72	135	64	74	138
2018	62	71	134	64	73	137	66	75	141
2019	63	72	134	65	74	139	67	76	143
2020	63	72	135	66	75	141	68	78	146
2021	64	73	136	66	76	142	69	79	149
2022	64	73	137	67	77	144	71	81	152
2023	64	74	138	68	78	146	72	82	154
2024	65	74	139	69	79	148	73	84	157
2025	65	75	140	70	80	150	75	86	160
2026	66	75	140	71	81	151	76	87	163
2027	66	75	141	72	82	153	78	89	166
2028	66	76	142	72	83	155	79	90	169
2029	67	76	143	73	84	157	80	92	172
2030	67	77	144	74	85	159	82	94	175
2031	68	77	145	75	86	161	83	95	178
2032	68	78	146	76	87	163	85	97	182
2033	68	78	146	77	88	165	86	99	185
2034	69	79	147	78	89	167	88	100	188

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%


Quincy Annual Therm Usage
Therms
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 41.64%
Medium: 26.21%
Low: 12.38%
Low
Medium
High


Quincy Annual Customer Growth
Customers
200
180
160
140
120
100
80
60
40
20
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 41.64%
Medium: 26.21%
Low: 12.38%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sunnyside

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,244,465	1,033,135	3,277,600	2,248,489	1,033,135	3,281,625	2,252,514	1,033,135	3,285,649
2016	2,256,993	1,038,902	3,295,896	2,263,893	1,040,213	3,304,107	2,270,804	1,041,524	3,312,328
2017	2,250,225	1,035,787	3,286,012	2,260,038	1,038,442	3,298,480	2,269,879	1,041,100	3,310,979
2018	2,253,238	1,037,174	3,290,411	2,266,089	1,041,222	3,307,312	2,278,995	1,045,282	3,324,277
2019	2,256,318	1,038,592	3,294,910	2,272,285	1,044,069	3,316,355	2,288,342	1,049,569	3,337,911
2020	2,269,166	1,044,506	3,313,672	2,288,363	1,051,457	3,339,820	2,307,695	1,058,445	3,366,140
2021	2,262,597	1,041,482	3,304,078	2,284,940	1,049,884	3,334,824	2,307,472	1,058,343	3,365,815
2022	2,265,787	1,042,950	3,308,737	2,291,383	1,052,844	3,344,227	2,317,231	1,062,819	3,380,050
2023	2,268,983	1,044,421	3,313,404	2,297,848	1,055,815	3,353,663	2,327,039	1,067,317	3,394,356
2024	2,282,019	1,050,422	3,332,441	2,314,341	1,063,393	3,377,733	2,347,073	1,076,506	3,423,580
2025	2,275,416	1,047,382	3,322,799	2,310,887	1,061,806	3,372,693	2,346,860	1,076,408	3,423,268
2026	2,278,641	1,048,867	3,327,507	2,317,437	1,064,815	3,382,252	2,356,837	1,080,984	3,437,821
2027	2,281,847	1,050,343	3,332,190	2,323,959	1,067,812	3,391,771	2,366,787	1,085,548	3,452,335
2028	2,294,900	1,056,351	3,351,250	2,340,522	1,075,423	3,415,945	2,386,986	1,094,812	3,481,798
2029	2,288,195	1,053,265	3,341,460	2,336,898	1,073,757	3,410,655	2,386,566	1,094,620	3,481,186
2030	2,291,324	1,054,705	3,346,029	2,343,289	1,076,694	3,419,983	2,396,357	1,099,110	3,495,467
2031	2,294,476	1,056,156	3,350,632	2,349,736	1,079,656	3,429,392	2,406,246	1,103,646	3,509,892
2032	2,307,508	1,062,154	3,369,662	2,366,292	1,087,264	3,453,556	2,426,489	1,112,931	3,539,420
2033	2,300,727	1,059,033	3,359,760	2,362,547	1,085,543	3,448,090	2,425,939	1,112,678	3,538,617
2034	2,303,858	1,060,474	3,364,332	2,368,978	1,088,498	3,457,476	2,435,844	1,117,221	3,553,065

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.56%	0.56%	0.69%	0.69%	0.69%	0.81%	0.81%	0.81%
2017	-0.30%	-0.30%	-0.30%	-0.17%	-0.17%	-0.17%	-0.04%	-0.04%	-0.04%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.57%	0.57%	0.57%	0.71%	0.71%	0.71%	0.85%	0.85%	0.85%
2021	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.01%	-0.01%	-0.01%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.57%	0.57%	0.57%	0.72%	0.72%	0.72%	0.86%	0.86%	0.86%
2025	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.01%	-0.01%	-0.01%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.57%	0.57%	0.57%	0.71%	0.71%	0.71%	0.85%	0.85%	0.85%
2029	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.02%	-0.02%	-0.02%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.57%	0.57%	0.57%	0.70%	0.70%	0.70%	0.84%	0.84%	0.84%
2033	-0.29%	-0.29%	-0.29%	-0.16%	-0.16%	-0.16%	-0.02%	-0.02%	-0.02%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,831	34,083	36,913	2,831	34,128	36,959	2,831	34,173	37,004
2016	2,846	34,114	36,960	2,850	34,202	37,052	2,853	34,291	37,144
2017	2,838	34,170	37,008	2,845	34,303	37,148	2,852	34,437	37,289
2018	2,842	34,216	37,058	2,853	34,395	37,248	2,864	34,575	37,439
2019	2,845	34,263	37,108	2,860	34,489	37,350	2,876	34,717	37,593
2020	2,862	34,298	37,159	2,881	34,572	37,452	2,900	34,848	37,748
2021	2,853	34,358	37,211	2,876	34,681	37,558	2,900	35,007	37,907
2022	2,857	34,407	37,264	2,885	34,779	37,664	2,912	35,155	38,067
2023	2,861	34,455	37,317	2,893	34,877	37,770	2,924	35,304	38,228
2024	2,878	34,492	37,370	2,913	34,964	37,878	2,949	35,442	38,392
2025	2,870	34,553	37,422	2,909	35,075	37,984	2,949	35,605	38,554
2026	2,874	34,602	37,475	2,917	35,175	38,092	2,962	35,756	38,718
2027	2,878	34,650	37,528	2,926	35,274	38,199	2,974	35,907	38,881
2028	2,894	34,687	37,581	2,946	35,360	38,306	2,999	36,045	39,045
2029	2,886	34,747	37,632	2,942	35,470	38,412	2,999	36,207	39,206
2030	2,890	34,794	37,684	2,950	35,567	38,517	3,011	36,356	39,367
2031	2,894	34,842	37,736	2,958	35,665	38,623	3,024	36,506	39,529
2032	2,910	34,877	37,787	2,979	35,749	38,728	3,049	36,642	39,691
2033	2,901	34,937	37,839	2,974	35,859	38,833	3,048	36,804	39,853
2034	2,905	34,985	37,890	2,982	35,957	38,939	3,061	36,955	40,016

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.09%	0.13%	0.69%	0.22%	0.25%	0.81%	0.34%	0.38%
2017	-0.30%	0.17%	0.13%	-0.17%	0.30%	0.26%	-0.04%	0.43%	0.39%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.57%	0.10%	0.14%	0.71%	0.24%	0.28%	0.85%	0.38%	0.41%
2021	-0.29%	0.18%	0.14%	-0.15%	0.32%	0.28%	-0.01%	0.46%	0.42%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.57%	0.11%	0.14%	0.72%	0.25%	0.29%	0.86%	0.39%	0.43%
2025	-0.29%	0.18%	0.14%	-0.15%	0.32%	0.28%	-0.01%	0.46%	0.42%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.57%	0.10%	0.14%	0.71%	0.24%	0.28%	0.85%	0.38%	0.42%
2029	-0.29%	0.17%	0.14%	-0.15%	0.31%	0.28%	-0.02%	0.45%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.57%	0.10%	0.14%	0.70%	0.24%	0.27%	0.84%	0.37%	0.41%
2033	-0.29%	0.17%	0.14%	-0.16%	0.31%	0.27%	-0.02%	0.44%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,074,994	2,038,889	3,113,883	1,076,314	2,041,393	3,117,706	1,077,634	2,043,896	3,121,530
2016	1,081,458	2,049,852	3,131,311	1,084,153	2,054,959	3,139,112	1,086,850	2,060,072	3,146,923
2017	1,077,753	2,044,122	3,121,875	1,081,842	2,051,878	3,133,719	1,085,941	2,059,653	3,145,594
2018	1,079,196	2,046,859	3,126,054	1,084,739	2,057,372	3,142,110	1,090,303	2,067,925	3,158,228
2019	1,080,671	2,049,657	3,130,328	1,087,704	2,062,997	3,150,701	1,094,775	2,076,407	3,171,181
2020	1,087,291	2,060,908	3,148,199	1,095,871	2,077,171	3,173,042	1,104,507	2,093,540	3,198,047
2021	1,083,678	2,055,360	3,139,038	1,093,762	2,074,486	3,168,248	1,103,926	2,093,764	3,197,691
2022	1,085,206	2,058,258	3,143,464	1,096,846	2,080,336	3,177,182	1,108,596	2,102,620	3,211,216
2023	1,086,737	2,061,162	3,147,899	1,099,941	2,086,205	3,186,146	1,113,287	2,111,519	3,224,806
2024	1,093,449	2,072,581	3,166,031	1,108,311	2,100,751	3,209,062	1,123,354	2,129,264	3,252,618
2025	1,089,818	2,067,006	3,156,824	1,106,183	2,098,044	3,204,226	1,122,770	2,129,504	3,252,275
2026	1,091,362	2,069,935	3,161,297	1,109,318	2,103,990	3,213,307	1,127,543	2,138,557	3,266,101
2027	1,092,898	2,072,848	3,165,746	1,112,440	2,109,911	3,222,351	1,132,304	2,147,586	3,279,889
2028	1,099,621	2,084,280	3,183,901	1,120,849	2,124,516	3,245,365	1,142,457	2,165,473	3,307,930
2029	1,095,938	2,078,614	3,174,552	1,118,633	2,121,658	3,240,292	1,141,766	2,165,533	3,307,300
2030	1,097,437	2,081,456	3,178,894	1,121,693	2,127,461	3,249,154	1,146,450	2,174,417	3,320,868
2031	1,098,947	2,084,320	3,183,266	1,124,779	2,133,314	3,258,093	1,151,181	2,183,391	3,334,572
2032	1,105,663	2,095,730	3,201,393	1,133,190	2,147,908	3,281,098	1,161,364	2,201,310	3,362,674
2033	1,101,941	2,089,998	3,191,938	1,130,911	2,144,945	3,275,857	1,160,603	2,201,259	3,361,862
2034	1,103,440	2,092,842	3,196,283	1,133,990	2,150,784	3,284,774	1,165,341	2,210,247	3,375,588

Annual Change

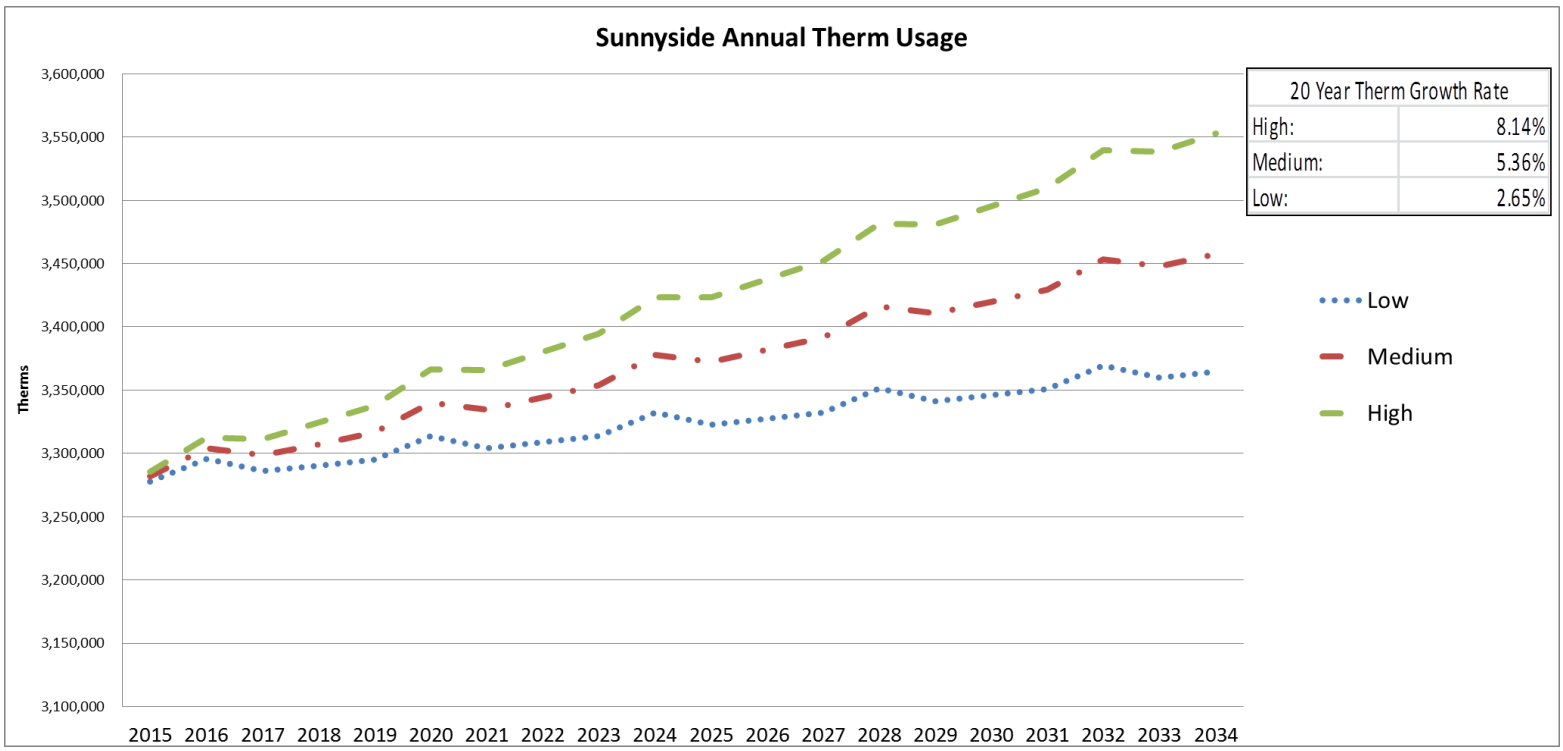
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.60%	0.54%	0.56%	0.73%	0.66%	0.69%	0.86%	0.79%	0.81%
2017	-0.34%	-0.28%	-0.30%	-0.21%	-0.15%	-0.17%	-0.08%	-0.02%	-0.04%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.61%	0.55%	0.57%	0.75%	0.69%	0.71%	0.89%	0.83%	0.85%
2021	-0.33%	-0.27%	-0.29%	-0.19%	-0.13%	-0.15%	-0.05%	0.01%	-0.01%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.62%	0.55%	0.58%	0.76%	0.70%	0.72%	0.90%	0.84%	0.86%
2025	-0.33%	-0.27%	-0.29%	-0.19%	-0.13%	-0.15%	-0.05%	0.01%	-0.01%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.62%	0.55%	0.57%	0.76%	0.69%	0.71%	0.90%	0.83%	0.85%
2029	-0.33%	-0.27%	-0.29%	-0.20%	-0.13%	-0.16%	-0.06%	0.00%	-0.02%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.61%	0.55%	0.57%	0.75%	0.68%	0.71%	0.88%	0.82%	0.84%
2033	-0.34%	-0.27%	-0.30%	-0.20%	-0.14%	-0.16%	-0.07%	0.00%	-0.02%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

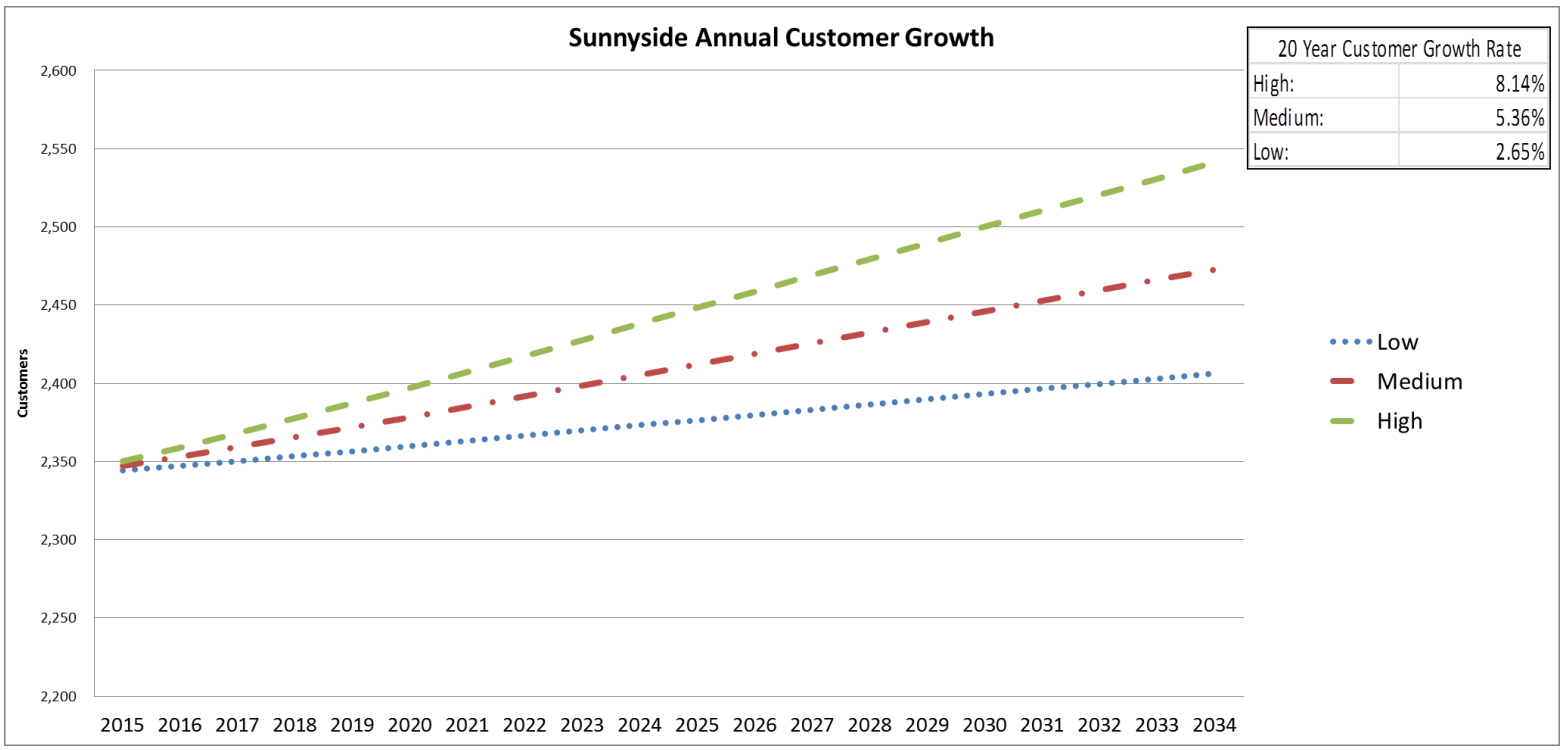
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,819	525	2,344	1,821	526	2,347	1,824	526	2,350
2016	1,822	526	2,347	1,826	527	2,353	1,831	528	2,359
2017	1,824	526	2,350	1,831	528	2,359	1,838	530	2,368
2018	1,826	527	2,353	1,836	530	2,365	1,845	532	2,378
2019	1,829	528	2,357	1,841	531	2,372	1,853	535	2,387
2020	1,831	528	2,360	1,846	533	2,378	1,860	537	2,397
2021	1,834	529	2,363	1,851	534	2,385	1,868	539	2,407
2022	1,837	530	2,366	1,856	536	2,392	1,876	541	2,417
2023	1,839	531	2,370	1,861	537	2,399	1,884	544	2,428
2024	1,842	531	2,373	1,867	539	2,405	1,892	546	2,438
2025	1,844	532	2,377	1,872	540	2,412	1,900	548	2,448
2026	1,847	533	2,380	1,877	542	2,419	1,908	551	2,459
2027	1,850	534	2,383	1,883	543	2,426	1,916	553	2,469
2028	1,852	534	2,387	1,888	545	2,433	1,924	555	2,480
2029	1,855	535	2,390	1,893	546	2,439	1,932	558	2,490
2030	1,857	536	2,393	1,898	548	2,446	1,940	560	2,500
2031	1,860	537	2,396	1,903	549	2,453	1,948	562	2,510
2032	1,862	537	2,400	1,909	551	2,459	1,956	564	2,521
2033	1,865	538	2,403	1,914	552	2,466	1,964	567	2,531
2034	1,867	539	2,406	1,919	554	2,473	1,972	569	2,541

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.13%	0.13%	0.13%	0.25%	0.25%	0.25%	0.38%	0.38%	0.38%
2017	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.39%	0.39%	0.39%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2021	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2025	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2033	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%


Sunnyside Annual Therm Usage
Therms
3,600,000
3,550,000
3,500,000
3,450,000
3,400,000
3,350,000
3,300,000
3,250,000
3,200,000
3,150,000
3,100,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 8.14%
Medium: 5.36%
Low: 2.65%
Low
Medium
High


Sunnyside Annual Customer Growth
Customers
2,600
2,550
2,500
2,450
2,400
2,350
2,300
2,250
2,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.14%
Medium: 5.36%
Low: 2.65%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Moses Lake

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,670,037	857,347	3,527,384	2,704,489	857,347	3,561,836	2,738,942	857,347	3,596,289
2016	2,708,635	869,741	3,578,376	2,770,319	878,215	3,648,535	2,832,684	886,690	3,719,374
2017	2,722,779	874,282	3,597,062	2,811,858	891,384	3,703,242	2,902,841	908,651	3,811,491
2018	2,749,448	882,846	3,632,294	2,866,941	908,845	3,775,786	2,988,138	935,351	3,923,489
2019	2,776,314	891,472	3,667,786	2,922,968	926,607	3,849,575	3,075,732	962,769	4,038,501
2020	2,816,193	904,277	3,720,470	2,993,577	948,990	3,942,567	3,180,150	995,454	4,175,604
2021	2,830,640	908,916	3,739,557	3,037,915	963,046	4,000,960	3,258,037	1,019,835	4,277,872
2022	2,858,100	917,734	3,775,834	3,096,855	981,730	4,078,586	3,352,855	1,049,515	4,402,369
2023	2,885,761	926,616	3,812,376	3,156,798	1,000,733	4,157,531	3,450,202	1,079,986	4,530,188
2024	2,926,940	939,838	3,866,778	3,232,461	1,024,719	4,257,180	3,566,358	1,116,346	4,682,704
2025	2,941,676	944,570	3,886,246	3,279,720	1,039,700	4,319,420	3,652,683	1,143,367	4,796,050
2026	2,969,936	953,644	3,923,580	3,342,734	1,059,676	4,402,410	3,757,953	1,176,319	4,934,272
2027	2,998,395	962,782	3,961,177	3,406,797	1,079,984	4,486,781	3,865,984	1,210,135	5,076,118
2028	3,040,892	976,428	4,017,320	3,487,793	1,105,661	4,593,454	3,995,017	1,250,525	5,245,542
2029	3,055,911	981,251	4,037,162	3,538,118	1,121,615	4,659,733	4,090,573	1,280,436	5,371,009
2030	3,084,972	990,582	4,075,554	3,605,410	1,142,947	4,748,357	4,207,272	1,316,965	5,524,237
2031	3,114,232	999,978	4,114,210	3,673,805	1,164,628	4,838,433	4,326,990	1,354,439	5,681,429
2032	3,158,063	1,014,052	4,172,115	3,760,422	1,192,087	4,952,509	4,470,126	1,399,244	5,869,371
2033	3,173,356	1,018,962	4,192,318	3,813,954	1,209,057	5,023,010	4,575,748	1,432,306	6,008,055
2034	3,203,220	1,028,552	4,231,772	3,885,741	1,231,814	5,117,554	4,704,937	1,472,745	6,177,682

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	1.45%	1.45%	2.43%	2.43%	2.43%	3.42%	3.42%	3.42%
2017	0.52%	0.52%	0.52%	1.50%	1.50%	1.50%	2.48%	2.48%	2.48%
2018	0.98%	0.98%	0.98%	1.96%	1.96%	1.96%	2.94%	2.94%	2.94%
2019	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2020	1.44%	1.44%	1.44%	2.42%	2.42%	2.42%	3.39%	3.39%	3.39%
2021	0.51%	0.51%	0.51%	1.48%	1.48%	1.48%	2.45%	2.45%	2.45%
2022	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.90%	2.90%	2.90%
2024	1.43%	1.43%	1.43%	2.40%	2.40%	2.40%	3.37%	3.37%	3.37%
2025	0.50%	0.50%	0.50%	1.46%	1.46%	1.46%	2.42%	2.42%	2.42%
2026	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.88%	2.88%	2.88%
2027	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.87%	2.87%	2.87%
2028	1.42%	1.42%	1.42%	2.38%	2.38%	2.38%	3.34%	3.34%	3.34%
2029	0.49%	0.49%	0.49%	1.44%	1.44%	1.44%	2.39%	2.39%	2.39%
2030	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2031	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2032	1.41%	1.41%	1.41%	2.36%	2.36%	2.36%	3.31%	3.31%	3.31%
2033	0.48%	0.48%	0.48%	1.42%	1.42%	1.42%	2.36%	2.36%	2.36%
2034	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,349	38,605	40,954	2,349	39,005	41,354	2,349	39,405	41,754
2016	2,383	38,974	41,357	2,406	39,762	42,168	2,429	40,557	42,987
2017	2,395	39,368	41,763	2,442	40,554	42,996	2,489	41,763	44,253
2018	2,419	39,753	42,172	2,490	41,348	43,838	2,563	42,990	45,553
2019	2,442	40,142	42,584	2,539	42,156	44,695	2,638	44,251	46,888
2020	2,477	40,522	42,999	2,600	42,966	45,566	2,727	45,532	48,260
2021	2,490	40,927	43,418	2,638	43,814	46,452	2,794	46,873	49,668
2022	2,514	41,324	43,839	2,690	44,664	47,354	2,875	48,238	51,113
2023	2,539	41,724	44,263	2,742	45,529	48,270	2,959	49,638	52,597
2024	2,575	42,115	44,690	2,807	46,395	49,202	3,058	51,062	54,120
2025	2,588	42,533	45,121	2,848	47,301	50,150	3,133	52,551	55,684
2026	2,613	42,941	45,554	2,903	48,210	51,113	3,223	54,066	57,289
2027	2,638	43,353	45,991	2,959	49,134	52,093	3,315	55,620	58,935
2028	2,675	43,755	46,430	3,029	50,060	53,089	3,426	57,199	60,625
2029	2,688	44,184	46,873	3,073	51,028	54,101	3,508	58,851	62,359
2030	2,714	44,605	47,319	3,131	51,999	55,130	3,608	60,530	64,138
2031	2,740	45,028	47,767	3,191	52,985	56,176	3,711	62,253	65,963
2032	2,778	45,441	48,219	3,266	53,973	57,239	3,834	64,002	67,835
2033	2,792	45,883	48,674	3,312	55,006	58,319	3,924	65,831	69,756
2034	2,818	46,314	49,132	3,375	56,042	59,417	4,035	67,690	71,725

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	0.96%	0.98%	2.43%	1.94%	1.97%	3.42%	2.92%	2.95%
2017	0.52%	1.01%	0.98%	1.50%	1.99%	1.96%	2.48%	2.97%	2.95%
2018	0.98%	0.98%	0.98%	1.96%	1.96%	1.96%	2.94%	2.94%	2.94%
2019	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2020	1.44%	0.95%	0.97%	2.42%	1.92%	1.95%	3.39%	2.90%	2.92%
2021	0.51%	1.00%	0.97%	1.48%	1.97%	1.95%	2.45%	2.95%	2.92%
2022	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.90%	2.90%	2.90%
2024	1.43%	0.94%	0.97%	2.40%	1.90%	1.93%	3.37%	2.87%	2.90%
2025	0.50%	0.99%	0.96%	1.46%	1.95%	1.93%	2.42%	2.92%	2.89%
2026	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.88%	2.88%	2.88%
2027	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.87%	2.87%	2.87%
2028	1.42%	0.93%	0.96%	2.38%	1.88%	1.91%	3.34%	2.84%	2.87%
2029	0.49%	0.98%	0.95%	1.44%	1.93%	1.91%	2.39%	2.89%	2.86%
2030	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2031	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2032	1.41%	0.92%	0.95%	2.36%	1.86%	1.89%	3.31%	2.81%	2.84%
2033	0.48%	0.97%	0.94%	1.42%	1.92%	1.89%	2.36%	2.86%	2.83%
2034	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	3,527,384	3,527,384	-	3,561,836	3,561,836	-	3,596,289	3,596,289
2016	-	3,578,376	3,578,376	-	3,648,535	3,648,535	-	3,719,374	3,719,374
2017	-	3,597,062	3,597,062	-	3,703,242	3,703,242	-	3,811,491	3,811,491
2018	-	3,632,294	3,632,294	-	3,775,786	3,775,786	-	3,923,489	3,923,489
2019	-	3,667,786	3,667,786	-	3,849,575	3,849,575	-	4,038,501	4,038,501
2020	-	3,720,470	3,720,470	-	3,942,567	3,942,567	-	4,175,604	4,175,604
2021	-	3,739,557	3,739,557	-	4,000,960	4,000,960	-	4,277,872	4,277,872
2022	-	3,775,834	3,775,834	-	4,078,586	4,078,586	-	4,402,369	4,402,369
2023	-	3,812,376	3,812,376	-	4,157,531	4,157,531	-	4,530,188	4,530,188
2024	-	3,866,778	3,866,778	-	4,257,180	4,257,180	-	4,682,704	4,682,704
2025	-	3,886,246	3,886,246	-	4,319,420	4,319,420	-	4,796,050	4,796,050
2026	-	3,923,580	3,923,580	-	4,402,410	4,402,410	-	4,934,272	4,934,272
2027	-	3,961,177	3,961,177	-	4,486,781	4,486,781	-	5,076,118	5,076,118
2028	-	4,017,320	4,017,320	-	4,593,454	4,593,454	-	5,245,542	5,245,542
2029	-	4,037,162	4,037,162	-	4,659,733	4,659,733	-	5,371,009	5,371,009
2030	-	4,075,554	4,075,554	-	4,748,357	4,748,357	-	5,524,237	5,524,237
2031	-	4,114,210	4,114,210	-	4,838,433	4,838,433	-	5,681,429	5,681,429
2032	-	4,172,115	4,172,115	-	4,952,509	4,952,509	-	5,869,371	5,869,371
2033	-	4,192,318	4,192,318	-	5,023,010	5,023,010	-	6,008,055	6,008,055
2034	-	4,231,772	4,231,772	-	5,117,554	5,117,554	-	6,177,682	6,177,682

Annual Change

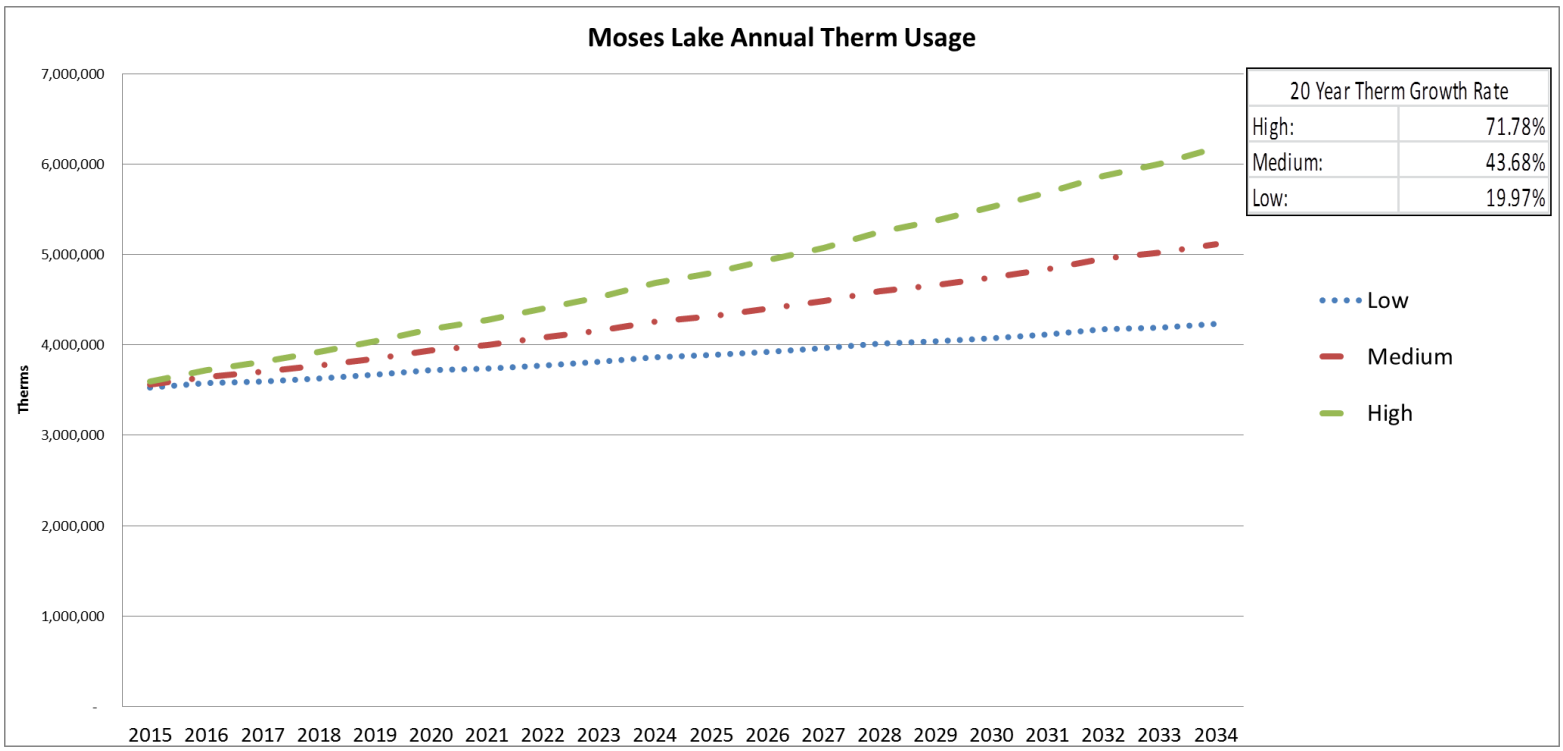
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	1.45%	1.45%	#DIV/0!	2.43%	2.43%	#DIV/0!	3.42%	3.42%
2017	#DIV/0!	0.52%	0.52%	#DIV/0!	1.50%	1.50%	#DIV/0!	2.48%	2.48%
2018	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.94%	2.94%
2019	#DIV/0!	0.98%	0.98%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.93%	2.93%
2020	#DIV/0!	1.44%	1.44%	#DIV/0!	2.42%	2.42%	#DIV/0!	3.39%	3.39%
2021	#DIV/0!	0.51%	0.51%	#DIV/0!	1.48%	1.48%	#DIV/0!	2.45%	2.45%
2022	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.91%	2.91%
2023	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.90%	2.90%
2024	#DIV/0!	1.43%	1.43%	#DIV/0!	2.40%	2.40%	#DIV/0!	3.37%	3.37%
2025	#DIV/0!	0.50%	0.50%	#DIV/0!	1.46%	1.46%	#DIV/0!	2.42%	2.42%
2026	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.88%	2.88%
2027	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.87%	2.87%
2028	#DIV/0!	1.42%	1.42%	#DIV/0!	2.38%	2.38%	#DIV/0!	3.34%	3.34%
2029	#DIV/0!	0.49%	0.49%	#DIV/0!	1.44%	1.44%	#DIV/0!	2.39%	2.39%
2030	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2031	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2032	#DIV/0!	1.41%	1.41%	#DIV/0!	2.36%	2.36%	#DIV/0!	3.31%	3.31%
2033	#DIV/0!	0.48%	0.48%	#DIV/0!	1.42%	1.42%	#DIV/0!	2.36%	2.36%
2034	#DIV/0!	0.94%	0.94%	#DIV/0!	1.88%	1.88%	#DIV/0!	2.82%	2.82%

Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	12	12	-	12	12	-	12	12
2016	-	12	12	-	12	12	-	13	13
2017	-	12	12	-	13	13	-	13	13
2018	-	12	12	-	13	13	-	13	13
2019	-	13	13	-	13	13	-	14	14
2020	-	13	13	-	13	13	-	14	14
2021	-	13	13	-	14	14	-	15	15
2022	-	13	13	-	14	14	-	15	15
2023	-	13	13	-	14	14	-	16	16
2024	-	13	13	-	15	15	-	16	16
2025	-	13	13	-	15	15	-	16	16
2026	-	13	13	-	15	15	-	17	17
2027	-	14	14	-	15	15	-	17	17
2028	-	14	14	-	16	16	-	18	18
2029	-	14	14	-	16	16	-	18	18
2030	-	14	14	-	16	16	-	19	19
2031	-	14	14	-	17	17	-	20	20
2032	-	14	14	-	17	17	-	20	20
2033	-	14	14	-	17	17	-	21	21
2034	-	15	15	-	18	18	-	21	21

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.98%	0.98%	#DIV/0!	1.97%	1.97%	#DIV/0!	2.95%	2.95%
2017	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.95%	2.95%
2018	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.94%	2.94%
2019	#DIV/0!	0.98%	0.98%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.93%	2.93%
2020	#DIV/0!	0.97%	0.97%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.92%	2.92%
2021	#DIV/0!	0.97%	0.97%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.92%	2.92%
2022	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.91%	2.91%
2023	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.90%	2.90%
2024	#DIV/0!	0.97%	0.97%	#DIV/0!	1.93%	1.93%	#DIV/0!	2.90%	2.90%
2025	#DIV/0!	0.96%	0.96%	#DIV/0!	1.93%	1.93%	#DIV/0!	2.89%	2.89%
2026	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.88%	2.88%
2027	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.87%	2.87%
2028	#DIV/0!	0.96%	0.96%	#DIV/0!	1.91%	1.91%	#DIV/0!	2.87%	2.87%
2029	#DIV/0!	0.95%	0.95%	#DIV/0!	1.91%	1.91%	#DIV/0!	2.86%	2.86%
2030	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2031	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2032	#DIV/0!	0.95%	0.95%	#DIV/0!	1.89%	1.89%	#DIV/0!	2.84%	2.84%
2033	#DIV/0!	0.94%	0.94%	#DIV/0!	1.89%	1.89%	#DIV/0!	2.83%	2.83%
2034	#DIV/0!	0.94%	0.94%	#DIV/0!	1.88%	1.88%	#DIV/0!	2.82%	2.82%


Moses Lake Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
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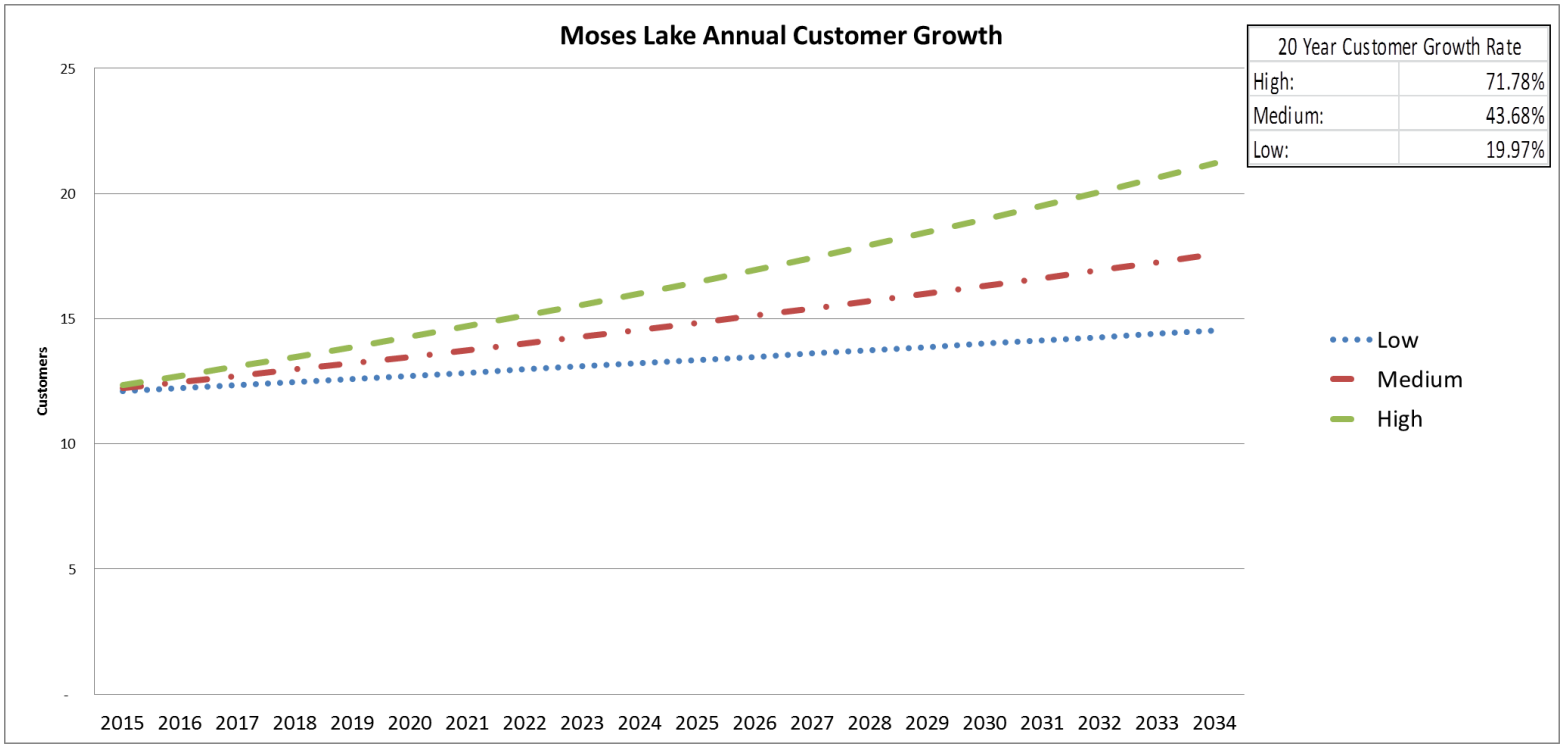
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 71.78%
Medium: 43.68%
Low: 19.97%
Low
Medium
High


Moses Lake Annual Customer Growth
Customers
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2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 71.78%
Medium: 43.68%
Low: 19.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Woodland

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,026,242	321,145	1,347,387	1,045,268	321,145	1,366,413	1,064,294	321,145	1,385,439
2016	1,045,018	327,020	1,372,039	1,079,007	331,510	1,410,518	1,113,528	336,001	1,449,529
2017	1,054,626	330,027	1,384,653	1,103,483	339,030	1,442,513	1,153,808	348,155	1,501,963
2018	1,068,547	334,383	1,402,931	1,132,615	347,981	1,480,596	1,199,500	361,942	1,561,442
2019	1,082,296	338,686	1,420,982	1,161,762	356,936	1,518,697	1,245,801	375,913	1,621,714
2020	1,100,590	344,410	1,445,001	1,196,024	367,462	1,563,486	1,298,224	391,731	1,689,956
2021	1,109,278	347,129	1,456,407	1,220,043	374,842	1,594,885	1,340,120	404,373	1,744,493
2022	1,122,524	351,274	1,473,799	1,249,182	383,794	1,632,976	1,388,131	418,860	1,806,991
2023	1,135,605	355,368	1,490,972	1,278,294	392,739	1,671,033	1,436,656	433,502	1,870,158
2024	1,153,501	360,968	1,514,468	1,313,068	403,422	1,716,491	1,492,180	450,257	1,942,437
2025	1,161,315	363,413	1,524,728	1,336,500	410,622	1,747,122	1,535,328	463,276	1,998,604
2026	1,173,949	367,367	1,541,316	1,365,581	419,556	1,785,137	1,585,438	478,396	2,063,834
2027	1,186,434	371,274	1,557,708	1,394,627	428,480	1,823,107	1,636,021	493,660	2,129,680
2028	1,203,949	376,755	1,580,704	1,429,786	439,282	1,869,068	1,694,359	511,263	2,205,622
2029	1,210,968	378,951	1,589,920	1,452,600	446,292	1,898,891	1,738,551	524,598	2,263,149
2030	1,223,022	382,723	1,605,745	1,481,517	455,176	1,936,694	1,790,467	540,263	2,330,730
2031	1,234,962	386,460	1,621,422	1,510,446	464,064	1,974,510	1,842,909	556,087	2,398,995
2032	1,252,152	391,839	1,643,992	1,545,978	474,981	2,020,959	1,903,964	574,510	2,478,473
2033	1,258,474	393,817	1,652,291	1,568,229	481,817	2,050,046	1,949,158	588,147	2,537,305
2034	1,270,063	397,444	1,667,507	1,597,113	490,691	2,087,805	2,003,008	604,396	2,607,404

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.83%	1.83%	1.83%	3.23%	3.23%	3.23%	4.63%	4.63%	4.63%
2017	0.92%	0.92%	0.92%	2.27%	2.27%	2.27%	3.62%	3.62%	3.62%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.69%	1.69%	1.69%	2.95%	2.95%	2.95%	4.21%	4.21%	4.21%
2021	0.79%	0.79%	0.79%	2.01%	2.01%	2.01%	3.23%	3.23%	3.23%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.58%	1.58%	1.58%	2.72%	2.72%	2.72%	3.86%	3.86%	3.86%
2025	0.68%	0.68%	0.68%	1.78%	1.78%	1.78%	2.89%	2.89%	2.89%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.48%	1.48%	1.48%	2.52%	2.52%	2.52%	3.57%	3.57%	3.57%
2029	0.58%	0.58%	0.58%	1.60%	1.60%	1.60%	2.61%	2.61%	2.61%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.39%	1.39%	1.39%	2.35%	2.35%	2.35%	3.31%	3.31%	3.31%
2033	0.50%	0.50%	0.50%	1.44%	1.44%	1.44%	2.37%	2.37%	2.37%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	880	12,036	12,916	880	12,218	13,098	880	12,401	13,281
2016	896	12,200	13,096	908	12,555	13,463	921	12,915	13,835
2017	904	12,369	13,273	929	12,899	13,828	954	13,444	14,397
2018	916	12,532	13,448	953	13,239	14,193	992	13,976	14,968
2019	928	12,693	13,621	978	13,580	14,558	1,030	14,515	15,545
2020	944	12,848	13,792	1,007	13,916	14,923	1,073	15,057	16,130
2021	951	13,010	13,961	1,027	14,261	15,288	1,108	15,614	16,722
2022	962	13,165	14,128	1,051	14,602	15,653	1,148	16,174	17,321
2023	974	13,319	14,292	1,076	14,942	16,018	1,188	16,739	17,927
2024	989	13,466	14,455	1,105	15,278	16,383	1,234	17,306	18,540
2025	996	13,620	14,616	1,125	15,623	16,748	1,269	17,889	19,158
2026	1,006	13,768	14,775	1,149	15,962	17,112	1,311	18,473	19,783
2027	1,017	13,915	14,932	1,174	16,302	17,476	1,352	19,062	20,415
2028	1,032	14,055	15,087	1,204	16,636	17,840	1,401	19,651	21,052
2029	1,038	14,202	15,241	1,223	16,980	18,202	1,437	20,257	21,694
2030	1,049	14,344	15,392	1,247	17,318	18,565	1,480	20,862	22,342
2031	1,059	14,484	15,543	1,271	17,656	18,927	1,524	21,473	22,996
2032	1,074	14,618	15,691	1,301	17,988	19,289	1,574	22,082	23,656
2033	1,079	14,760	15,838	1,320	18,331	19,651	1,611	22,711	24,322
2034	1,089	14,895	15,984	1,344	18,669	20,013	1,656	23,338	24,994

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.83%	1.36%	1.39%	3.23%	2.75%	2.78%	4.63%	4.14%	4.18%
2017	0.92%	1.39%	1.35%	2.27%	2.74%	2.71%	3.62%	4.10%	4.06%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.69%	1.22%	1.25%	2.95%	2.48%	2.51%	4.21%	3.73%	3.76%
2021	0.79%	1.26%	1.22%	2.01%	2.48%	2.45%	3.23%	3.70%	3.67%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.58%	1.11%	1.14%	2.72%	2.25%	2.28%	3.86%	3.39%	3.42%
2025	0.68%	1.14%	1.11%	1.78%	2.26%	2.22%	2.89%	3.37%	3.34%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.48%	1.01%	1.04%	2.52%	2.05%	2.08%	3.57%	3.09%	3.12%
2029	0.58%	1.05%	1.02%	1.60%	2.07%	2.03%	2.61%	3.08%	3.05%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.39%	0.92%	0.96%	2.35%	1.88%	1.91%	3.31%	2.84%	2.87%
2033	0.50%	0.97%	0.94%	1.44%	1.91%	1.88%	2.37%	2.85%	2.82%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	349,683	997,704	1,347,387	354,620	1,011,792	1,366,413	359,558	1,025,881	1,385,439
2016	356,184	1,015,854	1,372,039	366,174	1,044,344	1,410,518	376,301	1,073,228	1,449,529
2017	359,354	1,025,299	1,384,653	374,371	1,068,143	1,442,513	389,799	1,112,164	1,501,963
2018	364,098	1,038,833	1,402,931	384,254	1,096,342	1,480,596	405,236	1,156,206	1,561,442
2019	368,783	1,052,199	1,420,982	394,142	1,124,555	1,518,697	420,878	1,200,836	1,621,714
2020	375,125	1,069,875	1,445,001	405,884	1,157,601	1,563,486	438,716	1,251,239	1,689,956
2021	377,976	1,078,430	1,456,407	413,915	1,180,970	1,594,885	452,742	1,291,751	1,744,493
2022	382,490	1,091,309	1,473,799	423,801	1,209,176	1,632,976	468,962	1,338,029	1,806,991
2023	386,947	1,104,025	1,490,972	433,677	1,237,355	1,671,033	485,356	1,384,802	1,870,158
2024	393,159	1,121,309	1,514,468	445,605	1,270,886	1,716,491	504,261	1,438,176	1,942,437
2025	395,708	1,129,021	1,524,728	453,425	1,293,697	1,747,122	518,691	1,479,913	1,998,604
2026	400,013	1,141,304	1,541,316	463,291	1,321,846	1,785,137	535,620	1,528,214	2,063,834
2027	404,267	1,153,441	1,557,708	473,145	1,349,962	1,823,107	552,709	1,576,972	2,129,680
2028	410,354	1,170,350	1,580,704	485,214	1,383,854	1,869,068	572,584	1,633,038	2,205,622
2029	412,626	1,177,293	1,589,920	492,813	1,406,078	1,898,891	587,347	1,675,802	2,263,149
2030	416,734	1,189,012	1,605,745	502,624	1,434,070	1,936,694	604,886	1,725,844	2,330,730
2031	420,802	1,200,620	1,621,422	512,438	1,462,072	1,974,510	622,603	1,776,392	2,398,995
2032	426,784	1,217,208	1,643,992	524,646	1,496,314	2,020,959	643,417	1,835,056	2,478,473
2033	428,814	1,223,478	1,652,291	532,042	1,518,005	2,050,046	658,498	1,878,806	2,537,305
2034	432,763	1,234,745	1,667,507	541,841	1,545,964	2,087,805	676,691	1,930,713	2,607,404

Annual Change

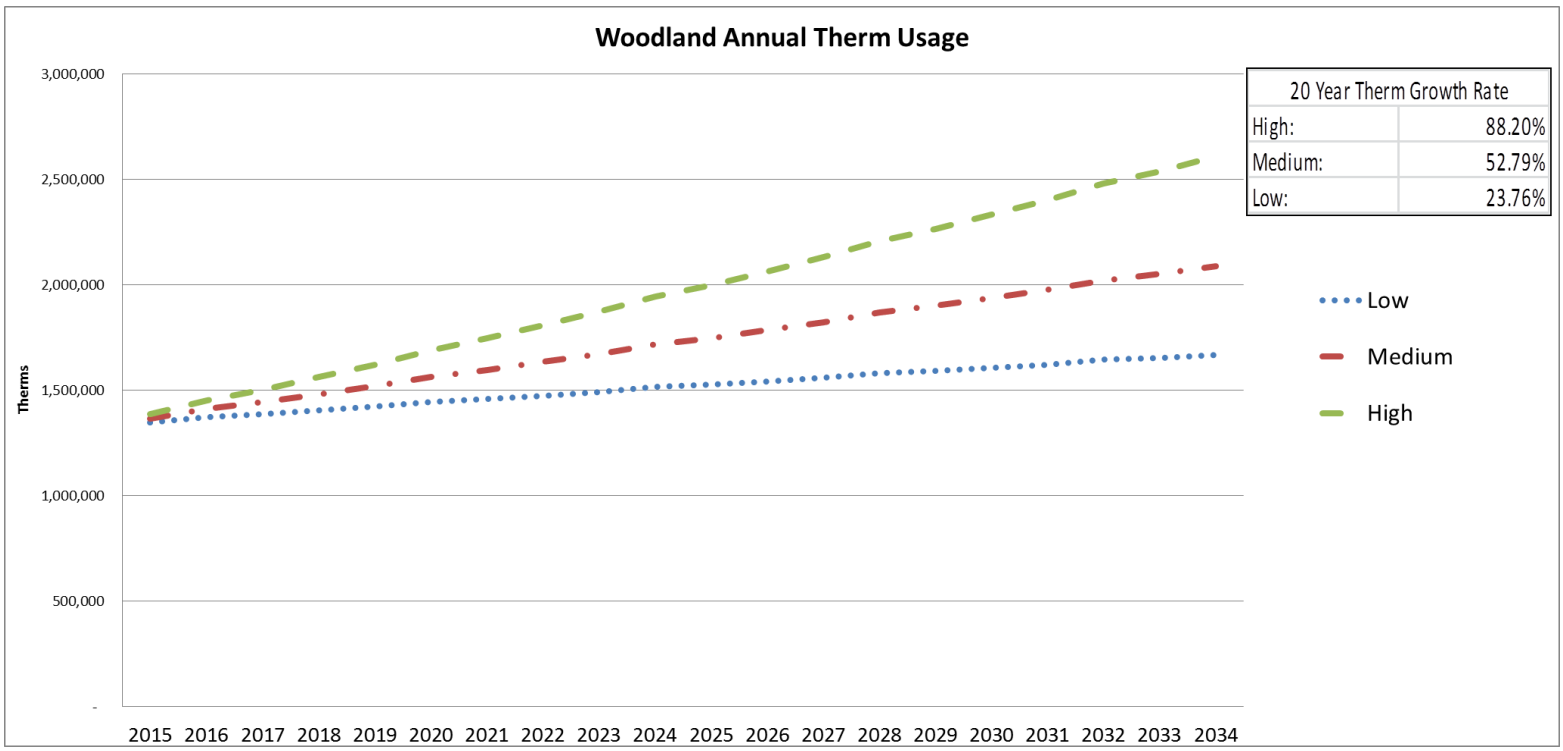
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.86%	1.82%	1.83%	3.26%	3.22%	3.23%	4.66%	4.62%	4.63%
2017	0.89%	0.93%	0.92%	2.24%	2.28%	2.27%	3.59%	3.63%	3.62%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.72%	1.68%	1.69%	2.98%	2.94%	2.95%	4.24%	4.20%	4.21%
2021	0.76%	0.80%	0.79%	1.98%	2.02%	2.01%	3.20%	3.24%	3.23%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.61%	1.57%	1.58%	2.75%	2.71%	2.72%	3.90%	3.85%	3.86%
2025	0.65%	0.69%	0.68%	1.75%	1.79%	1.78%	2.86%	2.90%	2.89%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.51%	1.47%	1.48%	2.55%	2.51%	2.52%	3.60%	3.56%	3.57%
2029	0.55%	0.59%	0.58%	1.57%	1.61%	1.60%	2.58%	2.62%	2.61%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.42%	1.38%	1.39%	2.38%	2.34%	2.35%	3.34%	3.30%	3.31%
2033	0.48%	0.52%	0.50%	1.41%	1.45%	1.44%	2.34%	2.38%	2.37%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

Customer Count Forecast

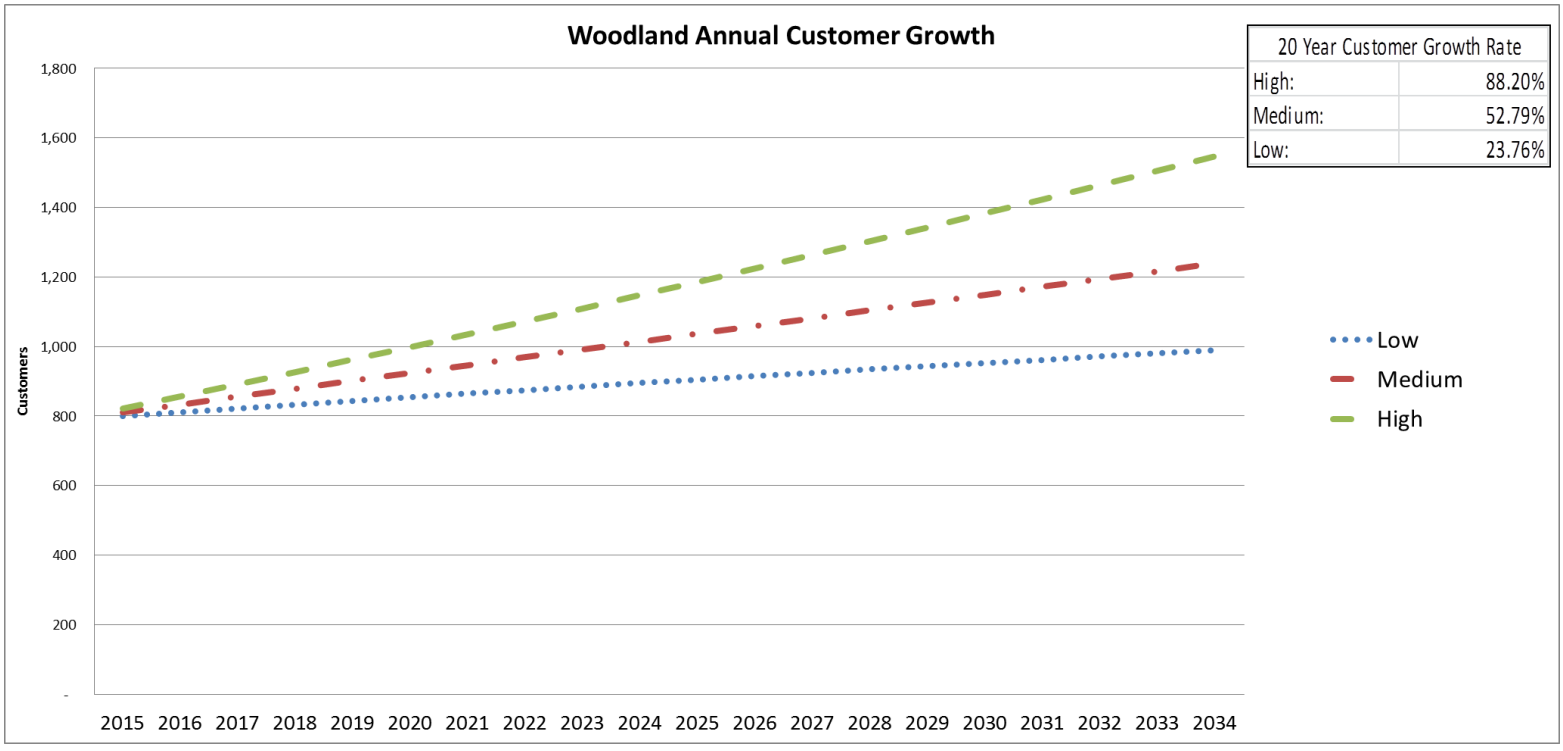
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	588	211	800	597	214	811	605	217	822
2016	597	214	811	613	220	833	630	226	857
2017	605	217	822	630	226	856	656	235	891
2018	613	220	833	647	232	879	682	245	927
2019	621	223	843	663	238	901	708	254	962
2020	628	225	854	680	244	924	735	264	999
2021	636	228	864	697	250	947	762	273	1,035
2022	644	231	875	713	256	969	789	283	1,072
2023	651	234	885	730	262	992	817	293	1,110
2024	659	236	895	746	268	1,014	845	303	1,148
2025	666	239	905	763	274	1,037	873	313	1,186
2026	673	242	915	780	280	1,059	901	323	1,225
2027	680	244	924	796	286	1,082	930	334	1,264
2028	687	247	934	813	292	1,104	959	344	1,303
2029	694	249	944	829	298	1,127	988	355	1,343
2030	701	252	953	846	303	1,149	1,018	365	1,383
2031	708	254	962	862	309	1,172	1,048	376	1,424
2032	715	257	971	879	315	1,194	1,078	387	1,465
2033	722	259	981	895	321	1,217	1,108	398	1,506
2034	728	261	990	912	327	1,239	1,139	409	1,547

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	1.39%	1.39%	2.78%	2.78%	2.78%	4.18%	4.18%	4.18%
2017	1.35%	1.35%	1.35%	2.71%	2.71%	2.71%	4.06%	4.06%	4.06%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.25%	1.25%	1.25%	2.51%	2.51%	2.51%	3.76%	3.76%	3.76%
2021	1.22%	1.22%	1.22%	2.45%	2.45%	2.45%	3.67%	3.67%	3.67%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.14%	1.14%	1.14%	2.28%	2.28%	2.28%	3.42%	3.42%	3.42%
2025	1.11%	1.11%	1.11%	2.22%	2.22%	2.22%	3.34%	3.34%	3.34%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.04%	1.04%	1.04%	2.08%	2.08%	2.08%	3.12%	3.12%	3.12%
2029	1.02%	1.02%	1.02%	2.03%	2.03%	2.03%	3.05%	3.05%	3.05%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	0.96%	0.96%	0.96%	1.91%	1.91%	1.91%	2.87%	2.87%	2.87%
2033	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%



20 Year Therm Growth Rate	
High:	88.20%
Medium:	52.79%
Low:	23.76%



20 Year Customer Growth Rate	
High:	88.20%
Medium:	52.79%
Low:	23.76%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

A/M Rendering

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	214,556	250,848	465,404	218,979	250,848	469,827	223,402	250,848	474,250
2016	217,387	254,157	471,545	223,946	256,538	480,485	230,590	258,919	489,508
2017	218,604	255,580	474,184	227,280	260,357	487,637	236,164	265,178	501,342
2018	220,615	257,931	478,546	231,461	265,147	496,608	242,681	272,495	515,176
2019	222,615	260,270	482,885	235,659	269,955	505,613	249,282	279,907	529,190
2020	225,434	263,565	488,999	240,753	275,791	516,544	256,904	288,466	545,369
2021	226,580	264,905	491,484	244,089	279,612	523,701	262,717	294,993	557,710
2022	228,543	267,201	495,744	248,320	284,458	532,778	269,548	302,663	572,211
2023	230,492	269,478	499,970	252,554	289,308	541,862	276,441	310,403	586,845
2024	233,290	272,750	506,040	257,751	295,262	553,013	284,463	319,410	603,873
2025	234,348	273,987	508,336	261,040	299,030	560,070	290,433	326,114	616,547
2026	236,255	276,217	512,472	265,288	303,897	569,185	297,523	334,075	631,597
2027	238,146	278,428	516,574	269,536	308,762	578,297	304,668	342,097	646,765
2028	240,911	281,660	522,571	274,796	314,788	589,583	313,022	351,478	664,500
2029	241,879	282,792	524,672	278,018	318,479	596,498	319,106	358,310	677,416
2030	243,721	284,945	528,666	282,251	323,328	605,579	326,394	366,492	692,886
2031	245,551	287,085	532,636	286,491	328,184	614,675	333,747	374,750	708,497
2032	248,281	290,277	538,559	291,801	334,268	626,069	342,409	384,476	726,885
2033	249,168	291,314	540,482	294,962	337,889	632,851	348,604	391,432	740,036
2034	250,958	293,407	544,365	299,200	342,743	641,943	356,117	399,867	755,984

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.32%	1.32%	2.27%	2.27%	2.27%	3.22%	3.22%	3.22%
2017	0.56%	0.56%	0.56%	1.49%	1.49%	1.49%	2.42%	2.42%	2.42%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	1.27%	1.27%	2.16%	2.16%	2.16%	3.06%	3.06%	3.06%
2021	0.51%	0.51%	0.51%	1.39%	1.39%	1.39%	2.26%	2.26%	2.26%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	1.21%	1.21%	2.06%	2.06%	2.06%	2.90%	2.90%	2.90%
2025	0.45%	0.45%	0.45%	1.28%	1.28%	1.28%	2.10%	2.10%	2.10%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	1.16%	1.16%	1.95%	1.95%	1.95%	2.74%	2.74%	2.74%
2029	0.40%	0.40%	0.40%	1.17%	1.17%	1.17%	1.94%	1.94%	1.94%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	1.11%	1.11%	1.85%	1.85%	1.85%	2.60%	2.60%	2.60%
2033	0.36%	0.36%	0.36%	1.08%	1.08%	1.08%	1.81%	1.81%	1.81%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	687	2,846	3,534	687	2,880	3,567	687	2,914	3,601
2016	696	2,871	3,567	703	2,932	3,635	709	2,994	3,703
2017	700	2,900	3,600	713	2,989	3,703	727	3,080	3,807
2018	707	2,927	3,634	726	3,044	3,771	747	3,165	3,912
2019	713	2,953	3,666	740	3,099	3,839	767	3,251	4,018
2020	722	2,977	3,699	756	3,152	3,908	790	3,335	4,126
2021	726	3,006	3,732	766	3,210	3,976	808	3,426	4,235
2022	732	3,032	3,764	779	3,266	4,045	829	3,515	4,345
2023	738	3,058	3,796	793	3,322	4,114	850	3,605	4,456
2024	747	3,081	3,828	809	3,374	4,183	875	3,693	4,568
2025	751	3,109	3,860	819	3,433	4,253	893	3,788	4,681
2026	757	3,134	3,891	833	3,489	4,322	915	3,880	4,796
2027	763	3,159	3,922	846	3,545	4,391	937	3,974	4,911
2028	772	3,181	3,953	862	3,598	4,460	963	4,064	5,027
2029	775	3,209	3,984	873	3,657	4,529	982	4,162	5,143
2030	781	3,233	4,014	886	3,712	4,598	1,004	4,257	5,261
2031	787	3,258	4,044	899	3,768	4,667	1,027	4,353	5,379
2032	795	3,279	4,074	916	3,820	4,736	1,053	4,445	5,499
2033	798	3,306	4,104	926	3,879	4,805	1,072	4,547	5,619
2034	804	3,329	4,133	939	3,935	4,874	1,096	4,645	5,740

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	0.86%	0.95%	2.27%	1.80%	1.89%	3.22%	2.75%	2.84%
2017	0.56%	1.02%	0.93%	1.49%	1.95%	1.86%	2.42%	2.89%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	0.80%	0.89%	2.16%	1.69%	1.78%	3.06%	2.59%	2.68%
2021	0.51%	0.97%	0.88%	1.39%	1.85%	1.76%	2.26%	2.73%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	0.75%	0.84%	2.06%	1.59%	1.68%	2.90%	2.43%	2.52%
2025	0.45%	0.92%	0.83%	1.28%	1.74%	1.65%	2.10%	2.57%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	0.70%	0.79%	1.95%	1.49%	1.58%	2.74%	2.27%	2.36%
2029	0.40%	0.86%	0.77%	1.17%	1.64%	1.55%	1.94%	2.41%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	0.65%	0.74%	1.85%	1.39%	1.48%	2.60%	2.13%	2.22%
2033	0.36%	0.82%	0.73%	1.08%	1.55%	1.46%	1.81%	2.28%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	461,284	4,120	465,404	465,668	4,159	469,827	470,052	4,198	474,250
2016	467,371	4,173	471,545	476,232	4,252	480,485	485,176	4,332	489,508
2017	469,987	4,198	474,184	483,320	4,317	487,637	496,904	4,438	501,342
2018	474,310	4,236	478,546	492,212	4,396	496,608	510,615	4,561	515,176
2019	478,610	4,275	482,885	501,138	4,476	505,613	524,505	4,685	529,190
2020	484,671	4,328	488,999	511,972	4,571	516,544	540,543	4,827	545,369
2021	487,133	4,351	491,484	519,065	4,636	523,701	552,773	4,937	557,710
2022	491,355	4,389	495,744	528,062	4,716	532,778	567,145	5,065	572,211
2023	495,544	4,426	499,970	537,065	4,797	541,862	581,650	5,195	586,845
2024	501,562	4,478	506,040	548,119	4,894	553,013	598,529	5,344	603,873
2025	503,836	4,500	508,336	555,112	4,958	560,070	611,089	5,458	616,547
2026	507,935	4,537	512,472	564,146	5,039	569,185	626,006	5,591	631,597
2027	512,001	4,573	516,574	573,178	5,119	578,297	641,040	5,725	646,765
2028	517,947	4,625	522,571	584,365	5,218	589,583	658,620	5,881	664,500
2029	520,027	4,645	524,672	591,217	5,280	596,498	671,419	5,997	677,416
2030	523,986	4,680	528,666	600,218	5,361	605,579	686,752	6,134	692,886
2031	527,921	4,715	532,636	609,234	5,441	614,675	702,225	6,272	708,497
2032	533,793	4,766	538,559	620,528	5,541	626,069	720,452	6,433	726,885
2033	535,697	4,785	540,482	627,248	5,602	632,851	733,485	6,551	740,036
2034	539,546	4,819	544,365	636,260	5,683	641,943	749,292	6,692	755,984

Annual Change

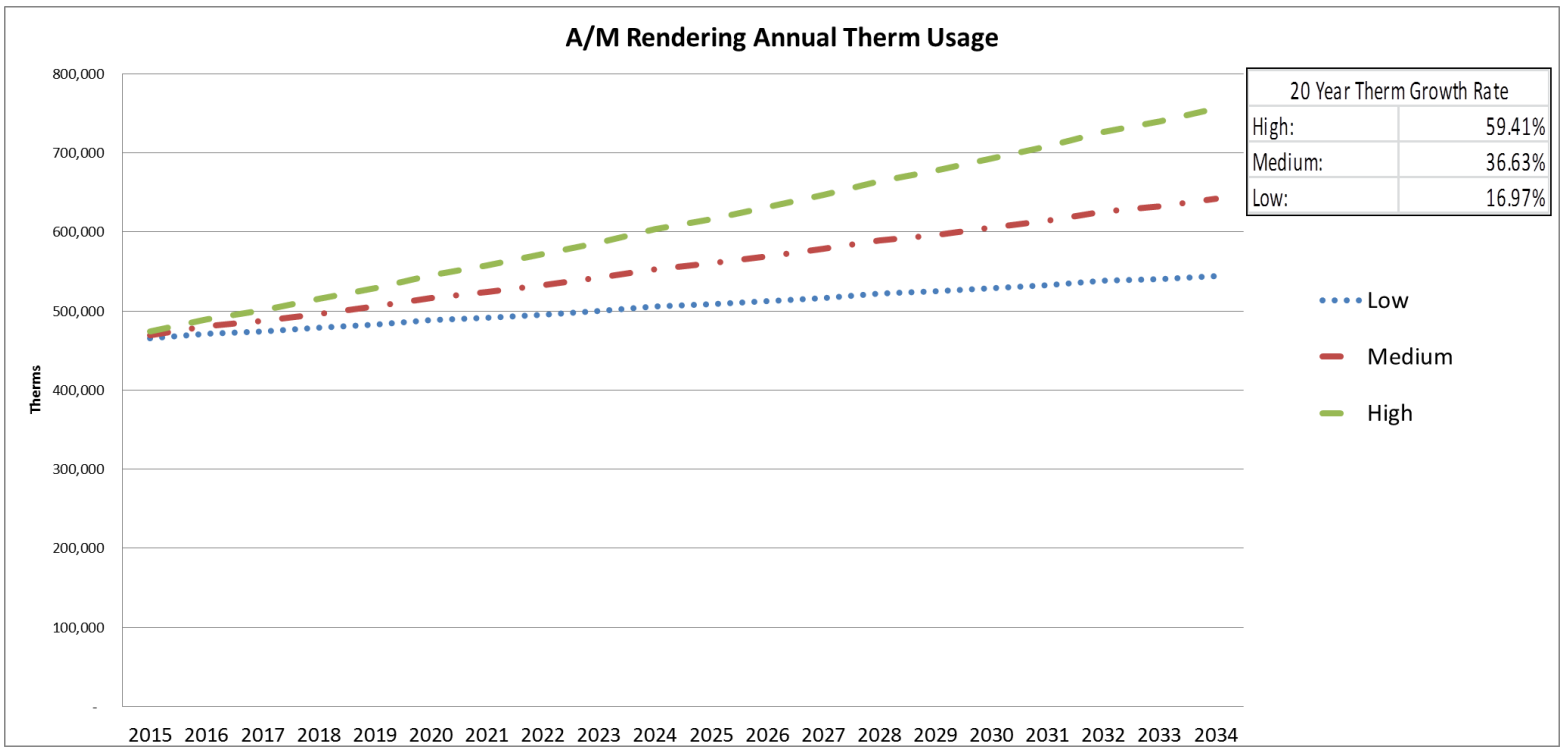
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.29%	1.32%	2.27%	2.24%	2.27%	3.22%	3.19%	3.22%
2017	0.56%	0.59%	0.56%	1.49%	1.52%	1.49%	2.42%	2.44%	2.42%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	1.24%	1.27%	2.16%	2.13%	2.16%	3.06%	3.03%	3.06%
2021	0.51%	0.54%	0.51%	1.39%	1.41%	1.39%	2.26%	2.29%	2.26%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	1.19%	1.21%	2.06%	2.03%	2.06%	2.90%	2.87%	2.90%
2025	0.45%	0.48%	0.45%	1.28%	1.30%	1.28%	2.10%	2.13%	2.10%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	1.13%	1.16%	1.95%	1.92%	1.95%	2.74%	2.71%	2.74%
2029	0.40%	0.43%	0.40%	1.17%	1.20%	1.17%	1.94%	1.97%	1.94%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	1.08%	1.11%	1.85%	1.83%	1.85%	2.60%	2.57%	2.60%
2033	0.36%	0.38%	0.36%	1.08%	1.11%	1.08%	1.81%	1.84%	1.81%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

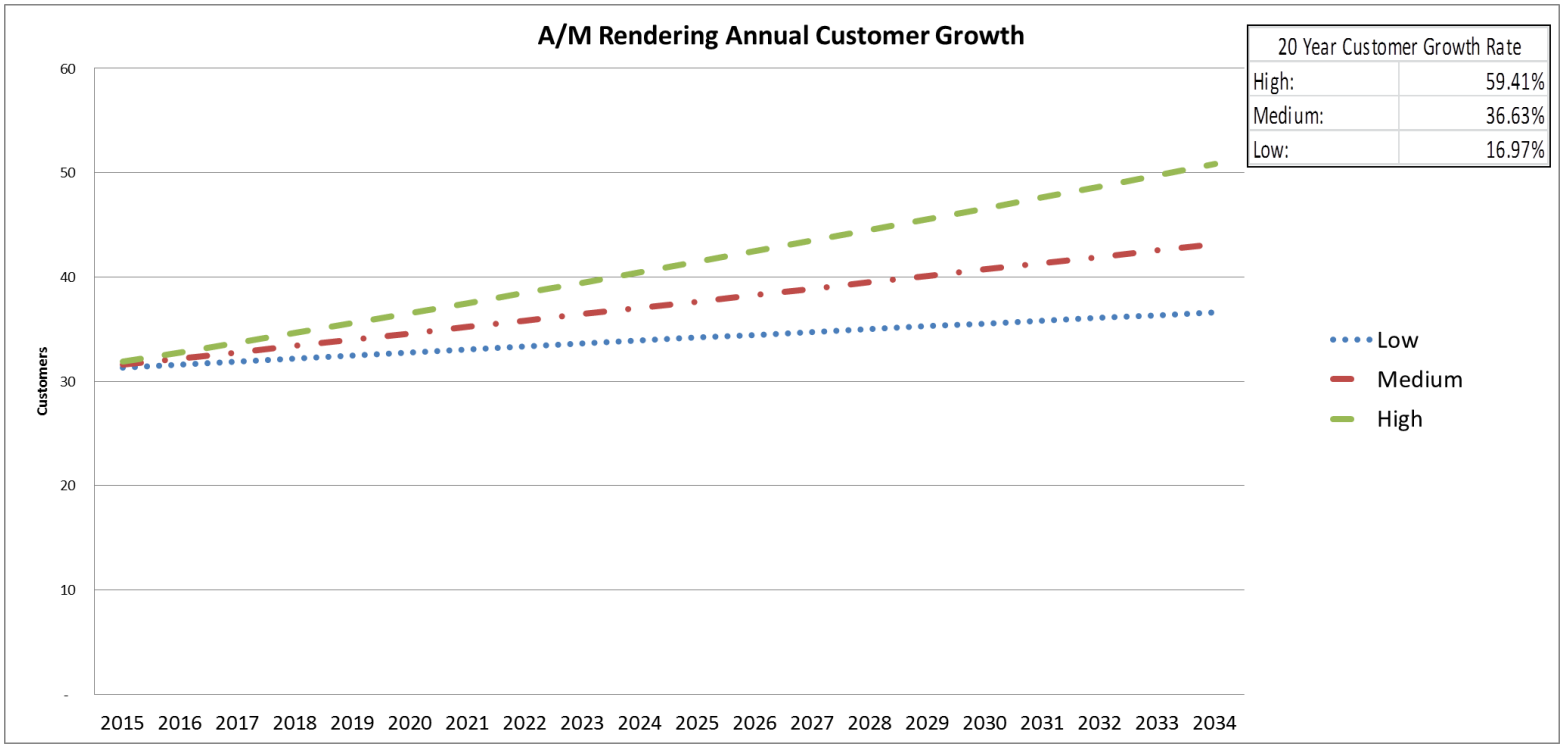
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30	1	31	31	1	32	31	1	32
2016	31	1	32	31	1	32	32	1	33
2017	31	1	32	32	1	33	33	1	34
2018	31	1	32	32	1	33	34	1	35
2019	31	1	32	33	1	34	34	1	36
2020	32	1	33	33	1	35	35	1	37
2021	32	1	33	34	1	35	36	1	38
2022	32	1	33	35	1	36	37	1	38
2023	33	1	34	35	1	36	38	1	39
2024	33	1	34	36	1	37	39	1	40
2025	33	1	34	36	1	38	40	1	41
2026	33	1	34	37	1	38	41	1	42
2027	34	1	35	38	1	39	42	1	43
2028	34	1	35	38	1	40	43	1	45
2029	34	1	35	39	1	40	44	1	46
2030	34	1	36	39	1	41	45	2	47
2031	35	1	36	40	1	41	46	2	48
2032	35	1	36	41	1	42	47	2	49
2033	35	1	36	41	1	43	48	2	50
2034	35	1	37	42	1	43	49	2	51

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


A/M Rendering Annual Therm Usage
Therms
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


A/M Rendering Annual Customer Growth
Customers
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

LDS Church

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	11,046	333	11,379	11,149	333	11,482	11,252	333	11,586
2016	11,283	340	11,624	11,491	343	11,834	11,700	347	12,047
2017	11,245	339	11,584	11,553	345	11,899	11,867	351	12,219
2018	11,344	342	11,687	11,757	351	12,109	12,181	361	12,542
2019	11,443	345	11,788	11,962	358	12,320	12,500	370	12,870
2020	11,684	353	12,036	12,318	368	12,686	12,980	384	13,364
2021	11,639	351	11,990	12,374	370	12,744	13,148	389	13,537
2022	11,736	354	12,091	12,581	376	12,957	13,477	399	13,877
2023	11,833	357	12,190	12,788	382	13,170	13,810	409	14,220
2024	12,077	364	12,441	13,156	393	13,550	14,322	424	14,746
2025	12,025	363	12,388	13,204	395	13,599	14,487	429	14,916
2026	12,120	366	12,485	13,412	401	13,813	14,830	439	15,270
2027	12,214	369	12,583	13,621	407	14,028	15,177	449	15,626
2028	12,460	376	12,836	14,001	419	14,420	15,718	466	16,183
2029	12,401	374	12,775	14,039	420	14,459	15,878	470	16,348
2030	12,493	377	12,870	14,248	426	14,674	16,232	481	16,713
2031	12,585	380	12,965	14,458	432	14,890	16,590	491	17,081
2032	12,833	387	13,220	14,848	444	15,292	17,160	508	17,668
2033	12,767	385	13,152	14,877	445	15,322	17,314	513	17,827
2034	12,857	388	13,245	15,087	451	15,538	17,681	524	18,205

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.15%	2.15%	2.15%	3.07%	3.07%	3.07%	3.98%	3.98%	3.98%
2017	-0.34%	-0.34%	-0.34%	0.54%	0.54%	0.54%	1.43%	1.43%	1.43%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.10%	2.10%	2.10%	2.97%	2.97%	2.97%	3.84%	3.84%	3.84%
2021	-0.38%	-0.38%	-0.38%	0.46%	0.46%	0.46%	1.29%	1.29%	1.29%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.06%	2.06%	2.06%	2.88%	2.88%	2.88%	3.70%	3.70%	3.70%
2025	-0.43%	-0.43%	-0.43%	0.36%	0.36%	0.36%	1.15%	1.15%	1.15%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.01%	2.01%	2.01%	2.79%	2.79%	2.79%	3.56%	3.56%	3.56%
2029	-0.47%	-0.47%	-0.47%	0.27%	0.27%	0.27%	1.02%	1.02%	1.02%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.97%	1.97%	1.97%	2.70%	2.70%	2.70%	3.43%	3.43%	3.43%
2033	-0.51%	-0.51%	-0.51%	0.19%	0.19%	0.19%	0.90%	0.90%	0.90%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1	126	127	1	127	128	1	128	129
2016	1	127	128	1	129	130	1	132	133
2017	1	128	129	1	132	133	1	135	136
2018	1	129	130	1	134	135	1	139	140
2019	1	130	131	1	136	137	1	142	143
2020	1	131	132	1	139	140	1	146	147
2021	1	133	134	1	141	142	1	150	151
2022	1	134	135	1	143	144	1	153	155
2023	1	135	136	1	146	147	1	157	158
2024	1	136	137	1	148	149	1	161	162
2025	1	137	138	1	150	151	1	165	166
2026	1	138	139	1	153	154	1	169	170
2027	1	139	140	1	155	156	1	173	174
2028	1	140	141	1	158	159	1	177	178
2029	1	141	142	1	160	161	1	181	182
2030	1	142	143	1	162	163	1	185	186
2031	1	143	144	1	165	166	1	189	190
2032	1	144	145	1	167	168	1	193	194
2033	1	145	146	1	169	171	1	197	199
2034	1	146	148	1	172	173	1	201	203

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.15%	0.90%	0.90%	3.07%	1.80%	1.81%	3.98%	2.70%	2.71%
2017	-0.34%	0.90%	0.89%	0.54%	1.80%	1.79%	1.43%	2.69%	2.68%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.10%	0.85%	0.86%	2.97%	1.71%	1.72%	3.84%	2.57%	2.58%
2021	-0.38%	0.86%	0.85%	0.46%	1.70%	1.70%	1.29%	2.55%	2.54%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.06%	0.80%	0.81%	2.88%	1.62%	1.63%	3.70%	2.43%	2.44%
2025	-0.43%	0.81%	0.80%	0.36%	1.61%	1.60%	1.15%	2.41%	2.40%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.01%	0.76%	0.77%	2.79%	1.53%	1.53%	3.56%	2.29%	2.30%
2029	-0.47%	0.76%	0.76%	0.27%	1.52%	1.51%	1.02%	2.27%	2.27%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.97%	0.72%	0.72%	2.70%	1.44%	1.45%	3.43%	2.16%	2.17%
2033	-0.51%	0.72%	0.72%	0.19%	1.44%	1.43%	0.90%	2.16%	2.15%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,025	8,354	11,379	3,053	8,429	11,482	3,080	8,505	11,586
2016	3,091	8,533	11,624	3,147	8,687	11,834	3,204	8,843	12,047
2017	3,080	8,504	11,584	3,164	8,735	11,899	3,249	8,970	12,219
2018	3,107	8,579	11,687	3,219	8,889	12,109	3,335	9,208	12,542
2019	3,134	8,654	11,788	3,275	9,044	12,320	3,422	9,448	12,870
2020	3,201	8,835	12,036	3,374	9,312	12,686	3,554	9,810	13,364
2021	3,188	8,802	11,990	3,388	9,355	12,744	3,599	9,938	13,537
2022	3,215	8,876	12,091	3,445	9,512	12,957	3,689	10,187	13,877
2023	3,241	8,949	12,190	3,502	9,669	13,170	3,781	10,439	14,220
2024	3,308	9,133	12,441	3,603	9,946	13,550	3,921	10,825	14,746
2025	3,293	9,094	12,388	3,615	9,983	13,599	3,966	10,950	14,916
2026	3,320	9,166	12,485	3,673	10,141	13,813	4,060	11,210	15,270
2027	3,345	9,237	12,583	3,730	10,299	14,028	4,155	11,472	15,626
2028	3,413	9,422	12,836	3,835	10,585	14,420	4,304	11,880	16,183
2029	3,396	9,378	12,775	3,844	10,615	14,459	4,346	12,001	16,348
2030	3,422	9,448	12,870	3,901	10,773	14,674	4,443	12,269	16,713
2031	3,447	9,518	12,965	3,959	10,931	14,890	4,541	12,540	17,081
2032	3,516	9,704	13,220	4,067	11,225	15,292	4,698	12,970	17,668
2033	3,497	9,655	13,152	4,074	11,248	15,322	4,740	13,088	17,827
2034	3,521	9,723	13,245	4,131	11,407	15,538	4,840	13,365	18,205

Annual Change

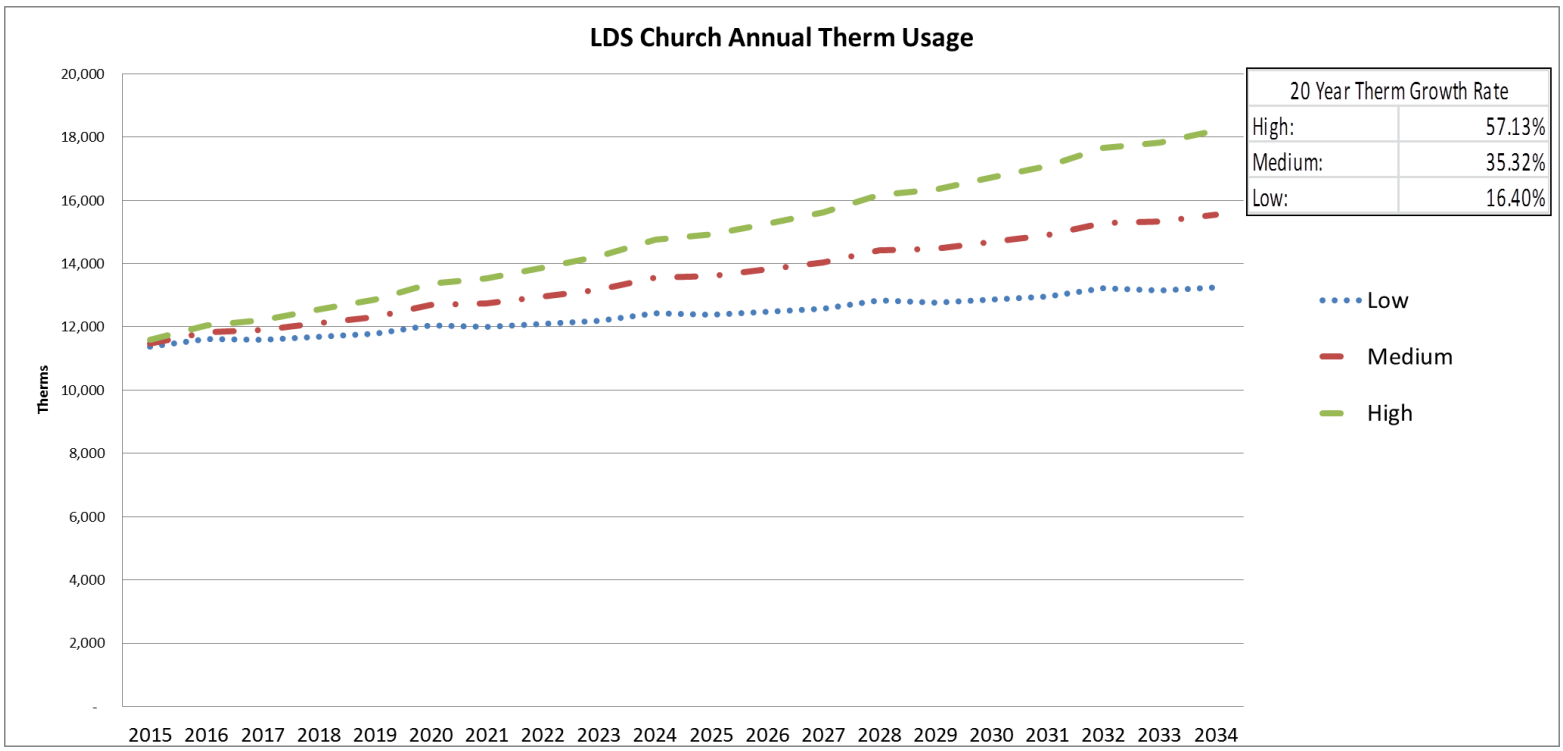
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.17%	2.14%	2.15%	3.09%	3.06%	3.07%	4.01%	3.97%	3.98%
2017	-0.36%	-0.33%	-0.34%	0.52%	0.55%	0.54%	1.40%	1.44%	1.43%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.13%	2.10%	2.10%	3.00%	2.96%	2.97%	3.86%	3.83%	3.84%
2021	-0.40%	-0.37%	-0.38%	0.43%	0.46%	0.46%	1.27%	1.30%	1.29%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.08%	2.05%	2.06%	2.90%	2.87%	2.88%	3.73%	3.70%	3.70%
2025	-0.45%	-0.42%	-0.43%	0.34%	0.37%	0.36%	1.13%	1.16%	1.15%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.03%	2.00%	2.01%	2.81%	2.78%	2.79%	3.59%	3.56%	3.56%
2029	-0.50%	-0.47%	-0.47%	0.25%	0.28%	0.27%	1.00%	1.03%	1.02%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.99%	1.96%	1.97%	2.72%	2.69%	2.70%	3.46%	3.43%	3.43%
2033	-0.53%	-0.50%	-0.51%	0.17%	0.20%	0.19%	0.88%	0.91%	0.90%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

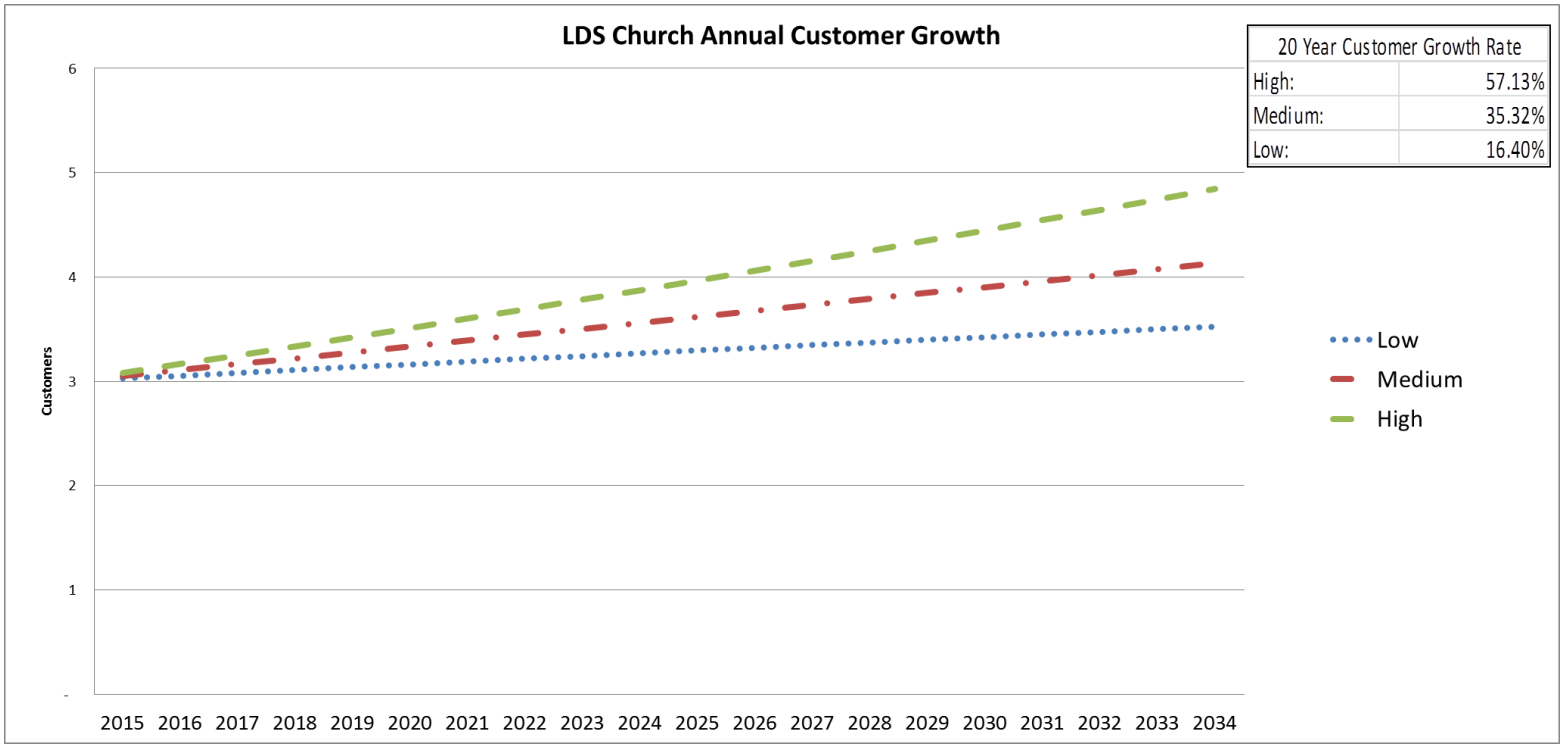
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	1	3	2	1	3	2	1	3
2016	2	1	3	2	1	3	2	1	3
2017	2	1	3	2	1	3	2	1	3
2018	2	1	3	2	1	3	2	1	3
2019	2	1	3	2	1	3	2	1	3
2020	2	1	3	2	1	3	2	1	4
2021	2	1	3	2	1	3	2	1	4
2022	2	1	3	2	1	3	2	1	4
2023	2	1	3	2	1	4	3	1	4
2024	2	1	3	2	1	4	3	1	4
2025	2	1	3	2	1	4	3	1	4
2026	2	1	3	2	1	4	3	1	4
2027	2	1	3	2	1	4	3	1	4
2028	2	1	3	3	1	4	3	1	4
2029	2	1	3	3	1	4	3	1	4
2030	2	1	3	3	1	4	3	1	4
2031	2	1	3	3	1	4	3	2	5
2032	2	1	3	3	1	4	3	2	5
2033	2	1	3	3	1	4	3	2	5
2034	2	1	4	3	1	4	3	2	5

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.90%	0.90%	0.90%	1.81%	1.81%	1.81%	2.71%	2.71%	2.71%
2017	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2021	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.54%	2.54%	2.54%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2025	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	0.77%	0.77%	0.77%	1.53%	1.53%	1.53%	2.30%	2.30%	2.30%
2029	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2033	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%


LDS Church Annual Therm Usage
Therms
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 57.13%
Medium: 35.32%
Low: 16.40%
Low
Medium
High


LDS Church Annual Customer Growth
Customers
6
5
4
3
2
1
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 57.13%
Medium: 35.32%
Low: 16.40%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kalama #1

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	774	98	872	776	98	874	778	98	876
2016	776	98	874	779	99	878	783	99	882
2017	777	99	876	783	99	882	788	99	888
2018	779	99	878	787	99	886	794	100	894
2019	781	99	880	790	100	890	800	101	901
2020	783	99	882	794	100	895	806	102	907
2021	785	99	884	798	101	899	811	102	914
2022	787	100	887	802	101	903	817	103	920
2023	789	100	889	806	102	908	823	104	927
2024	791	100	891	810	102	912	830	105	934
2025	793	100	893	814	103	917	836	105	941
2026	795	101	895	818	103	921	842	106	948
2027	797	101	898	822	104	926	848	107	955
2028	799	101	900	826	104	930	854	108	962
2029	800	101	902	830	105	935	860	109	969
2030	802	102	904	834	105	939	867	109	976
2031	804	102	906	838	106	944	873	110	983
2032	806	102	908	842	106	948	879	111	990
2033	808	102	911	846	107	953	886	112	997
2034	810	103	913	850	107	958	892	112	1,004

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2017	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2022	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2023	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2024	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2025	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2026	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2027	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2028	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2029	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2030	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2031	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	0	17	17	0	17	17	0	17	17
2016	0	17	17	0	17	17	0	17	17
2017	0	17	17	0	17	17	0	17	17
2018	0	17	17	0	17	17	0	17	17
2019	0	17	17	0	17	17	0	17	17
2020	0	17	17	0	17	17	0	17	18
2021	0	17	17	0	17	17	0	17	18
2022	0	17	17	0	17	17	0	18	18
2023	0	17	17	0	17	18	0	18	18
2024	0	17	17	0	17	18	0	18	18
2025	0	17	17	0	17	18	0	18	18
2026	0	17	17	0	18	18	0	18	18
2027	0	17	17	0	18	18	0	18	18
2028	0	17	17	0	18	18	0	18	19
2029	0	17	17	0	18	18	0	18	19
2030	0	17	17	0	18	18	0	19	19
2031	0	17	18	0	18	18	0	19	19
2032	0	17	18	0	18	18	0	19	19
2033	0	17	18	0	18	18	0	19	19
2034	0	17	18	0	18	19	0	19	19

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2017	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2022	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2023	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2024	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2025	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2026	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2027	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2028	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2029	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2030	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2031	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	872	-	872	874	-	874	876	-	876
2016	874	-	874	878	-	878	882	-	882
2017	876	-	876	882	-	882	888	-	888
2018	878	-	878	886	-	886	894	-	894
2019	880	-	880	890	-	890	901	-	901
2020	882	-	882	895	-	895	907	-	907
2021	884	-	884	899	-	899	914	-	914
2022	887	-	887	903	-	903	920	-	920
2023	889	-	889	908	-	908	927	-	927
2024	891	-	891	912	-	912	934	-	934
2025	893	-	893	917	-	917	941	-	941
2026	895	-	895	921	-	921	948	-	948
2027	898	-	898	926	-	926	955	-	955
2028	900	-	900	930	-	930	962	-	962
2029	902	-	902	935	-	935	969	-	969
2030	904	-	904	939	-	939	976	-	976
2031	906	-	906	944	-	944	983	-	983
2032	908	-	908	948	-	948	990	-	990
2033	911	-	911	953	-	953	997	-	997
2034	913	-	913	958	-	958	1,004	-	1,004

Annual Change

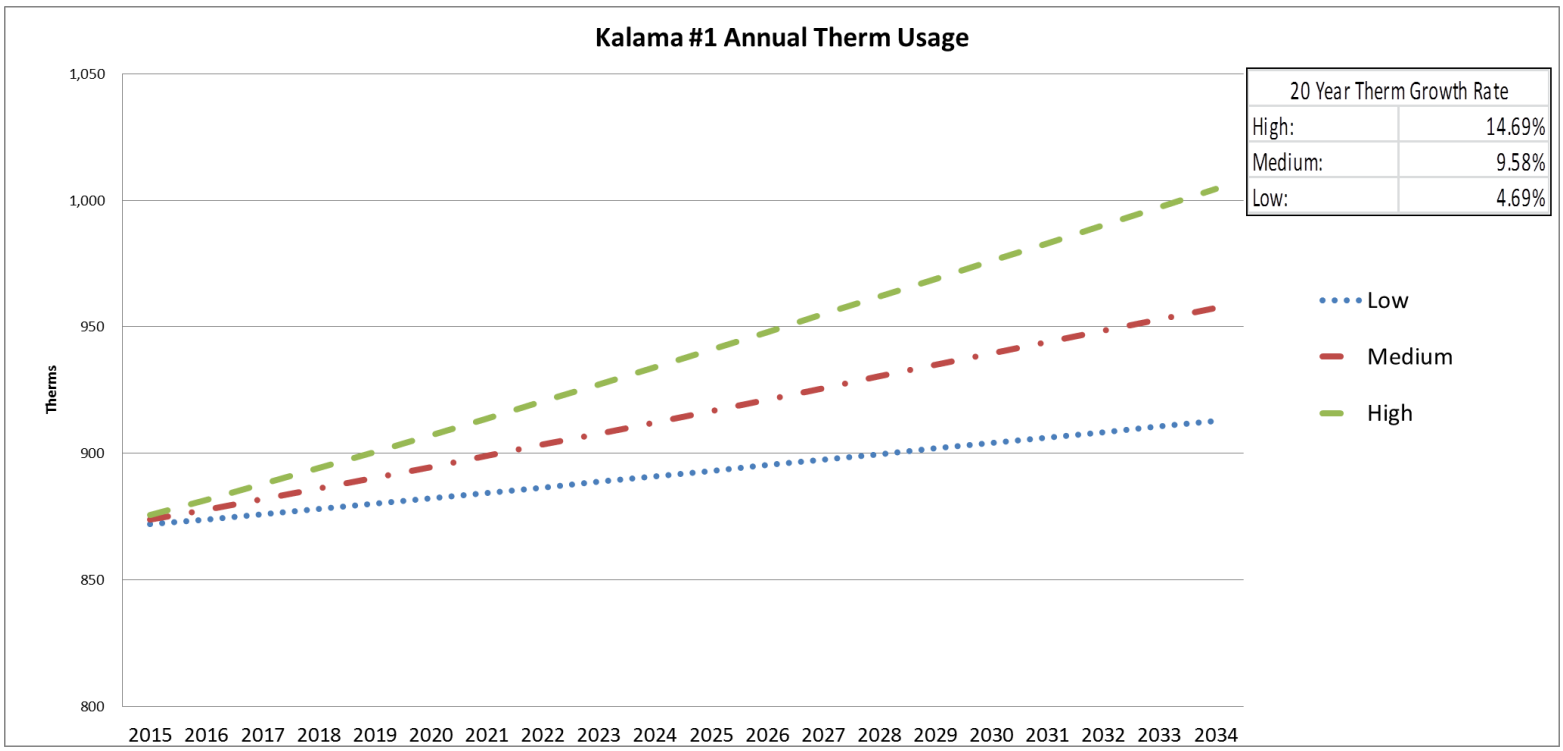
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	#DIV/0!	0.23%	0.45%	#DIV/0!	0.45%	0.68%	#DIV/0!	0.68%
2017	0.23%	#DIV/0!	0.23%	0.46%	#DIV/0!	0.46%	0.69%	#DIV/0!	0.69%
2018	0.24%	#DIV/0!	0.24%	0.47%	#DIV/0!	0.47%	0.71%	#DIV/0!	0.71%
2019	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2020	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2021	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2022	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2023	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2024	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2025	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2026	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2027	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2028	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2029	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2030	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2031	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2032	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2033	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2034	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%

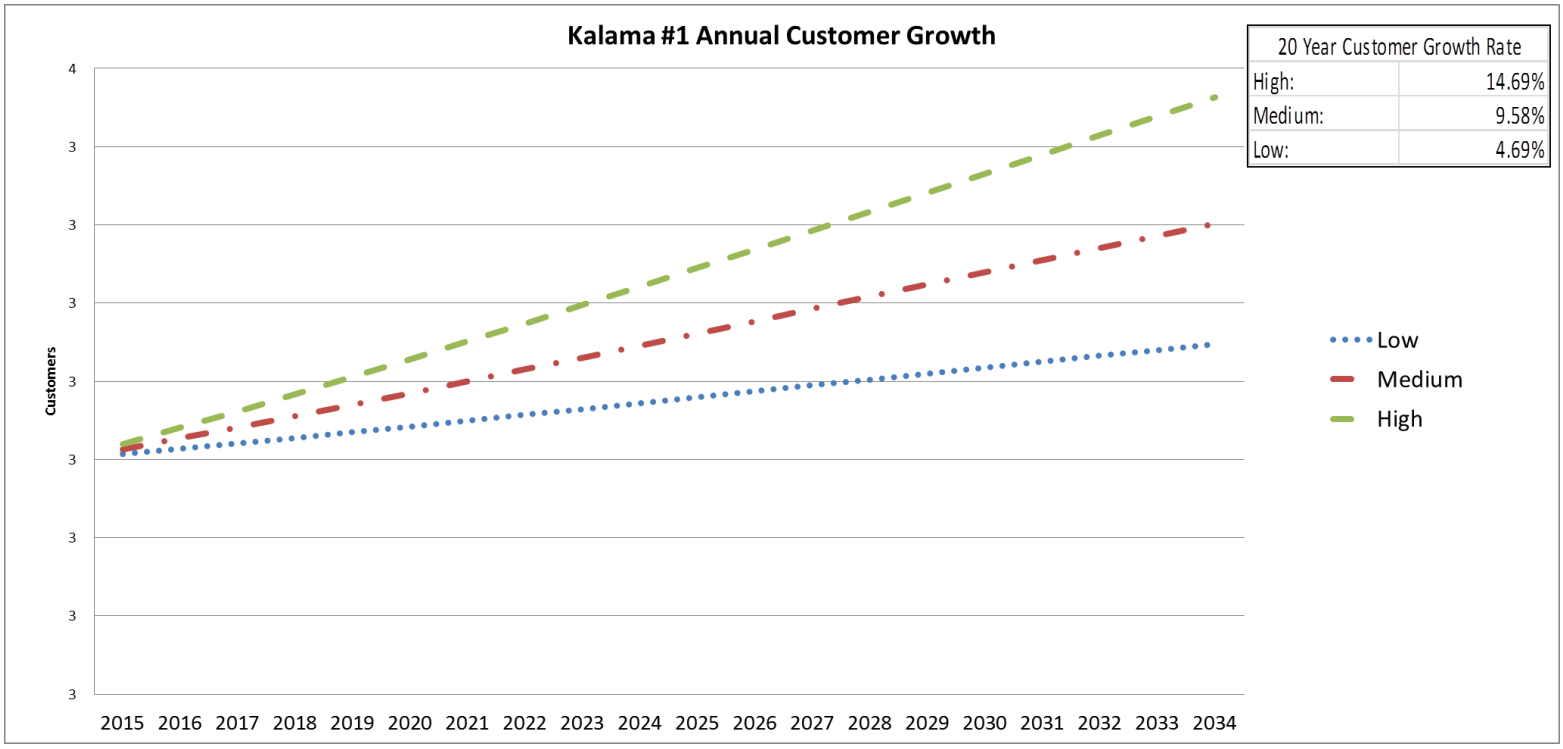
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3	-	3	3	-	3	3	-	3
2016	3	-	3	3	-	3	3	-	3
2017	3	-	3	3	-	3	3	-	3
2018	3	-	3	3	-	3	3	-	3
2019	3	-	3	3	-	3	3	-	3
2020	3	-	3	3	-	3	3	-	3
2021	3	-	3	3	-	3	3	-	3
2022	3	-	3	3	-	3	3	-	3
2023	3	-	3	3	-	3	3	-	3
2024	3	-	3	3	-	3	3	-	3
2025	3	-	3	3	-	3	3	-	3
2026	3	-	3	3	-	3	3	-	3
2027	3	-	3	3	-	3	3	-	3
2028	3	-	3	3	-	3	3	-	3
2029	3	-	3	3	-	3	3	-	3
2030	3	-	3	3	-	3	3	-	3
2031	3	-	3	3	-	3	3	-	3
2032	3	-	3	3	-	3	3	-	3
2033	3	-	3	3	-	3	3	-	3
2034	3	-	3	3	-	3	3	-	3

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	#DIV/0!	0.23%	0.45%	#DIV/0!	0.45%	0.68%	#DIV/0!	0.68%
2017	0.23%	#DIV/0!	0.23%	0.46%	#DIV/0!	0.46%	0.69%	#DIV/0!	0.69%
2018	0.24%	#DIV/0!	0.24%	0.47%	#DIV/0!	0.47%	0.71%	#DIV/0!	0.71%
2019	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2020	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2021	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2022	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2023	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2024	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2025	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2026	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2027	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2028	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2029	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2030	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2031	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2032	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2033	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2034	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%


Kalama #1 Annual Therm Usage
20 Year Therm Growth Rate
High: 14.69%
Medium: 9.58%
Low: 4.69%
Therms
1,050
1,000
950
900
850
800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Kalama #1 Annual Customer Growth
20 Year Customer Growth Rate
High: 14.69%
Medium: 9.58%
Low: 4.69%
Customers
4
3
3
3
3
3
3
3
3
3
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Dehawn Dairy

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,276	192	1,468	1,277	192	1,469	1,278	192	1,469
2016	1,283	193	1,476	1,284	193	1,477	1,286	193	1,479
2017	1,278	192	1,470	1,280	192	1,473	1,283	193	1,476
2018	1,279	192	1,471	1,282	193	1,475	1,286	193	1,479
2019	1,280	192	1,472	1,284	193	1,477	1,289	194	1,483
2020	1,287	193	1,480	1,293	194	1,487	1,299	195	1,493
2021	1,282	193	1,474	1,289	194	1,482	1,296	195	1,490
2022	1,283	193	1,476	1,291	194	1,485	1,299	195	1,494
2023	1,284	193	1,477	1,293	194	1,488	1,303	196	1,498
2024	1,291	194	1,485	1,302	196	1,497	1,312	197	1,509
2025	1,286	193	1,480	1,298	195	1,493	1,310	197	1,506
2026	1,287	194	1,481	1,300	195	1,496	1,313	197	1,510
2027	1,289	194	1,482	1,303	196	1,498	1,317	198	1,514
2028	1,296	195	1,491	1,311	197	1,508	1,327	199	1,526
2029	1,291	194	1,485	1,307	196	1,504	1,324	199	1,523
2030	1,292	194	1,486	1,310	197	1,506	1,327	199	1,527
2031	1,293	194	1,488	1,312	197	1,509	1,331	200	1,531
2032	1,301	196	1,496	1,320	198	1,519	1,341	201	1,542
2033	1,295	195	1,490	1,317	198	1,514	1,338	201	1,539
2034	1,297	195	1,492	1,319	198	1,517	1,341	201	1,543

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	0.61%	0.61%	0.61%	0.68%	0.68%	0.68%
2017	-0.40%	-0.40%	-0.40%	-0.33%	-0.33%	-0.33%	-0.25%	-0.25%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.56%	0.56%	0.56%	0.64%	0.64%	0.64%	0.73%	0.73%	0.73%
2021	-0.39%	-0.39%	-0.39%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.57%	0.57%	0.57%	0.66%	0.66%	0.66%	0.75%	0.75%	0.75%
2025	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.57%	0.57%	0.57%	0.66%	0.66%	0.66%	0.75%	0.75%	0.75%
2029	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2033	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1	18	19	1	18	19	1	18	19
2016	1	18	19	1	18	19	1	18	19
2017	1	18	19	1	18	19	1	19	19
2018	1	18	19	1	19	19	1	19	19
2019	1	18	19	1	19	19	1	19	19
2020	1	18	19	1	19	19	1	19	19
2021	1	19	19	1	19	19	1	19	19
2022	1	19	19	1	19	19	1	19	19
2023	1	19	19	1	19	19	1	19	19
2024	1	19	19	1	19	19	1	19	19
2025	1	19	19	1	19	19	1	19	19
2026	1	19	19	1	19	19	1	19	20
2027	1	19	19	1	19	19	1	19	20
2028	1	19	19	1	19	19	1	19	20
2029	1	19	19	1	19	19	1	19	20
2030	1	19	19	1	19	19	1	19	20
2031	1	19	19	1	19	19	1	19	20
2032	1	19	19	1	19	20	1	19	20
2033	1	19	19	1	19	20	1	19	20
2034	1	19	19	1	19	20	1	19	20

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.05%	0.07%	0.61%	0.12%	0.14%	0.68%	0.19%	0.21%
2017	-0.40%	0.09%	0.07%	-0.33%	0.16%	0.15%	-0.25%	0.23%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.56%	0.07%	0.08%	0.64%	0.15%	0.17%	0.73%	0.24%	0.25%
2021	-0.39%	0.10%	0.09%	-0.30%	0.19%	0.17%	-0.21%	0.27%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.57%	0.08%	0.09%	0.66%	0.17%	0.18%	0.75%	0.26%	0.27%
2025	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.57%	0.08%	0.09%	0.66%	0.17%	0.18%	0.75%	0.26%	0.27%
2029	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.26%
2033	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,468	-	1,468	1,469	-	1,469	1,469	-	1,469
2016	1,476	-	1,476	1,477	-	1,477	1,479	-	1,479
2017	1,470	-	1,470	1,473	-	1,473	1,476	-	1,476
2018	1,471	-	1,471	1,475	-	1,475	1,479	-	1,479
2019	1,472	-	1,472	1,477	-	1,477	1,483	-	1,483
2020	1,480	-	1,480	1,487	-	1,487	1,493	-	1,493
2021	1,474	-	1,474	1,482	-	1,482	1,490	-	1,490
2022	1,476	-	1,476	1,485	-	1,485	1,494	-	1,494
2023	1,477	-	1,477	1,488	-	1,488	1,498	-	1,498
2024	1,485	-	1,485	1,497	-	1,497	1,509	-	1,509
2025	1,480	-	1,480	1,493	-	1,493	1,506	-	1,506
2026	1,481	-	1,481	1,496	-	1,496	1,510	-	1,510
2027	1,482	-	1,482	1,498	-	1,498	1,514	-	1,514
2028	1,491	-	1,491	1,508	-	1,508	1,526	-	1,526
2029	1,485	-	1,485	1,504	-	1,504	1,523	-	1,523
2030	1,486	-	1,486	1,506	-	1,506	1,527	-	1,527
2031	1,488	-	1,488	1,509	-	1,509	1,531	-	1,531
2032	1,496	-	1,496	1,519	-	1,519	1,542	-	1,542
2033	1,490	-	1,490	1,514	-	1,514	1,539	-	1,539
2034	1,492	-	1,492	1,517	-	1,517	1,543	-	1,543

Annual Change

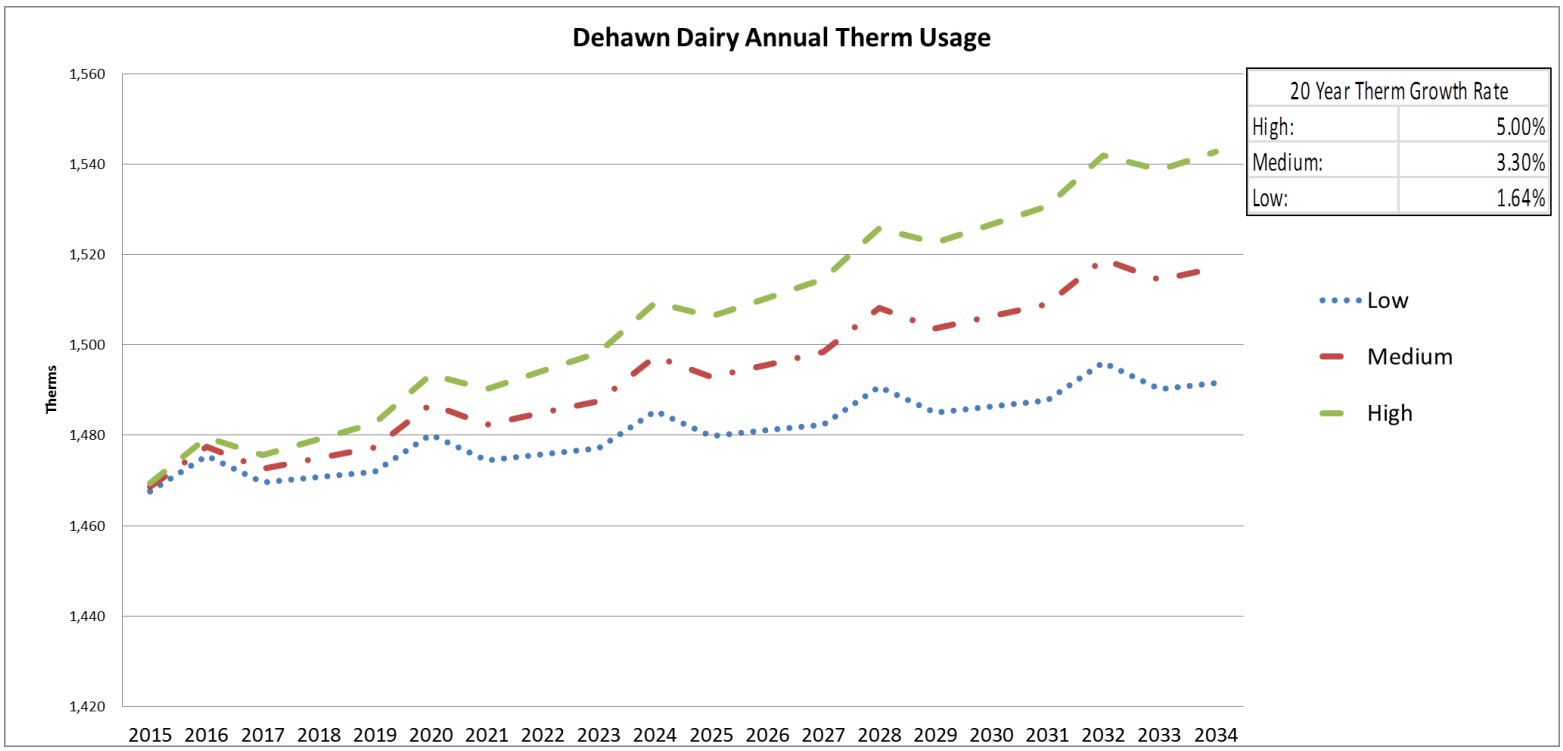
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	#DIV/0!	0.54%	0.61%	#DIV/0!	0.61%	0.68%	#DIV/0!	0.68%
2017	-0.40%	#DIV/0!	-0.40%	-0.33%	#DIV/0!	-0.33%	-0.25%	#DIV/0!	-0.25%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.56%	#DIV/0!	0.56%	0.64%	#DIV/0!	0.64%	0.73%	#DIV/0!	0.73%
2021	-0.39%	#DIV/0!	-0.39%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.57%	#DIV/0!	0.57%	0.66%	#DIV/0!	0.66%	0.75%	#DIV/0!	0.75%
2025	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.57%	#DIV/0!	0.57%	0.66%	#DIV/0!	0.66%	0.75%	#DIV/0!	0.75%
2029	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.56%	#DIV/0!	0.56%	0.65%	#DIV/0!	0.65%	0.74%	#DIV/0!	0.74%
2033	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%

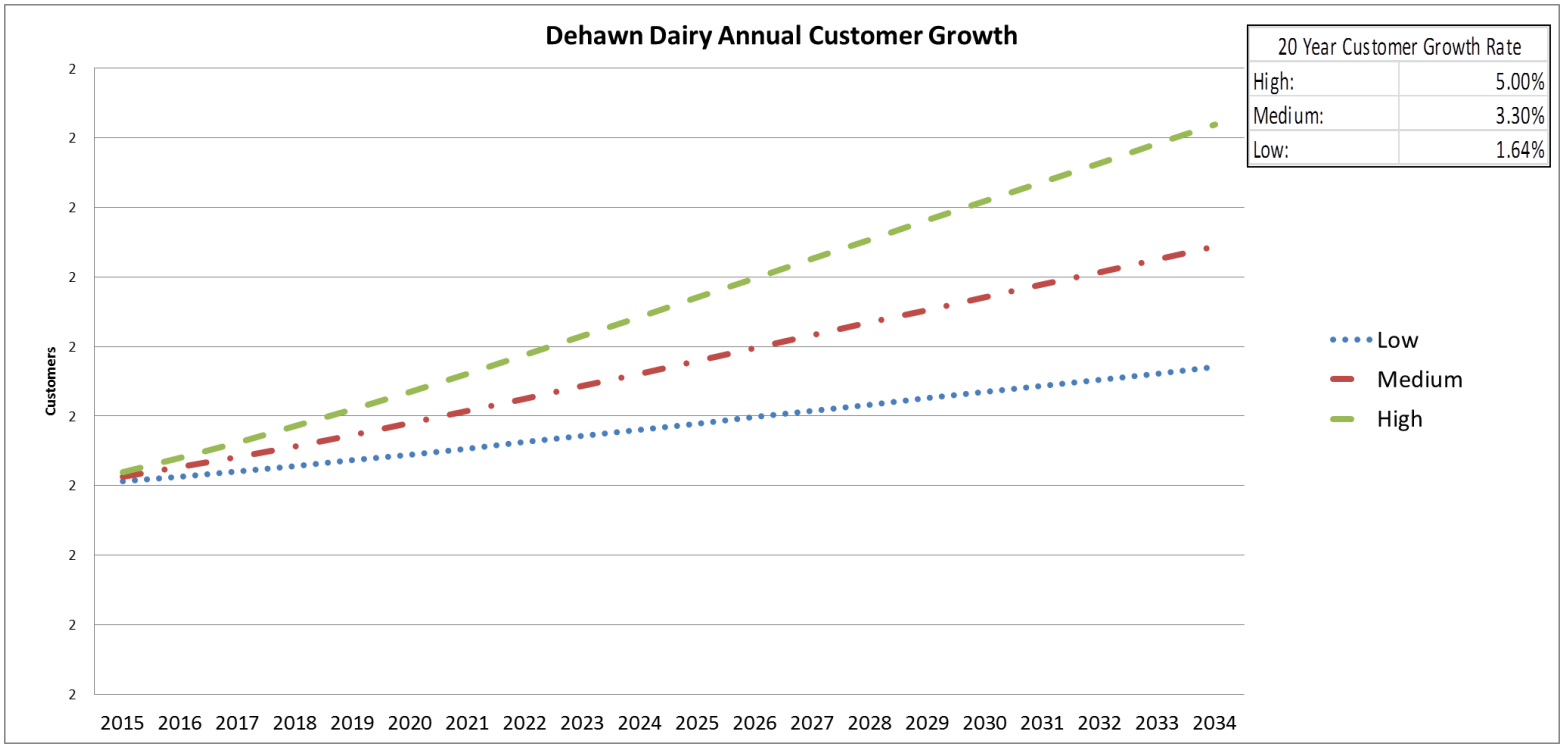
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	-	2	2	-	2	2	-	2
2016	2	-	2	2	-	2	2	-	2
2017	2	-	2	2	-	2	2	-	2
2018	2	-	2	2	-	2	2	-	2
2019	2	-	2	2	-	2	2	-	2
2020	2	-	2	2	-	2	2	-	2
2021	2	-	2	2	-	2	2	-	2
2022	2	-	2	2	-	2	2	-	2
2023	2	-	2	2	-	2	2	-	2
2024	2	-	2	2	-	2	2	-	2
2025	2	-	2	2	-	2	2	-	2
2026	2	-	2	2	-	2	2	-	2
2027	2	-	2	2	-	2	2	-	2
2028	2	-	2	2	-	2	2	-	2
2029	2	-	2	2	-	2	2	-	2
2030	2	-	2	2	-	2	2	-	2
2031	2	-	2	2	-	2	2	-	2
2032	2	-	2	2	-	2	2	-	2
2033	2	-	2	2	-	2	2	-	2
2034	2	-	2	2	-	2	2	-	2

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%


Dehawn Dairy Annual Therm Usage
Therms
1,560
1,540
1,520
1,500
1,480
1,460
1,440
1,420
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


Dehawn Dairy Annual Customer Growth
Customers
2
2
2
2
2
2
2
2
2
2
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Chief Ranch

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	735	(104)	630	735	(104)	631	736	(104)	631
2016	735	(104)	631	736	(105)	632	737	(105)	633
2017	736	(105)	631	737	(105)	633	739	(105)	634
2018	736	(105)	632	738	(105)	634	740	(105)	635
2019	737	(105)	632	740	(105)	635	742	(105)	637
2020	738	(105)	633	741	(105)	636	744	(106)	639
2021	738	(105)	633	742	(105)	637	746	(106)	640
2022	739	(105)	634	743	(106)	638	748	(106)	642
2023	740	(105)	634	745	(106)	639	750	(106)	644
2024	740	(105)	635	746	(106)	640	752	(107)	645
2025	741	(105)	636	747	(106)	641	754	(107)	647
2026	742	(105)	636	749	(106)	642	756	(107)	649
2027	742	(105)	637	750	(107)	644	758	(108)	651
2028	743	(106)	637	752	(107)	645	760	(108)	652
2029	744	(106)	638	753	(107)	646	762	(108)	654
2030	744	(106)	638	754	(107)	647	764	(108)	656
2031	745	(106)	639	755	(107)	648	766	(109)	658
2032	746	(106)	640	757	(107)	649	768	(109)	659
2033	746	(106)	640	758	(108)	650	770	(109)	661
2034	747	(106)	641	759	(108)	652	772	(110)	663

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	(0)	11	11	(0)	11	11	(0)	11	11
2016	(0)	11	11	(0)	11	11	(0)	11	11
2017	(0)	11	11	(0)	11	11	(0)	11	11
2018	(0)	11	11	(0)	11	11	(0)	11	11
2019	(0)	11	11	(0)	11	11	(0)	11	11
2020	(0)	11	11	(0)	11	11	(0)	11	11
2021	(0)	11	11	(0)	11	11	(0)	11	11
2022	(0)	11	11	(0)	11	11	(0)	11	11
2023	(0)	11	11	(0)	11	11	(0)	11	11
2024	(0)	11	11	(0)	11	11	(0)	11	11
2025	(0)	11	11	(0)	11	11	(0)	12	11
2026	(0)	11	11	(0)	11	11	(0)	12	11
2027	(0)	11	11	(0)	11	11	(0)	12	11
2028	(0)	11	11	(0)	11	11	(0)	12	11
2029	(0)	11	11	(0)	12	11	(0)	12	11
2030	(0)	11	11	(0)	12	11	(0)	12	11
2031	(0)	11	11	(0)	12	11	(0)	12	11
2032	(0)	11	11	(0)	12	11	(0)	12	11
2033	(0)	11	11	(0)	12	11	(0)	12	11
2034	(0)	11	11	(0)	12	11	(0)	12	12

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	630	-	630	631	-	631	631	-	631
2016	631	-	631	632	-	632	633	-	633
2017	631	-	631	633	-	633	634	-	634
2018	632	-	632	634	-	634	635	-	635
2019	632	-	632	635	-	635	637	-	637
2020	633	-	633	636	-	636	639	-	639
2021	633	-	633	637	-	637	640	-	640
2022	634	-	634	638	-	638	642	-	642
2023	634	-	634	639	-	639	644	-	644
2024	635	-	635	640	-	640	645	-	645
2025	636	-	636	641	-	641	647	-	647
2026	636	-	636	642	-	642	649	-	649
2027	637	-	637	644	-	644	651	-	651
2028	637	-	637	645	-	645	652	-	652
2029	638	-	638	646	-	646	654	-	654
2030	638	-	638	647	-	647	656	-	656
2031	639	-	639	648	-	648	658	-	658
2032	640	-	640	649	-	649	659	-	659
2033	640	-	640	650	-	650	661	-	661
2034	641	-	641	652	-	652	663	-	663

Annual Change

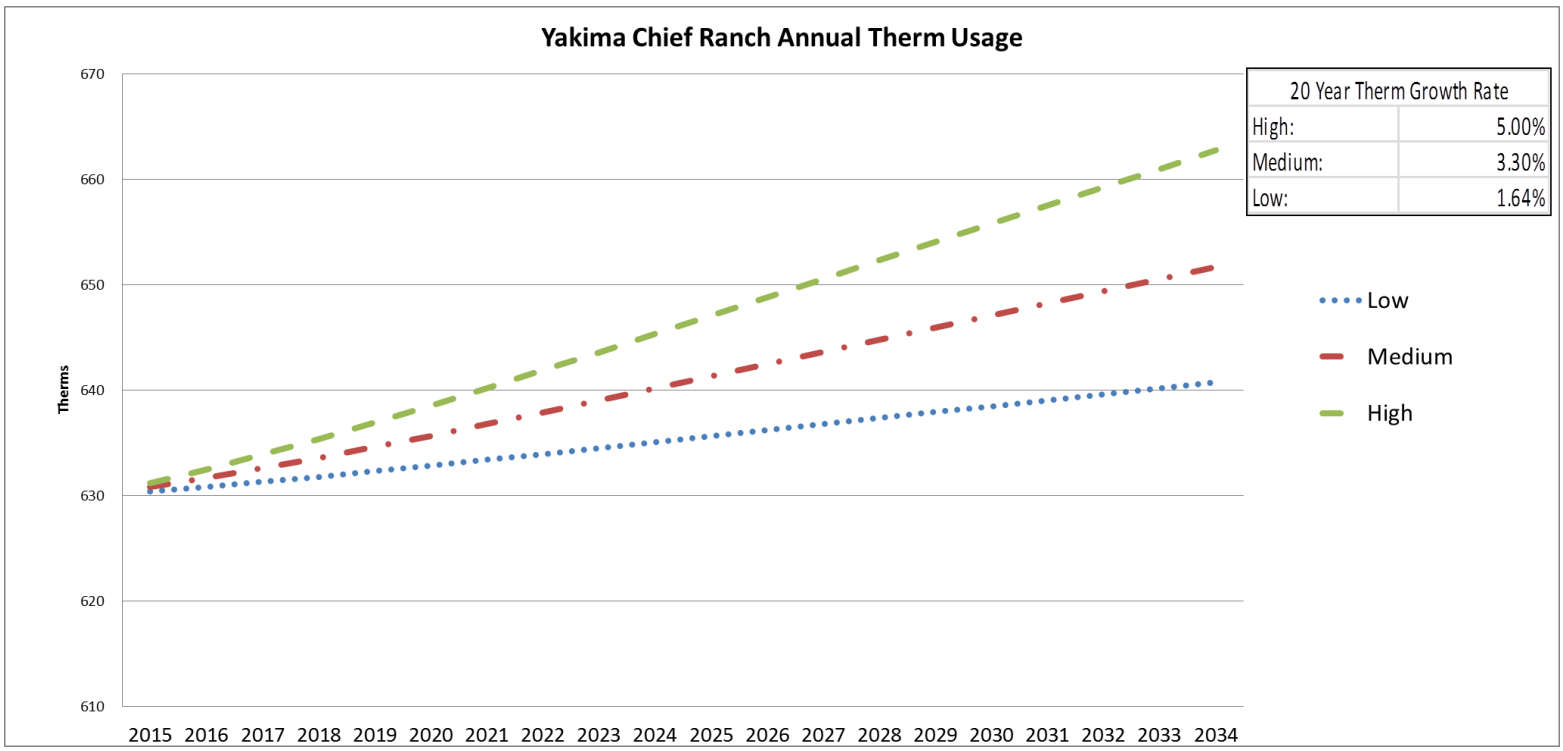
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%

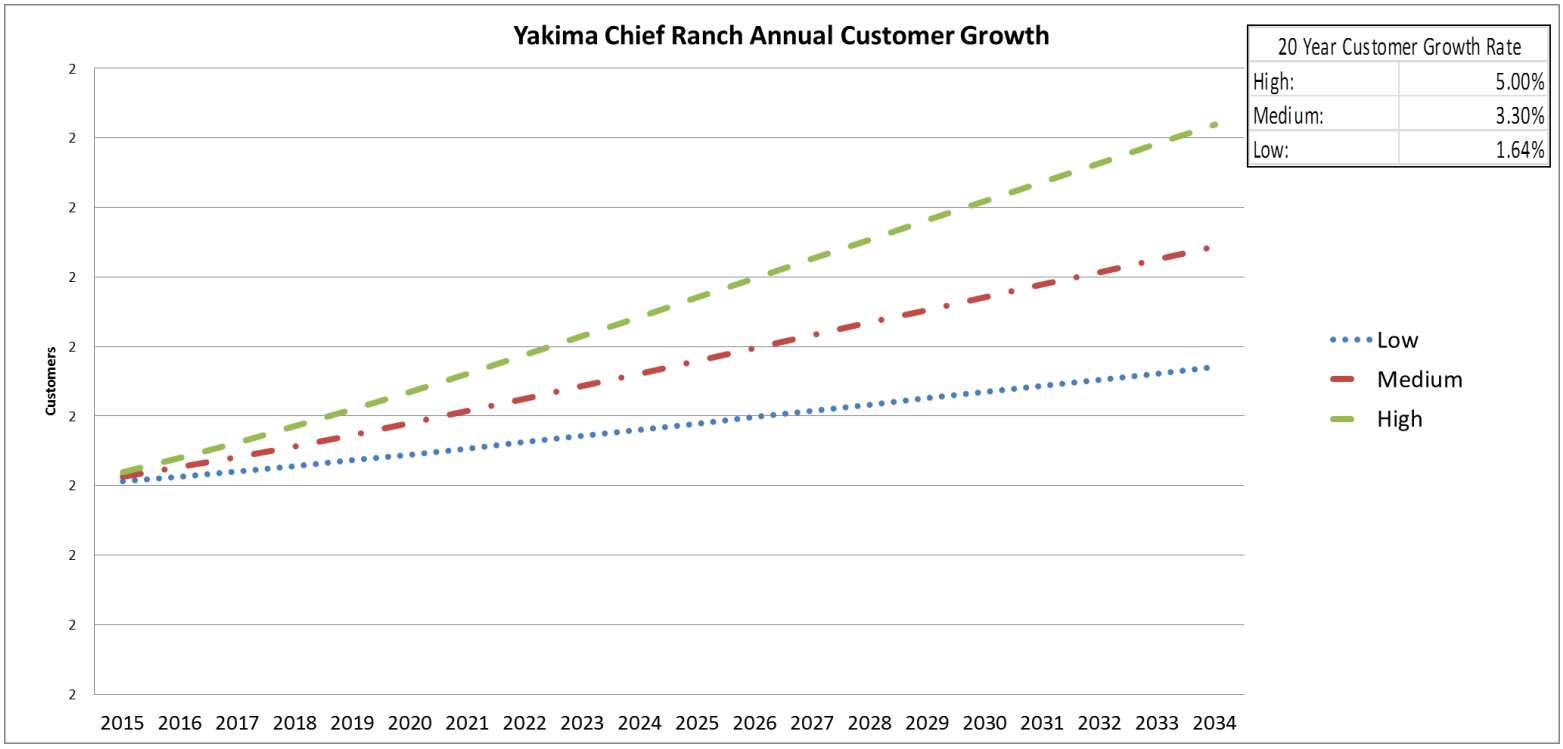
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	-	2	2	-	2	2	-	2
2016	2	-	2	2	-	2	2	-	2
2017	2	-	2	2	-	2	2	-	2
2018	2	-	2	2	-	2	2	-	2
2019	2	-	2	2	-	2	2	-	2
2020	2	-	2	2	-	2	2	-	2
2021	2	-	2	2	-	2	2	-	2
2022	2	-	2	2	-	2	2	-	2
2023	2	-	2	2	-	2	2	-	2
2024	2	-	2	2	-	2	2	-	2
2025	2	-	2	2	-	2	2	-	2
2026	2	-	2	2	-	2	2	-	2
2027	2	-	2	2	-	2	2	-	2
2028	2	-	2	2	-	2	2	-	2
2029	2	-	2	2	-	2	2	-	2
2030	2	-	2	2	-	2	2	-	2
2031	2	-	2	2	-	2	2	-	2
2032	2	-	2	2	-	2	2	-	2
2033	2	-	2	2	-	2	2	-	2
2034	2	-	2	2	-	2	2	-	2

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%


Yakima Chief Ranch Annual Therm Usage
Therms
670
660
650
640
630
620
610
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


Yakima Chief Ranch Annual Customer Growth
Customers
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

7th Day School

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	17,635	497	18,132	17,647	497	18,143	17,658	497	18,155
2016	17,647	497	18,144	17,671	497	18,168	17,695	498	18,192
2017	17,660	497	18,157	17,697	498	18,195	17,733	499	18,232
2018	17,674	498	18,171	17,724	499	18,223	17,775	500	18,275
2019	17,688	498	18,186	17,753	499	18,253	17,818	501	18,319
2020	17,703	498	18,201	17,783	500	18,283	17,863	502	18,365
2021	17,718	499	18,217	17,813	501	18,315	17,909	504	18,413
2022	17,734	499	18,233	17,845	502	18,347	17,956	505	18,461
2023	17,750	500	18,249	17,876	503	18,379	18,004	506	18,510
2024	17,766	500	18,266	17,909	504	18,413	18,053	508	18,561
2025	17,781	501	18,282	17,941	505	18,446	18,101	509	18,610
2026	17,798	501	18,299	17,973	506	18,479	18,151	510	18,661
2027	17,814	502	18,315	18,006	507	18,512	18,200	512	18,711
2028	17,830	502	18,332	18,038	508	18,546	18,249	513	18,762
2029	17,845	502	18,348	18,070	508	18,578	18,297	514	18,812
2030	17,861	503	18,364	18,102	509	18,611	18,345	516	18,861
2031	17,877	503	18,380	18,134	510	18,644	18,394	517	18,911
2032	17,893	504	18,396	18,166	511	18,677	18,442	519	18,961
2033	17,908	504	18,413	18,198	512	18,710	18,491	520	19,011
2034	17,924	505	18,429	18,230	513	18,743	18,540	521	19,062

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	1	162	163	1	162	163	1	162	164
2016	1	162	163	1	162	164	1	163	164
2017	1	162	164	1	163	164	1	163	164
2018	1	162	164	1	163	164	1	163	165
2019	1	162	164	1	163	164	1	164	165
2020	1	163	164	1	163	165	1	164	165
2021	1	163	164	1	164	165	1	164	166
2022	1	163	164	1	164	165	1	165	166
2023	1	163	164	1	164	166	1	165	167
2024	1	163	165	1	164	166	1	166	167
2025	1	163	165	1	165	166	1	166	168
2026	1	163	165	1	165	166	1	167	168
2027	1	164	165	1	165	167	1	167	169
2028	1	164	165	1	166	167	1	168	169
2029	1	164	165	1	166	167	1	168	169
2030	1	164	165	1	166	168	1	168	170
2031	1	164	166	1	167	168	1	169	170
2032	1	164	166	1	167	168	1	169	171
2033	1	164	166	1	167	169	1	170	171
2034	1	165	166	1	167	169	1	170	172

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	12,357	5,775	18,132	12,365	5,779	18,143	12,373	5,782	18,155
2016	12,365	5,779	18,144	12,382	5,786	18,168	12,398	5,794	18,192
2017	12,374	5,783	18,157	12,400	5,795	18,195	12,425	5,807	18,232
2018	12,384	5,787	18,171	12,419	5,804	18,223	12,454	5,820	18,275
2019	12,394	5,792	18,186	12,439	5,813	18,253	12,485	5,835	18,319
2020	12,404	5,797	18,201	12,460	5,823	18,283	12,516	5,849	18,365
2021	12,415	5,802	18,217	12,482	5,833	18,315	12,548	5,864	18,413
2022	12,426	5,807	18,233	12,503	5,843	18,347	12,581	5,880	18,461
2023	12,437	5,812	18,249	12,526	5,854	18,379	12,615	5,895	18,510
2024	12,448	5,818	18,266	12,548	5,864	18,413	12,649	5,911	18,561
2025	12,459	5,823	18,282	12,571	5,875	18,446	12,683	5,927	18,610
2026	12,471	5,828	18,299	12,594	5,885	18,479	12,718	5,943	18,661
2027	12,482	5,833	18,315	12,616	5,896	18,512	12,752	5,959	18,711
2028	12,493	5,839	18,332	12,639	5,907	18,546	12,786	5,976	18,762
2029	12,504	5,844	18,348	12,661	5,917	18,578	12,820	5,991	18,812
2030	12,515	5,849	18,364	12,683	5,927	18,611	12,854	6,007	18,861
2031	12,526	5,854	18,380	12,706	5,938	18,644	12,888	6,023	18,911
2032	12,537	5,859	18,396	12,728	5,948	18,677	12,922	6,039	18,961
2033	12,548	5,864	18,413	12,751	5,959	18,710	12,956	6,055	19,011
2034	12,559	5,869	18,429	12,773	5,969	18,743	12,991	6,071	19,062

Annual Change

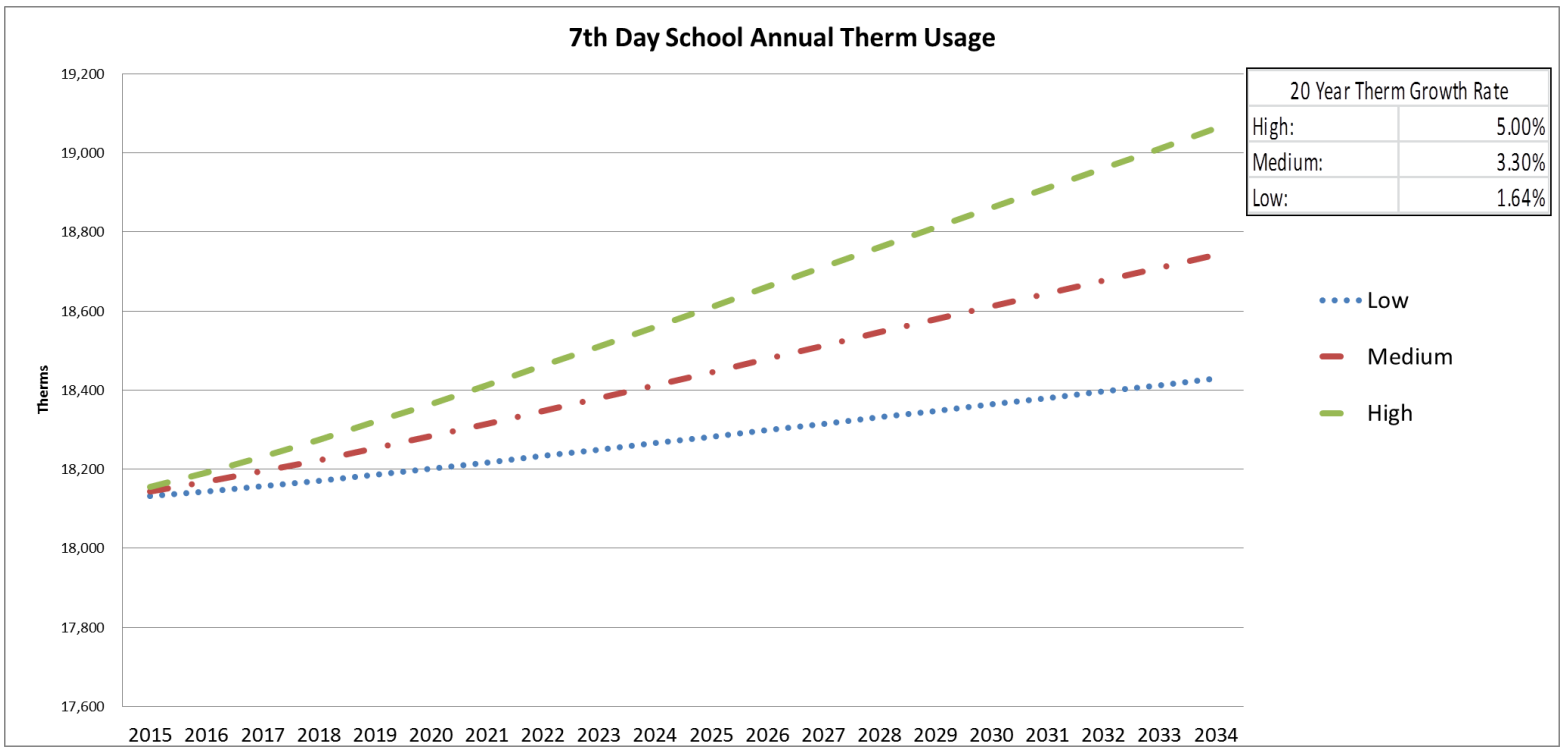
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

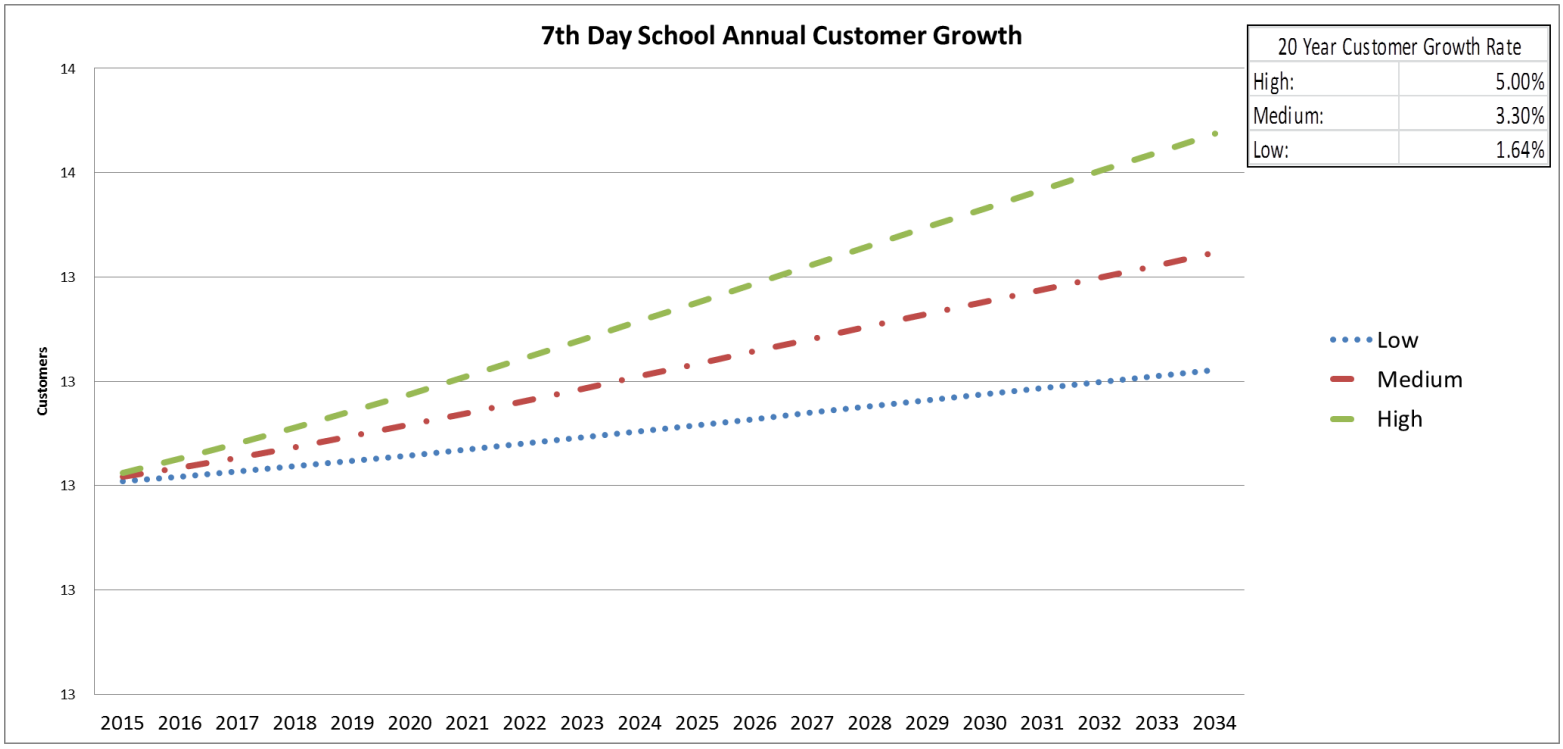
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	11	2	13	11	2	13	11	2	13
2016	11	2	13	11	2	13	11	2	13
2017	11	2	13	11	2	13	11	2	13
2018	11	2	13	11	2	13	11	2	13
2019	11	2	13	11	2	13	11	2	13
2020	11	2	13	11	2	13	11	2	13
2021	11	2	13	11	2	13	11	2	13
2022	11	2	13	11	2	13	11	2	13
2023	11	2	13	11	2	13	11	2	13
2024	11	2	13	11	2	13	11	2	13
2025	11	2	13	11	2	13	11	2	13
2026	11	2	13	11	2	13	11	2	13
2027	11	2	13	11	2	13	11	2	13
2028	11	2	13	11	2	13	11	2	13
2029	11	2	13	11	2	13	11	2	13
2030	11	2	13	11	2	13	11	2	14
2031	11	2	13	11	2	13	11	2	14
2032	11	2	13	11	2	13	12	2	14
2033	11	2	13	11	2	13	12	2	14
2034	11	2	13	11	2	13	12	2	14

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


7th Day School Annual Therm Usage
Therms
19,200
19,000
18,800
18,600
18,400
18,200
18,000
17,800
17,600
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


7th Day School Annual Customer Growth
Customers
14
14
13
13
13
13
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Training Center

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	310,351	71,641	381,992	310,826	71,641	382,467	311,301	71,641	382,943
2016	312,331	72,098	384,430	313,209	72,191	385,400	314,089	72,283	386,371
2017	311,157	71,828	382,985	312,443	72,014	384,457	313,732	72,201	385,932
2018	311,579	71,925	383,504	313,289	72,209	385,498	315,006	72,494	387,500
2019	312,010	72,024	384,034	314,155	72,409	386,564	316,313	72,795	389,108
2020	314,035	72,492	386,527	316,634	72,980	389,614	319,251	73,471	392,722
2021	312,887	72,227	385,114	315,924	72,816	388,741	318,986	73,410	392,396
2022	313,333	72,330	385,663	316,824	73,024	389,848	320,350	73,724	394,073
2023	313,780	72,433	386,213	317,728	73,232	390,960	321,720	74,039	395,759
2024	315,833	72,907	388,739	320,266	73,817	394,084	324,756	74,738	399,494
2025	314,678	72,640	387,319	319,549	73,652	393,201	324,488	74,676	399,164
2026	315,129	72,744	387,873	320,464	73,863	394,327	325,882	74,997	400,878
2027	315,577	72,848	388,425	321,375	74,073	395,448	327,271	75,317	402,588
2028	317,633	73,322	390,956	323,926	74,661	398,587	330,335	76,022	406,357
2029	316,464	73,052	389,516	323,182	74,489	397,672	330,034	75,952	405,986
2030	316,901	73,153	390,054	324,075	74,695	398,770	331,402	76,267	407,669
2031	317,341	73,255	390,596	324,976	74,903	399,878	332,783	76,585	409,368
2032	319,396	73,729	393,125	327,529	75,491	403,020	335,857	77,293	413,150
2033	318,214	73,457	391,671	326,765	75,315	402,080	335,533	77,218	412,751
2034	318,651	73,557	392,209	327,663	75,522	403,185	336,917	77,536	414,453

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	0.77%	0.77%	0.77%	0.90%	0.90%	0.90%
2017	-0.38%	-0.38%	-0.38%	-0.24%	-0.24%	-0.24%	-0.11%	-0.11%	-0.11%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.93%	0.93%	0.93%
2021	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.65%	0.65%	0.80%	0.80%	0.80%	0.94%	0.94%	0.94%
2025	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.94%	0.94%	0.94%
2029	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.09%	-0.09%	-0.09%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.92%	0.92%	0.92%
2033	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.10%	-0.10%	-0.10%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	196	4,628	4,825	196	4,634	4,831	196	4,640	4,837
2016	198	4,633	4,831	198	4,645	4,843	198	4,657	4,855
2017	197	4,640	4,837	197	4,659	4,856	198	4,677	4,874
2018	197	4,647	4,844	198	4,671	4,869	199	4,696	4,894
2019	197	4,653	4,850	198	4,684	4,882	199	4,715	4,915
2020	199	4,659	4,857	200	4,696	4,896	201	4,734	4,935
2021	198	4,666	4,864	199	4,710	4,910	201	4,755	4,956
2022	198	4,673	4,871	200	4,724	4,924	202	4,775	4,977
2023	198	4,680	4,878	201	4,737	4,938	203	4,796	4,999
2024	200	4,685	4,885	202	4,750	4,952	205	4,815	5,020
2025	199	4,693	4,892	202	4,764	4,966	205	4,837	5,042
2026	199	4,700	4,899	202	4,778	4,980	205	4,858	5,063
2027	200	4,706	4,906	203	4,792	4,995	206	4,878	5,085
2028	201	4,712	4,913	205	4,804	5,009	208	4,898	5,106
2029	200	4,720	4,920	204	4,819	5,023	208	4,920	5,128
2030	200	4,726	4,926	205	4,832	5,037	209	4,940	5,149
2031	201	4,733	4,933	205	4,845	5,051	210	4,961	5,170
2032	202	4,738	4,940	207	4,858	5,064	212	4,980	5,192
2033	201	4,746	4,947	206	4,872	5,078	212	5,002	5,213
2034	202	4,752	4,954	207	4,885	5,092	212	5,022	5,235

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.11%	0.13%	0.77%	0.23%	0.26%	0.90%	0.36%	0.38%
2017	-0.38%	0.15%	0.13%	-0.24%	0.29%	0.26%	-0.11%	0.42%	0.40%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.12%	0.14%	0.79%	0.26%	0.28%	0.93%	0.40%	0.42%
2021	-0.37%	0.16%	0.14%	-0.22%	0.31%	0.28%	-0.08%	0.45%	0.43%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.12%	0.14%	0.80%	0.27%	0.29%	0.94%	0.41%	0.43%
2025	-0.37%	0.16%	0.14%	-0.22%	0.31%	0.28%	-0.08%	0.45%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.12%	0.14%	0.79%	0.26%	0.28%	0.94%	0.40%	0.42%
2029	-0.37%	0.16%	0.14%	-0.23%	0.30%	0.28%	-0.09%	0.44%	0.42%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.12%	0.14%	0.79%	0.25%	0.27%	0.92%	0.39%	0.41%
2033	-0.37%	0.16%	0.14%	-0.23%	0.30%	0.28%	-0.10%	0.43%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,822	377,170	381,992	4,828	377,639	382,467	4,834	378,109	382,943
2016	4,853	379,577	384,430	4,865	380,535	385,400	4,877	381,494	386,371
2017	4,835	378,150	382,985	4,853	379,603	384,457	4,872	381,060	385,932
2018	4,841	378,662	383,504	4,866	380,632	385,498	4,892	382,609	387,500
2019	4,848	379,186	384,034	4,880	381,684	386,564	4,912	384,196	389,108
2020	4,879	381,648	386,527	4,918	384,696	389,614	4,958	387,764	392,722
2021	4,861	380,253	385,114	4,907	383,833	388,741	4,953	387,443	392,396
2022	4,868	380,794	385,663	4,921	384,927	389,848	4,975	389,099	394,073
2023	4,875	381,337	386,213	4,935	386,024	390,960	4,996	390,763	395,759
2024	4,907	383,832	388,739	4,975	389,109	394,084	5,043	394,451	399,494
2025	4,889	382,430	387,319	4,964	388,237	393,201	5,039	394,125	399,164
2026	4,896	382,977	387,873	4,978	389,349	394,327	5,060	395,818	400,878
2027	4,903	383,521	388,425	4,992	390,456	395,448	5,082	397,506	402,588
2028	4,935	386,021	390,956	5,032	393,556	398,587	5,130	401,227	406,357
2029	4,917	384,599	389,516	5,020	392,652	397,672	5,125	400,861	405,986
2030	4,924	385,130	390,054	5,034	393,736	398,770	5,146	402,523	407,669
2031	4,931	385,665	390,596	5,048	394,830	399,878	5,168	404,200	409,368
2032	4,963	388,163	393,125	5,088	397,933	403,020	5,215	407,934	413,150
2033	4,944	386,726	391,671	5,076	397,004	402,080	5,210	407,541	412,751
2034	4,951	387,258	392,209	5,090	398,096	403,185	5,232	409,221	414,453

Annual Change

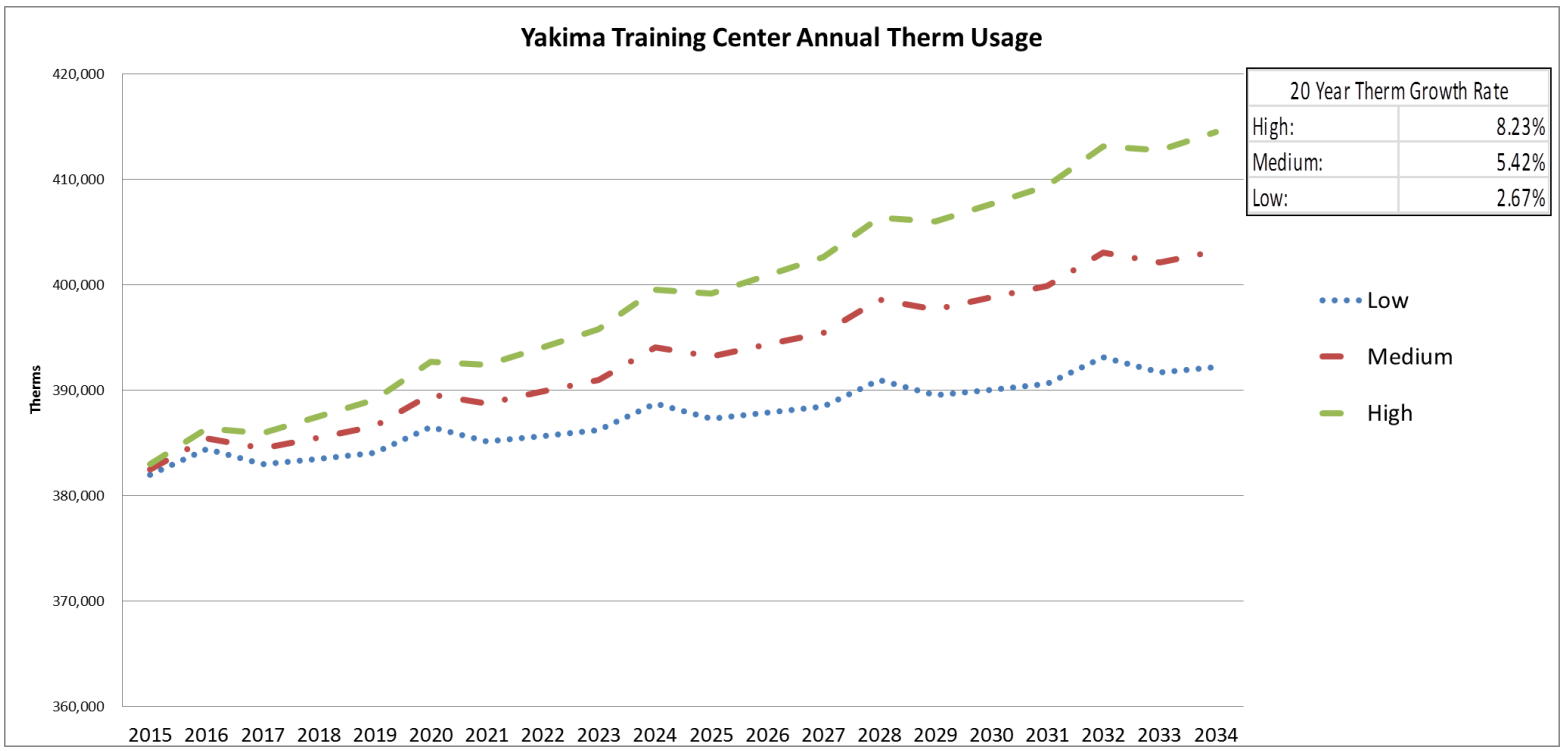
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	0.77%	0.77%	0.77%	0.89%	0.90%	0.90%
2017	-0.38%	-0.38%	-0.38%	-0.24%	-0.24%	-0.24%	-0.11%	-0.11%	-0.11%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.93%	0.93%	0.93%
2021	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.65%	0.65%	0.80%	0.80%	0.80%	0.94%	0.94%	0.94%
2025	-0.36%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.94%	0.94%	0.94%
2029	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.09%	-0.09%	-0.09%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.92%	0.92%	0.92%
2033	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.10%	-0.10%	-0.10%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

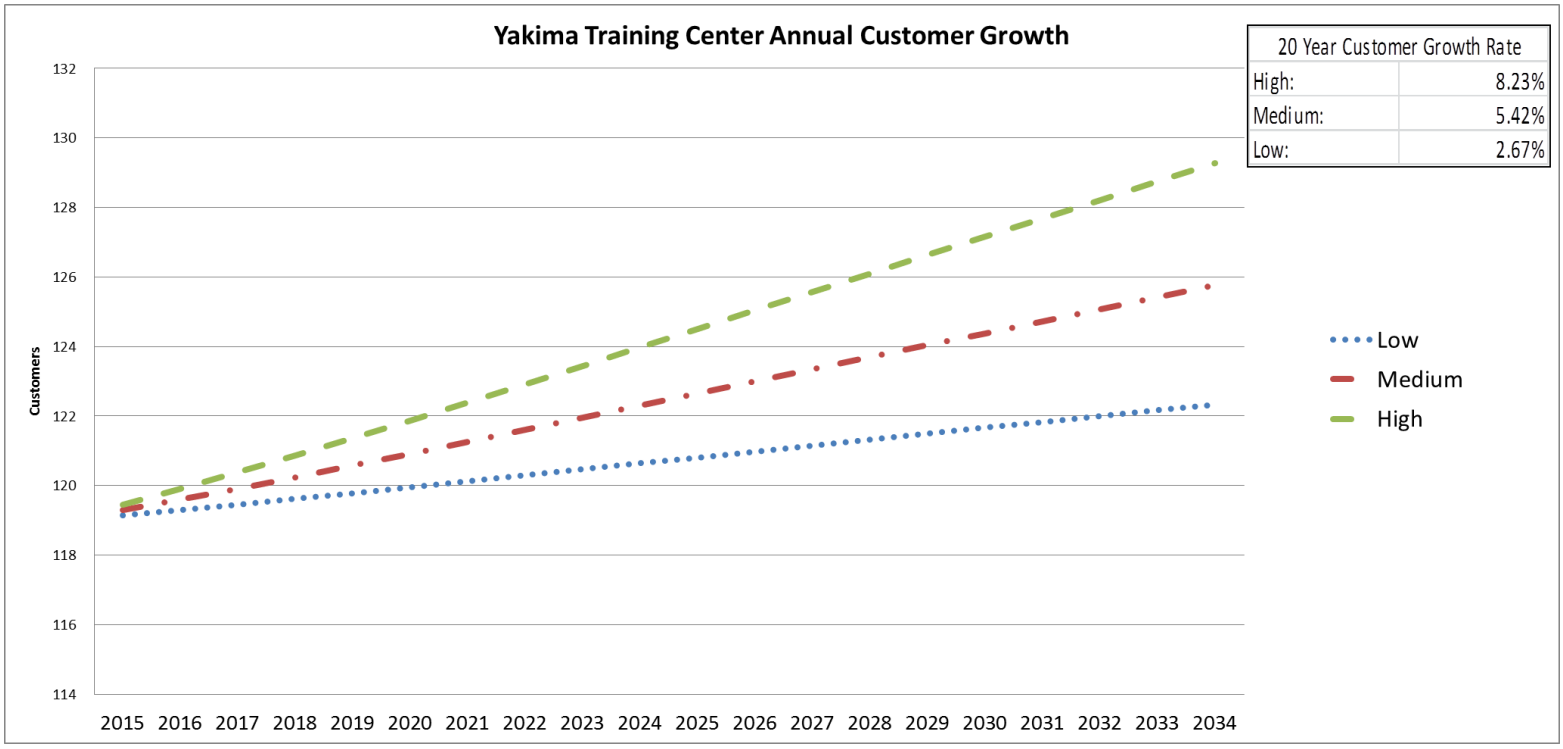
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25	94	119	25	94	119	25	95	119
2016	25	94	119	25	95	120	25	95	120
2017	25	95	119	25	95	120	25	95	120
2018	25	95	120	25	95	120	25	96	121
2019	25	95	120	25	95	121	25	96	121
2020	25	95	120	25	96	121	25	97	122
2021	25	95	120	25	96	121	25	97	122
2022	25	95	120	25	96	122	26	97	123
2023	25	95	120	25	97	122	26	98	123
2024	25	96	121	25	97	122	26	98	124
2025	25	96	121	26	97	123	26	99	125
2026	25	96	121	26	97	123	26	99	125
2027	25	96	121	26	98	123	26	99	126
2028	25	96	121	26	98	124	26	100	126
2029	25	96	121	26	98	124	26	100	127
2030	25	96	122	26	99	124	26	101	127
2031	25	96	122	26	99	125	27	101	128
2032	25	97	122	26	99	125	27	102	128
2033	25	97	122	26	99	125	27	102	129
2034	25	97	122	26	100	126	27	102	129

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.38%	0.38%	0.38%
2017	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.40%	0.40%	0.40%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2021	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2025	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2033	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%


Yakima Training Center Annual Therm Usage
Therms
420,000
410,000
400,000
390,000
380,000
370,000
360,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 8.23%
Medium: 5.42%
Low: 2.67%
Low
Medium
High


Yakima Training Center Annual Customer Growth
Customers
132
130
128
126
124
122
120
118
116
114
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.23%
Medium: 5.42%
Low: 2.67%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Burbank Heights Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,833,145	1,272,975	5,106,120	3,855,155	1,272,975	5,128,130	3,877,164	1,272,975	5,150,140
2016	3,867,976	1,284,543	5,152,518	3,906,939	1,290,074	5,197,014	3,946,094	1,295,606	5,241,700
2017	3,866,346	1,284,001	5,150,347	3,922,082	1,295,075	5,217,156	3,978,346	1,306,196	5,284,541
2018	3,883,035	1,289,544	5,172,579	3,955,942	1,306,255	5,262,197	4,029,865	1,323,111	5,352,975
2019	3,899,741	1,295,092	5,194,833	3,989,981	1,317,495	5,307,476	4,081,878	1,340,188	5,422,066
2020	3,934,957	1,306,787	5,241,743	4,043,125	1,335,043	5,378,168	4,153,753	1,363,786	5,517,539
2021	3,933,090	1,306,167	5,239,256	4,058,367	1,340,076	5,398,443	4,187,042	1,374,716	5,561,758
2022	3,949,708	1,311,685	5,261,393	4,092,662	1,351,400	5,444,063	4,240,116	1,392,142	5,632,257
2023	3,966,232	1,317,173	5,283,405	4,126,906	1,362,708	5,489,614	4,293,332	1,409,614	5,702,946
2024	4,001,644	1,328,933	5,330,577	4,181,033	1,380,581	5,561,614	4,367,619	1,434,004	5,801,624
2025	3,999,136	1,328,100	5,327,237	4,195,522	1,385,365	5,580,887	4,400,627	1,444,842	5,845,469
2026	4,015,457	1,333,520	5,348,977	4,229,766	1,396,672	5,626,438	4,454,505	1,462,531	5,917,036
2027	4,031,663	1,338,902	5,370,565	4,263,908	1,407,946	5,671,854	4,508,438	1,480,239	5,988,677
2028	4,066,959	1,350,624	5,417,583	4,318,350	1,425,923	5,744,273	4,584,097	1,505,080	6,089,177
2029	4,063,700	1,349,542	5,413,241	4,331,807	1,430,366	5,762,173	4,616,340	1,515,666	6,132,006
2030	4,079,510	1,354,792	5,434,302	4,365,513	1,441,496	5,807,009	4,670,221	1,533,356	6,203,577
2031	4,095,283	1,360,030	5,455,313	4,399,271	1,452,643	5,851,914	4,724,392	1,551,142	6,275,534
2032	4,130,414	1,371,697	5,502,112	4,453,892	1,470,679	5,924,571	4,801,178	1,576,353	6,377,532
2033	4,126,493	1,370,395	5,496,889	4,466,453	1,474,826	5,941,279	4,832,817	1,586,741	6,419,558
2034	4,141,993	1,375,543	5,517,536	4,500,006	1,485,906	5,985,911	4,887,275	1,604,621	6,491,895

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.91%	0.91%	0.91%	1.34%	1.34%	1.34%	1.78%	1.78%	1.78%
2017	-0.04%	-0.04%	-0.04%	0.39%	0.39%	0.39%	0.82%	0.82%	0.82%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.90%	0.90%	0.90%	1.33%	1.33%	1.33%	1.76%	1.76%	1.76%
2021	-0.05%	-0.05%	-0.05%	0.38%	0.38%	0.38%	0.80%	0.80%	0.80%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.89%	0.89%	0.89%	1.31%	1.31%	1.31%	1.73%	1.73%	1.73%
2025	-0.06%	-0.06%	-0.06%	0.35%	0.35%	0.35%	0.76%	0.76%	0.76%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.88%	0.88%	0.88%	1.28%	1.28%	1.28%	1.68%	1.68%	1.68%
2029	-0.08%	-0.08%	-0.08%	0.31%	0.31%	0.31%	0.70%	0.70%	0.70%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.86%	0.86%	0.86%	1.24%	1.24%	1.24%	1.63%	1.63%	1.63%
2033	-0.09%	-0.09%	-0.09%	0.28%	0.28%	0.28%	0.66%	0.66%	0.66%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	3,488	66,804	70,292	3,488	67,107	70,595	3,488	67,410	70,898
2016	3,519	67,077	70,596	3,534	67,671	71,206	3,550	68,268	71,818
2017	3,518	67,383	70,901	3,548	68,272	71,821	3,579	69,170	72,748
2018	3,533	67,674	71,207	3,579	68,862	72,441	3,625	70,065	73,690
2019	3,548	67,965	71,513	3,610	69,454	73,064	3,672	70,970	74,641
2020	3,580	68,238	71,819	3,658	70,030	73,688	3,736	71,861	75,597
2021	3,579	68,546	72,125	3,671	70,645	74,316	3,766	72,798	76,564
2022	3,594	68,836	72,430	3,702	71,242	74,944	3,814	73,721	77,535
2023	3,609	69,124	72,733	3,733	71,838	75,571	3,862	74,646	78,508
2024	3,641	69,395	73,036	3,782	72,419	76,201	3,929	75,561	79,490
2025	3,639	69,697	73,336	3,796	73,032	76,828	3,958	76,512	80,470
2026	3,653	69,982	73,635	3,826	73,628	77,455	4,007	77,448	81,455
2027	3,668	70,264	73,932	3,857	74,223	78,080	4,055	78,386	82,442
2028	3,700	70,527	74,228	3,907	74,797	78,704	4,124	79,306	83,429
2029	3,697	70,823	74,520	3,919	75,405	79,323	4,153	80,262	84,415
2030	3,712	71,098	74,810	3,949	75,991	79,941	4,201	81,199	85,400
2031	3,726	71,373	75,099	3,980	76,579	80,559	4,250	82,141	86,390
2032	3,758	71,628	75,386	4,029	77,145	81,174	4,319	83,062	87,380
2033	3,755	71,917	75,671	4,041	77,748	81,789	4,347	84,026	88,373
2034	3,769	72,187	75,956	4,071	78,332	82,403	4,396	84,973	89,369

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.91%	0.41%	0.43%	1.34%	0.84%	0.87%	1.78%	1.27%	1.30%
2017	-0.04%	0.46%	0.43%	0.39%	0.89%	0.86%	0.82%	1.32%	1.30%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.90%	0.40%	0.43%	1.33%	0.83%	0.85%	1.76%	1.26%	1.28%
2021	-0.05%	0.45%	0.43%	0.38%	0.88%	0.85%	0.80%	1.30%	1.28%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.89%	0.39%	0.42%	1.31%	0.81%	0.83%	1.73%	1.23%	1.25%
2025	-0.06%	0.44%	0.41%	0.35%	0.85%	0.82%	0.76%	1.26%	1.23%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.88%	0.37%	0.40%	1.28%	0.77%	0.80%	1.68%	1.17%	1.20%
2029	-0.08%	0.42%	0.39%	0.31%	0.81%	0.79%	0.70%	1.21%	1.18%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.86%	0.36%	0.38%	1.24%	0.74%	0.76%	1.63%	1.12%	1.15%
2033	-0.09%	0.40%	0.38%	0.28%	0.78%	0.76%	0.66%	1.16%	1.14%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,811,624	2,075,430	4,887,055	2,823,744	2,084,376	4,908,120	2,835,863	2,093,323	4,929,186
2016	2,837,449	2,094,034	4,931,483	2,861,952	2,112,117	4,974,069	2,886,560	2,130,278	5,016,839
2017	2,835,977	2,093,407	4,929,384	2,872,765	2,120,562	4,993,327	2,909,870	2,147,951	5,057,821
2018	2,848,219	2,102,443	4,950,662	2,897,567	2,138,869	5,036,436	2,947,552	2,175,767	5,123,319
2019	2,860,473	2,111,488	4,971,962	2,922,499	2,157,274	5,079,772	2,985,596	2,203,849	5,189,445
2020	2,886,584	2,130,296	5,016,880	2,961,712	2,185,740	5,147,452	3,038,462	2,242,382	5,280,844
2021	2,884,934	2,129,545	5,014,479	2,972,589	2,194,248	5,166,836	3,062,516	2,260,629	5,323,144
2022	2,897,124	2,138,543	5,035,667	2,997,708	2,212,790	5,210,499	3,101,336	2,289,284	5,390,619
2023	2,909,244	2,147,489	5,056,734	3,022,791	2,231,305	5,254,096	3,140,260	2,318,016	5,458,276
2024	2,935,504	2,166,399	5,101,903	3,062,734	2,260,294	5,323,028	3,194,905	2,357,837	5,552,742
2025	2,933,380	2,165,305	5,098,685	3,073,049	2,268,404	5,341,453	3,218,738	2,375,946	5,594,684
2026	2,945,351	2,174,142	5,119,493	3,098,132	2,286,919	5,385,050	3,258,146	2,405,035	5,663,180
2027	2,957,238	2,182,916	5,140,154	3,123,139	2,305,378	5,428,517	3,297,594	2,434,154	5,731,748
2028	2,983,417	2,201,759	5,185,176	3,163,323	2,334,529	5,497,852	3,353,259	2,474,701	5,827,960
2029	2,980,737	2,200,263	5,181,000	3,172,872	2,342,089	5,514,962	3,376,517	2,492,411	5,868,928
2030	2,992,334	2,208,823	5,201,157	3,197,561	2,360,313	5,557,874	3,415,926	2,521,502	5,937,428
2031	3,003,903	2,217,363	5,221,267	3,222,287	2,378,565	5,600,852	3,455,548	2,550,749	6,006,298
2032	3,029,967	2,236,112	5,266,079	3,262,611	2,407,804	5,670,415	3,512,053	2,591,891	6,103,945
2033	3,026,797	2,234,262	5,261,059	3,271,495	2,414,889	5,686,384	3,534,854	2,609,290	6,144,143
2034	3,038,166	2,242,654	5,280,820	3,296,071	2,433,030	5,729,101	3,574,685	2,638,692	6,213,377

Annual Change

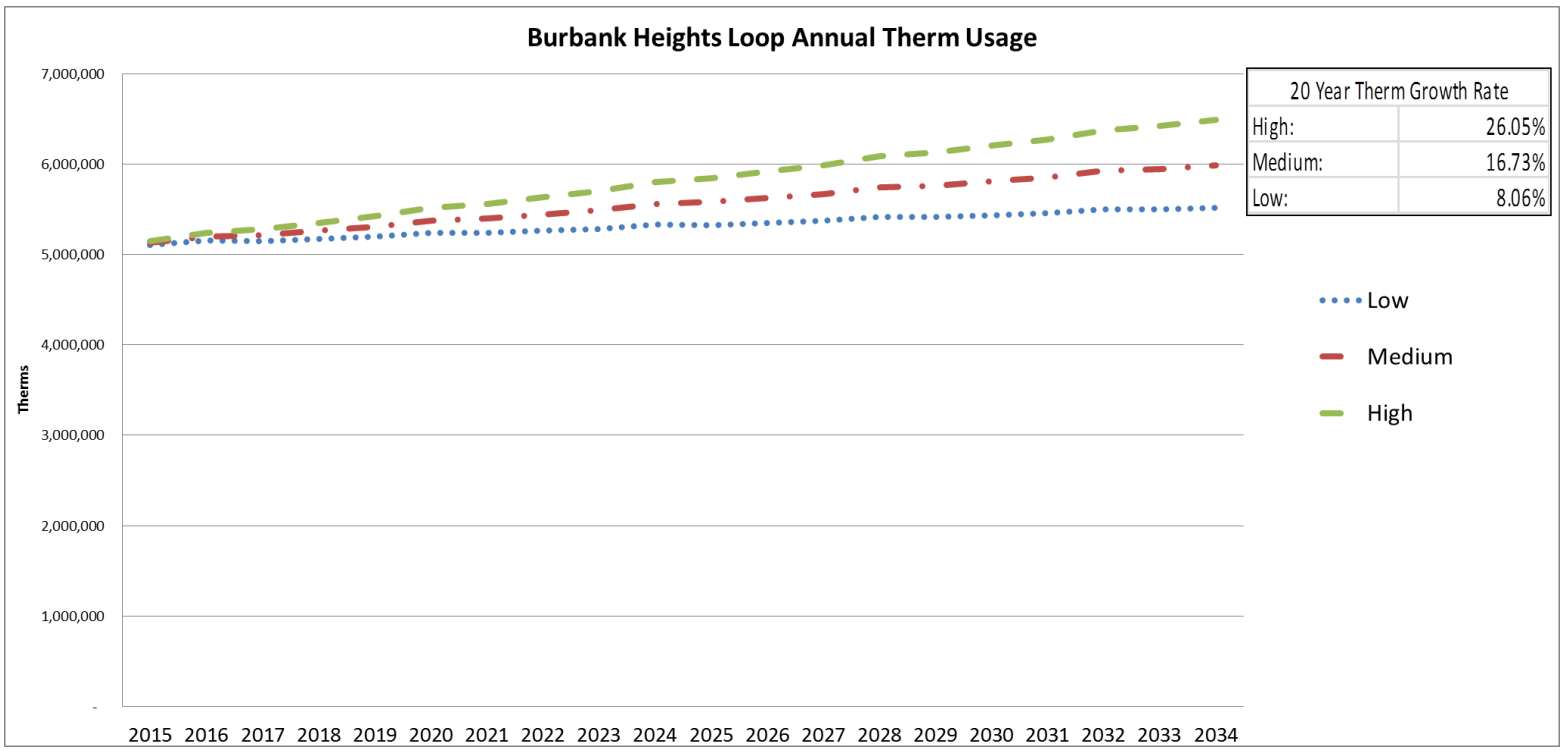
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.90%	0.91%	1.35%	1.33%	1.34%	1.79%	1.77%	1.78%
2017	-0.05%	-0.03%	-0.04%	0.38%	0.40%	0.39%	0.81%	0.83%	0.82%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.91%	0.89%	0.90%	1.34%	1.32%	1.33%	1.77%	1.75%	1.76%
2021	-0.06%	-0.04%	-0.05%	0.37%	0.39%	0.38%	0.79%	0.81%	0.80%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.90%	0.88%	0.89%	1.32%	1.30%	1.31%	1.74%	1.72%	1.73%
2025	-0.07%	-0.05%	-0.06%	0.34%	0.36%	0.35%	0.75%	0.77%	0.76%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.89%	0.86%	0.88%	1.29%	1.26%	1.28%	1.69%	1.67%	1.68%
2029	-0.09%	-0.07%	-0.08%	0.30%	0.32%	0.31%	0.69%	0.72%	0.70%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.87%	0.85%	0.86%	1.25%	1.23%	1.24%	1.64%	1.61%	1.63%
2033	-0.10%	-0.08%	-0.10%	0.27%	0.29%	0.28%	0.65%	0.67%	0.66%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

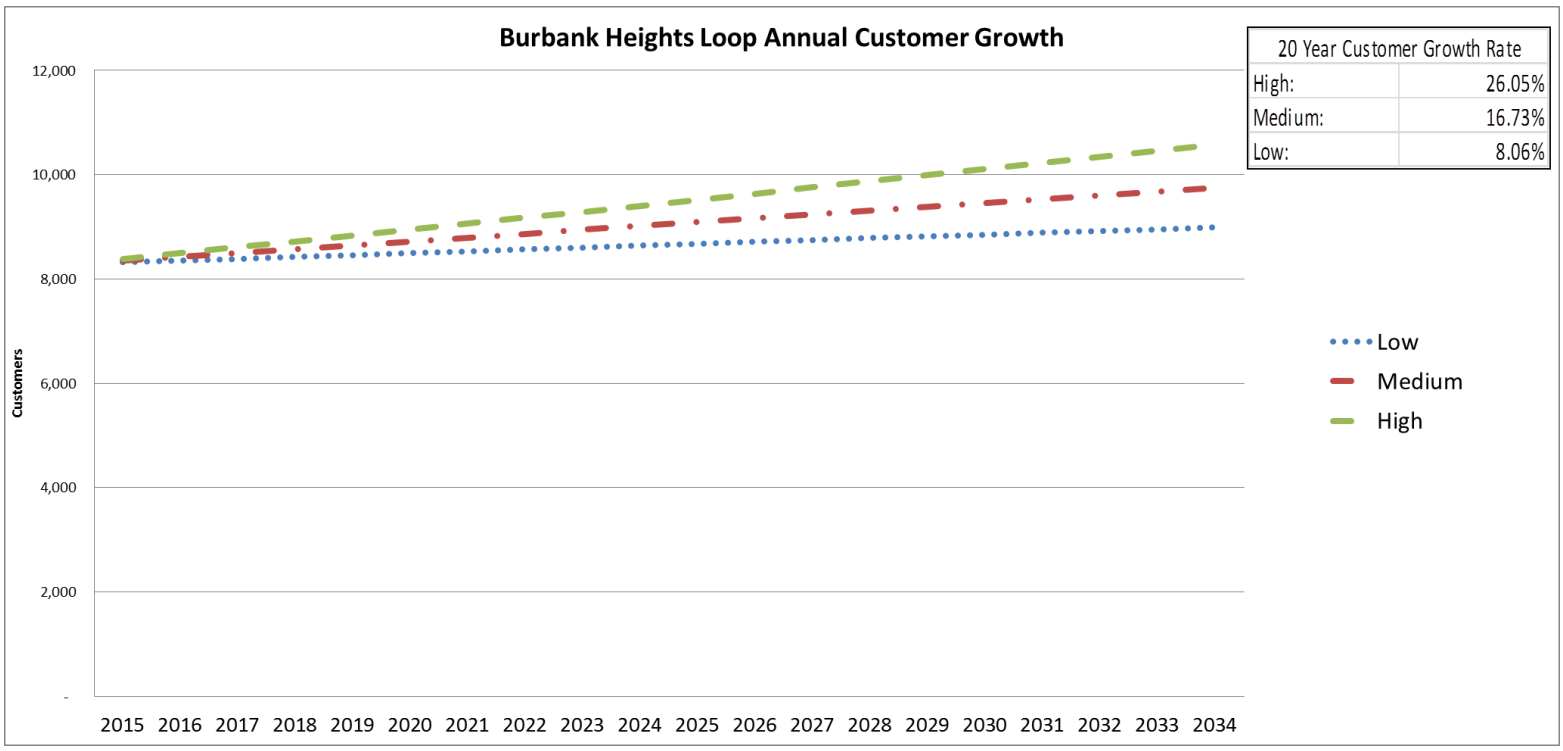
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	7,510	808	8,318	7,542	812	8,354	7,575	815	8,390
2016	7,542	812	8,354	7,607	819	8,426	7,673	826	8,499
2017	7,575	815	8,390	7,673	826	8,499	7,772	836	8,609
2018	7,608	819	8,426	7,739	833	8,572	7,873	847	8,720
2019	7,640	822	8,463	7,806	840	8,646	7,975	858	8,833
2020	7,673	826	8,499	7,873	847	8,720	8,077	869	8,946
2021	7,706	829	8,535	7,940	855	8,794	8,180	880	9,060
2022	7,738	833	8,571	8,007	862	8,869	8,284	892	9,175
2023	7,771	836	8,607	8,074	869	8,943	8,388	903	9,290
2024	7,803	840	8,643	8,141	876	9,017	8,493	914	9,407
2025	7,835	843	8,678	8,208	883	9,092	8,597	925	9,523
2026	7,867	847	8,714	8,275	891	9,166	8,703	937	9,639
2027	7,899	850	8,749	8,342	898	9,240	8,808	948	9,756
2028	7,930	853	8,784	8,409	905	9,314	8,913	959	9,873
2029	7,962	857	8,818	8,475	912	9,387	9,019	971	9,989
2030	7,993	860	8,853	8,541	919	9,460	9,124	982	10,106
2031	8,023	864	8,887	8,607	926	9,533	9,230	993	10,223
2032	8,054	867	8,921	8,672	933	9,606	9,336	1,005	10,340
2033	8,085	870	8,955	8,738	940	9,679	9,442	1,016	10,458
2034	8,115	873	8,988	8,804	947	9,751	9,548	1,028	10,576

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.43%	0.43%	0.43%	0.87%	0.87%	0.87%	1.30%	1.30%	1.30%
2017	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.30%	1.30%	1.30%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.43%	0.43%	0.43%	0.85%	0.85%	0.85%	1.28%	1.28%	1.28%
2021	0.43%	0.43%	0.43%	0.85%	0.85%	0.85%	1.28%	1.28%	1.28%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.42%	0.42%	0.42%	0.83%	0.83%	0.83%	1.25%	1.25%	1.25%
2025	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.23%	1.23%	1.23%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.40%	0.40%	0.40%	0.80%	0.80%	0.80%	1.20%	1.20%	1.20%
2029	0.39%	0.39%	0.39%	0.79%	0.79%	0.79%	1.18%	1.18%	1.18%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.38%	0.38%	0.38%	0.76%	0.76%	0.76%	1.15%	1.15%	1.15%
2033	0.38%	0.38%	0.38%	0.76%	0.76%	0.76%	1.14%	1.14%	1.14%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%


Burbank Heights Loop Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 26.05%
Medium: 16.73%
Low: 8.06%
Low
Medium
High


Burbank Heights Loop Annual Customer Growth
Customers
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 26.05%
Medium: 16.73%
Low: 8.06%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

East Stanwood Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	6,882,973	2,607,913	9,490,885	6,953,982	2,607,913	9,561,895	7,024,991	2,607,913	9,632,904
2016	6,964,429	2,638,776	9,603,205	7,088,364	2,658,309	9,746,673	7,213,363	2,677,842	9,891,205
2017	6,985,513	2,646,765	9,632,278	7,161,945	2,685,904	9,847,849	7,341,282	2,725,330	10,066,612
2018	7,036,606	2,666,123	9,702,729	7,266,711	2,725,193	9,991,904	7,502,365	2,785,130	10,287,495
2019	7,087,541	2,685,422	9,772,963	7,371,912	2,764,647	10,136,559	7,665,285	2,845,611	10,510,896
2020	7,169,177	2,716,353	9,885,530	7,509,709	2,816,324	10,326,032	7,863,555	2,919,215	10,782,770
2021	7,188,669	2,723,739	9,912,407	7,583,028	2,843,820	10,426,848	7,995,723	2,968,281	10,964,004
2022	7,238,853	2,742,753	9,981,606	7,688,903	2,883,526	10,572,428	8,163,178	3,030,446	11,193,624
2023	7,288,692	2,761,637	10,050,329	7,794,777	2,923,231	10,718,009	8,331,786	3,093,039	11,424,825
2024	7,370,210	2,792,524	10,162,734	7,935,271	2,975,920	10,911,190	8,538,946	3,169,944	11,708,890
2025	7,387,501	2,799,075	10,186,576	8,006,828	3,002,756	11,009,584	8,672,917	3,219,678	11,892,594
2026	7,436,413	2,817,607	10,254,020	8,112,854	3,042,518	11,155,371	8,845,185	3,283,630	12,128,815
2027	7,484,951	2,835,998	10,320,949	8,218,760	3,082,235	11,300,995	9,018,385	3,347,927	12,366,312
2028	7,565,842	2,866,647	10,432,489	8,360,697	3,135,465	11,496,162	9,232,414	3,427,382	12,659,796
2029	7,580,815	2,872,320	10,453,135	8,429,954	3,161,438	11,591,392	9,367,100	3,477,382	12,844,481
2030	7,628,131	2,890,248	10,518,379	8,535,186	3,200,903	11,736,089	9,542,495	3,542,495	13,084,990
2031	7,675,198	2,908,081	10,583,279	8,640,513	3,240,403	11,880,916	9,719,132	3,608,068	13,327,200
2032	7,755,426	2,938,479	10,693,906	8,783,613	3,294,069	12,077,682	9,939,465	3,689,863	13,629,328
2033	7,768,290	2,943,354	10,711,644	8,850,747	3,319,246	12,169,992	10,074,914	3,740,146	13,815,061
2034	7,814,405	2,960,826	10,775,231	8,955,828	3,358,654	12,314,482	10,254,337	3,806,754	14,061,091

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	1.18%	1.18%	1.93%	1.93%	1.93%	2.68%	2.68%	2.68%
2017	0.30%	0.30%	0.30%	1.04%	1.04%	1.04%	1.77%	1.77%	1.77%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.15%	1.15%	1.15%	1.87%	1.87%	1.87%	2.59%	2.59%	2.59%
2021	0.27%	0.27%	0.27%	0.98%	0.98%	0.98%	1.68%	1.68%	1.68%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.12%	1.12%	1.12%	1.80%	1.80%	1.80%	2.49%	2.49%	2.49%
2025	0.23%	0.23%	0.23%	0.90%	0.90%	0.90%	1.57%	1.57%	1.57%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.08%	1.08%	1.08%	1.73%	1.73%	1.73%	2.37%	2.37%	2.37%
2029	0.20%	0.20%	0.20%	0.83%	0.83%	0.83%	1.46%	1.46%	1.46%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.05%	1.05%	1.05%	1.66%	1.66%	1.66%	2.27%	2.27%	2.27%
2033	0.17%	0.17%	0.17%	0.76%	0.76%	0.76%	1.36%	1.36%	1.36%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	7,145	93,721	100,866	7,145	94,476	101,621	7,145	95,230	102,375
2016	7,230	94,389	101,618	7,283	95,853	103,136	7,337	97,329	104,666
2017	7,251	95,117	102,369	7,359	97,301	104,660	7,467	99,518	106,984
2018	7,304	95,813	103,117	7,466	98,724	106,191	7,630	101,701	109,332
2019	7,357	96,506	103,864	7,574	100,153	107,728	7,796	103,910	111,706
2020	7,442	97,164	104,606	7,716	101,551	109,267	7,998	106,102	114,100
2021	7,462	97,883	105,346	7,791	103,022	110,813	8,132	108,389	116,522
2022	7,514	98,567	106,081	7,900	104,460	112,360	8,303	110,659	118,962
2023	7,566	99,245	106,811	8,009	105,898	113,907	8,474	112,945	121,419
2024	7,651	99,888	107,539	8,153	107,306	115,459	8,685	115,215	123,900
2025	7,669	100,591	108,259	8,227	108,779	117,006	8,821	117,569	126,390
2026	7,719	101,257	108,976	8,336	110,220	118,555	8,996	119,905	128,901
2027	7,770	101,918	109,688	8,444	111,659	120,103	9,172	122,253	131,425
2028	7,854	102,539	110,393	8,590	113,058	121,649	9,390	124,572	133,962
2029	7,869	103,223	111,092	8,661	114,528	123,189	9,527	126,980	136,507
2030	7,918	103,867	111,786	8,770	115,958	124,727	9,705	129,357	139,063
2031	7,967	104,508	112,475	8,878	117,388	126,266	9,885	131,752	141,637
2032	8,051	105,109	113,160	9,025	118,777	127,802	10,109	134,112	144,221
2033	8,064	105,776	113,840	9,094	120,245	129,339	10,247	136,575	146,822
2034	8,112	106,404	114,515	9,202	121,672	130,874	10,429	139,007	149,436

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	0.71%	0.75%	1.93%	1.46%	1.49%	2.68%	2.20%	2.24%
2017	0.30%	0.77%	0.74%	1.04%	1.51%	1.48%	1.77%	2.25%	2.22%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.15%	0.68%	0.71%	1.87%	1.40%	1.43%	2.59%	2.11%	2.14%
2021	0.27%	0.74%	0.71%	0.98%	1.45%	1.42%	1.68%	2.16%	2.12%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.12%	0.65%	0.68%	1.80%	1.33%	1.36%	2.49%	2.01%	2.04%
2025	0.23%	0.70%	0.67%	0.90%	1.37%	1.34%	1.57%	2.04%	2.01%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.08%	0.61%	0.64%	1.73%	1.25%	1.29%	2.37%	1.90%	1.93%
2029	0.20%	0.67%	0.63%	0.83%	1.30%	1.27%	1.46%	1.93%	1.90%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.05%	0.57%	0.61%	1.66%	1.18%	1.22%	2.27%	1.79%	1.82%
2033	0.17%	0.63%	0.60%	0.76%	1.24%	1.20%	1.36%	1.84%	1.80%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,397,466	3,571,416	8,968,882	5,437,849	3,598,136	9,035,986	5,478,232	3,624,857	9,103,089
2016	5,462,058	3,613,357	9,075,415	5,543,660	3,667,339	9,210,999	5,625,866	3,721,722	9,347,587
2017	5,477,876	3,624,621	9,102,498	5,600,471	3,705,741	9,306,212	5,724,882	3,788,061	9,512,943
2018	5,517,942	3,651,132	9,169,074	5,682,396	3,759,949	9,442,344	5,850,498	3,871,179	9,721,678
2019	5,557,884	3,677,561	9,235,445	5,764,661	3,814,382	9,579,043	5,977,546	3,955,245	9,932,791
2020	5,622,638	3,719,586	9,342,225	5,873,184	3,885,332	9,758,516	6,132,965	4,057,187	10,190,152
2021	5,637,186	3,730,034	9,367,220	5,929,748	3,923,618	9,853,366	6,235,229	4,125,749	10,360,978
2022	5,676,539	3,756,074	9,432,613	6,012,540	3,978,400	9,990,939	6,365,814	4,212,155	10,577,969
2023	5,715,622	3,781,934	9,497,555	6,095,331	4,033,181	10,128,513	6,497,298	4,299,156	10,796,454
2024	5,780,304	3,823,889	9,604,193	6,206,007	4,105,507	10,311,514	6,659,719	4,405,654	11,065,373
2025	5,793,105	3,833,203	9,626,309	6,261,150	4,142,901	10,404,051	6,763,318	4,475,177	11,238,496
2026	5,831,461	3,858,583	9,690,044	6,344,059	4,197,761	10,541,820	6,897,657	4,564,067	11,461,724
2027	5,869,524	3,883,768	9,753,292	6,426,876	4,252,559	10,679,435	7,032,721	4,653,437	11,686,158
2028	5,933,734	3,925,388	9,859,123	6,538,724	4,325,612	10,864,336	7,200,570	4,763,448	11,964,018
2029	5,944,698	3,933,510	9,878,207	6,592,024	4,361,835	10,953,860	7,304,656	4,833,372	12,138,028
2030	5,981,802	3,958,061	9,939,863	6,674,313	4,416,284	11,090,598	7,441,433	4,923,875	12,365,309
2031	6,018,711	3,982,483	10,001,193	6,756,677	4,470,783	11,227,460	7,579,178	5,015,019	12,594,197
2032	6,082,421	4,023,750	10,106,172	6,869,478	4,544,418	11,413,896	7,752,015	5,128,249	12,880,264
2033	6,091,712	4,030,786	10,122,498	6,921,074	4,579,562	11,500,637	7,856,625	5,198,601	13,055,225
2034	6,127,874	4,054,714	10,182,588	7,003,245	4,633,933	11,637,179	7,996,542	5,291,182	13,287,724

Annual Change

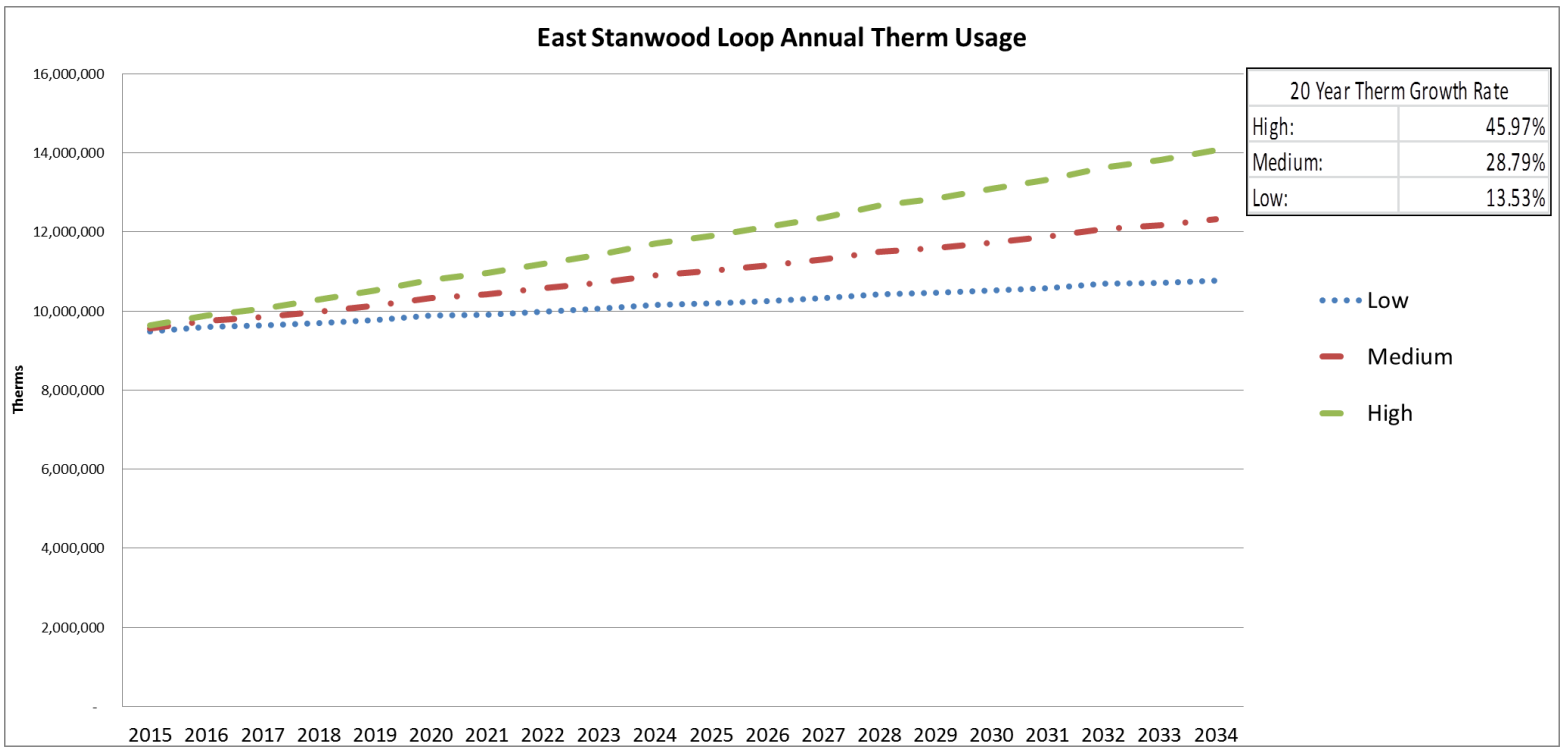
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.20%	1.17%	1.19%	1.95%	1.92%	1.94%	2.69%	2.67%	2.69%
2017	0.29%	0.31%	0.30%	1.02%	1.05%	1.03%	1.76%	1.78%	1.77%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.17%	1.14%	1.16%	1.88%	1.86%	1.87%	2.60%	2.58%	2.59%
2021	0.26%	0.28%	0.27%	0.96%	0.99%	0.97%	1.67%	1.69%	1.68%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.13%	1.11%	1.12%	1.82%	1.79%	1.81%	2.50%	2.48%	2.49%
2025	0.22%	0.24%	0.23%	0.89%	0.91%	0.90%	1.56%	1.58%	1.56%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.09%	1.07%	1.09%	1.74%	1.72%	1.73%	2.39%	2.36%	2.38%
2029	0.18%	0.21%	0.19%	0.82%	0.84%	0.82%	1.45%	1.47%	1.45%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.06%	1.04%	1.05%	1.67%	1.65%	1.66%	2.28%	2.26%	2.27%
2033	0.15%	0.17%	0.16%	0.75%	0.77%	0.76%	1.35%	1.37%	1.36%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

Customer Count Forecast

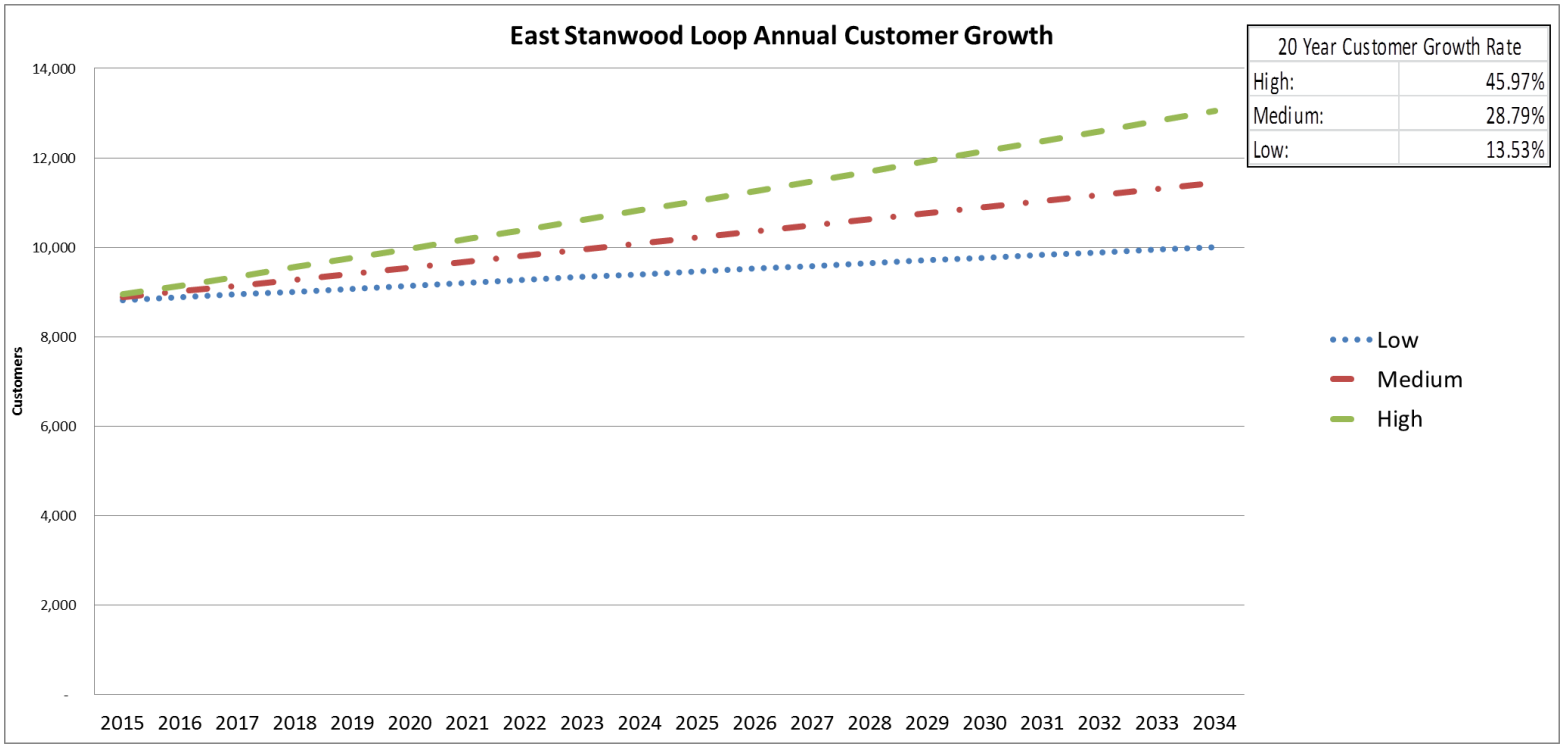
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	7,896	916	8,812	7,955	923	8,878	8,014	930	8,944
2016	7,954	923	8,878	8,073	937	9,010	8,193	951	9,144
2017	8,013	930	8,943	8,193	951	9,143	8,375	972	9,347
2018	8,072	937	9,009	8,312	965	9,277	8,558	993	9,552
2019	8,130	944	9,074	8,433	979	9,412	8,744	1,015	9,759
2020	8,188	950	9,139	8,553	993	9,546	8,932	1,037	9,968
2021	8,246	957	9,203	8,674	1,007	9,681	9,121	1,059	10,180
2022	8,304	964	9,268	8,795	1,021	9,816	9,312	1,081	10,393
2023	8,361	971	9,331	8,916	1,035	9,951	9,504	1,103	10,608
2024	8,418	977	9,395	9,038	1,049	10,087	9,699	1,126	10,824
2025	8,474	984	9,458	9,159	1,063	10,222	9,894	1,148	11,042
2026	8,530	990	9,521	9,280	1,077	10,357	10,090	1,171	11,261
2027	8,586	997	9,583	9,401	1,091	10,493	10,288	1,194	11,482
2028	8,641	1,003	9,644	9,522	1,105	10,628	10,486	1,217	11,703
2029	8,696	1,009	9,705	9,643	1,119	10,762	10,685	1,240	11,926
2030	8,750	1,016	9,766	9,763	1,133	10,897	10,886	1,264	12,149
2031	8,804	1,022	9,826	9,884	1,147	11,031	11,087	1,287	12,374
2032	8,858	1,028	9,886	10,004	1,161	11,165	11,289	1,310	12,600
2033	8,911	1,034	9,945	10,124	1,175	11,300	11,493	1,334	12,827
2034	8,964	1,040	10,005	10,245	1,189	11,434	11,698	1,358	13,055

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2017	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2021	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.12%	2.12%	2.12%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2025	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2029	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2033	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%



20 Year Therm Growth Rate	
High:	45.97%
Medium:	28.79%
Low:	13.53%



20 Year Customer Growth Rate	
High:	45.97%
Medium:	28.79%
Low:	13.53%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kennewick Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	13,757,749	5,099,577	18,857,326	13,874,511	5,099,577	18,974,089	13,991,274	5,099,577	19,090,851
2016	13,909,133	5,155,691	19,064,823	14,113,257	5,187,328	19,300,585	14,318,829	5,218,966	19,537,795
2017	13,927,471	5,162,488	19,089,959	14,217,886	5,225,785	19,443,671	14,512,258	5,289,467	19,801,724
2018	14,012,120	5,193,865	19,205,984	14,390,713	5,289,307	19,680,020	14,776,865	5,385,912	20,162,777
2019	14,096,468	5,225,130	19,321,598	14,563,967	5,352,987	19,916,954	15,043,721	5,483,176	20,526,896
2020	14,248,374	5,281,437	19,529,811	14,807,954	5,442,664	20,250,618	15,385,655	5,607,805	20,993,460
2021	14,264,011	5,287,233	19,551,244	14,911,189	5,480,608	20,391,797	15,583,294	5,679,841	21,263,135
2022	14,347,117	5,318,038	19,665,154	15,084,942	5,544,471	20,629,413	15,855,671	5,779,118	21,634,789
2023	14,429,608	5,348,615	19,778,223	15,258,410	5,608,229	20,866,639	16,129,167	5,878,802	22,007,970
2024	14,581,450	5,404,898	19,986,348	15,506,302	5,699,342	21,205,645	16,483,520	6,007,958	22,491,477
2025	14,593,092	5,409,214	20,002,306	15,605,132	5,735,667	21,340,799	16,680,474	6,079,744	22,760,218
2026	14,673,968	5,439,192	20,113,160	15,778,101	5,799,242	21,577,343	16,957,806	6,180,827	23,138,634
2027	14,754,202	5,468,932	20,223,133	15,950,642	5,862,659	21,813,301	17,235,969	6,282,213	23,518,182
2028	14,904,933	5,524,803	20,429,736	16,199,994	5,954,309	22,154,303	17,598,774	6,414,449	24,013,223
2029	14,912,422	5,527,579	20,440,001	16,293,656	5,988,734	22,282,389	17,793,429	6,485,397	24,278,826
2030	14,990,400	5,556,483	20,546,883	16,464,056	6,051,365	22,515,421	18,072,557	6,587,135	24,659,692
2031	15,067,974	5,585,238	20,653,212	16,634,457	6,113,996	22,748,453	18,353,130	6,689,399	25,042,529
2032	15,217,582	5,640,693	20,858,274	16,884,941	6,206,061	23,091,001	18,723,632	6,824,440	25,548,071
2033	15,221,294	5,642,069	20,863,362	16,973,831	6,238,733	23,212,564	18,916,206	6,894,630	25,810,836
2034	15,297,217	5,670,211	20,967,428	17,143,162	6,300,970	23,444,131	19,199,266	6,997,801	26,197,067

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	1.10%	1.10%	1.72%	1.72%	1.72%	2.34%	2.34%	2.34%
2017	0.13%	0.13%	0.13%	0.74%	0.74%	0.74%	1.35%	1.35%	1.35%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.08%	1.08%	1.08%	1.68%	1.68%	1.68%	2.27%	2.27%	2.27%
2021	0.11%	0.11%	0.11%	0.70%	0.70%	0.70%	1.28%	1.28%	1.28%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.05%	1.05%	1.05%	1.62%	1.62%	1.62%	2.20%	2.20%	2.20%
2025	0.08%	0.08%	0.08%	0.64%	0.64%	0.64%	1.19%	1.19%	1.19%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.02%	1.02%	1.02%	1.56%	1.56%	1.56%	2.10%	2.10%	2.10%
2029	0.05%	0.05%	0.05%	0.58%	0.58%	0.58%	1.11%	1.11%	1.11%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.99%	0.99%	0.99%	1.51%	1.51%	1.51%	2.02%	2.02%	2.02%
2033	0.02%	0.02%	0.02%	0.53%	0.53%	0.53%	1.03%	1.03%	1.03%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	13,971	248,367	262,339	13,971	249,992	263,963	13,971	251,616	265,588
2016	14,125	249,834	263,959	14,212	253,011	267,223	14,299	256,209	270,507
2017	14,144	251,431	265,575	14,317	256,179	270,496	14,492	260,985	275,477
2018	14,230	252,960	267,189	14,491	259,293	273,784	14,756	265,744	280,500
2019	14,315	254,482	268,798	14,666	262,415	277,080	15,022	270,543	285,566
2020	14,470	255,927	270,397	14,911	265,465	280,376	15,364	275,297	290,661
2021	14,486	257,507	271,993	15,015	268,671	283,686	15,561	280,247	295,808
2022	14,570	259,007	273,577	15,190	271,801	286,992	15,833	285,145	300,978
2023	14,654	260,497	275,150	15,365	274,927	290,292	16,106	290,064	306,170
2024	14,808	261,910	276,718	15,615	277,984	293,599	16,460	294,942	311,402
2025	14,820	263,448	278,268	15,714	281,174	296,888	16,657	299,978	316,635
2026	14,902	264,908	279,810	15,888	284,291	300,179	16,934	304,966	321,900
2027	14,983	266,356	281,340	16,062	287,400	303,462	17,212	309,968	327,180
2028	15,136	267,720	282,856	16,313	290,420	306,734	17,574	314,897	332,471
2029	15,144	269,213	284,357	16,407	293,580	309,988	17,768	319,993	337,762
2030	15,223	270,620	285,844	16,579	296,650	313,230	18,047	325,013	343,060
2031	15,302	272,021	287,323	16,751	299,721	316,471	18,327	330,059	348,386
2032	15,454	273,336	288,790	17,003	302,700	319,702	18,697	335,024	353,721
2033	15,458	274,789	290,246	17,092	305,836	322,928	18,889	340,185	359,075
2034	15,535	276,159	291,694	17,263	308,887	326,150	19,172	345,276	364,448

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.59%	0.62%	1.72%	1.21%	1.23%	2.34%	1.83%	1.85%
2017	0.13%	0.64%	0.61%	0.74%	1.25%	1.22%	1.35%	1.86%	1.84%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.08%	0.57%	0.59%	1.68%	1.16%	1.19%	2.27%	1.76%	1.78%
2021	0.11%	0.62%	0.59%	0.70%	1.21%	1.18%	1.28%	1.80%	1.77%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.05%	0.54%	0.57%	1.62%	1.11%	1.14%	2.20%	1.68%	1.71%
2025	0.08%	0.59%	0.56%	0.64%	1.15%	1.12%	1.19%	1.71%	1.68%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.02%	0.51%	0.54%	1.56%	1.05%	1.08%	2.10%	1.59%	1.62%
2029	0.05%	0.56%	0.53%	0.58%	1.09%	1.06%	1.11%	1.62%	1.59%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.99%	0.48%	0.51%	1.51%	0.99%	1.02%	2.02%	1.50%	1.53%
2033	0.02%	0.53%	0.50%	0.53%	1.04%	1.01%	1.03%	1.54%	1.51%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	8,466,953	9,486,985	17,953,938	8,519,380	9,545,727	18,065,107	8,571,806	9,604,469	18,176,275
2016	8,562,306	9,589,542	18,151,848	8,668,190	9,708,129	18,376,319	8,774,725	9,827,445	18,602,170
2017	8,571,406	9,604,021	18,175,426	8,730,222	9,781,970	18,512,193	8,890,989	9,962,105	18,853,093
2018	8,623,501	9,662,392	18,285,893	8,836,343	9,900,876	18,737,220	9,053,102	10,143,748	19,196,849
2019	8,675,412	9,720,556	18,395,968	8,942,727	10,020,076	18,962,803	9,216,591	10,326,933	19,543,525
2020	8,771,139	9,823,429	18,594,568	9,094,865	10,185,993	19,280,858	9,428,486	10,559,640	19,988,126
2021	8,778,523	9,836,090	18,614,612	9,155,932	10,258,966	19,414,897	9,547,163	10,697,329	20,244,492
2022	8,829,669	9,893,397	18,723,066	9,262,621	10,378,509	19,641,130	9,714,036	10,884,306	20,598,342
2023	8,880,437	9,950,281	18,830,718	9,369,136	10,497,855	19,866,992	9,881,595	11,072,051	20,953,645
2024	8,976,177	10,053,066	19,029,243	9,523,782	10,666,368	20,190,150	10,101,269	11,313,138	21,414,407
2025	8,981,050	10,063,016	19,044,066	9,582,034	10,736,402	20,318,436	10,219,355	11,450,502	21,669,856
2026	9,030,823	10,118,785	19,149,609	9,688,243	10,855,405	20,543,648	10,389,263	11,640,879	22,030,143
2027	9,080,202	10,174,112	19,254,314	9,794,188	10,974,114	20,768,302	10,559,681	11,831,827	22,391,508
2028	9,175,309	10,276,089	19,451,398	9,949,839	11,143,540	21,093,379	10,784,709	12,078,571	22,863,279
2029	9,177,575	10,283,217	19,460,792	10,004,809	11,210,109	21,214,918	10,901,211	12,214,502	23,115,712
2030	9,225,566	10,336,989	19,562,554	10,109,441	11,327,346	21,436,786	11,072,220	12,406,113	23,478,333
2031	9,273,307	10,390,482	19,663,789	10,214,072	11,444,582	21,658,654	11,244,114	12,598,715	23,842,829
2032	9,367,772	10,491,642	19,859,414	10,370,525	11,614,696	21,985,221	11,474,033	12,850,594	24,324,627
2033	9,367,665	10,496,207	19,863,872	10,422,458	11,678,073	22,100,532	11,589,084	12,985,245	24,574,329
2034	9,414,391	10,548,562	19,962,952	10,526,432	11,794,573	22,321,005	11,762,502	13,179,555	24,942,057

Annual Change

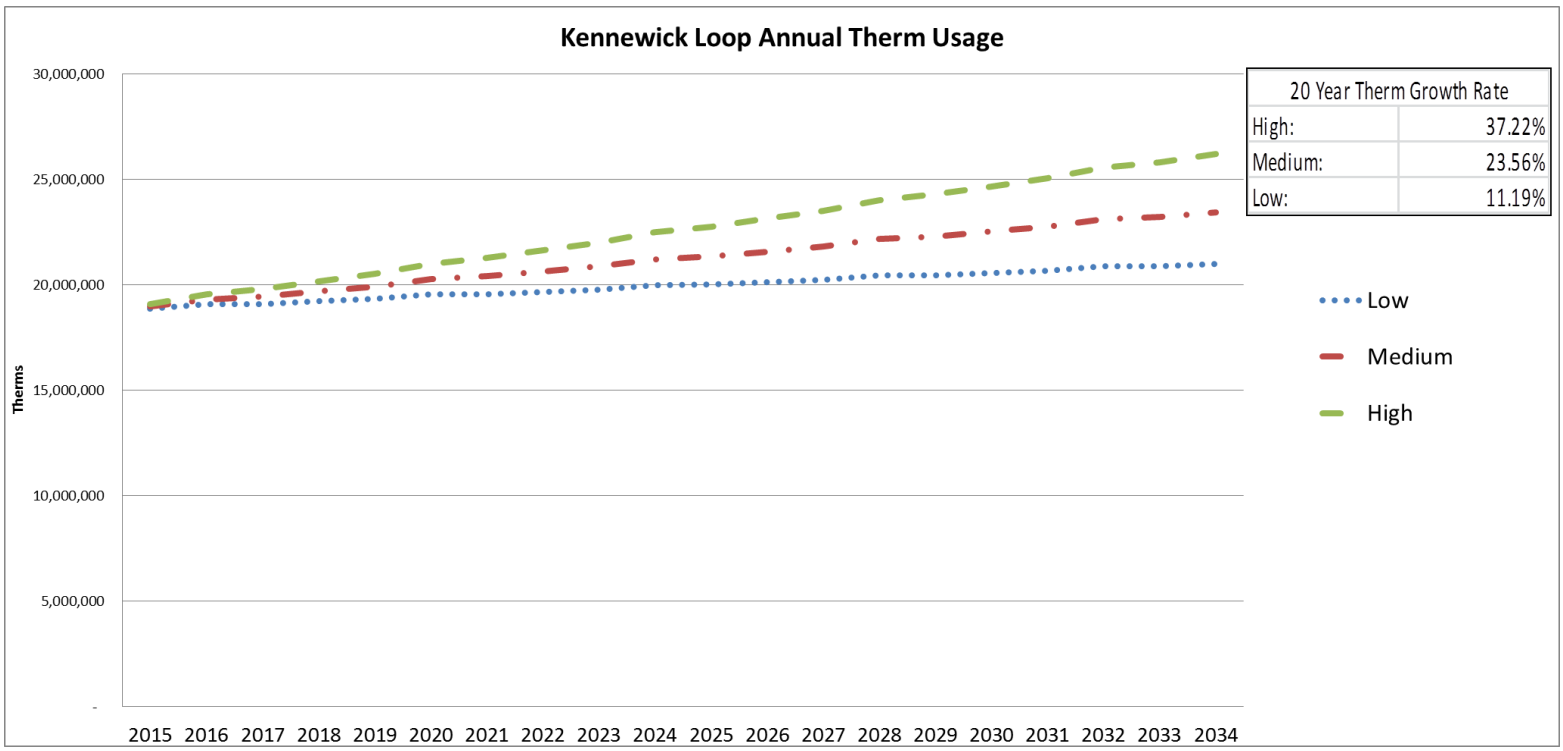
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.13%	1.08%	1.10%	1.75%	1.70%	1.72%	2.37%	2.32%	2.34%
2017	0.11%	0.15%	0.13%	0.72%	0.76%	0.74%	1.32%	1.37%	1.35%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.10%	1.06%	1.08%	1.70%	1.66%	1.68%	2.30%	2.25%	2.27%
2021	0.08%	0.13%	0.11%	0.67%	0.72%	0.70%	1.26%	1.30%	1.28%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.08%	1.03%	1.05%	1.65%	1.61%	1.63%	2.22%	2.18%	2.20%
2025	0.05%	0.10%	0.08%	0.61%	0.66%	0.64%	1.17%	1.21%	1.19%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.05%	1.00%	1.02%	1.59%	1.54%	1.57%	2.13%	2.09%	2.11%
2029	0.02%	0.07%	0.05%	0.55%	0.60%	0.58%	1.08%	1.13%	1.10%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	1.02%	0.97%	0.99%	1.53%	1.49%	1.51%	2.04%	2.00%	2.02%
2033	0.00%	0.04%	0.02%	0.50%	0.55%	0.52%	1.00%	1.05%	1.03%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

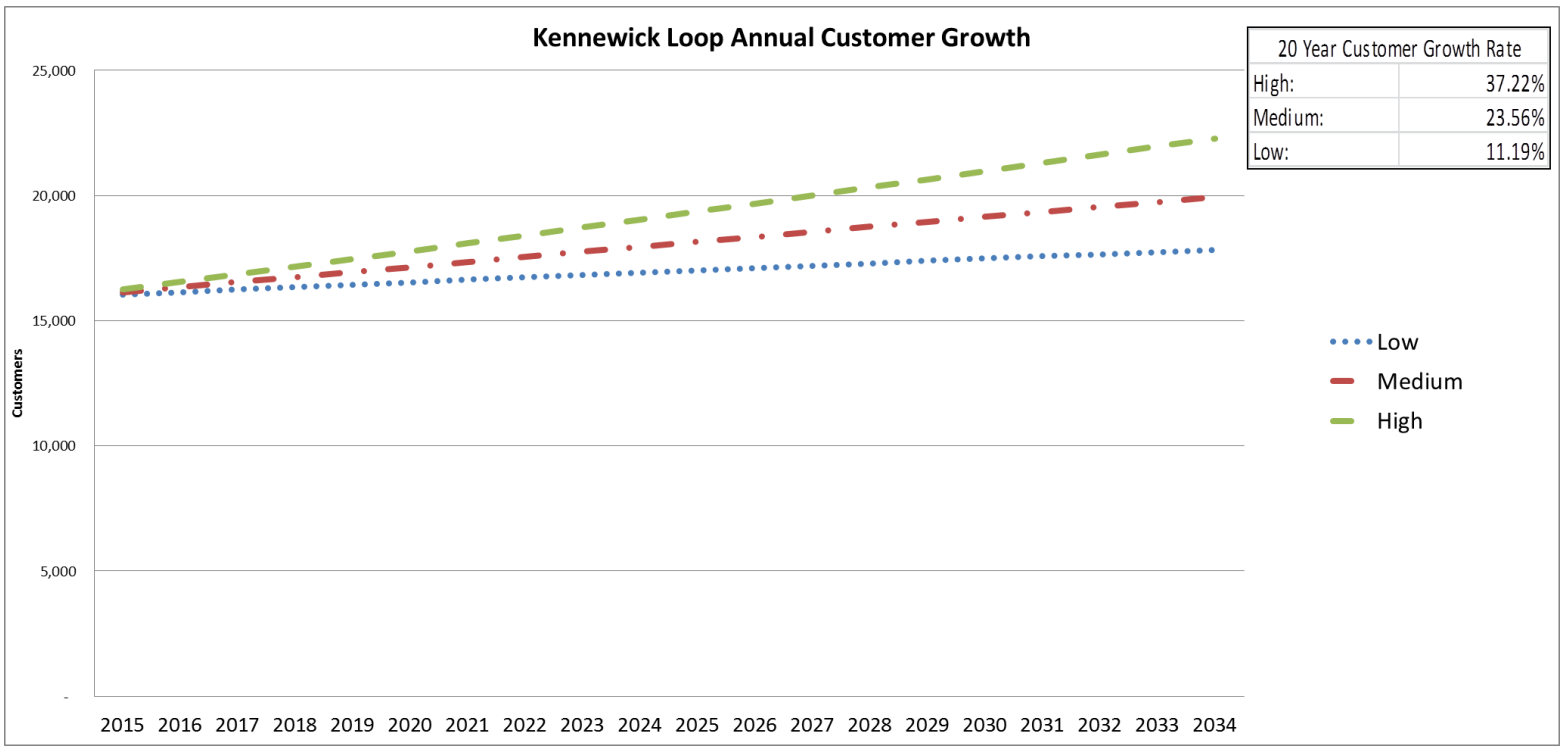
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,802	2,241	16,043	13,887	2,255	16,143	13,973	2,269	16,242
2016	13,887	2,255	16,142	14,059	2,283	16,342	14,232	2,311	16,543
2017	13,972	2,269	16,241	14,231	2,311	16,542	14,493	2,353	16,847
2018	14,057	2,283	16,340	14,404	2,339	16,743	14,757	2,396	17,154
2019	14,142	2,296	16,438	14,578	2,367	16,945	15,024	2,440	17,464
2020	14,226	2,310	16,536	14,751	2,395	17,146	15,292	2,483	17,775
2021	14,310	2,324	16,634	14,925	2,424	17,349	15,563	2,527	18,090
2022	14,393	2,337	16,730	15,099	2,452	17,551	15,835	2,571	18,406
2023	14,476	2,351	16,827	15,273	2,480	17,753	16,108	2,616	18,724
2024	14,558	2,364	16,922	15,447	2,508	17,955	16,383	2,660	19,044
2025	14,640	2,377	17,017	15,620	2,536	18,156	16,659	2,705	19,364
2026	14,721	2,390	17,112	15,793	2,564	18,357	16,936	2,750	19,686
2027	14,802	2,404	17,205	15,965	2,593	18,558	17,213	2,795	20,008
2028	14,881	2,416	17,298	16,138	2,620	18,758	17,492	2,840	20,332
2029	14,960	2,429	17,390	16,309	2,648	18,957	17,770	2,886	20,656
2030	15,039	2,442	17,481	16,479	2,676	19,155	18,049	2,931	20,980
2031	15,116	2,455	17,571	16,650	2,704	19,354	18,329	2,976	21,305
2032	15,194	2,467	17,661	16,820	2,731	19,551	18,610	3,022	21,632
2033	15,270	2,480	17,750	16,990	2,759	19,748	18,891	3,068	21,959
2034	15,346	2,492	17,838	17,159	2,786	19,945	19,174	3,114	22,288

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2017	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.84%	1.84%	1.84%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2021	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2025	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2029	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2033	0.50%	0.50%	0.50%	1.01%	1.01%	1.01%	1.51%	1.51%	1.51%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%


Kennewick Loop Annual Therm Usage
Therms
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 37.22%
Medium: 23.56%
Low: 11.19%
Low
Medium
High


Kennewick Loop Annual Customer Growth
Customers
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 37.22%
Medium: 23.56%
Low: 11.19%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Longview South Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,858,187	1,152,178	4,010,365	2,868,042	1,152,178	4,020,220	2,877,898	1,152,178	4,030,076
2016	2,881,327	1,161,506	4,042,833	2,898,444	1,164,391	4,062,836	2,915,611	1,167,277	4,082,887
2017	2,872,513	1,157,953	4,030,466	2,896,829	1,163,743	4,060,572	2,921,281	1,169,546	4,090,827
2018	2,879,813	1,160,896	4,040,709	2,911,553	1,169,657	4,081,210	2,943,552	1,178,463	4,122,016
2019	2,887,180	1,163,866	4,051,046	2,926,450	1,175,642	4,102,093	2,966,144	1,187,508	4,153,652
2020	2,910,757	1,173,370	4,084,126	2,957,880	1,188,268	4,146,148	3,005,635	1,203,318	4,208,953
2021	2,902,016	1,169,846	4,071,862	2,956,563	1,187,739	4,144,303	3,011,985	1,205,860	4,217,845
2022	2,909,472	1,172,852	4,082,324	2,971,756	1,193,843	4,165,599	3,035,201	1,215,155	4,250,356
2023	2,916,916	1,175,853	4,092,769	2,986,963	1,199,952	4,186,914	3,058,498	1,224,482	4,282,980
2024	2,940,734	1,185,454	4,126,188	3,019,039	1,212,838	4,231,877	3,099,214	1,240,783	4,339,997
2025	2,931,789	1,181,848	4,113,638	3,017,462	1,212,204	4,229,667	3,105,403	1,243,261	4,348,663
2026	2,939,207	1,184,838	4,124,045	3,032,731	1,218,338	4,251,069	3,128,973	1,252,697	4,381,670
2027	2,946,590	1,187,815	4,134,404	3,047,966	1,224,459	4,272,425	3,152,552	1,262,137	4,414,689
2028	2,970,445	1,197,431	4,167,876	3,080,274	1,237,438	4,317,712	3,193,862	1,278,675	4,472,538
2029	2,961,196	1,193,703	4,154,898	3,078,221	1,236,613	4,314,834	3,199,549	1,280,952	4,480,501
2030	2,968,409	1,196,610	4,165,019	3,093,217	1,242,637	4,335,854	3,222,930	1,290,313	4,513,242
2031	2,975,619	1,199,517	4,175,136	3,108,244	1,248,674	4,356,918	3,246,415	1,299,715	4,546,130
2032	2,999,452	1,209,124	4,208,576	3,140,652	1,261,694	4,402,346	3,288,112	1,316,409	4,604,521
2033	2,989,901	1,205,274	4,195,175	3,138,116	1,260,675	4,398,791	3,293,271	1,318,474	4,611,745
2034	2,997,004	1,208,137	4,205,141	3,153,026	1,266,664	4,419,691	3,316,742	1,327,871	4,644,613

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.81%	0.81%	1.06%	1.06%	1.06%	1.31%	1.31%	1.31%
2017	-0.31%	-0.31%	-0.31%	-0.06%	-0.06%	-0.06%	0.19%	0.19%	0.19%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.82%	0.82%	0.82%	1.07%	1.07%	1.07%	1.33%	1.33%	1.33%
2021	-0.30%	-0.30%	-0.30%	-0.04%	-0.04%	-0.04%	0.21%	0.21%	0.21%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.82%	0.82%	0.82%	1.07%	1.07%	1.07%	1.33%	1.33%	1.33%
2025	-0.30%	-0.30%	-0.30%	-0.05%	-0.05%	-0.05%	0.20%	0.20%	0.20%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.81%	0.81%	0.81%	1.06%	1.06%	1.06%	1.31%	1.31%	1.31%
2029	-0.31%	-0.31%	-0.31%	-0.07%	-0.07%	-0.07%	0.18%	0.18%	0.18%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.80%	0.80%	0.80%	1.04%	1.04%	1.04%	1.28%	1.28%	1.28%
2033	-0.32%	-0.32%	-0.32%	-0.08%	-0.08%	-0.08%	0.16%	0.16%	0.16%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	3,157	39,609	42,766	3,157	39,714	42,871	3,157	39,819	42,976
2016	3,182	39,690	42,872	3,190	39,894	43,084	3,198	40,099	43,297
2017	3,172	39,808	42,980	3,188	40,113	43,301	3,204	40,420	43,624
2018	3,181	39,909	43,089	3,205	40,317	43,521	3,229	40,728	43,956
2019	3,189	40,011	43,200	3,221	40,523	43,744	3,253	41,040	44,294
2020	3,215	40,096	43,310	3,256	40,712	43,968	3,297	41,337	44,634
2021	3,205	40,217	43,422	3,254	40,940	44,194	3,304	41,675	44,978
2022	3,213	40,320	43,533	3,271	41,150	44,421	3,329	41,996	45,325
2023	3,222	40,423	43,645	3,288	41,361	44,649	3,355	42,318	45,673
2024	3,248	40,508	43,756	3,323	41,554	44,877	3,399	42,624	46,024
2025	3,238	40,629	43,867	3,321	41,783	45,104	3,406	42,967	46,373
2026	3,246	40,732	43,978	3,338	41,995	45,333	3,432	43,293	46,725
2027	3,254	40,834	44,089	3,355	42,206	45,560	3,458	43,620	47,078
2028	3,281	40,918	44,198	3,390	42,397	45,787	3,503	43,926	47,429
2029	3,270	41,037	44,307	3,388	42,625	46,013	3,509	44,270	47,779
2030	3,278	41,137	44,415	3,404	42,832	46,237	3,535	44,593	48,128
2031	3,286	41,237	44,523	3,421	43,040	46,461	3,561	44,918	48,479
2032	3,313	41,317	44,630	3,457	43,228	46,685	3,607	45,222	48,829
2033	3,302	41,435	44,737	3,454	43,454	46,908	3,612	45,567	49,179
2034	3,310	41,533	44,843	3,470	43,661	47,131	3,638	45,891	49,529

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.20%	0.25%	1.06%	0.45%	0.50%	1.31%	0.70%	0.75%
2017	-0.31%	0.30%	0.25%	-0.06%	0.55%	0.50%	0.19%	0.80%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.82%	0.21%	0.26%	1.07%	0.47%	0.51%	1.33%	0.72%	0.77%
2021	-0.30%	0.30%	0.26%	-0.04%	0.56%	0.51%	0.21%	0.82%	0.77%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.82%	0.21%	0.26%	1.07%	0.47%	0.51%	1.33%	0.72%	0.77%
2025	-0.30%	0.30%	0.25%	-0.05%	0.55%	0.51%	0.20%	0.80%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.81%	0.20%	0.25%	1.06%	0.45%	0.50%	1.31%	0.70%	0.75%
2029	-0.31%	0.29%	0.25%	-0.07%	0.54%	0.49%	0.18%	0.78%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.80%	0.20%	0.24%	1.04%	0.44%	0.48%	1.28%	0.68%	0.72%
2033	-0.32%	0.28%	0.24%	-0.08%	0.52%	0.48%	0.16%	0.76%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	742,794	2,780,271	3,523,065	744,620	2,787,103	3,531,723	746,445	2,793,936	3,540,381
2016	748,901	2,802,747	3,551,648	752,606	2,816,614	3,569,220	756,321	2,830,515	3,586,836
2017	746,517	2,794,206	3,540,724	752,094	2,815,078	3,567,171	757,697	2,836,053	3,593,750
2018	748,415	2,801,307	3,549,722	755,916	2,829,386	3,585,302	763,474	2,857,675	3,621,149
2019	750,329	2,808,474	3,558,803	759,784	2,843,863	3,603,647	769,334	2,879,608	3,648,942
2020	756,550	2,831,374	3,587,924	768,039	2,874,371	3,642,411	779,673	2,917,911	3,697,585
2021	754,185	2,822,905	3,577,090	767,602	2,873,126	3,640,728	781,224	2,924,111	3,705,334
2022	756,122	2,830,158	3,586,280	771,547	2,887,890	3,659,437	787,245	2,946,650	3,733,895
2023	758,057	2,837,399	3,595,456	775,495	2,902,668	3,678,162	793,288	2,969,267	3,762,555
2024	764,342	2,860,534	3,624,876	783,920	2,933,804	3,717,724	803,948	3,008,760	3,812,708
2025	761,922	2,851,867	3,613,789	783,413	2,932,307	3,715,720	805,454	3,014,804	3,820,257
2026	763,850	2,859,082	3,622,932	787,377	2,947,144	3,734,521	811,567	3,037,686	3,849,253
2027	765,769	2,866,264	3,632,033	791,333	2,961,950	3,753,283	817,683	3,060,577	3,878,259
2028	772,064	2,889,435	3,661,499	799,820	2,993,311	3,793,131	828,500	3,100,645	3,929,145
2029	769,565	2,880,472	3,650,036	799,188	2,991,351	3,790,538	829,872	3,106,203	3,936,075
2030	771,439	2,887,488	3,658,927	803,081	3,005,923	3,809,005	835,937	3,128,901	3,964,838
2031	773,313	2,894,502	3,667,815	806,982	3,020,526	3,827,508	842,028	3,151,701	3,993,729
2032	779,603	2,917,650	3,697,254	815,498	3,051,984	3,867,482	852,949	3,192,144	4,045,093
2033	777,025	2,908,394	3,685,419	814,738	3,049,555	3,864,293	854,181	3,197,191	4,051,372
2034	778,870	2,915,303	3,694,174	818,609	3,064,045	3,882,654	860,269	3,219,977	4,080,246

Annual Change

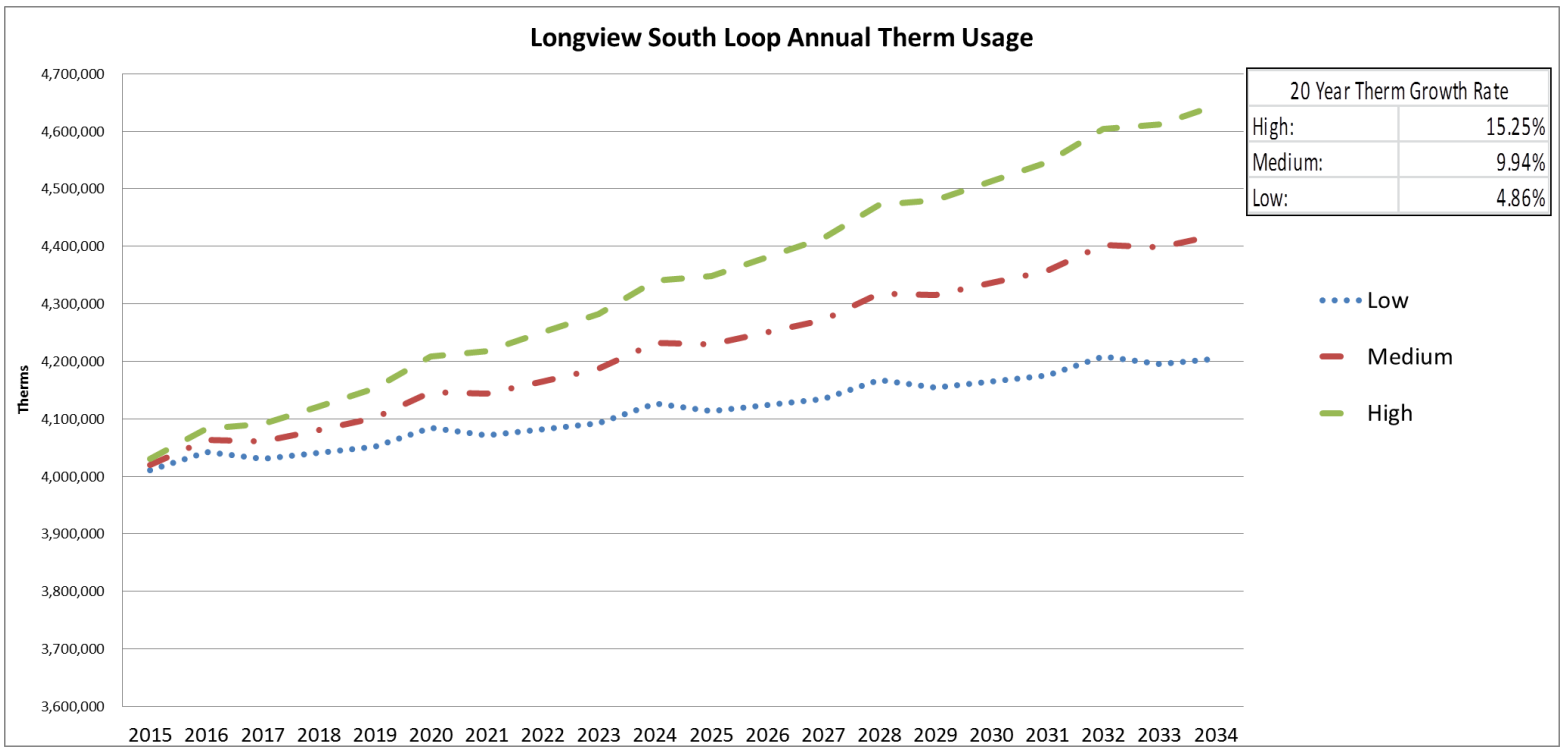
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.81%	0.81%	1.07%	1.06%	1.06%	1.32%	1.31%	1.31%
2017	-0.32%	-0.30%	-0.31%	-0.07%	-0.05%	-0.06%	0.18%	0.20%	0.19%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.83%	0.82%	0.82%	1.09%	1.07%	1.08%	1.34%	1.33%	1.33%
2021	-0.31%	-0.30%	-0.30%	-0.06%	-0.04%	-0.05%	0.20%	0.21%	0.21%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.83%	0.82%	0.82%	1.09%	1.07%	1.08%	1.34%	1.33%	1.33%
2025	-0.32%	-0.30%	-0.31%	-0.06%	-0.05%	-0.05%	0.19%	0.20%	0.20%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.82%	0.81%	0.81%	1.07%	1.06%	1.06%	1.32%	1.31%	1.31%
2029	-0.32%	-0.31%	-0.31%	-0.08%	-0.07%	-0.07%	0.17%	0.18%	0.18%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.81%	0.80%	0.80%	1.06%	1.04%	1.04%	1.30%	1.28%	1.29%
2033	-0.33%	-0.32%	-0.32%	-0.09%	-0.08%	-0.08%	0.14%	0.16%	0.16%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

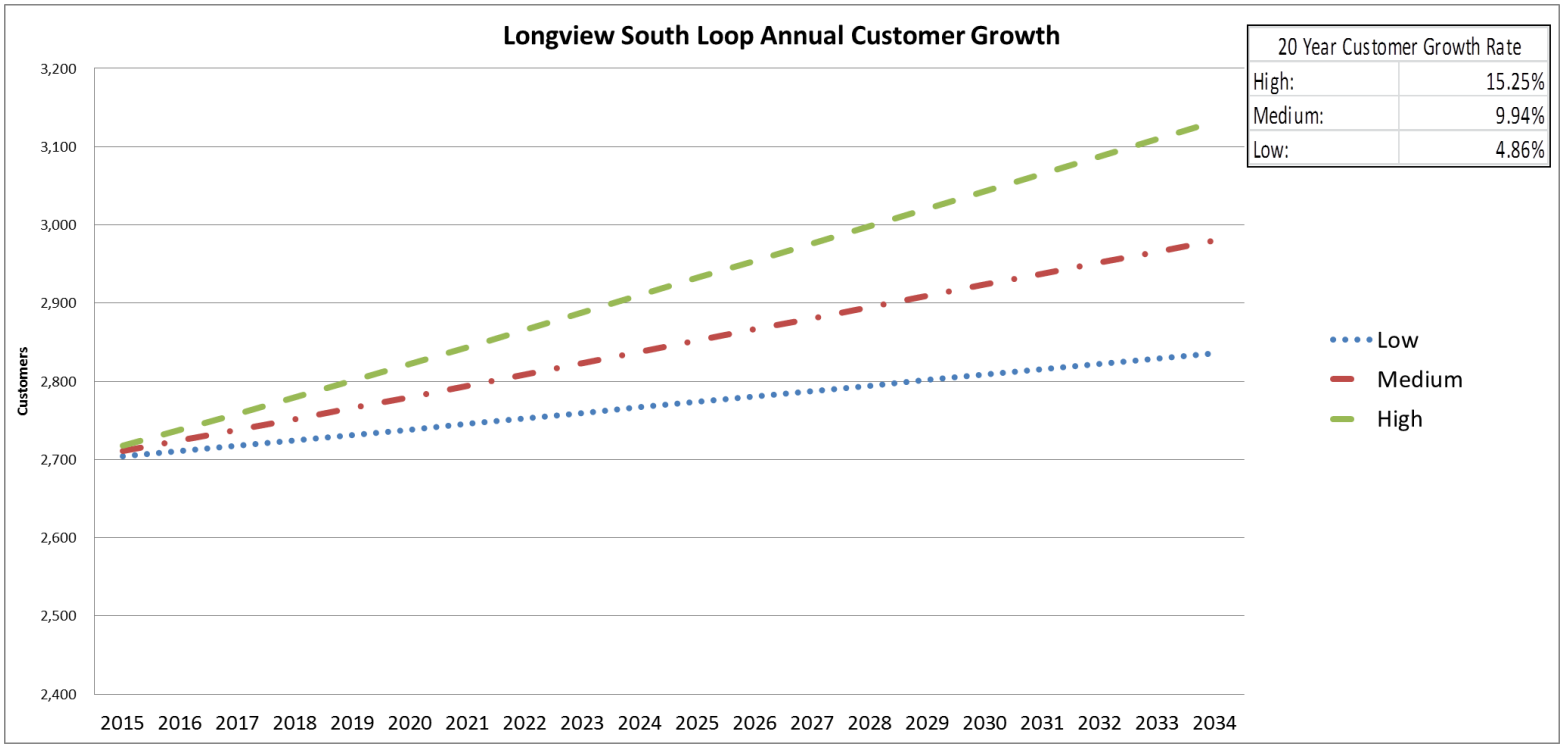
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,829	875	2,704	1,834	877	2,711	1,838	879	2,717
2016	1,834	877	2,711	1,843	881	2,724	1,852	886	2,738
2017	1,838	879	2,718	1,852	886	2,738	1,866	892	2,758
2018	1,843	882	2,725	1,862	890	2,752	1,880	899	2,779
2019	1,848	884	2,732	1,871	895	2,766	1,895	906	2,801
2020	1,853	886	2,739	1,881	899	2,780	1,909	913	2,822
2021	1,857	888	2,746	1,890	904	2,794	1,924	920	2,844
2022	1,862	891	2,753	1,900	909	2,809	1,939	927	2,866
2023	1,867	893	2,760	1,910	913	2,823	1,954	934	2,888
2024	1,872	895	2,767	1,920	918	2,838	1,969	942	2,910
2025	1,876	897	2,774	1,929	923	2,852	1,984	949	2,932
2026	1,881	900	2,781	1,939	927	2,866	1,999	956	2,955
2027	1,886	902	2,788	1,949	932	2,881	2,014	963	2,977
2028	1,891	904	2,795	1,958	937	2,895	2,029	970	2,999
2029	1,895	906	2,802	1,968	941	2,909	2,044	977	3,021
2030	1,900	909	2,808	1,978	946	2,924	2,059	985	3,043
2031	1,904	911	2,815	1,987	951	2,938	2,074	992	3,065
2032	1,909	913	2,822	1,997	955	2,952	2,089	999	3,088
2033	1,914	915	2,829	2,006	960	2,966	2,104	1,006	3,110
2034	1,918	917	2,835	2,016	964	2,980	2,119	1,013	3,132

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2021	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2025	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2029	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%


Longview South Loop Annual Therm Usage
Therms
4,700,000
4,600,000
4,500,000
4,400,000
4,300,000
4,200,000
4,100,000
4,000,000
3,900,000
3,800,000
3,700,000
3,600,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.25%
Medium: 9.94%
Low: 4.86%
Low
Medium
High


Longview South Loop Annual Customer Growth
Customers
3,200
3,100
3,000
2,900
2,800
2,700
2,600
2,500
2,400
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.25%
Medium: 9.94%
Low: 4.86%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sedro-Woolley Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,962,098	5,501,602	27,463,700	22,156,453	5,501,602	27,658,055	22,350,808	5,501,602	27,852,409
2016	22,217,388	5,565,553	27,782,940	22,571,093	5,604,560	28,175,653	22,927,555	5,643,567	28,571,122
2017	22,271,719	5,579,163	27,850,882	22,783,361	5,657,267	28,440,629	23,302,727	5,735,914	29,038,642
2018	22,426,189	5,617,858	28,044,047	23,099,397	5,735,741	28,835,138	23,787,587	5,855,262	29,642,849
2019	22,580,102	5,656,414	28,236,517	23,416,465	5,814,471	29,230,937	24,277,359	5,975,818	30,253,177
2020	22,836,295	5,720,592	28,556,886	23,841,659	5,920,050	29,761,709	24,883,562	6,125,033	31,008,595
2021	22,885,979	5,733,038	28,619,017	24,053,012	5,972,530	30,025,542	25,270,601	6,220,302	31,490,904
2022	23,037,804	5,771,071	28,808,875	24,372,146	6,051,774	30,423,920	25,773,535	6,344,098	32,117,633
2023	23,188,554	5,808,834	28,997,388	24,691,108	6,130,974	30,822,082	26,279,488	6,468,637	32,748,125
2024	23,444,632	5,872,983	29,317,615	25,124,503	6,238,589	31,363,092	26,911,825	6,624,286	33,536,111
2025	23,487,552	5,883,734	29,371,287	25,329,893	6,289,589	31,619,482	27,302,561	6,720,464	34,023,025
2026	23,635,673	5,920,839	29,556,512	25,649,372	6,368,917	32,018,289	27,819,100	6,847,609	34,666,709
2027	23,782,554	5,957,634	29,740,188	25,968,161	6,448,075	32,416,236	28,337,734	6,975,270	35,313,004
2028	24,036,866	6,021,340	30,058,205	26,405,788	6,556,741	32,962,529	28,989,833	7,135,783	36,125,616
2029	24,072,764	6,030,333	30,103,097	26,603,844	6,605,920	33,209,763	29,381,412	7,232,169	36,613,581
2030	24,215,980	6,066,209	30,282,189	26,920,392	6,684,521	33,604,913	29,905,808	7,361,248	37,267,056
2031	24,358,509	6,101,913	30,460,422	27,237,285	6,763,207	34,000,493	30,433,862	7,491,227	37,925,089
2032	24,610,905	6,165,139	30,776,044	27,678,241	6,872,700	34,550,941	31,103,930	7,656,163	38,760,093
2033	24,640,404	6,172,529	30,812,933	27,869,519	6,920,196	34,789,715	31,496,551	7,752,806	39,249,357
2034	24,780,035	6,207,507	30,987,542	28,185,378	6,998,625	35,184,003	32,031,999	7,884,605	39,916,604

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.16%	1.16%	1.16%	1.87%	1.87%	1.87%	2.58%	2.58%	2.58%
2017	0.24%	0.24%	0.24%	0.94%	0.94%	0.94%	1.64%	1.64%	1.64%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.13%	1.13%	1.13%	1.82%	1.82%	1.82%	2.50%	2.50%	2.50%
2021	0.22%	0.22%	0.22%	0.89%	0.89%	0.89%	1.56%	1.56%	1.56%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.10%	1.10%	1.10%	1.76%	1.76%	1.76%	2.41%	2.41%	2.41%
2025	0.18%	0.18%	0.18%	0.82%	0.82%	0.82%	1.45%	1.45%	1.45%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.07%	1.07%	1.07%	1.69%	1.69%	1.69%	2.30%	2.30%	2.30%
2029	0.15%	0.15%	0.15%	0.75%	0.75%	0.75%	1.35%	1.35%	1.35%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.04%	1.04%	1.04%	1.62%	1.62%	1.62%	2.20%	2.20%	2.20%
2033	0.12%	0.12%	0.12%	0.69%	0.69%	0.69%	1.26%	1.26%	1.26%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	15,073	304,090	319,162	15,073	306,348	321,421	15,073	308,607	323,680
2016	15,248	306,167	321,415	15,355	310,603	325,958	15,462	315,072	330,533
2017	15,285	308,377	323,662	15,499	315,016	330,516	15,715	321,750	337,465
2018	15,391	310,515	325,907	15,714	319,386	335,100	16,042	328,445	344,487
2019	15,497	312,646	328,144	15,930	323,770	339,700	16,372	335,208	351,580
2020	15,673	314,696	330,369	16,219	328,088	344,307	16,781	341,951	358,732
2021	15,707	316,882	332,589	16,363	332,571	348,934	17,042	348,922	365,964
2022	15,811	318,984	334,795	16,580	336,984	353,564	17,381	355,866	373,247
2023	15,915	321,071	336,986	16,797	341,394	358,191	17,722	362,852	380,574
2024	16,090	323,079	339,169	17,092	345,741	362,833	18,149	369,824	387,972
2025	16,120	325,211	341,331	17,232	350,226	367,458	18,412	376,978	395,390
2026	16,221	327,262	343,484	17,449	354,643	372,092	18,761	384,110	402,870
2027	16,322	329,296	345,618	17,666	359,051	376,717	19,110	391,271	410,381
2028	16,497	331,240	347,737	17,964	363,373	381,337	19,550	398,380	417,930
2029	16,521	333,314	349,836	18,098	367,840	385,939	19,814	405,681	425,495
2030	16,620	335,297	351,917	18,314	372,217	390,531	20,168	412,922	433,090
2031	16,718	337,270	353,988	18,529	376,599	395,128	20,524	420,213	440,737
2032	16,891	339,151	356,042	18,829	380,883	399,713	20,976	427,432	448,408
2033	16,911	341,174	358,085	18,959	385,340	404,300	21,241	434,886	456,126
2034	17,007	343,107	360,114	19,174	389,708	408,882	21,602	442,279	463,881

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.16%	0.68%	0.71%	1.87%	1.39%	1.41%	2.58%	2.09%	2.12%
2017	0.24%	0.72%	0.70%	0.94%	1.42%	1.40%	1.64%	2.12%	2.10%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.13%	0.66%	0.68%	1.82%	1.33%	1.36%	2.50%	2.01%	2.03%
2021	0.22%	0.69%	0.67%	0.89%	1.37%	1.34%	1.56%	2.04%	2.02%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.10%	0.63%	0.65%	1.76%	1.27%	1.30%	2.41%	1.92%	1.94%
2025	0.18%	0.66%	0.64%	0.82%	1.30%	1.27%	1.45%	1.93%	1.91%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.07%	0.59%	0.61%	1.69%	1.20%	1.23%	2.30%	1.82%	1.84%
2029	0.15%	0.63%	0.60%	0.75%	1.23%	1.21%	1.35%	1.83%	1.81%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.04%	0.56%	0.58%	1.62%	1.14%	1.16%	2.20%	1.72%	1.74%
2033	0.12%	0.60%	0.57%	0.69%	1.17%	1.15%	1.26%	1.74%	1.72%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	16,809,606	9,444,919	26,254,524	16,928,564	9,511,758	26,440,322	17,047,521	9,578,598	26,626,120
2016	17,006,649	9,553,824	26,560,473	17,247,038	9,688,868	26,935,906	17,489,115	9,824,859	27,313,974
2017	17,046,587	9,578,073	26,624,660	17,407,551	9,780,890	27,188,441	17,773,574	9,986,550	27,760,124
2018	17,164,816	9,644,503	26,809,320	17,649,017	9,916,564	27,565,581	18,143,389	10,194,340	28,337,729
2019	17,282,621	9,710,695	26,993,316	17,891,272	10,052,681	27,943,953	18,516,951	10,404,235	28,921,186
2020	17,480,401	9,819,964	27,300,365	18,217,904	10,234,271	28,452,175	18,981,155	10,663,042	29,644,197
2021	17,516,736	9,842,239	27,358,975	18,377,623	10,325,951	28,703,574	19,274,521	10,829,896	30,104,418
2022	17,632,942	9,907,532	27,540,474	18,621,456	10,462,955	29,084,411	19,658,121	11,045,432	30,703,554
2023	17,748,324	9,972,363	27,720,687	18,865,158	10,599,885	29,465,043	20,044,024	11,262,262	31,306,287
2024	17,946,062	10,081,559	28,027,621	19,198,151	10,784,945	29,983,096	20,528,312	11,532,189	32,060,501
2025	17,977,175	10,100,948	28,078,124	19,353,220	10,874,115	30,227,335	20,824,347	11,700,707	32,525,055
2026	18,090,546	10,164,649	28,255,194	19,597,316	11,011,267	30,608,583	21,218,325	11,922,074	33,140,398
2027	18,202,967	10,227,816	28,430,783	19,840,886	11,148,123	30,989,010	21,613,900	12,144,338	33,758,238
2028	18,399,397	10,336,228	28,735,625	20,177,208	11,334,949	31,512,157	22,113,414	12,422,652	34,536,066
2029	18,425,092	10,352,622	28,777,714	20,326,577	11,421,022	31,747,599	22,409,939	12,591,614	35,001,553
2030	18,534,708	10,414,213	28,948,921	20,568,435	11,556,916	32,125,351	22,809,910	12,816,347	35,626,257
2031	18,643,798	10,475,508	29,119,307	20,810,556	11,692,958	32,503,514	23,212,670	13,042,649	36,255,318
2032	18,838,804	10,583,074	29,421,879	21,149,516	11,881,163	33,030,678	23,726,045	13,328,579	37,054,624
2033	18,859,559	10,596,739	29,456,297	21,293,613	11,964,376	33,257,989	24,023,209	13,498,072	37,521,281
2034	18,966,431	10,656,788	29,623,218	21,534,943	12,099,974	33,634,917	24,431,609	13,727,542	38,159,151

Annual Change

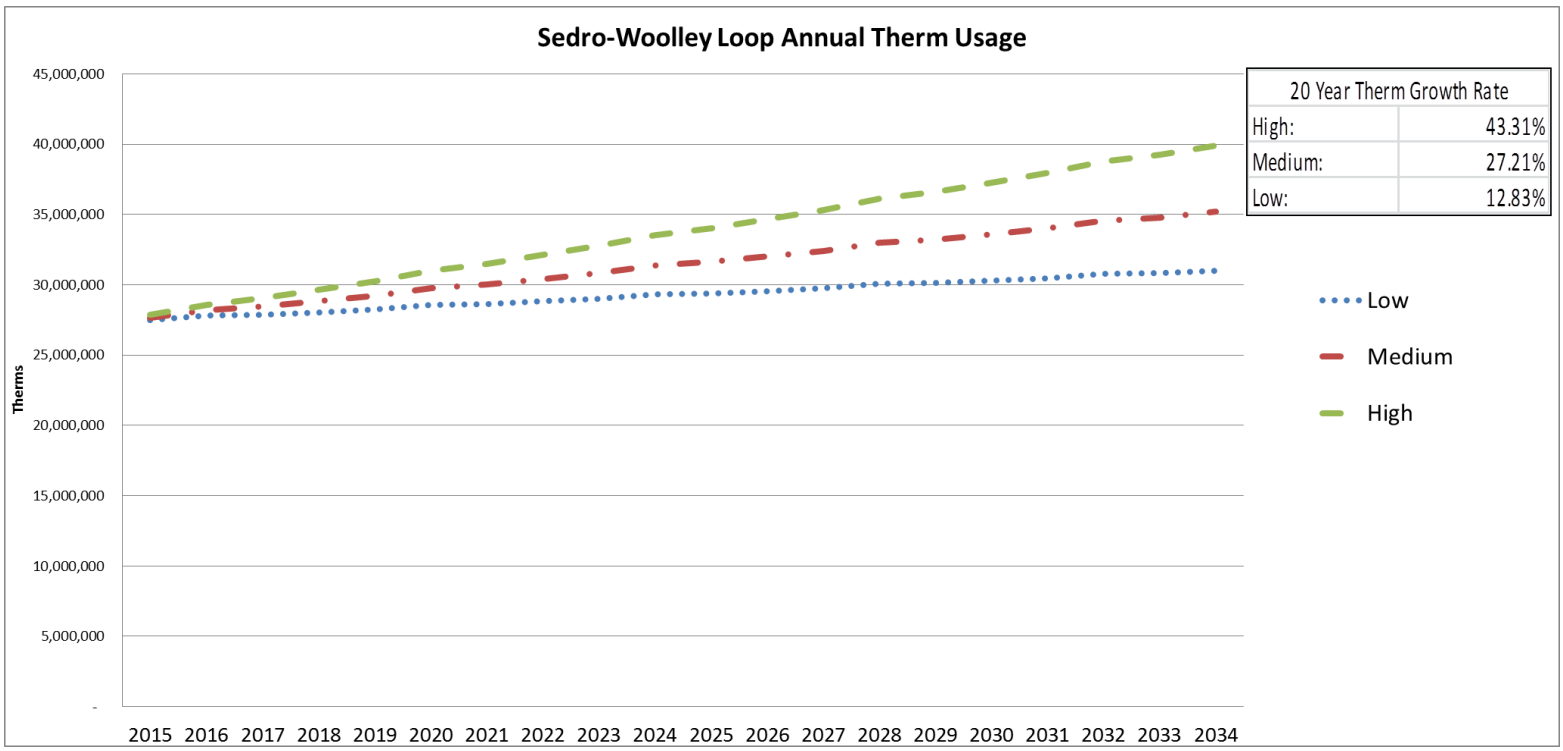
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	1.15%	1.17%	1.88%	1.86%	1.87%	2.59%	2.57%	2.58%
2017	0.23%	0.25%	0.24%	0.93%	0.95%	0.94%	1.63%	1.65%	1.63%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.14%	1.13%	1.14%	1.83%	1.81%	1.82%	2.51%	2.49%	2.50%
2021	0.21%	0.23%	0.21%	0.88%	0.90%	0.88%	1.55%	1.56%	1.55%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.11%	1.09%	1.11%	1.77%	1.75%	1.76%	2.42%	2.40%	2.41%
2025	0.17%	0.19%	0.18%	0.81%	0.83%	0.81%	1.44%	1.46%	1.45%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.08%	1.06%	1.07%	1.70%	1.68%	1.69%	2.31%	2.29%	2.30%
2029	0.14%	0.16%	0.15%	0.74%	0.76%	0.75%	1.34%	1.36%	1.35%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.05%	1.03%	1.04%	1.63%	1.61%	1.62%	2.21%	2.19%	2.20%
2033	0.11%	0.13%	0.12%	0.68%	0.70%	0.69%	1.25%	1.27%	1.26%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

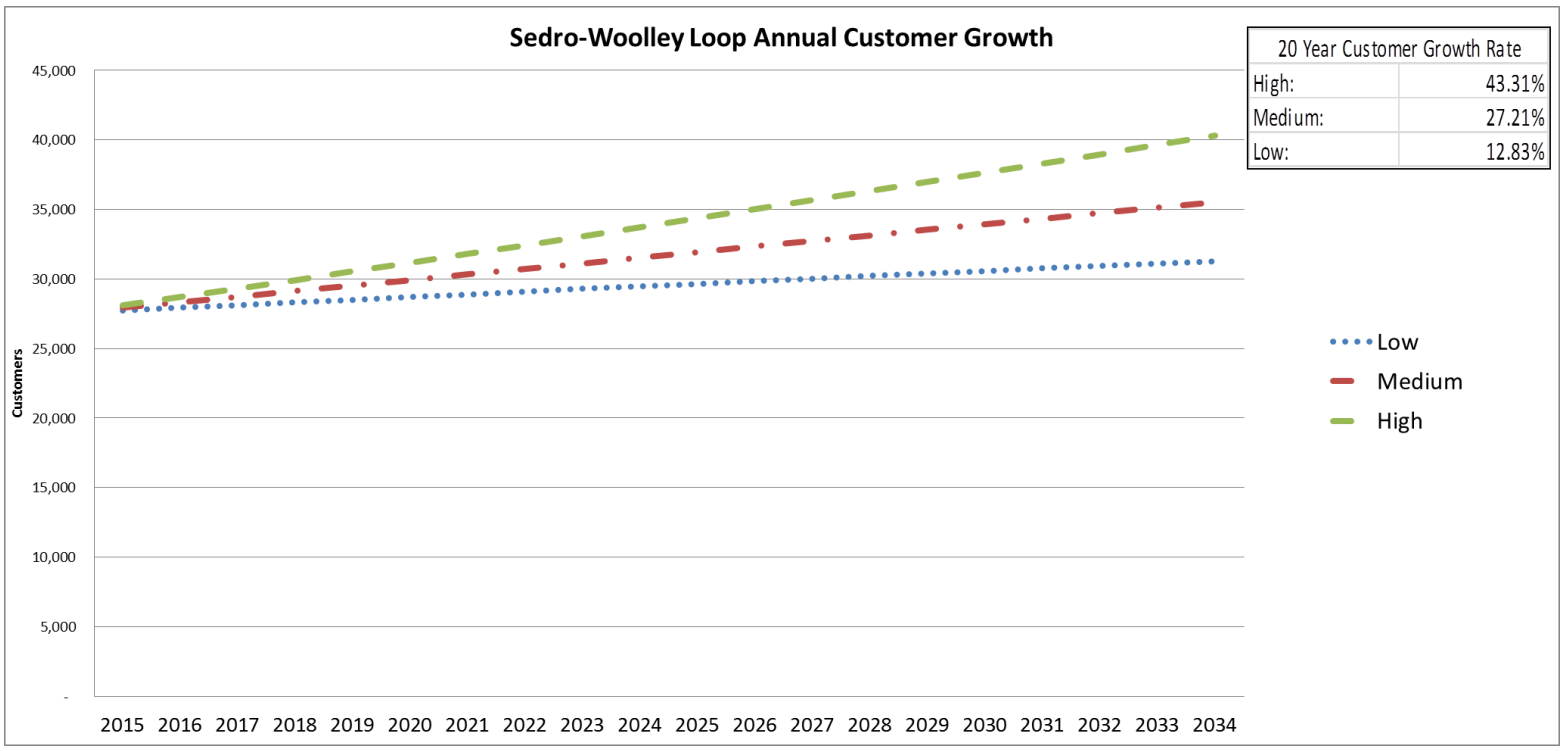
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,469	3,268	27,737	24,642	3,291	27,933	24,815	3,314	28,129
2016	24,642	3,291	27,933	24,990	3,338	28,327	25,341	3,384	28,725
2017	24,814	3,314	28,128	25,339	3,384	28,724	25,872	3,455	29,327
2018	24,986	3,337	28,323	25,691	3,431	29,122	26,410	3,527	29,938
2019	25,157	3,360	28,517	26,043	3,478	29,522	26,954	3,600	30,554
2020	25,328	3,383	28,711	26,397	3,526	29,922	27,502	3,673	31,176
2021	25,498	3,406	28,904	26,751	3,573	30,324	28,057	3,747	31,804
2022	25,667	3,428	29,095	27,106	3,620	30,727	28,615	3,822	32,437
2023	25,835	3,451	29,286	27,461	3,668	31,129	29,177	3,897	33,074
2024	26,003	3,473	29,476	27,817	3,715	31,532	29,744	3,973	33,717
2025	26,168	3,495	29,663	28,171	3,763	31,934	30,313	4,049	34,361
2026	26,333	3,517	29,850	28,527	3,810	32,337	30,886	4,125	35,012
2027	26,497	3,539	30,036	28,881	3,857	32,739	31,462	4,202	35,664
2028	26,660	3,561	30,220	29,235	3,905	33,140	32,041	4,279	36,320
2029	26,820	3,582	30,403	29,588	3,952	33,540	32,621	4,357	36,978
2030	26,980	3,603	30,583	29,940	3,999	33,939	33,203	4,435	37,638
2031	27,139	3,625	30,763	30,293	4,046	34,339	33,789	4,513	38,302
2032	27,296	3,646	30,942	30,644	4,093	34,737	34,378	4,591	38,969
2033	27,453	3,667	31,119	30,996	4,140	35,136	34,969	4,670	39,640
2034	27,608	3,687	31,296	31,347	4,187	35,534	35,564	4,750	40,314

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%
2017	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.10%	2.10%	2.10%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.03%	2.03%	2.03%
2021	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.02%	2.02%	2.02%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.94%	1.94%	1.94%
2025	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2029	0.60%	0.60%	0.60%	1.21%	1.21%	1.21%	1.81%	1.81%	1.81%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2033	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%


Sedro-Woolley Loop Annual Therm Usage
Therms
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 43.31%
Medium: 27.21%
Low: 12.83%
Low
Medium
High


Sedro-Woolley Loop Annual Customer Growth
Customers
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 43.31%
Medium: 27.21%
Low: 12.83%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sumas SPE Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	35,576,040	10,623,702	46,199,742	36,015,078	10,623,702	46,638,780	36,454,117	10,623,702	47,077,819
2016	36,073,102	10,772,134	46,845,236	36,860,323	10,873,032	47,733,355	37,655,885	10,973,929	48,629,814
2017	36,247,207	10,824,125	47,071,333	37,380,328	11,026,422	48,406,750	38,536,595	11,230,591	49,767,186
2018	36,580,615	10,923,687	47,504,302	38,067,988	11,229,267	49,297,255	39,599,991	11,540,493	51,140,485
2019	36,912,296	11,022,734	47,935,030	38,758,323	11,432,902	50,191,225	40,677,167	11,854,411	52,531,579
2020	37,408,333	11,170,860	48,579,194	39,626,591	11,689,023	51,315,615	41,953,046	12,226,236	54,179,282
2021	37,569,625	11,219,025	48,788,650	40,144,819	11,841,890	51,986,709	42,869,465	12,493,305	55,362,770
2022	37,895,230	11,316,257	49,211,487	40,840,666	12,047,150	52,887,816	43,984,075	12,818,132	56,802,207
2023	38,218,280	11,412,726	49,631,006	41,536,985	12,252,550	53,789,534	45,108,944	13,145,949	58,254,894
2024	38,712,006	11,560,163	50,272,169	42,424,330	12,514,298	54,938,629	46,453,506	13,537,790	59,991,296
2025	38,857,761	11,603,688	50,461,449	42,932,773	12,664,278	55,597,052	47,392,066	13,811,312	61,203,378
2026	39,173,945	11,698,107	50,872,051	43,631,456	12,870,375	56,501,831	48,548,945	14,148,457	62,697,402
2027	39,487,526	11,791,748	51,279,273	44,329,981	13,076,426	57,406,407	49,714,824	14,488,225	64,203,049
2028	39,976,641	11,937,807	51,914,448	45,229,824	13,341,861	58,571,685	51,117,324	14,896,951	66,014,275
2029	40,106,496	11,976,585	52,083,081	45,725,138	13,487,968	59,213,106	52,070,857	15,174,836	67,245,694
2030	40,411,804	12,067,756	52,479,560	46,421,297	13,693,320	60,114,617	53,260,014	15,521,388	68,781,402
2031	40,715,303	12,158,386	52,873,690	47,118,560	13,898,999	61,017,559	54,459,989	15,871,093	70,331,081
2032	41,199,671	12,303,028	53,502,699	48,028,820	14,167,506	62,196,326	55,916,278	16,295,494	72,211,772
2033	41,315,073	12,337,489	53,652,562	48,511,824	14,309,983	62,821,806	56,884,304	16,577,603	73,461,907
2034	41,611,850	12,426,113	54,037,963	49,208,771	14,515,568	63,724,339	58,110,151	16,934,848	75,044,999

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.34%	1.34%	1.34%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.31%	1.31%	1.31%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.29%	1.29%	1.29%	2.14%	2.14%	2.14%	2.98%	2.98%	2.98%
2025	0.38%	0.38%	0.38%	1.20%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.82%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.10%	1.10%	1.10%	1.87%	1.87%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.93%	1.93%	1.93%	2.67%	2.67%	2.67%
2033	0.28%	0.28%	0.28%	1.01%	1.01%	1.01%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	29,106	497,848	526,954	29,106	502,855	531,961	29,106	507,863	536,969
2016	29,513	502,423	531,936	29,789	512,232	542,021	30,066	522,135	552,200
2017	29,655	507,240	536,895	30,209	521,917	552,127	30,769	536,875	567,644
2018	29,928	511,906	541,834	30,765	531,519	562,284	31,618	551,690	583,308
2019	30,199	516,547	546,746	31,323	541,158	572,481	32,478	566,697	599,175
2020	30,605	521,020	551,626	32,025	550,673	582,698	33,497	581,719	615,216
2021	30,737	525,746	556,483	32,444	560,516	592,960	34,228	597,239	631,467
2022	31,003	530,302	561,306	33,006	570,232	603,238	35,118	612,767	647,885
2023	31,268	534,823	566,091	33,569	579,954	613,523	36,016	628,438	664,455
2024	31,672	539,178	570,850	34,286	589,552	623,838	37,090	644,122	681,212
2025	31,791	543,772	575,563	34,697	599,443	634,139	37,839	660,246	698,085
2026	32,050	548,196	580,246	35,261	609,198	644,459	38,763	676,363	715,126
2027	32,306	552,585	584,891	35,826	618,951	654,777	39,694	692,606	732,299
2028	32,706	556,792	589,498	36,553	628,539	665,092	40,814	708,791	749,604
2029	32,813	561,246	594,059	36,953	638,431	675,384	41,575	725,429	767,004
2030	33,062	565,519	598,581	37,516	648,151	685,667	42,524	741,996	784,520
2031	33,311	569,766	603,077	38,079	657,886	695,966	43,482	758,713	802,196
2032	33,707	573,826	607,533	38,815	667,435	706,251	44,645	775,333	819,978
2033	33,801	578,159	611,961	39,205	677,339	716,545	45,418	792,488	837,906
2034	34,044	582,312	616,356	39,769	687,070	726,839	46,397	809,566	855,962

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	0.92%	0.95%	2.35%	1.86%	1.89%	3.30%	2.81%	2.84%
2017	0.48%	0.96%	0.93%	1.41%	1.89%	1.86%	2.34%	2.82%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.34%	0.87%	0.89%	2.24%	1.76%	1.78%	3.14%	2.65%	2.68%
2021	0.43%	0.91%	0.88%	1.31%	1.79%	1.76%	2.18%	2.67%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.29%	0.81%	0.84%	2.14%	1.65%	1.68%	2.98%	2.50%	2.52%
2025	0.38%	0.85%	0.83%	1.20%	1.68%	1.65%	2.02%	2.50%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	0.76%	0.79%	2.03%	1.55%	1.58%	2.82%	2.34%	2.36%
2029	0.32%	0.80%	0.77%	1.10%	1.57%	1.55%	1.87%	2.35%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	0.71%	0.74%	1.93%	1.45%	1.48%	2.67%	2.19%	2.22%
2033	0.28%	0.76%	0.73%	1.01%	1.48%	1.46%	1.73%	2.21%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,305,124	14,768,967	45,074,090	30,593,115	14,909,317	45,502,432	30,881,106	15,049,667	45,930,773
2016	30,730,914	14,973,023	45,703,937	31,313,529	15,256,890	46,570,419	31,901,614	15,543,423	47,445,037
2017	30,876,852	15,047,594	45,924,445	31,752,830	15,474,495	47,227,325	32,645,220	15,909,395	48,554,615
2018	31,160,862	15,186,004	46,346,865	32,336,965	15,759,169	48,096,133	33,546,047	16,348,406	49,894,453
2019	31,443,401	15,323,697	46,767,099	32,923,372	16,044,950	48,968,322	34,458,548	16,793,105	51,251,653
2020	31,868,407	15,527,243	47,395,650	33,663,525	16,401,879	50,065,403	35,542,118	17,317,185	52,859,303
2021	32,003,341	15,596,580	47,599,920	34,101,136	16,618,923	50,720,059	36,315,692	17,698,170	54,013,862
2022	32,280,704	15,731,750	48,012,455	34,692,224	16,906,986	51,599,210	37,259,904	18,158,325	55,418,228
2023	32,555,892	15,865,861	48,421,752	35,283,714	17,195,244	52,478,959	38,212,806	18,622,714	56,835,520
2024	32,979,015	16,068,365	49,047,380	36,040,256	17,559,893	53,600,149	39,354,853	19,174,864	58,529,717
2025	33,100,628	16,131,334	49,231,962	36,469,371	17,773,065	54,242,436	40,146,890	19,565,275	59,712,165
2026	33,369,966	16,262,594	49,632,560	37,062,869	18,062,302	55,125,171	41,126,908	20,042,879	61,169,788
2027	33,637,087	16,392,773	50,029,860	37,656,234	18,351,473	56,007,707	42,114,550	20,524,199	62,638,749
2028	34,056,365	16,593,282	50,649,647	38,423,575	18,721,118	57,144,693	43,305,984	21,099,974	64,405,958
2029	34,164,352	16,649,731	50,814,083	38,841,354	18,929,032	57,770,386	44,110,400	21,496,861	65,607,260
2030	34,424,425	16,776,476	51,200,901	39,432,708	19,217,224	58,649,931	45,117,761	21,987,790	67,105,551
2031	34,682,958	16,902,470	51,585,429	40,025,000	19,505,873	59,530,873	46,134,287	22,483,186	68,617,473
2032	35,098,273	17,100,931	52,199,204	40,801,374	19,879,652	60,681,026	47,371,600	23,080,864	70,452,464
2033	35,193,866	17,151,457	52,345,324	41,208,512	20,082,648	61,291,160	48,187,979	23,484,037	71,672,016
2034	35,446,674	17,274,661	52,721,335	41,800,536	20,371,167	62,171,703	49,226,422	23,990,114	73,216,536

Annual Change

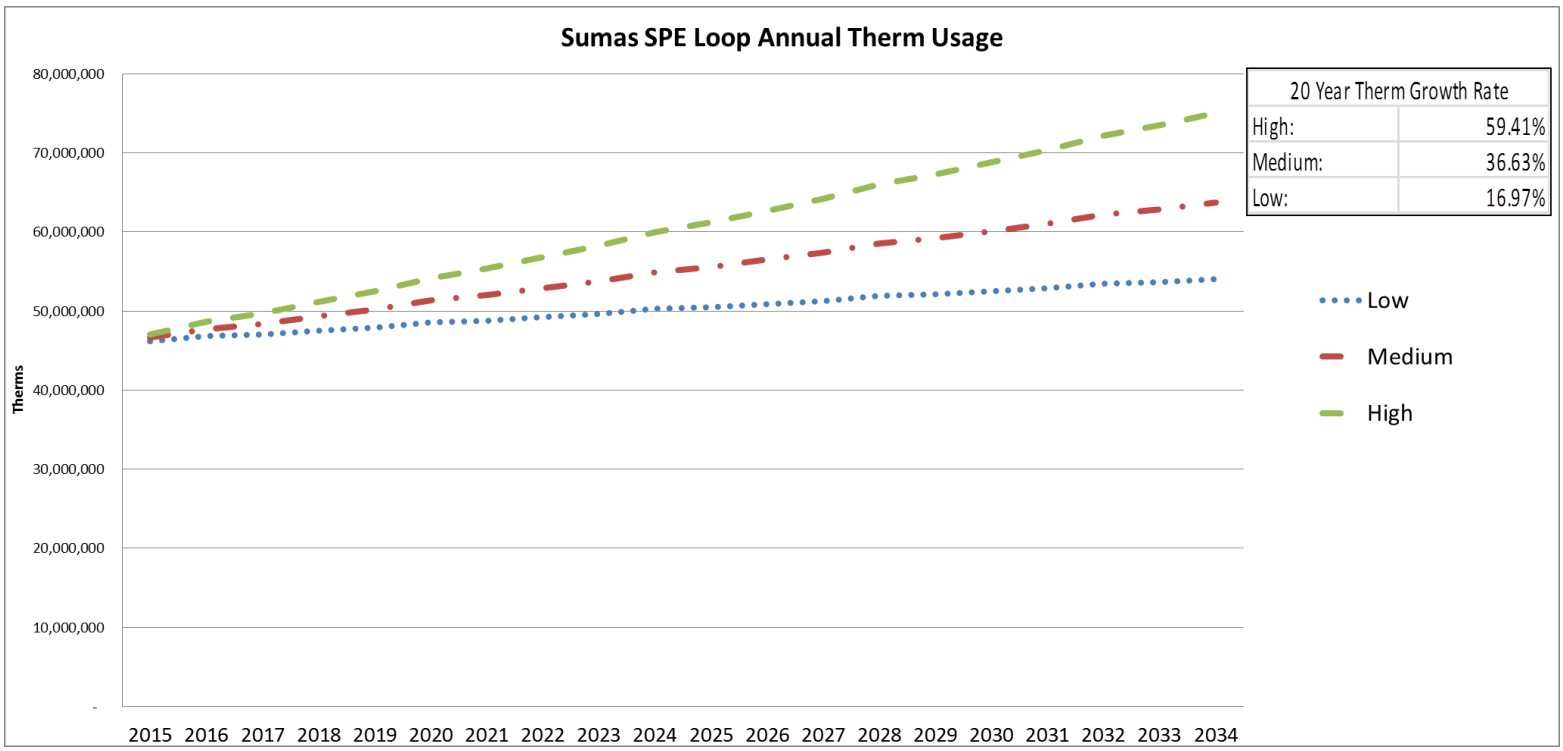
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	1.38%	1.40%	2.35%	2.33%	2.35%	3.30%	3.28%	3.30%
2017	0.47%	0.50%	0.48%	1.40%	1.43%	1.41%	2.33%	2.35%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.33%	1.34%	2.25%	2.22%	2.24%	3.14%	3.12%	3.14%
2021	0.42%	0.45%	0.43%	1.30%	1.32%	1.31%	2.18%	2.20%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.28%	1.29%	2.14%	2.12%	2.14%	2.99%	2.96%	2.98%
2025	0.37%	0.39%	0.38%	1.19%	1.21%	1.20%	2.01%	2.04%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.25%	1.22%	1.24%	2.04%	2.01%	2.03%	2.83%	2.81%	2.82%
2029	0.32%	0.34%	0.32%	1.09%	1.11%	1.09%	1.86%	1.88%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.20%	1.17%	1.19%	1.94%	1.92%	1.93%	2.68%	2.66%	2.67%
2033	0.27%	0.30%	0.28%	1.00%	1.02%	1.01%	1.72%	1.75%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

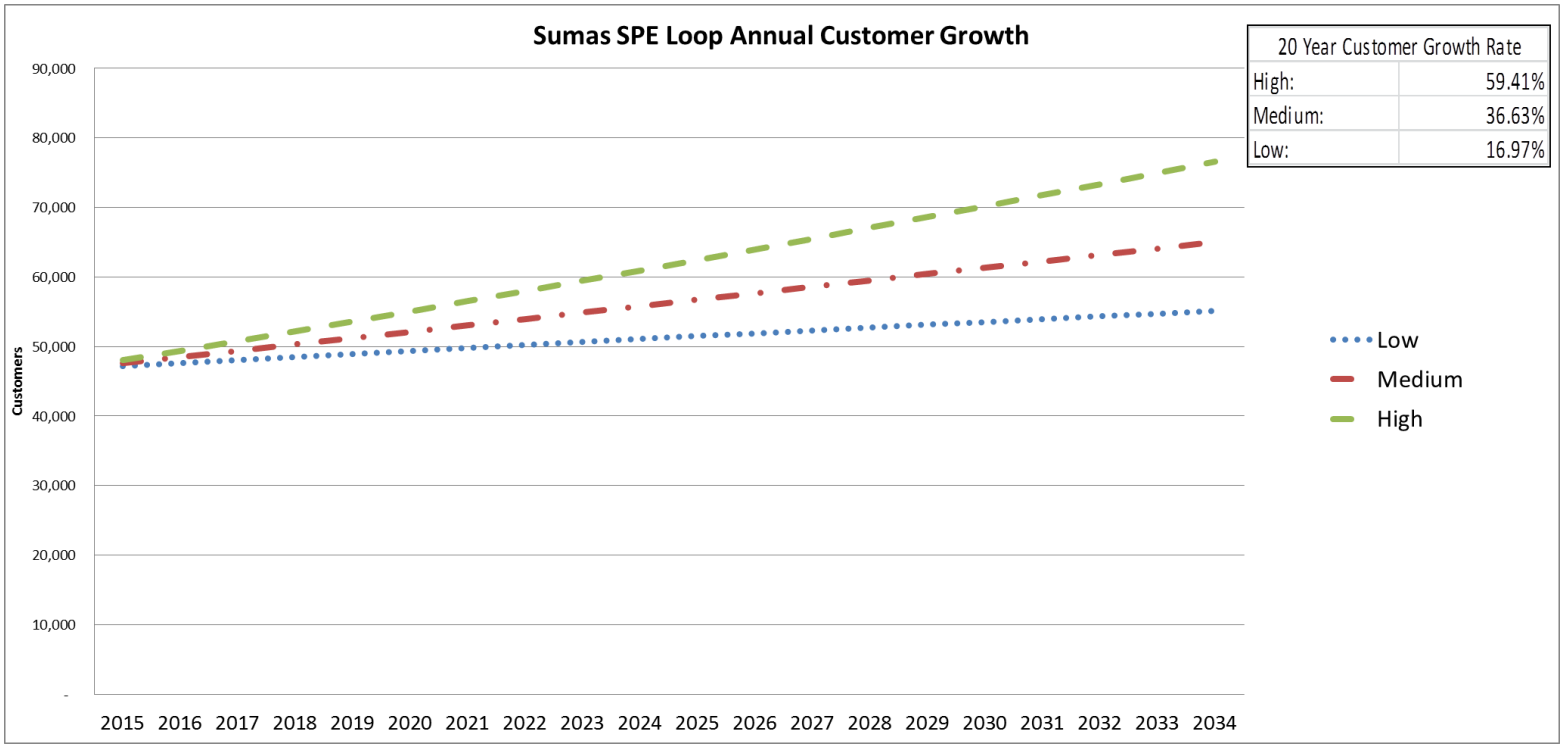
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	42,161	4,988	47,150	42,562	5,036	47,598	42,963	5,083	48,046
2016	42,560	5,036	47,596	43,367	5,131	48,498	44,181	5,227	49,409
2017	42,957	5,083	48,039	44,175	5,227	49,402	45,417	5,374	50,791
2018	43,352	5,129	48,481	44,988	5,323	50,311	46,670	5,522	52,192
2019	43,745	5,176	48,921	45,804	5,419	51,223	47,940	5,672	53,612
2020	44,135	5,222	49,357	46,621	5,516	52,138	49,223	5,824	55,047
2021	44,524	5,268	49,792	47,442	5,613	53,056	50,523	5,978	56,501
2022	44,910	5,314	50,223	48,265	5,711	53,975	51,837	6,133	57,970
2023	45,293	5,359	50,652	49,088	5,808	54,896	53,163	6,290	59,453
2024	45,673	5,404	51,077	49,913	5,906	55,819	54,503	6,449	60,952
2025	46,050	5,449	51,499	50,737	6,003	56,740	55,853	6,609	62,462
2026	46,425	5,493	51,918	51,563	6,101	57,664	57,217	6,770	63,987
2027	46,797	5,537	52,334	52,388	6,199	58,587	58,591	6,932	65,523
2028	47,165	5,581	52,746	53,214	6,296	59,510	59,975	7,096	67,072
2029	47,530	5,624	53,154	54,037	6,394	60,431	61,367	7,261	68,628
2030	47,892	5,667	53,559	54,860	6,491	61,351	62,769	7,427	70,196
2031	48,252	5,709	53,961	55,684	6,588	62,272	64,183	7,594	71,777
2032	48,608	5,751	54,360	56,507	6,686	63,193	65,606	7,762	73,368
2033	48,963	5,793	54,756	57,330	6,783	64,114	67,040	7,932	74,972
2034	49,314	5,835	55,149	58,154	6,881	65,035	68,485	8,103	76,588

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Sumas SPE Loop Annual Therm Usage
Therms
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Sumas SPE Loop Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,533,234	5,603,834	27,137,068	21,550,609	5,603,834	27,154,443	21,567,984	5,603,834	27,171,818
2016	21,648,325	5,633,785	27,282,110	21,680,603	5,637,637	27,318,240	21,712,905	5,641,488	27,354,393
2017	21,563,722	5,611,768	27,175,490	21,611,655	5,619,708	27,231,362	21,659,658	5,627,653	27,287,311
2018	21,580,504	5,616,136	27,196,640	21,645,294	5,628,455	27,273,749	21,710,230	5,640,793	27,351,023
2019	21,598,093	5,620,713	27,218,806	21,680,579	5,637,630	27,318,209	21,763,315	5,654,585	27,417,901
2020	21,716,691	5,651,577	27,368,268	21,817,701	5,673,286	27,490,988	21,919,102	5,695,062	27,614,165
2021	21,634,780	5,630,260	27,265,040	21,754,263	5,656,790	27,411,053	21,874,310	5,683,424	27,557,734
2022	21,653,788	5,635,207	27,288,995	21,792,489	5,666,730	27,459,220	21,931,967	5,698,405	27,630,371
2023	21,672,952	5,640,194	27,313,146	21,831,062	5,676,761	27,507,823	21,990,196	5,713,534	27,703,730
2024	21,793,648	5,671,605	27,465,253	21,972,537	5,713,549	27,686,086	22,152,745	5,755,768	27,908,513
2025	21,711,958	5,650,345	27,362,303	21,909,679	5,697,203	27,606,882	22,109,034	5,744,411	27,853,444
2026	21,731,670	5,655,475	27,387,146	21,949,463	5,707,548	27,657,011	22,169,253	5,760,057	27,929,310
2027	21,751,279	5,660,578	27,411,858	21,989,074	5,717,849	27,706,922	22,229,264	5,775,649	28,004,914
2028	21,872,270	5,692,065	27,564,335	22,131,285	5,754,828	27,886,112	22,393,144	5,818,229	28,211,372
2029	21,790,060	5,670,671	27,460,730	22,067,517	5,738,246	27,805,763	22,348,268	5,806,569	28,154,836
2030	21,809,103	5,675,627	27,484,730	22,106,090	5,748,276	27,854,366	22,406,863	5,821,793	28,228,656
2031	21,828,472	5,680,667	27,509,139	22,145,355	5,758,487	27,903,841	22,466,562	5,837,304	28,303,866
2032	21,949,367	5,712,129	27,661,496	22,287,511	5,795,452	28,082,963	22,630,570	5,879,917	28,510,487
2033	21,866,903	5,690,668	27,557,571	22,223,366	5,778,772	28,002,137	22,585,327	5,868,162	28,453,489
2034	21,886,305	5,695,718	27,582,023	22,262,804	5,789,027	28,051,831	22,645,448	5,883,783	28,529,231

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.53%	0.53%	0.60%	0.60%	0.60%	0.67%	0.67%	0.67%
2017	-0.39%	-0.39%	-0.39%	-0.32%	-0.32%	-0.32%	-0.25%	-0.25%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.55%	0.55%	0.55%	0.63%	0.63%	0.63%	0.72%	0.72%	0.72%
2021	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2025	-0.37%	-0.37%	-0.37%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2029	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.55%	0.55%	0.55%	0.64%	0.64%	0.64%	0.73%	0.73%	0.73%
2033	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	15,353	317,482	332,835	15,353	317,695	333,048	15,353	317,908	333,261
2016	15,435	317,628	333,063	15,446	318,058	333,504	15,456	318,489	333,945
2017	15,375	317,931	333,306	15,396	318,595	333,991	15,418	319,259	334,678
2018	15,387	318,179	333,566	15,420	319,091	334,511	15,454	320,005	335,459
2019	15,399	318,438	333,837	15,446	319,611	335,057	15,492	320,787	336,279
2020	15,484	318,631	334,114	15,543	320,069	335,613	15,603	321,513	337,116
2021	15,425	318,979	334,404	15,498	320,697	336,195	15,571	322,423	337,994
2022	15,439	319,259	334,698	15,525	321,261	336,786	15,612	323,273	338,885
2023	15,453	319,542	334,995	15,553	321,829	337,382	15,654	324,131	339,785
2024	15,539	319,760	335,298	15,654	322,341	337,994	15,769	324,941	340,710
2025	15,480	320,117	335,597	15,609	322,988	338,597	15,738	325,883	341,621
2026	15,494	320,408	335,902	15,637	323,575	339,212	15,781	326,771	342,552
2027	15,508	320,697	336,205	15,665	324,159	339,824	15,824	327,655	343,479
2028	15,595	320,913	336,508	15,767	324,670	340,436	15,940	328,467	344,407
2029	15,536	321,269	336,805	15,721	325,315	341,036	15,908	329,409	345,318
2030	15,550	321,549	337,099	15,749	325,884	341,633	15,950	330,273	346,223
2031	15,563	321,835	337,398	15,777	326,463	342,239	15,993	331,153	347,146
2032	15,650	322,045	337,694	15,878	326,962	342,839	16,109	331,949	348,059
2033	15,591	322,402	337,992	15,832	327,613	343,445	16,077	332,904	348,981
2034	15,605	322,688	338,292	15,860	328,194	344,054	16,120	333,790	349,910

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.05%	0.07%	0.60%	0.11%	0.14%	0.67%	0.18%	0.21%
2017	-0.39%	0.10%	0.07%	-0.32%	0.17%	0.15%	-0.25%	0.24%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.55%	0.06%	0.08%	0.63%	0.14%	0.17%	0.72%	0.23%	0.25%
2021	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.17%	-0.20%	0.28%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.27%
2025	-0.37%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.27%
2029	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.55%	0.07%	0.09%	0.64%	0.15%	0.18%	0.73%	0.24%	0.26%
2033	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	12,366,278	13,959,329	26,325,607	12,374,195	13,968,267	26,342,462	12,382,113	13,977,205	26,359,318
2016	12,435,057	14,031,322	26,466,379	12,451,524	14,049,904	26,501,428	12,468,003	14,068,498	26,536,500
2017	12,383,786	13,979,093	26,362,880	12,409,247	14,007,834	26,417,082	12,434,743	14,036,615	26,471,358
2018	12,393,424	13,989,973	26,383,397	12,428,563	14,029,638	26,458,201	12,463,776	14,069,388	26,533,164
2019	12,403,526	14,001,376	26,404,901	12,448,823	14,052,508	26,501,331	12,494,252	14,103,790	26,598,042
2020	12,474,327	14,075,634	26,549,961	12,530,262	14,138,749	26,669,011	12,586,405	14,202,100	26,788,505
2021	12,424,594	14,025,158	26,449,752	12,491,132	14,100,267	26,591,399	12,557,974	14,175,720	26,733,695
2022	12,435,510	14,037,481	26,472,991	12,513,081	14,125,044	26,638,126	12,591,074	14,213,085	26,804,159
2023	12,446,516	14,049,904	26,496,420	12,535,229	14,150,046	26,685,275	12,624,504	14,250,821	26,875,324
2024	12,518,532	14,125,514	26,644,046	12,619,186	14,239,089	26,858,275	12,720,568	14,353,484	27,074,052
2025	12,468,917	14,075,190	26,544,107	12,580,370	14,201,002	26,781,372	12,692,728	14,327,834	27,020,562
2026	12,480,237	14,087,969	26,568,207	12,603,214	14,226,788	26,830,003	12,727,300	14,366,859	27,094,159
2027	12,491,498	14,100,681	26,592,180	12,625,959	14,252,463	26,878,421	12,761,752	14,405,750	27,167,502
2028	12,563,693	14,176,472	26,740,165	12,710,358	14,341,964	27,052,321	12,858,610	14,509,246	27,367,856
2029	12,513,770	14,125,821	26,639,591	12,671,000	14,303,307	26,974,307	12,830,072	14,482,870	27,312,942
2030	12,524,706	14,138,167	26,662,873	12,693,148	14,328,308	27,021,456	12,863,711	14,520,843	27,384,554
2031	12,535,829	14,150,723	26,686,552	12,715,694	14,353,758	27,069,452	12,897,984	14,559,531	27,457,515
2032	12,607,979	14,226,442	26,834,421	12,800,081	14,443,205	27,243,286	12,994,945	14,663,082	27,658,027
2033	12,557,900	14,175,636	26,733,536	12,760,487	14,404,322	27,164,809	12,966,167	14,636,497	27,602,664
2034	12,569,042	14,188,214	26,757,257	12,783,132	14,429,884	27,213,016	13,000,682	14,675,459	27,676,141

Annual Change

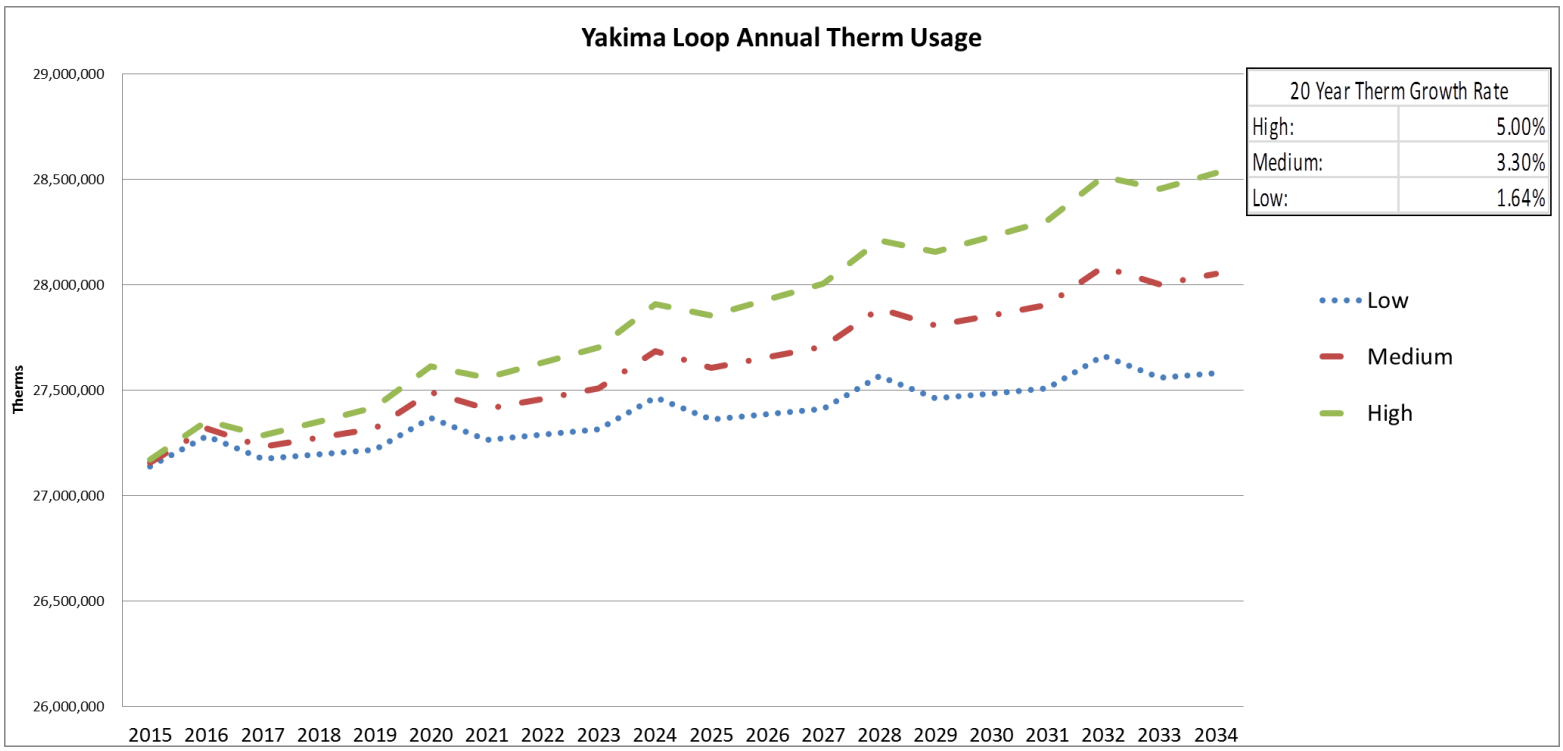
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.52%	0.53%	0.62%	0.58%	0.60%	0.69%	0.65%	0.67%
2017	-0.41%	-0.37%	-0.39%	-0.34%	-0.30%	-0.32%	-0.27%	-0.23%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.57%	0.53%	0.55%	0.65%	0.61%	0.63%	0.74%	0.70%	0.72%
2021	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.23%	-0.19%	-0.20%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.58%	0.54%	0.56%	0.67%	0.63%	0.65%	0.76%	0.72%	0.74%
2025	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.58%	0.54%	0.56%	0.67%	0.63%	0.65%	0.76%	0.72%	0.74%
2029	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.58%	0.54%	0.55%	0.66%	0.62%	0.64%	0.75%	0.71%	0.73%
2033	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

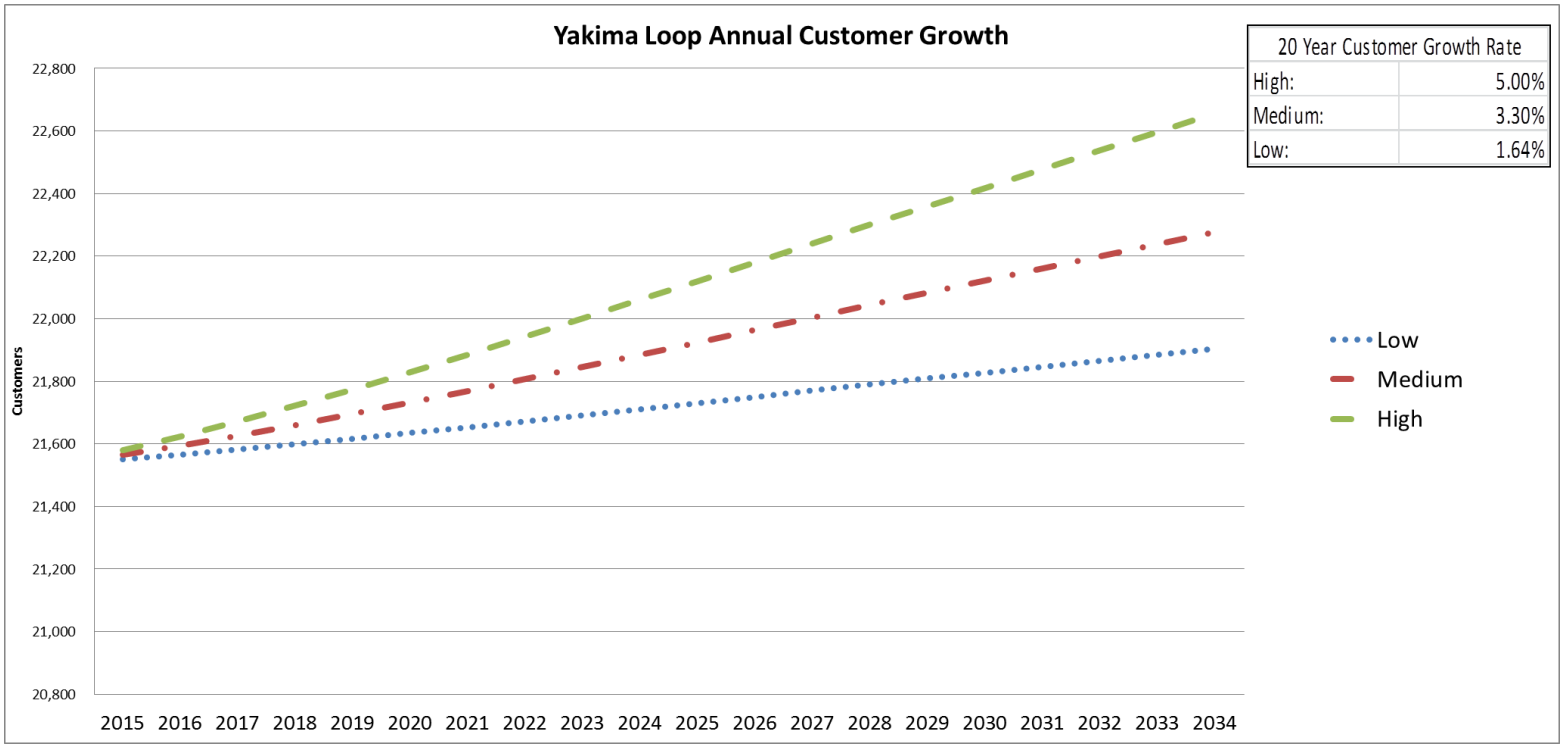
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	18,212	3,339	21,552	18,224	3,341	21,566	18,236	3,343	21,579
2016	18,225	3,342	21,566	18,249	3,346	21,595	18,273	3,350	21,624
2017	18,238	3,344	21,582	18,276	3,351	21,627	18,313	3,358	21,671
2018	18,252	3,347	21,599	18,304	3,356	21,660	18,356	3,366	21,722
2019	18,267	3,349	21,617	18,334	3,362	21,696	18,401	3,374	21,775
2020	18,283	3,352	21,635	18,364	3,367	21,732	18,447	3,382	21,829
2021	18,298	3,355	21,653	18,396	3,373	21,769	18,495	3,391	21,886
2022	18,314	3,358	21,672	18,429	3,379	21,808	18,544	3,400	21,943
2023	18,331	3,361	21,692	18,461	3,385	21,846	18,593	3,409	22,002
2024	18,347	3,364	21,711	18,495	3,391	21,886	18,643	3,418	22,062
2025	18,364	3,367	21,731	18,528	3,397	21,925	18,693	3,427	22,121
2026	18,380	3,370	21,750	18,561	3,403	21,965	18,744	3,437	22,181
2027	18,397	3,373	21,770	18,595	3,409	22,004	18,795	3,446	22,241
2028	18,413	3,376	21,790	18,628	3,415	22,044	18,846	3,455	22,301
2029	18,430	3,379	21,809	18,661	3,422	22,083	18,896	3,464	22,360
2030	18,446	3,382	21,828	18,694	3,427	22,121	18,945	3,474	22,419
2031	18,462	3,385	21,847	18,727	3,434	22,161	18,996	3,483	22,478
2032	18,478	3,388	21,866	18,760	3,440	22,200	19,046	3,492	22,537
2033	18,495	3,391	21,886	18,793	3,446	22,239	19,096	3,501	22,597
2034	18,511	3,394	21,905	18,826	3,452	22,278	19,147	3,511	22,657

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


Yakima Loop Annual Therm Usage
Therms
29,000,000
28,500,000
28,000,000
27,500,000
27,000,000
26,500,000
26,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


Yakima Loop Annual Customer Growth
Customers
22,800
22,600
22,400
22,200
22,000
21,800
21,600
21,400
21,200
21,000
20,800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 10

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,227,991	2,653,703	9,881,694	7,241,975	2,653,703	9,895,678	7,255,959	2,653,703	9,909,661
2016	7,285,567	2,653,703	9,939,270	7,314,091	2,653,703	9,967,794	7,342,703	2,653,703	9,996,406
2017	7,257,026	2,653,703	9,910,729	7,300,309	2,653,703	9,954,011	7,343,856	2,653,703	9,997,558
2018	7,272,118	2,653,703	9,925,821	7,330,759	2,653,703	9,984,462	7,389,935	2,653,703	10,043,638
2019	7,287,496	2,653,703	9,941,198	7,361,873	2,653,703	10,015,576	7,437,153	2,653,703	10,090,856
2020	7,346,477	2,653,703	10,000,180	7,437,168	2,653,703	10,090,871	7,529,231	2,653,703	10,182,934
2021	7,318,732	2,653,703	9,972,434	7,425,338	2,653,703	10,079,041	7,533,874	2,653,703	10,187,576
2022	7,334,549	2,653,703	9,988,252	7,457,607	2,653,703	10,111,310	7,583,256	2,653,703	10,236,959
2023	7,350,375	2,653,703	10,004,078	7,489,981	2,653,703	10,143,683	7,632,937	2,653,703	10,286,640
2024	7,410,166	2,653,703	10,063,869	7,567,272	2,653,703	10,220,975	7,728,610	2,653,703	10,382,313
2025	7,382,157	2,653,703	10,035,860	7,555,255	2,653,703	10,208,957	7,733,520	2,653,703	10,387,223
2026	7,398,054	2,653,703	10,051,757	7,588,034	2,653,703	10,241,737	7,784,238	2,653,703	10,437,940
2027	7,413,854	2,653,703	10,067,557	7,620,701	2,653,703	10,274,404	7,834,923	2,653,703	10,488,626
2028	7,473,670	2,653,703	10,127,373	7,698,394	2,653,703	10,352,097	7,931,779	2,653,703	10,585,482
2029	7,445,094	2,653,703	10,098,797	7,685,548	2,653,703	10,339,250	7,935,956	2,653,703	10,589,659
2030	7,460,482	2,653,703	10,114,185	7,717,617	2,653,703	10,371,320	7,986,131	2,653,703	10,639,834
2031	7,475,959	2,653,703	10,129,661	7,749,947	2,653,703	10,403,650	8,036,838	2,653,703	10,690,541
2032	7,535,642	2,653,703	10,189,345	7,827,701	2,653,703	10,481,403	8,134,338	2,653,703	10,788,041
2033	7,506,628	2,653,703	10,160,331	7,814,258	2,653,703	10,467,961	8,138,108	2,653,703	10,791,811
2034	7,521,968	2,653,703	10,175,671	7,846,539	2,653,703	10,500,242	8,189,131	2,653,703	10,842,834

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.00%	0.58%	1.00%	0.00%	0.73%	1.20%	0.00%	0.88%
2017	-0.39%	0.00%	-0.29%	-0.19%	0.00%	-0.14%	0.02%	0.00%	0.01%
2018	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.46%
2019	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.64%	0.00%	0.47%
2020	0.81%	0.00%	0.59%	1.02%	0.00%	0.75%	1.24%	0.00%	0.91%
2021	-0.38%	0.00%	-0.28%	-0.16%	0.00%	-0.12%	0.06%	0.00%	0.05%
2022	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.48%
2023	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.49%
2024	0.81%	0.00%	0.60%	1.03%	0.00%	0.76%	1.25%	0.00%	0.93%
2025	-0.38%	0.00%	-0.28%	-0.16%	0.00%	-0.12%	0.06%	0.00%	0.05%
2026	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.49%
2027	0.21%	0.00%	0.16%	0.43%	0.00%	0.32%	0.65%	0.00%	0.49%
2028	0.81%	0.00%	0.59%	1.02%	0.00%	0.76%	1.24%	0.00%	0.92%
2029	-0.38%	0.00%	-0.28%	-0.17%	0.00%	-0.12%	0.05%	0.00%	0.04%
2030	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.47%
2031	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.48%
2032	0.80%	0.00%	0.59%	1.00%	0.00%	0.75%	1.21%	0.00%	0.91%
2033	-0.39%	0.00%	-0.28%	-0.17%	0.00%	-0.13%	0.05%	0.00%	0.03%
2034	0.20%	0.00%	0.15%	0.41%	0.00%	0.31%	0.63%	0.00%	0.47%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	7,270	103,725	110,995	7,270	103,887	111,157	7,270	104,049	111,319
2016	7,270	103,890	111,161	7,270	104,219	111,489	7,270	104,549	111,819
2017	7,270	104,060	111,331	7,270	104,561	111,831	7,270	105,065	112,335
2018	7,270	104,235	111,505	7,270	104,913	112,183	7,270	105,597	112,868
2019	7,270	104,412	111,682	7,270	105,272	112,542	7,270	106,142	113,413
2020	7,270	104,590	111,861	7,270	105,634	112,904	7,270	106,693	113,964
2021	7,270	104,772	112,042	7,270	106,003	113,274	7,270	107,258	114,528
2022	7,270	104,954	112,224	7,270	106,375	113,646	7,270	107,828	115,098
2023	7,270	105,136	112,407	7,270	106,748	114,019	7,270	108,400	115,671
2024	7,270	105,320	112,591	7,270	107,126	114,397	7,270	108,982	116,253
2025	7,270	105,502	112,772	7,270	107,500	114,771	7,270	109,560	116,831
2026	7,270	105,685	112,955	7,270	107,878	115,148	7,270	110,145	117,415
2027	7,270	105,867	113,137	7,270	108,254	115,525	7,270	110,729	118,000
2028	7,270	106,048	113,318	7,270	108,630	115,900	7,270	111,315	118,585
2029	7,270	106,226	113,497	7,270	109,001	116,271	7,270	111,895	119,165
2030	7,270	106,403	113,674	7,270	109,371	116,641	7,270	112,474	119,744
2031	7,270	106,581	113,852	7,270	109,743	117,013	7,270	113,058	120,329
2032	7,270	106,757	114,028	7,270	110,113	117,383	7,270	113,641	120,911
2033	7,270	106,934	114,204	7,270	110,484	117,754	7,270	114,227	121,497
2034	7,270	107,110	114,381	7,270	110,855	118,126	7,270	114,815	122,086

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.16%	0.15%	0.00%	0.32%	0.30%	0.00%	0.48%	0.45%
2017	0.00%	0.16%	0.15%	0.00%	0.33%	0.31%	0.00%	0.49%	0.46%
2018	0.00%	0.17%	0.16%	0.00%	0.34%	0.31%	0.00%	0.51%	0.47%
2019	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2020	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2021	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2022	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2023	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2024	0.00%	0.18%	0.16%	0.00%	0.35%	0.33%	0.00%	0.54%	0.50%
2025	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2026	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2027	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2028	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2029	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2030	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2031	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2032	0.00%	0.17%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2033	0.00%	0.17%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2034	0.00%	0.16%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,073,307	6,557,665	9,630,972	3,077,637	6,567,045	9,644,682	3,081,966	6,576,425	9,658,391
2016	3,092,779	6,594,640	9,687,419	3,101,615	6,613,768	9,715,383	3,110,478	6,632,957	9,743,434
2017	3,082,299	6,577,131	9,659,430	3,095,700	6,606,159	9,701,859	3,109,183	6,635,368	9,744,551
2018	3,086,973	6,587,244	9,674,217	3,105,131	6,626,568	9,731,699	3,123,453	6,666,259	9,789,712
2019	3,091,737	6,597,546	9,689,283	3,114,768	6,647,418	9,762,187	3,138,076	6,697,909	9,835,986
2020	3,111,655	6,635,444	9,747,100	3,139,753	6,696,239	9,835,992	3,168,270	6,757,974	9,926,244
2021	3,101,414	6,618,467	9,719,881	3,134,427	6,689,939	9,824,366	3,168,030	6,762,735	9,930,765
2022	3,106,315	6,629,058	9,735,373	3,144,423	6,711,556	9,855,979	3,183,324	6,795,831	9,979,155
2023	3,111,219	6,639,654	9,750,873	3,154,452	6,733,242	9,887,694	3,198,711	6,829,127	10,027,838
2024	3,131,399	6,678,079	9,809,478	3,180,076	6,783,375	9,963,451	3,230,049	6,891,571	10,121,620
2025	3,121,067	6,660,930	9,781,997	3,174,673	6,776,964	9,951,637	3,229,861	6,896,540	10,126,401
2026	3,125,994	6,671,570	9,797,564	3,184,827	6,798,919	9,983,747	3,245,567	6,930,533	10,176,101
2027	3,130,890	6,682,146	9,813,036	3,194,947	6,820,800	10,015,748	3,261,264	6,964,508	10,225,772
2028	3,151,088	6,720,577	9,871,665	3,220,716	6,871,185	10,091,900	3,292,997	7,027,724	10,320,722
2029	3,140,571	6,703,055	9,843,626	3,215,036	6,864,237	10,079,272	3,292,549	7,032,238	10,324,787
2030	3,145,340	6,713,354	9,858,694	3,224,970	6,885,720	10,110,690	3,308,085	7,065,880	10,373,965
2031	3,150,137	6,723,711	9,873,848	3,234,985	6,907,375	10,142,361	3,323,786	7,099,878	10,423,663
2032	3,170,304	6,762,044	9,932,348	3,260,792	6,957,785	10,218,577	3,355,747	7,163,510	10,519,257
2033	3,159,642	6,744,234	9,903,877	3,254,907	6,950,455	10,205,362	3,355,141	7,167,785	10,522,926
2034	3,164,397	6,754,499	9,918,895	3,264,907	6,972,078	10,236,985	3,370,938	7,201,999	10,572,937

Annual Change

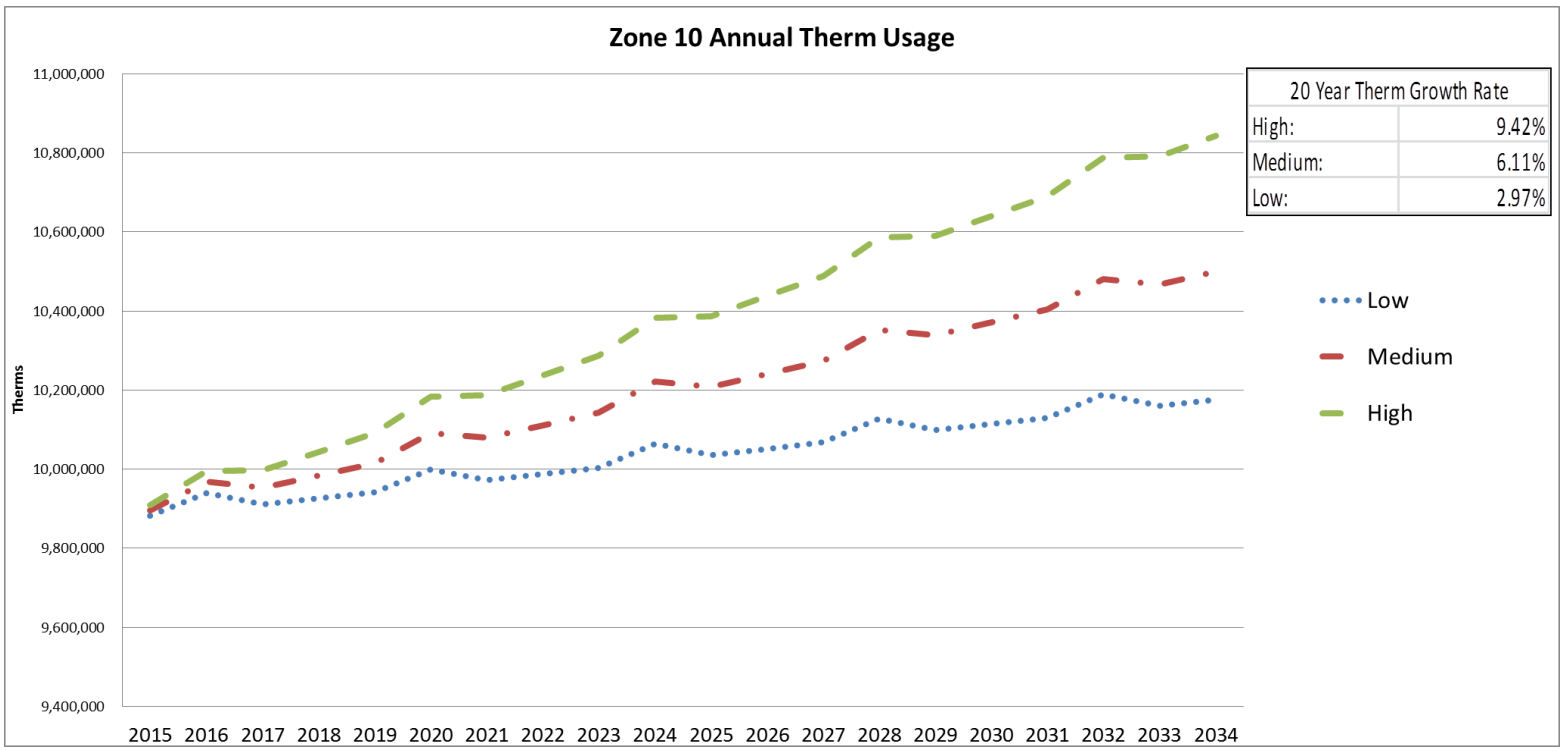
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.56%	0.59%	0.78%	0.71%	0.73%	0.93%	0.86%	0.88%
2017	-0.34%	-0.27%	-0.29%	-0.19%	-0.12%	-0.14%	-0.04%	0.04%	0.01%
2018	0.15%	0.15%	0.15%	0.30%	0.31%	0.31%	0.46%	0.47%	0.46%
2019	0.15%	0.16%	0.16%	0.31%	0.31%	0.31%	0.47%	0.47%	0.47%
2020	0.64%	0.57%	0.60%	0.80%	0.73%	0.76%	0.96%	0.90%	0.92%
2021	-0.33%	-0.26%	-0.28%	-0.17%	-0.09%	-0.12%	-0.01%	0.07%	0.05%
2022	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.49%
2023	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.49%
2024	0.65%	0.58%	0.60%	0.81%	0.74%	0.77%	0.98%	0.91%	0.94%
2025	-0.33%	-0.26%	-0.28%	-0.17%	-0.09%	-0.12%	-0.01%	0.07%	0.05%
2026	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.49%	0.49%	0.49%
2027	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.49%
2028	0.65%	0.58%	0.60%	0.81%	0.74%	0.76%	0.97%	0.91%	0.93%
2029	-0.33%	-0.26%	-0.28%	-0.18%	-0.10%	-0.13%	-0.01%	0.06%	0.04%
2030	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.48%	0.48%
2031	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.48%	0.48%
2032	0.64%	0.57%	0.59%	0.80%	0.73%	0.75%	0.96%	0.90%	0.92%
2033	-0.34%	-0.26%	-0.29%	-0.18%	-0.11%	-0.13%	-0.02%	0.06%	0.03%
2034	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.48%	0.48%

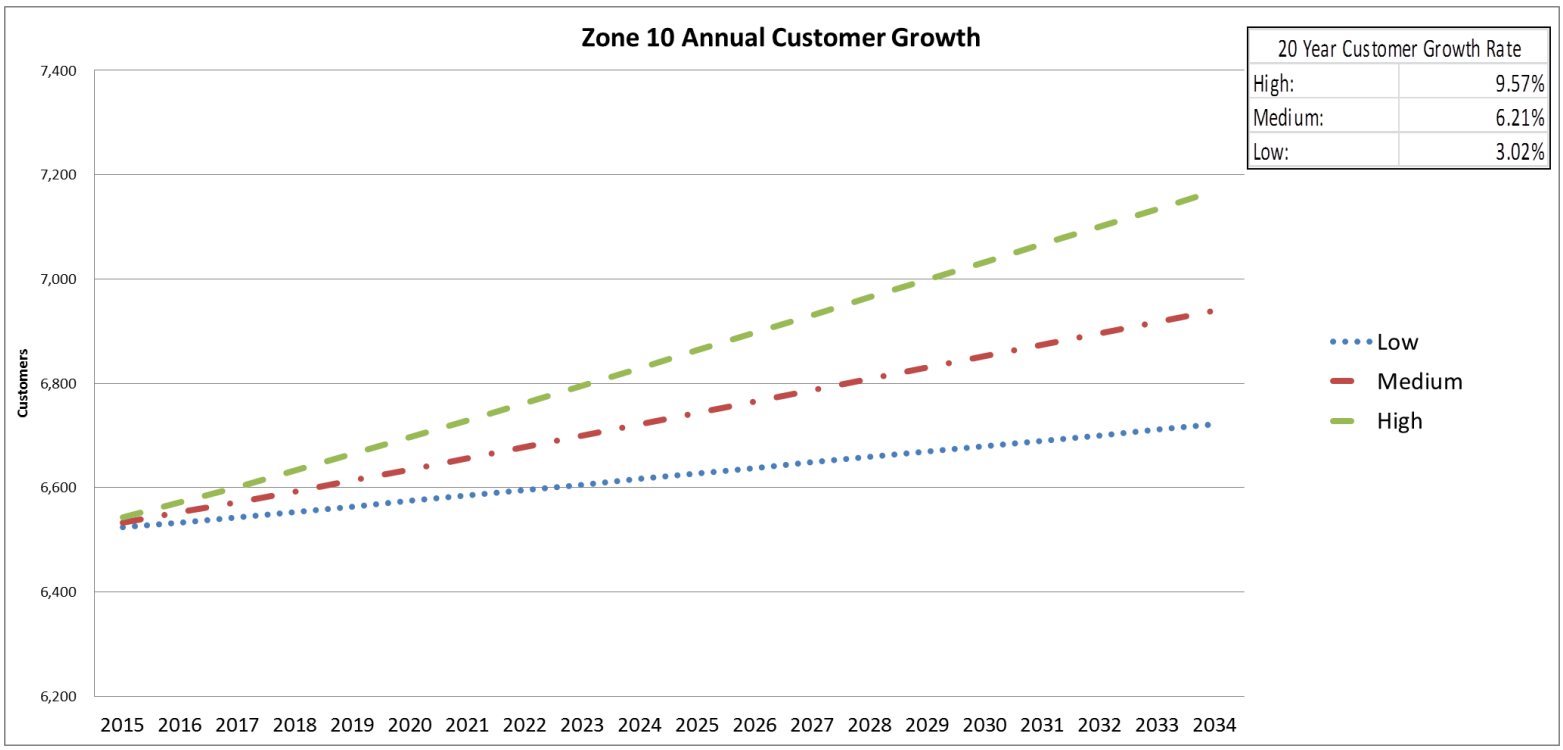
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,141	1,383	6,524	5,149	1,385	6,533	5,156	1,387	6,543
2016	5,149	1,385	6,534	5,164	1,389	6,553	5,178	1,393	6,572
2017	5,156	1,387	6,543	5,179	1,393	6,573	5,202	1,400	6,602
2018	5,164	1,389	6,554	5,195	1,398	6,593	5,226	1,407	6,633
2019	5,172	1,392	6,564	5,211	1,403	6,614	5,250	1,414	6,665
2020	5,180	1,394	6,574	5,228	1,407	6,635	5,275	1,421	6,697
2021	5,189	1,396	6,585	5,244	1,412	6,656	5,301	1,428	6,729
2022	5,197	1,399	6,595	5,261	1,417	6,678	5,327	1,436	6,763
2023	5,205	1,401	6,606	5,278	1,422	6,700	5,353	1,443	6,796
2024	5,214	1,403	6,617	5,295	1,427	6,722	5,379	1,451	6,830
2025	5,222	1,406	6,627	5,312	1,432	6,744	5,405	1,458	6,863
2026	5,230	1,408	6,638	5,329	1,436	6,766	5,432	1,466	6,897
2027	5,238	1,410	6,649	5,346	1,441	6,788	5,458	1,473	6,931
2028	5,247	1,413	6,659	5,363	1,446	6,809	5,484	1,481	6,965
2029	5,255	1,415	6,670	5,380	1,451	6,831	5,511	1,488	6,999
2030	5,263	1,417	6,680	5,397	1,456	6,853	5,537	1,496	7,033
2031	5,271	1,420	6,690	5,414	1,461	6,874	5,563	1,504	7,067
2032	5,279	1,422	6,701	5,430	1,465	6,896	5,590	1,511	7,101
2033	5,287	1,424	6,711	5,447	1,470	6,917	5,616	1,519	7,135
2034	5,295	1,426	6,721	5,464	1,475	6,939	5,643	1,526	7,169

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.15%	0.16%	0.15%	0.29%	0.31%	0.30%	0.44%	0.47%	0.44%
2017	0.15%	0.16%	0.15%	0.30%	0.32%	0.30%	0.45%	0.48%	0.46%
2018	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.46%	0.49%	0.47%
2019	0.16%	0.17%	0.16%	0.31%	0.33%	0.32%	0.47%	0.50%	0.48%
2020	0.16%	0.17%	0.16%	0.31%	0.33%	0.32%	0.47%	0.51%	0.48%
2021	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.48%	0.51%	0.49%
2022	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.49%
2023	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.49%
2024	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.50%
2025	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.49%	0.52%	0.49%
2026	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.50%
2027	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.49%	0.52%	0.49%
2028	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.48%	0.51%	0.49%
2029	0.15%	0.16%	0.16%	0.31%	0.33%	0.32%	0.48%	0.51%	0.48%
2030	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2031	0.15%	0.16%	0.16%	0.31%	0.33%	0.32%	0.48%	0.51%	0.48%
2032	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2033	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2034	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%


Zone 10 Annual Therm Usage
Therms
11,000,000
10,800,000
10,600,000
10,400,000
10,200,000
10,000,000
9,800,000
9,600,000
9,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 9.42%
Medium: 6.11%
Low: 2.97%
Low
Medium
High


Zone 10 Annual Customer Growth
Customers
7,400
7,200
7,000
6,800
6,600
6,400
6,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 9.57%
Medium: 6.21%
Low: 3.02%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 11

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	26,835,445	7,718,555	34,553,999	26,889,757	7,718,555	34,608,312	26,944,069	7,718,555	34,662,624
2016	27,044,986	7,718,555	34,763,540	27,155,753	7,718,555	34,874,308	27,266,956	7,718,555	34,985,510
2017	26,947,987	7,718,555	34,666,542	27,116,149	7,718,555	34,834,703	27,285,625	7,718,555	35,004,179
2018	27,006,366	7,718,555	34,724,921	27,234,230	7,718,555	34,952,784	27,464,751	7,718,555	35,183,305
2019	27,065,802	7,718,555	34,784,357	27,354,876	7,718,555	35,073,430	27,648,426	7,718,555	35,366,980
2020	27,280,441	7,718,555	34,998,995	27,632,877	7,718,555	35,351,432	27,992,106	7,718,555	35,710,661
2021	27,186,446	7,718,555	34,905,001	27,601,067	7,718,555	35,319,621	28,025,245	7,718,555	35,743,800
2022	27,247,518	7,718,555	34,966,072	27,726,337	7,718,555	35,444,891	28,217,992	7,718,555	35,936,547
2023	27,308,633	7,718,555	35,027,188	27,852,135	7,718,555	35,570,689	28,412,239	7,718,555	36,130,793
2024	27,526,248	7,718,555	35,244,802	28,137,937	7,718,555	35,856,492	28,770,582	7,718,555	36,489,137
2025	27,431,444	7,718,555	35,149,999	28,106,215	7,718,555	35,824,769	28,806,619	7,718,555	36,525,173
2026	27,492,891	7,718,555	35,211,446	28,233,983	7,718,555	35,952,538	29,005,969	7,718,555	36,724,524
2027	27,554,023	7,718,555	35,272,577	28,361,535	7,718,555	36,080,090	29,205,692	7,718,555	36,924,247
2028	27,771,802	7,718,555	35,490,357	28,649,420	7,718,555	36,367,975	29,570,077	7,718,555	37,288,631
2029	27,675,049	7,718,555	35,393,603	28,615,362	7,718,555	36,333,917	29,605,257	7,718,555	37,323,811
2030	27,734,742	7,718,555	35,453,297	28,741,209	7,718,555	36,459,763	29,804,425	7,718,555	37,522,979
2031	27,794,794	7,718,555	35,513,348	28,868,189	7,718,555	36,586,744	30,006,021	7,718,555	37,724,576
2032	28,012,162	7,718,555	35,730,717	29,156,899	7,718,555	36,875,454	30,374,492	7,718,555	38,093,047
2033	27,913,970	7,718,555	35,632,524	29,121,441	7,718,555	36,839,995	30,410,167	7,718,555	38,128,721
2034	27,973,573	7,718,555	35,692,127	29,248,677	7,718,555	36,967,231	30,614,187	7,718,555	38,332,742

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.00%	0.61%	0.99%	0.00%	0.77%	1.20%	0.00%	0.93%
2017	-0.36%	0.00%	-0.28%	-0.15%	0.00%	-0.11%	0.07%	0.00%	0.05%
2018	0.22%	0.00%	0.17%	0.44%	0.00%	0.34%	0.66%	0.00%	0.51%
2019	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.52%
2020	0.79%	0.00%	0.62%	1.02%	0.00%	0.79%	1.24%	0.00%	0.97%
2021	-0.34%	0.00%	-0.27%	-0.12%	0.00%	-0.09%	0.12%	0.00%	0.09%
2022	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2023	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2024	0.80%	0.00%	0.62%	1.03%	0.00%	0.80%	1.26%	0.00%	0.99%
2025	-0.34%	0.00%	-0.27%	-0.11%	0.00%	-0.09%	0.13%	0.00%	0.10%
2026	0.22%	0.00%	0.17%	0.45%	0.00%	0.36%	0.69%	0.00%	0.55%
2027	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2028	0.79%	0.00%	0.62%	1.02%	0.00%	0.80%	1.25%	0.00%	0.99%
2029	-0.35%	0.00%	-0.27%	-0.12%	0.00%	-0.09%	0.12%	0.00%	0.09%
2030	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.53%
2031	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.68%	0.00%	0.54%
2032	0.78%	0.00%	0.61%	1.00%	0.00%	0.79%	1.23%	0.00%	0.98%
2033	-0.35%	0.00%	-0.27%	-0.12%	0.00%	-0.10%	0.12%	0.00%	0.09%
2034	0.21%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	21,147	389,268	410,415	21,147	389,872	411,019	21,147	390,476	411,623
2016	21,147	389,888	411,034	21,147	391,116	412,262	21,147	392,348	413,495
2017	21,147	390,524	411,670	21,147	392,397	413,544	21,147	394,285	415,431
2018	21,147	391,177	412,324	21,147	393,718	414,865	21,147	396,287	417,434
2019	21,147	391,843	412,990	21,147	395,069	416,216	21,147	398,343	419,490
2020	21,147	392,513	413,660	21,147	396,433	417,580	21,147	400,426	421,573
2021	21,147	393,197	414,344	21,147	397,830	418,977	21,147	402,566	423,713
2022	21,147	393,883	415,030	21,147	399,237	420,383	21,147	404,728	425,875
2023	21,147	394,570	415,717	21,147	400,649	421,796	21,147	406,907	428,054
2024	21,147	395,265	416,412	21,147	402,082	423,229	21,147	409,125	430,272
2025	21,147	395,952	417,099	21,147	403,504	424,651	21,147	411,333	432,480
2026	21,147	396,644	417,791	21,147	404,941	426,087	21,147	413,571	434,718
2027	21,147	397,332	418,479	21,147	406,374	427,521	21,147	415,812	436,959
2028	21,147	398,018	419,165	21,147	407,808	428,955	21,147	418,061	439,208
2029	21,147	398,695	419,841	21,147	409,227	430,373	21,147	420,294	441,441
2030	21,147	399,367	420,513	21,147	410,640	431,787	21,147	422,527	443,674
2031	21,147	400,043	421,190	21,147	412,067	433,214	21,147	424,788	445,935
2032	21,147	400,713	421,860	21,147	413,487	434,634	21,147	427,045	448,192
2033	21,147	401,385	422,532	21,147	414,913	436,060	21,147	429,319	450,466
2034	21,147	402,057	423,203	21,147	416,343	437,490	21,147	431,607	452,754

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.16%	0.15%	0.00%	0.32%	0.30%	0.00%	0.48%	0.45%
2017	0.00%	0.16%	0.15%	0.00%	0.33%	0.31%	0.00%	0.49%	0.47%
2018	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.51%	0.48%
2019	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.52%	0.49%
2020	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.52%	0.50%
2021	0.00%	0.17%	0.17%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2022	0.00%	0.17%	0.17%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2023	0.00%	0.17%	0.17%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2024	0.00%	0.18%	0.17%	0.00%	0.36%	0.34%	0.00%	0.54%	0.52%
2025	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2026	0.00%	0.17%	0.17%	0.00%	0.36%	0.34%	0.00%	0.54%	0.52%
2027	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.52%
2028	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2029	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2030	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2031	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.54%	0.51%
2032	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%
2033	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%
2034	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,332,492	19,851,163	33,183,655	13,345,185	19,889,768	33,234,953	13,357,877	19,928,373	33,286,250
2016	13,410,210	19,973,723	33,383,933	13,436,330	20,052,244	33,488,574	13,462,513	20,131,110	33,593,623
2017	13,359,579	19,930,452	33,290,031	13,399,549	20,049,384	33,448,932	13,439,710	20,169,357	33,609,068
2018	13,374,026	19,971,226	33,345,252	13,428,640	20,131,977	33,560,617	13,483,644	20,294,833	33,778,478
2019	13,388,941	20,012,553	33,401,494	13,458,735	20,216,031	33,674,767	13,529,192	20,423,051	33,952,243
2020	13,468,776	20,137,896	33,606,672	13,554,391	20,385,496	33,939,887	13,641,018	20,638,465	34,279,483
2021	13,419,615	20,096,078	33,515,694	13,520,828	20,386,943	33,907,772	13,623,472	20,685,356	34,308,828
2022	13,435,320	20,138,200	33,573,520	13,552,719	20,473,644	34,026,363	13,672,047	20,819,216	34,491,264
2023	13,451,093	20,180,300	33,631,394	13,584,815	20,560,646	34,145,462	13,721,042	20,954,083	34,675,125
2024	13,532,192	20,307,238	33,839,430	13,683,296	20,734,741	34,418,037	13,837,577	21,178,752	35,016,329
2025	13,482,989	20,264,720	33,747,709	13,649,921	20,736,119	34,386,039	13,820,745	21,227,706	35,048,451
2026	13,499,026	20,306,887	33,805,913	13,682,755	20,824,272	34,507,027	13,871,188	21,365,978	35,237,166
2027	13,514,978	20,348,840	33,863,817	13,715,486	20,912,320	34,627,806	13,921,585	21,504,637	35,426,222
2028	13,596,232	20,475,778	34,072,010	13,814,561	21,087,778	34,902,339	14,039,472	21,733,630	35,773,102
2029	13,546,535	20,431,914	33,978,449	13,780,445	21,087,688	34,868,133	14,021,938	21,782,461	35,804,399
2030	13,562,062	20,472,922	34,034,984	13,812,510	21,174,761	34,987,271	14,071,643	21,921,232	35,992,875
2031	13,577,767	20,514,098	34,091,866	13,845,003	21,262,495	35,107,497	14,122,108	22,061,561	36,183,669
2032	13,658,943	20,640,717	34,299,660	13,944,184	21,438,597	35,382,781	14,240,599	22,293,752	36,534,350
2033	13,608,927	20,595,821	34,204,749	13,909,666	21,437,596	35,347,263	14,222,865	22,343,254	36,566,119
2034	13,624,584	20,636,627	34,261,211	13,942,247	21,525,485	35,467,732	14,273,780	22,485,413	36,759,194

Annual Change

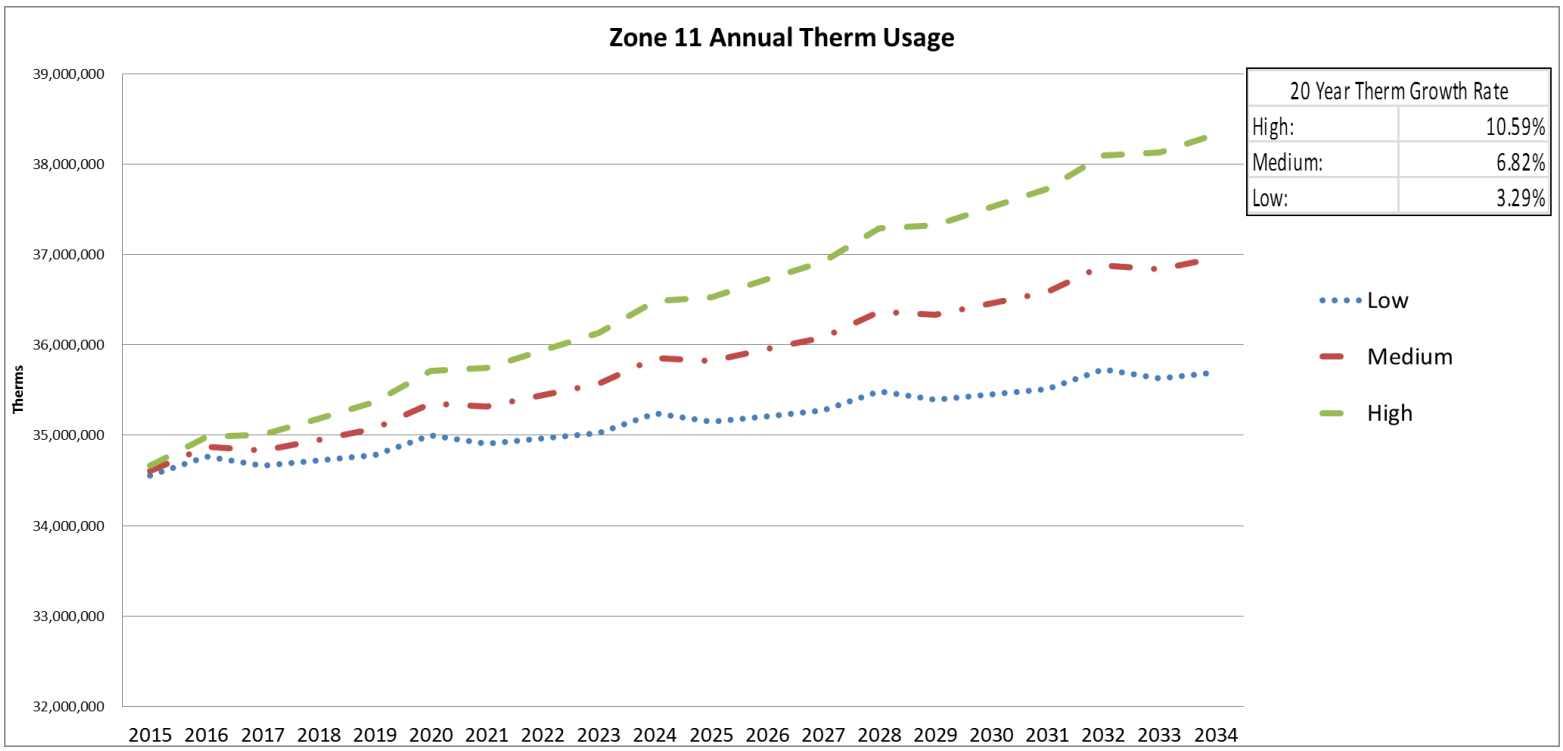
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.58%	0.62%	0.60%	0.68%	0.82%	0.76%	0.78%	1.02%	0.92%
2017	-0.38%	-0.22%	-0.28%	-0.27%	-0.01%	-0.12%	-0.17%	0.19%	0.05%
2018	0.11%	0.20%	0.17%	0.22%	0.41%	0.33%	0.33%	0.62%	0.50%
2019	0.11%	0.21%	0.17%	0.22%	0.42%	0.34%	0.34%	0.63%	0.51%
2020	0.60%	0.63%	0.61%	0.71%	0.84%	0.79%	0.83%	1.05%	0.96%
2021	-0.36%	-0.21%	-0.27%	-0.25%	0.01%	-0.09%	-0.13%	0.23%	0.09%
2022	0.12%	0.21%	0.17%	0.24%	0.43%	0.35%	0.36%	0.65%	0.53%
2023	0.12%	0.21%	0.17%	0.24%	0.42%	0.35%	0.36%	0.65%	0.53%
2024	0.60%	0.63%	0.62%	0.72%	0.85%	0.80%	0.85%	1.07%	0.98%
2025	-0.36%	-0.21%	-0.27%	-0.24%	0.01%	-0.09%	-0.12%	0.23%	0.09%
2026	0.12%	0.21%	0.17%	0.24%	0.43%	0.35%	0.36%	0.65%	0.54%
2027	0.12%	0.21%	0.17%	0.24%	0.42%	0.35%	0.36%	0.65%	0.54%
2028	0.60%	0.62%	0.61%	0.72%	0.84%	0.79%	0.85%	1.06%	0.98%
2029	-0.37%	-0.21%	-0.27%	-0.25%	0.00%	-0.10%	-0.12%	0.22%	0.09%
2030	0.11%	0.20%	0.17%	0.23%	0.41%	0.34%	0.35%	0.64%	0.53%
2031	0.12%	0.20%	0.17%	0.24%	0.41%	0.34%	0.36%	0.64%	0.53%
2032	0.60%	0.62%	0.61%	0.72%	0.83%	0.78%	0.84%	1.05%	0.97%
2033	-0.37%	-0.22%	-0.28%	-0.25%	0.00%	-0.10%	-0.12%	0.22%	0.09%
2034	0.12%	0.20%	0.17%	0.23%	0.41%	0.34%	0.36%	0.64%	0.53%

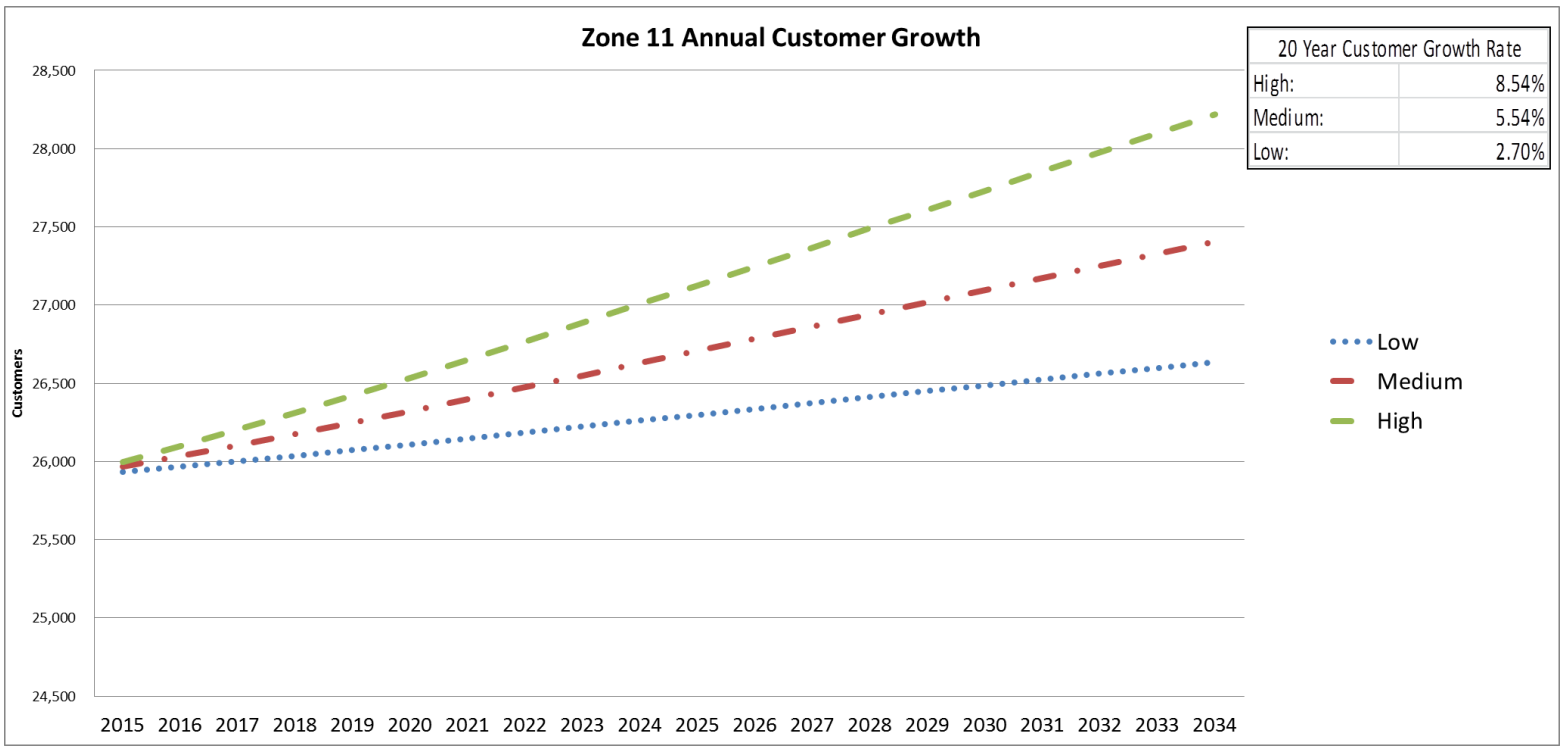
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	21,311	4,624	25,935	21,336	4,631	25,967	21,360	4,639	25,999
2016	21,337	4,632	25,968	21,386	4,648	26,034	21,436	4,664	26,099
2017	21,363	4,640	26,002	21,438	4,664	26,102	21,515	4,689	26,203
2018	21,390	4,648	26,038	21,493	4,681	26,174	21,597	4,714	26,311
2019	21,417	4,657	26,074	21,549	4,698	26,247	21,682	4,741	26,422
2020	21,445	4,665	26,110	21,605	4,716	26,321	21,768	4,767	26,535
2021	21,474	4,674	26,148	21,664	4,734	26,397	21,856	4,795	26,651
2022	21,503	4,683	26,185	21,722	4,751	26,474	21,946	4,822	26,768
2023	21,532	4,691	26,223	21,781	4,769	26,551	22,037	4,850	26,886
2024	21,561	4,700	26,261	21,842	4,788	26,629	22,129	4,878	27,007
2025	21,590	4,709	26,299	21,901	4,806	26,707	22,220	4,906	27,126
2026	21,619	4,718	26,337	21,961	4,824	26,785	22,313	4,935	27,248
2027	21,649	4,726	26,375	22,021	4,842	26,864	22,406	4,963	27,369
2028	21,678	4,735	26,413	22,082	4,860	26,942	22,499	4,992	27,491
2029	21,706	4,744	26,450	22,141	4,878	27,019	22,591	5,020	27,611
2030	21,735	4,752	26,487	22,200	4,896	27,096	22,683	5,048	27,732
2031	21,763	4,761	26,524	22,260	4,914	27,174	22,777	5,077	27,854
2032	21,792	4,769	26,561	22,319	4,932	27,251	22,869	5,106	27,975
2033	21,820	4,778	26,598	22,378	4,950	27,329	22,963	5,135	28,098
2034	21,849	4,786	26,635	22,438	4,969	27,407	23,057	5,164	28,221

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.12%	0.17%	0.13%	0.24%	0.35%	0.26%	0.35%	0.52%	0.38%
2017	0.12%	0.18%	0.13%	0.24%	0.36%	0.26%	0.37%	0.54%	0.40%
2018	0.13%	0.18%	0.14%	0.25%	0.36%	0.27%	0.38%	0.55%	0.41%
2019	0.13%	0.18%	0.14%	0.26%	0.37%	0.28%	0.39%	0.56%	0.42%
2020	0.13%	0.18%	0.14%	0.26%	0.37%	0.28%	0.40%	0.56%	0.43%
2021	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.57%	0.44%
2022	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.57%	0.44%
2023	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.58%	0.44%
2024	0.14%	0.19%	0.15%	0.28%	0.38%	0.29%	0.42%	0.58%	0.45%
2025	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.58%	0.44%
2026	0.14%	0.19%	0.14%	0.28%	0.38%	0.29%	0.42%	0.58%	0.45%
2027	0.13%	0.18%	0.14%	0.27%	0.38%	0.29%	0.42%	0.58%	0.45%
2028	0.13%	0.18%	0.14%	0.27%	0.38%	0.29%	0.42%	0.58%	0.44%
2029	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2030	0.13%	0.18%	0.14%	0.27%	0.37%	0.28%	0.41%	0.57%	0.44%
2031	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2032	0.13%	0.18%	0.14%	0.27%	0.37%	0.28%	0.41%	0.57%	0.44%
2033	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2034	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%


Zone 11 Annual Therm Usage
Therms
39,000,000
38,000,000
37,000,000
36,000,000
35,000,000
34,000,000
33,000,000
32,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Therm Growth Rate
High: 10.59%
Medium: 6.82%
Low: 3.29%


Zone 11 Annual Customer Growth
Customers
28,500
28,000
27,500
27,000
26,500
26,000
25,500
25,000
24,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Customer Growth Rate
High: 8.54%
Medium: 5.54%
Low: 2.70%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 20

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	25,381,241	8,613,491	33,994,733	25,595,412	8,613,491	34,208,903	25,809,582	8,613,491	34,423,073
2016	25,751,142	8,613,491	34,364,633	26,184,243	8,613,491	34,797,735	26,620,219	8,613,491	35,233,710
2017	25,809,381	8,613,491	34,422,872	26,460,274	8,613,491	35,073,765	27,119,811	8,613,491	35,733,302
2018	26,023,534	8,613,491	34,637,025	26,897,172	8,613,491	35,510,663	27,788,228	8,613,491	36,401,719
2019	26,237,467	8,613,491	34,850,959	27,336,491	8,613,491	35,949,982	28,464,748	8,613,491	37,078,239
2020	26,610,439	8,613,491	35,223,930	27,943,070	8,613,491	36,556,561	29,320,023	8,613,491	37,933,514
2021	26,663,860	8,613,491	35,277,352	28,220,690	8,613,491	36,834,182	29,839,681	8,613,491	38,453,173
2022	26,876,147	8,613,491	35,489,639	28,665,186	8,613,491	37,278,677	30,537,577	8,613,491	39,151,068
2023	27,087,435	8,613,491	35,700,926	29,110,433	8,613,491	37,723,924	31,241,147	8,613,491	39,854,638
2024	27,462,253	8,613,491	36,075,744	29,732,302	8,613,491	38,345,794	32,138,352	8,613,491	40,751,843
2025	27,507,942	8,613,491	36,121,434	30,005,035	8,613,491	38,618,526	32,668,306	8,613,491	41,281,797
2026	27,716,886	8,613,491	36,330,377	30,453,763	8,613,491	39,067,254	33,390,963	8,613,491	42,004,454
2027	27,924,704	8,613,491	36,538,196	30,902,876	8,613,491	39,516,368	34,118,795	8,613,491	42,732,286
2028	28,299,033	8,613,491	36,912,524	31,534,975	8,613,491	40,148,466	35,050,704	8,613,491	43,664,195
2029	28,336,611	8,613,491	36,950,102	31,801,356	8,613,491	40,414,847	35,588,565	8,613,491	44,202,057
2030	28,540,653	8,613,491	37,154,145	32,250,551	8,613,491	40,864,042	36,330,233	8,613,491	44,943,724
2031	28,744,143	8,613,491	37,357,634	32,701,250	8,613,491	41,314,741	37,078,947	8,613,491	45,692,438
2032	29,117,962	8,613,491	37,731,453	33,343,254	8,613,491	41,956,745	38,045,580	8,613,491	46,659,072
2033	29,148,175	8,613,491	37,761,667	33,604,259	8,613,491	42,217,750	38,592,872	8,613,491	47,206,363
2034	29,349,147	8,613,491	37,962,639	34,057,475	8,613,491	42,670,966	39,359,635	8,613,491	47,973,127

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.46%	0.00%	1.09%	2.30%	0.00%	1.72%	3.14%	0.00%	2.35%
2017	0.23%	0.00%	0.17%	1.05%	0.00%	0.79%	1.88%	0.00%	1.42%
2018	0.83%	0.00%	0.62%	1.65%	0.00%	1.25%	2.46%	0.00%	1.87%
2019	0.82%	0.00%	0.62%	1.63%	0.00%	1.24%	2.43%	0.00%	1.86%
2020	1.42%	0.00%	1.07%	2.22%	0.00%	1.69%	3.00%	0.00%	2.31%
2021	0.20%	0.00%	0.15%	0.99%	0.00%	0.76%	1.77%	0.00%	1.37%
2022	0.80%	0.00%	0.60%	1.58%	0.00%	1.21%	2.34%	0.00%	1.81%
2023	0.79%	0.00%	0.60%	1.55%	0.00%	1.19%	2.30%	0.00%	1.80%
2024	1.38%	0.00%	1.05%	2.14%	0.00%	1.65%	2.87%	0.00%	2.25%
2025	0.17%	0.00%	0.13%	0.92%	0.00%	0.71%	1.65%	0.00%	1.30%
2026	0.76%	0.00%	0.58%	1.50%	0.00%	1.16%	2.21%	0.00%	1.75%
2027	0.75%	0.00%	0.57%	1.47%	0.00%	1.15%	2.18%	0.00%	1.73%
2028	1.34%	0.00%	1.02%	2.05%	0.00%	1.60%	2.73%	0.00%	2.18%
2029	0.13%	0.00%	0.10%	0.84%	0.00%	0.66%	1.53%	0.00%	1.23%
2030	0.72%	0.00%	0.55%	1.41%	0.00%	1.11%	2.08%	0.00%	1.68%
2031	0.71%	0.00%	0.55%	1.40%	0.00%	1.10%	2.06%	0.00%	1.67%
2032	1.30%	0.00%	1.00%	1.96%	0.00%	1.55%	2.61%	0.00%	2.12%
2033	0.10%	0.00%	0.08%	0.78%	0.00%	0.62%	1.44%	0.00%	1.17%
2034	0.69%	0.00%	0.53%	1.35%	0.00%	1.07%	1.99%	0.00%	1.62%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	23,599	444,662	468,260	23,599	447,610	471,209	23,599	450,558	474,157
2016	23,599	447,607	471,206	23,599	453,540	477,139	23,599	459,512	483,111
2017	23,599	450,552	474,151	23,599	459,507	483,106	23,599	468,581	492,180
2018	23,599	453,497	477,095	23,599	465,514	489,113	23,599	477,769	501,368
2019	23,599	456,437	480,036	23,599	471,551	495,150	23,599	487,064	510,663
2020	23,599	459,365	482,964	23,599	477,602	501,201	23,599	496,441	520,040
2021	23,599	462,294	485,893	23,599	483,693	507,292	23,599	505,939	529,538
2022	23,599	465,208	488,807	23,599	489,792	513,391	23,599	515,512	539,111
2023	23,599	468,107	491,706	23,599	495,899	519,497	23,599	525,157	548,756
2024	23,599	471,002	494,600	23,599	502,034	525,633	23,599	534,908	558,507
2025	23,599	473,873	497,472	23,599	508,158	531,757	23,599	544,703	568,302
2026	23,599	476,736	500,335	23,599	514,303	537,901	23,599	554,591	578,190
2027	23,599	479,582	503,181	23,599	520,449	544,047	23,599	564,543	588,142
2028	23,599	482,412	506,010	23,599	526,596	550,195	23,599	574,558	598,157
2029	23,599	485,219	508,818	23,599	532,733	556,331	23,599	584,618	608,217
2030	23,599	488,009	511,608	23,599	538,868	562,467	23,599	594,737	618,336
2031	23,599	490,791	514,389	23,599	545,022	568,620	23,599	604,946	628,545
2032	23,599	493,556	517,154	23,599	551,175	574,773	23,599	615,216	638,814
2033	23,599	496,309	519,908	23,599	557,338	580,937	23,599	625,565	649,163
2034	23,599	499,052	522,651	23,599	563,514	587,113	23,599	635,996	659,595

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.66%	0.63%	0.00%	1.32%	1.26%	0.00%	1.99%	1.89%
2017	0.00%	0.66%	0.62%	0.00%	1.32%	1.25%	0.00%	1.97%	1.88%
2018	0.00%	0.65%	0.62%	0.00%	1.31%	1.24%	0.00%	1.96%	1.87%
2019	0.00%	0.65%	0.62%	0.00%	1.30%	1.23%	0.00%	1.95%	1.85%
2020	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.93%	1.84%
2021	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.91%	1.83%
2022	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.89%	1.81%
2023	0.00%	0.62%	0.59%	0.00%	1.25%	1.19%	0.00%	1.87%	1.79%
2024	0.00%	0.62%	0.59%	0.00%	1.24%	1.18%	0.00%	1.86%	1.78%
2025	0.00%	0.61%	0.58%	0.00%	1.22%	1.17%	0.00%	1.83%	1.75%
2026	0.00%	0.60%	0.58%	0.00%	1.21%	1.16%	0.00%	1.82%	1.74%
2027	0.00%	0.60%	0.57%	0.00%	1.20%	1.14%	0.00%	1.79%	1.72%
2028	0.00%	0.59%	0.56%	0.00%	1.18%	1.13%	0.00%	1.77%	1.70%
2029	0.00%	0.58%	0.55%	0.00%	1.17%	1.12%	0.00%	1.75%	1.68%
2030	0.00%	0.58%	0.55%	0.00%	1.15%	1.10%	0.00%	1.73%	1.66%
2031	0.00%	0.57%	0.54%	0.00%	1.14%	1.09%	0.00%	1.72%	1.65%
2032	0.00%	0.56%	0.54%	0.00%	1.13%	1.08%	0.00%	1.70%	1.63%
2033	0.00%	0.56%	0.53%	0.00%	1.12%	1.07%	0.00%	1.68%	1.62%
2034	0.00%	0.55%	0.53%	0.00%	1.11%	1.06%	0.00%	1.67%	1.61%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	14,433,316	18,042,697	32,476,013	14,518,811	18,162,682	32,681,493	14,604,307	18,282,666	32,886,973
2016	14,588,763	18,242,475	32,831,238	14,761,470	18,485,329	33,246,799	14,935,224	18,729,905	33,665,130
2017	14,603,823	18,282,983	32,886,806	14,862,949	18,648,405	33,511,354	15,125,217	19,019,017	34,144,234
2018	14,688,922	18,403,374	33,092,296	15,036,258	18,894,360	33,930,618	15,389,907	19,395,825	34,785,732
2019	14,773,777	18,523,805	33,297,582	15,210,101	19,142,132	34,352,233	15,656,984	19,778,085	35,435,069
2020	14,929,933	18,725,881	33,655,814	15,458,331	19,476,411	34,934,742	16,002,686	20,253,727	36,256,412
2021	14,942,394	18,764,387	33,706,781	15,558,593	19,642,332	35,200,926	16,197,085	20,557,935	36,755,020
2022	15,026,074	18,884,456	33,910,530	15,733,046	19,894,593	35,627,639	16,469,796	20,955,351	37,425,147
2023	15,109,145	19,004,192	34,113,336	15,907,216	20,147,911	36,055,126	16,743,612	21,357,217	38,100,830
2024	15,265,411	19,207,998	34,473,409	16,159,672	20,492,846	36,652,518	17,102,140	21,860,706	38,962,846
2025	15,273,908	19,243,101	34,517,009	16,255,573	20,658,610	36,914,184	17,295,868	22,175,849	39,471,717
2026	15,355,463	19,362,148	34,717,611	16,429,433	20,915,726	37,345,158	17,573,765	22,592,275	40,166,041
2027	15,436,351	19,480,803	34,917,154	16,602,808	21,173,757	37,776,565	17,852,389	23,013,076	40,865,465
2028	15,591,620	19,685,233	35,276,853	16,856,934	21,527,119	38,384,054	18,219,637	23,541,735	41,761,372
2029	15,595,966	19,716,755	35,312,722	16,947,659	21,692,151	38,639,810	18,411,006	23,867,260	42,278,266
2030	15,674,661	19,834,039	35,508,700	17,119,015	21,952,468	39,071,483	18,690,755	24,300,632	42,991,387
2031	15,752,970	19,951,196	35,704,166	17,290,403	22,214,256	39,504,659	18,971,986	24,739,424	43,711,410
2032	15,907,201	20,156,266	36,063,467	17,545,825	22,576,119	40,121,943	19,347,134	25,294,150	44,641,284
2033	15,907,775	20,184,544	36,092,319	17,631,777	22,740,959	40,372,736	19,536,380	25,631,336	45,167,715
2034	15,984,481	20,300,936	36,285,417	17,802,188	23,006,316	40,808,503	19,820,213	26,085,276	45,905,488

Annual Change

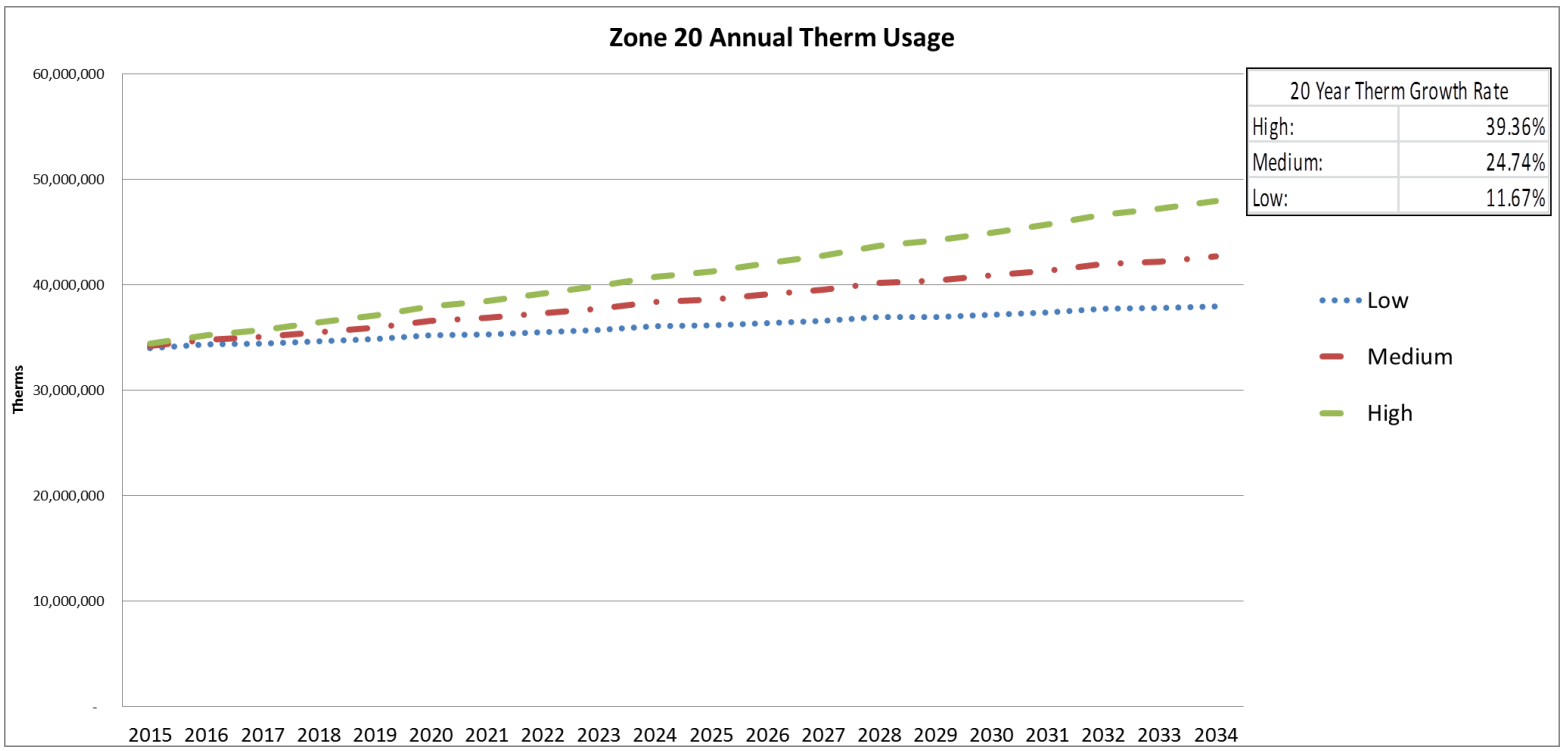
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.08%	1.11%	1.09%	1.67%	1.78%	1.73%	2.27%	2.45%	2.37%
2017	0.10%	0.22%	0.17%	0.69%	0.88%	0.80%	1.27%	1.54%	1.42%
2018	0.58%	0.66%	0.62%	1.17%	1.32%	1.25%	1.75%	1.98%	1.88%
2019	0.58%	0.65%	0.62%	1.16%	1.31%	1.24%	1.74%	1.97%	1.87%
2020	1.06%	1.09%	1.08%	1.63%	1.75%	1.70%	2.21%	2.40%	2.32%
2021	0.08%	0.21%	0.15%	0.65%	0.85%	0.76%	1.21%	1.50%	1.38%
2022	0.56%	0.64%	0.60%	1.12%	1.28%	1.21%	1.68%	1.93%	1.82%
2023	0.55%	0.63%	0.60%	1.11%	1.27%	1.20%	1.66%	1.92%	1.81%
2024	1.03%	1.07%	1.06%	1.59%	1.71%	1.66%	2.14%	2.36%	2.26%
2025	0.06%	0.18%	0.13%	0.59%	0.81%	0.71%	1.13%	1.44%	1.31%
2026	0.53%	0.62%	0.58%	1.07%	1.24%	1.17%	1.61%	1.88%	1.76%
2027	0.53%	0.61%	0.57%	1.06%	1.23%	1.16%	1.59%	1.86%	1.74%
2028	1.01%	1.05%	1.03%	1.53%	1.67%	1.61%	2.06%	2.30%	2.19%
2029	0.03%	0.16%	0.10%	0.54%	0.77%	0.67%	1.05%	1.38%	1.24%
2030	0.50%	0.59%	0.55%	1.01%	1.20%	1.12%	1.52%	1.82%	1.69%
2031	0.50%	0.59%	0.55%	1.00%	1.19%	1.11%	1.50%	1.81%	1.67%
2032	0.98%	1.03%	1.01%	1.48%	1.63%	1.56%	1.98%	2.24%	2.13%
2033	0.00%	0.14%	0.08%	0.49%	0.73%	0.63%	0.98%	1.33%	1.18%
2034	0.48%	0.58%	0.54%	0.97%	1.17%	1.08%	1.45%	1.77%	1.63%

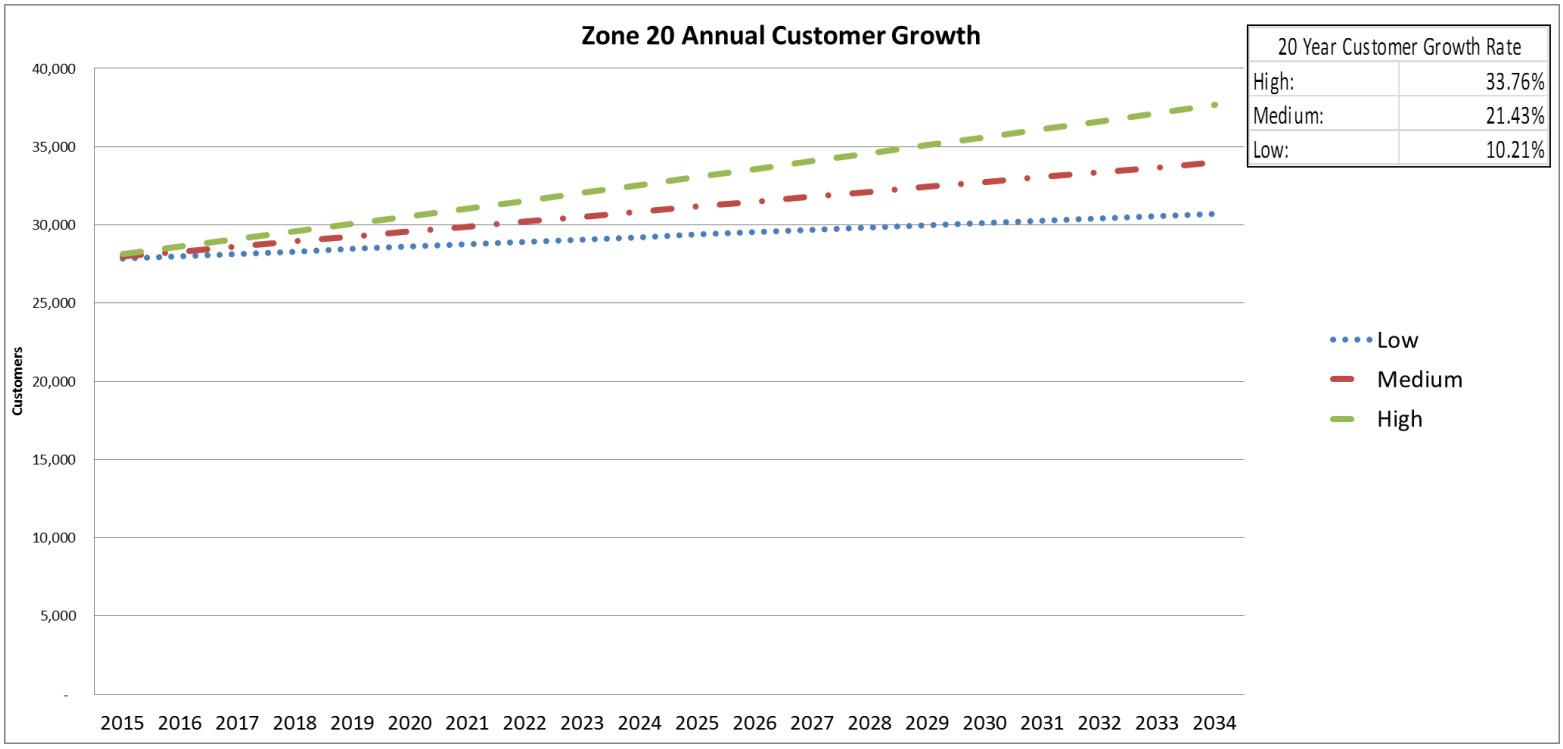
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,272	3,566	27,838	24,408	3,586	27,994	24,543	3,606	28,149
2016	24,408	3,586	27,993	24,680	3,626	28,307	24,954	3,667	28,621
2017	24,543	3,606	28,149	24,954	3,667	28,621	25,370	3,729	29,099
2018	24,678	3,626	28,304	25,229	3,708	28,937	25,790	3,791	29,581
2019	24,813	3,646	28,459	25,506	3,749	29,254	26,214	3,854	30,068
2020	24,948	3,666	28,614	25,782	3,790	29,572	26,641	3,917	30,558
2021	25,082	3,686	28,768	26,060	3,831	29,891	27,072	3,981	31,052
2022	25,215	3,706	28,921	26,337	3,872	30,209	27,504	4,045	31,550
2023	25,348	3,725	29,073	26,614	3,913	30,528	27,939	4,110	32,049
2024	25,480	3,745	29,225	26,892	3,954	30,847	28,377	4,175	32,552
2025	25,611	3,764	29,375	27,169	3,995	31,164	28,815	4,240	33,055
2026	25,741	3,784	29,524	27,446	4,036	31,482	29,256	4,305	33,562
2027	25,870	3,803	29,673	27,721	4,077	31,799	29,698	4,371	34,069
2028	25,998	3,822	29,820	27,997	4,118	32,115	30,141	4,437	34,578
2029	26,125	3,841	29,966	28,270	4,159	32,429	30,584	4,503	35,087
2030	26,251	3,859	30,110	28,543	4,200	32,742	31,027	4,569	35,596
2031	26,376	3,878	30,254	28,816	4,240	33,056	31,473	4,635	36,108
2032	26,500	3,896	30,396	29,088	4,281	33,368	31,919	4,701	36,621
2033	26,623	3,915	30,538	29,359	4,321	33,680	32,367	4,768	37,135
2034	26,746	3,933	30,679	29,630	4,361	33,992	32,817	4,835	37,652

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.56%	0.56%	1.12%	1.13%	1.12%	1.68%	1.69%	1.68%
2017	0.55%	0.56%	0.56%	1.11%	1.12%	1.11%	1.67%	1.68%	1.67%
2018	0.55%	0.56%	0.55%	1.10%	1.11%	1.10%	1.66%	1.67%	1.66%
2019	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.64%	1.66%	1.65%
2020	0.54%	0.55%	0.54%	1.08%	1.09%	1.08%	1.63%	1.64%	1.63%
2021	0.54%	0.54%	0.54%	1.08%	1.09%	1.08%	1.62%	1.63%	1.62%
2022	0.53%	0.54%	0.53%	1.06%	1.07%	1.07%	1.60%	1.61%	1.60%
2023	0.53%	0.53%	0.53%	1.05%	1.06%	1.05%	1.58%	1.59%	1.58%
2024	0.52%	0.53%	0.52%	1.04%	1.05%	1.05%	1.57%	1.58%	1.57%
2025	0.51%	0.52%	0.51%	1.03%	1.04%	1.03%	1.54%	1.56%	1.55%
2026	0.51%	0.51%	0.51%	1.02%	1.03%	1.02%	1.53%	1.54%	1.53%
2027	0.50%	0.51%	0.50%	1.01%	1.02%	1.01%	1.51%	1.53%	1.51%
2028	0.50%	0.50%	0.50%	0.99%	1.00%	0.99%	1.49%	1.51%	1.49%
2029	0.49%	0.49%	0.49%	0.98%	0.99%	0.98%	1.47%	1.48%	1.47%
2030	0.48%	0.49%	0.48%	0.96%	0.97%	0.97%	1.45%	1.46%	1.45%
2031	0.48%	0.48%	0.48%	0.96%	0.97%	0.96%	1.44%	1.45%	1.44%
2032	0.47%	0.48%	0.47%	0.94%	0.95%	0.94%	1.42%	1.43%	1.42%
2033	0.47%	0.47%	0.47%	0.93%	0.94%	0.93%	1.40%	1.42%	1.41%
2034	0.46%	0.47%	0.46%	0.92%	0.93%	0.93%	1.39%	1.40%	1.39%


Zone 20 Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 39.36%
Medium: 24.74%
Low: 11.67%
Low
Medium
High


Zone 20 Annual Customer Growth
Customers
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 33.76%
Medium: 21.43%
Low: 10.21%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 24

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,991,022	1,075,348	9,066,370	8,000,458	1,075,348	9,075,805	8,009,893	1,075,348	9,085,241
2016	8,044,830	1,075,348	9,120,178	8,064,159	1,075,348	9,139,506	8,083,510	1,075,348	9,158,857
2017	8,010,710	1,075,348	9,086,058	8,039,905	1,075,348	9,115,253	8,069,170	1,075,348	9,144,518
2018	8,021,103	1,075,348	9,096,451	8,060,764	1,075,348	9,136,112	8,100,570	1,075,348	9,175,918
2019	8,031,635	1,075,348	9,106,983	8,081,929	1,075,348	9,157,277	8,132,470	1,075,348	9,207,817
2020	8,086,374	1,075,348	9,161,722	8,147,598	1,075,348	9,222,946	8,209,199	1,075,348	9,284,547
2021	8,052,901	1,075,348	9,128,249	8,124,748	1,075,348	9,200,095	8,197,129	1,075,348	9,272,477
2022	8,063,637	1,075,348	9,138,985	8,146,406	1,075,348	9,221,754	8,229,897	1,075,348	9,305,245
2023	8,074,348	1,075,348	9,149,696	8,168,040	1,075,348	9,243,388	8,262,671	1,075,348	9,338,019
2024	8,129,672	1,075,348	9,205,020	8,234,997	1,075,348	9,310,345	8,341,513	1,075,348	9,416,861
2025	8,095,813	1,075,348	9,171,161	8,211,478	1,075,348	9,286,826	8,328,598	1,075,348	9,403,946
2026	8,106,458	1,075,348	9,181,806	8,233,061	1,075,348	9,308,409	8,361,418	1,075,348	9,436,766
2027	8,117,076	1,075,348	9,192,424	8,254,617	1,075,348	9,329,965	8,394,239	1,075,348	9,469,587
2028	8,172,046	1,075,348	9,247,394	8,320,967	1,075,348	9,396,315	8,472,328	1,075,348	9,547,676
2029	8,137,621	1,075,348	9,212,969	8,296,405	1,075,348	9,371,753	8,457,985	1,075,348	9,533,333
2030	8,147,629	1,075,348	9,222,977	8,316,800	1,075,348	9,392,148	8,489,156	1,075,348	9,564,504
2031	8,157,693	1,075,348	9,233,041	8,337,332	1,075,348	9,412,680	8,520,575	1,075,348	9,595,922
2032	8,212,421	1,075,348	9,287,769	8,403,289	1,075,348	9,478,637	8,598,214	1,075,348	9,673,562
2033	8,177,443	1,075,348	9,252,791	8,377,697	1,075,348	9,453,045	8,582,447	1,075,348	9,657,795
2034	8,187,364	1,075,348	9,262,712	8,398,009	1,075,348	9,473,357	8,613,638	1,075,348	9,688,986

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.00%	0.59%	0.80%	0.00%	0.70%	0.92%	0.00%	0.81%
2017	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2018	0.13%	0.00%	0.11%	0.26%	0.00%	0.23%	0.39%	0.00%	0.34%
2019	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2020	0.68%	0.00%	0.60%	0.81%	0.00%	0.72%	0.94%	0.00%	0.83%
2021	-0.41%	0.00%	-0.37%	-0.28%	0.00%	-0.25%	-0.15%	0.00%	-0.13%
2022	0.13%	0.00%	0.12%	0.27%	0.00%	0.24%	0.40%	0.00%	0.35%
2023	0.13%	0.00%	0.12%	0.27%	0.00%	0.23%	0.40%	0.00%	0.35%
2024	0.69%	0.00%	0.60%	0.82%	0.00%	0.72%	0.95%	0.00%	0.84%
2025	-0.42%	0.00%	-0.37%	-0.29%	0.00%	-0.25%	-0.15%	0.00%	-0.14%
2026	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2027	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2028	0.68%	0.00%	0.60%	0.80%	0.00%	0.71%	0.93%	0.00%	0.82%
2029	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.26%	-0.17%	0.00%	-0.15%
2030	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2031	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2032	0.67%	0.00%	0.59%	0.79%	0.00%	0.70%	0.91%	0.00%	0.81%
2033	-0.43%	0.00%	-0.38%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2034	0.12%	0.00%	0.11%	0.24%	0.00%	0.21%	0.36%	0.00%	0.32%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,946	108,677	111,623	2,946	108,794	111,741	2,946	108,912	111,858
2016	2,946	108,799	111,745	2,946	109,038	111,984	2,946	109,277	112,223
2017	2,946	108,922	111,868	2,946	109,285	112,231	2,946	109,648	112,594
2018	2,946	109,051	111,997	2,946	109,544	112,490	2,946	110,038	112,984
2019	2,946	109,182	112,128	2,946	109,806	112,752	2,946	110,434	113,380
2020	2,946	109,312	112,258	2,946	110,069	113,015	2,946	110,830	113,777
2021	2,946	109,446	112,392	2,946	110,338	113,284	2,946	111,237	114,183
2022	2,946	109,579	112,525	2,946	110,607	113,553	2,946	111,644	114,590
2023	2,946	109,712	112,658	2,946	110,875	113,821	2,946	112,051	114,997
2024	2,946	109,847	112,793	2,946	111,148	114,095	2,946	112,465	115,411
2025	2,946	109,978	112,924	2,946	111,414	114,361	2,946	112,869	115,815
2026	2,946	110,110	113,056	2,946	111,682	114,628	2,946	113,276	116,222
2027	2,946	110,242	113,188	2,946	111,950	114,896	2,946	113,684	116,630
2028	2,946	110,370	113,316	2,946	112,210	115,157	2,946	114,081	117,027
2029	2,946	110,497	113,443	2,946	112,469	115,415	2,946	114,475	117,421
2030	2,946	110,621	113,567	2,946	112,722	115,668	2,946	114,862	117,808
2031	2,946	110,746	113,692	2,946	112,977	115,923	2,946	115,252	118,199
2032	2,946	110,869	113,815	2,946	113,228	116,174	2,946	115,637	118,583
2033	2,946	110,991	113,938	2,946	113,478	116,424	2,946	116,021	118,967
2034	2,946	111,115	114,061	2,946	113,730	116,676	2,946	116,408	119,354

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.34%	0.33%
2017	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2018	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2019	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2020	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2021	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2022	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2023	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.36%	0.36%
2024	0.00%	0.12%	0.12%	0.00%	0.25%	0.24%	0.00%	0.37%	0.36%
2025	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2026	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2028	0.00%	0.12%	0.11%	0.00%	0.23%	0.23%	0.00%	0.35%	0.34%
2029	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2031	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2032	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%
2033	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.32%
2034	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,949,646	3,977,521	7,927,167	3,953,392	3,981,685	7,935,078	3,957,139	3,985,850	7,942,989
2016	3,973,740	4,000,935	7,974,676	3,981,424	4,009,465	7,990,889	3,989,117	4,018,004	8,007,121
2017	3,957,471	3,986,210	7,943,681	3,969,069	3,999,094	7,968,163	3,980,693	4,012,010	7,992,703
2018	3,961,649	3,990,793	7,952,442	3,977,452	4,008,293	7,985,745	3,993,309	4,025,858	8,019,167
2019	3,965,874	3,995,438	7,961,312	3,985,941	4,017,628	8,003,569	4,006,099	4,039,928	8,046,027
2020	3,990,381	4,019,260	8,009,641	4,014,838	4,046,270	8,061,108	4,039,436	4,073,447	8,112,883
2021	3,974,419	4,004,817	7,979,236	4,003,138	4,036,513	8,039,650	4,032,057	4,068,445	8,100,503
2022	3,978,739	4,009,551	7,988,290	4,011,847	4,046,064	8,057,911	4,045,228	4,082,896	8,128,124
2023	3,983,049	4,014,275	7,997,324	4,020,549	4,055,604	8,076,153	4,058,402	4,097,350	8,155,751
2024	4,007,824	4,038,351	8,046,176	4,050,028	4,084,809	8,134,836	4,092,680	4,131,793	8,224,473
2025	3,991,709	4,023,739	8,015,448	4,038,061	4,074,757	8,112,818	4,084,961	4,126,420	8,211,381
2026	3,995,996	4,028,432	8,024,428	4,046,745	4,084,275	8,131,020	4,098,155	4,140,894	8,239,049
2027	4,000,273	4,033,114	8,033,387	4,055,419	4,093,780	8,149,200	4,111,351	4,155,368	8,266,719
2028	4,024,890	4,057,036	8,081,926	4,084,622	4,122,719	8,207,340	4,145,273	4,189,482	8,334,754
2029	4,008,536	4,042,175	8,050,710	4,072,209	4,112,210	8,184,419	4,136,937	4,183,483	8,320,420
2030	4,012,550	4,046,589	8,059,139	4,080,381	4,121,206	8,201,587	4,149,413	4,197,233	8,346,646
2031	4,016,583	4,051,028	8,067,611	4,088,600	4,130,263	8,218,863	4,161,975	4,211,093	8,373,068
2032	4,041,107	4,074,842	8,115,949	4,117,648	4,159,027	8,276,675	4,195,719	4,245,007	8,440,726
2033	4,024,518	4,059,738	8,084,257	4,104,796	4,148,066	8,252,863	4,186,769	4,238,385	8,425,154
2034	4,028,501	4,064,114	8,092,615	4,112,939	4,157,025	8,269,965	4,199,256	4,252,143	8,451,399

Annual Change

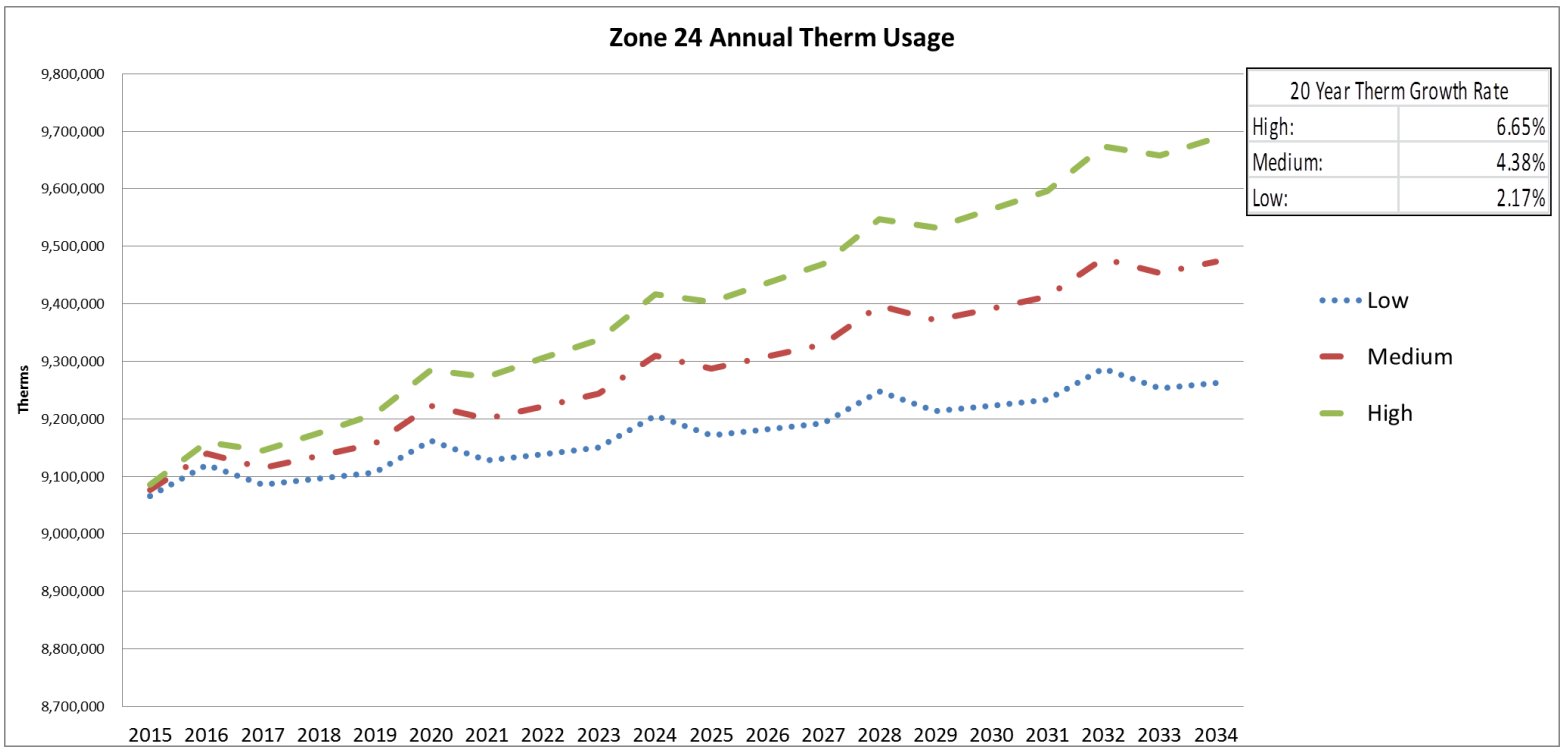
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.61%	0.59%	0.60%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2017	-0.41%	-0.37%	-0.39%	-0.31%	-0.26%	-0.28%	-0.21%	-0.15%	-0.18%
2018	0.11%	0.11%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.33%
2020	0.62%	0.60%	0.61%	0.72%	0.71%	0.72%	0.83%	0.83%	0.83%
2021	-0.40%	-0.36%	-0.38%	-0.29%	-0.24%	-0.27%	-0.18%	-0.12%	-0.15%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.35%	0.34%
2024	0.62%	0.60%	0.61%	0.73%	0.72%	0.73%	0.84%	0.84%	0.84%
2025	-0.40%	-0.36%	-0.38%	-0.30%	-0.25%	-0.27%	-0.19%	-0.13%	-0.16%
2026	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.32%	0.35%	0.34%
2027	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.34%
2028	0.62%	0.59%	0.60%	0.72%	0.71%	0.71%	0.83%	0.82%	0.82%
2029	-0.41%	-0.37%	-0.39%	-0.30%	-0.25%	-0.28%	-0.20%	-0.14%	-0.17%
2030	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.32%
2031	0.10%	0.11%	0.11%	0.20%	0.22%	0.21%	0.30%	0.33%	0.32%
2032	0.61%	0.59%	0.60%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2033	-0.41%	-0.37%	-0.39%	-0.31%	-0.26%	-0.29%	-0.21%	-0.16%	-0.18%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.32%	0.31%

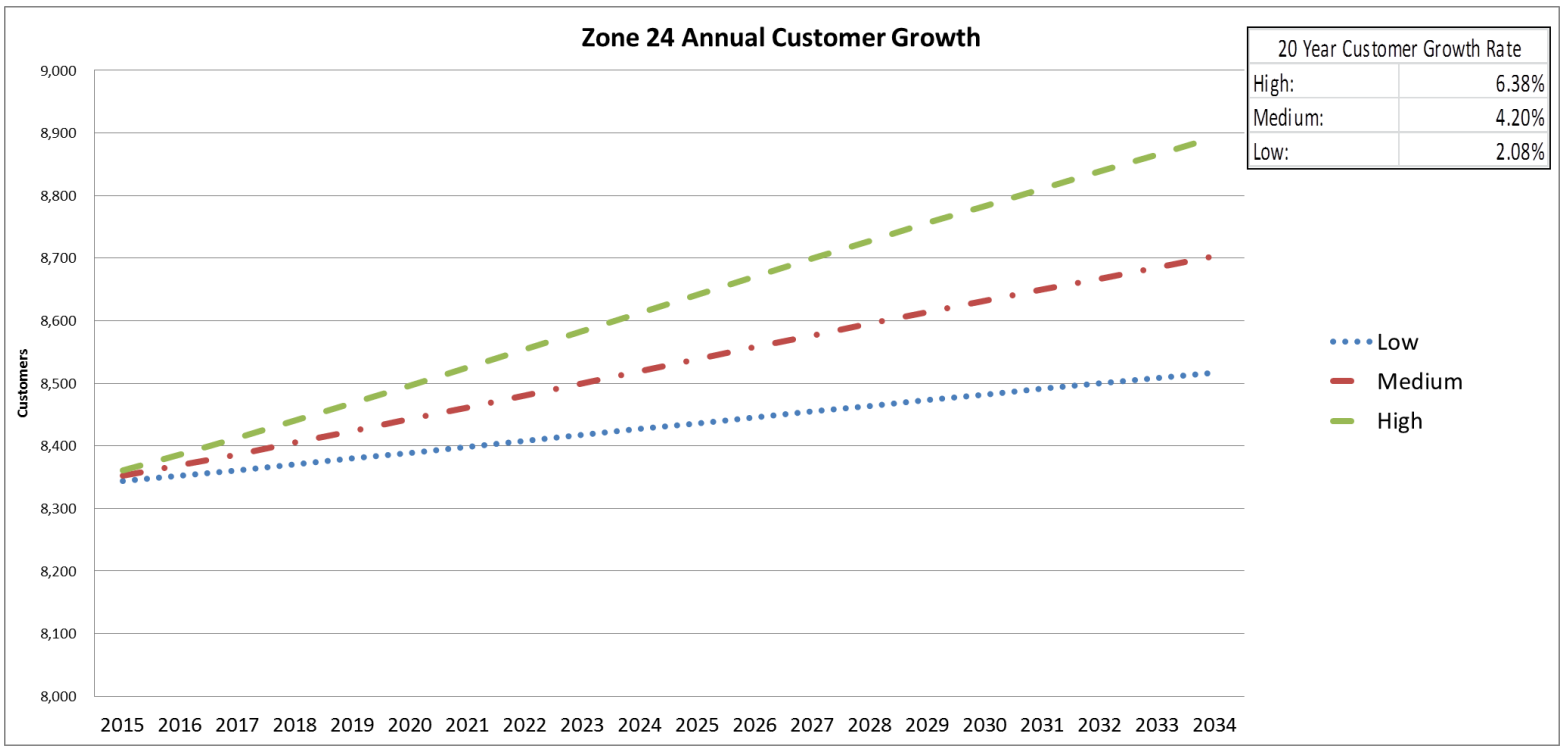
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,918	1,426	8,344	6,924	1,428	8,352	6,931	1,429	8,360
2016	6,925	1,428	8,352	6,938	1,431	8,369	6,952	1,434	8,386
2017	6,932	1,430	8,361	6,953	1,434	8,387	6,974	1,439	8,413
2018	6,939	1,431	8,370	6,968	1,438	8,405	6,996	1,444	8,440
2019	6,947	1,433	8,380	6,983	1,441	8,424	7,019	1,449	8,468
2020	6,954	1,435	8,389	6,998	1,444	8,443	7,042	1,454	8,497
2021	6,962	1,436	8,398	7,014	1,448	8,462	7,066	1,460	8,526
2022	6,970	1,438	8,408	7,029	1,451	8,481	7,090	1,465	8,555
2023	6,978	1,440	8,417	7,045	1,455	8,500	7,113	1,470	8,584
2024	6,985	1,442	8,427	7,061	1,459	8,520	7,137	1,476	8,613
2025	6,993	1,443	8,436	7,077	1,462	8,539	7,161	1,481	8,642
2026	7,001	1,445	8,446	7,092	1,465	8,558	7,185	1,486	8,671
2027	7,009	1,447	8,455	7,108	1,469	8,577	7,208	1,492	8,700
2028	7,016	1,448	8,464	7,123	1,472	8,595	7,231	1,497	8,728
2029	7,023	1,450	8,473	7,138	1,476	8,614	7,254	1,502	8,756
2030	7,031	1,452	8,482	7,153	1,479	8,632	7,277	1,507	8,784
2031	7,038	1,453	8,491	7,167	1,482	8,650	7,299	1,512	8,811
2032	7,045	1,455	8,500	7,182	1,486	8,668	7,322	1,517	8,839
2033	7,052	1,456	8,509	7,197	1,489	8,685	7,344	1,522	8,866
2034	7,059	1,458	8,517	7,211	1,492	8,703	7,367	1,527	8,894

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2017	0.10%	0.11%	0.10%	0.21%	0.23%	0.21%	0.31%	0.34%	0.31%
2018	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.33%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2021	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2024	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.34%
2025	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2026	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2027	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2028	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.32%
2029	0.11%	0.11%	0.11%	0.21%	0.23%	0.21%	0.32%	0.34%	0.32%
2030	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.31%
2031	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.32%
2032	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%
2033	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%


Zone 24 Annual Therm Usage
Therms
9,800,000
9,700,000
9,600,000
9,500,000
9,400,000
9,300,000
9,200,000
9,100,000
9,000,000
8,900,000
8,800,000
8,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.65%
Medium: 4.38%
Low: 2.17%
Low
Medium
High


Zone 24 Annual Customer Growth
Customers
9,000
8,900
8,800
8,700
8,600
8,500
8,400
8,300
8,200
8,100
8,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.38%
Medium: 4.20%
Low: 2.08%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 26

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,359,555	1,975,361	6,334,916	4,392,506	1,975,361	6,367,867	4,425,458	1,975,361	6,400,819
2016	4,421,406	1,975,361	6,396,766	4,488,098	1,975,361	6,463,459	4,555,421	1,975,361	6,530,782
2017	4,425,119	1,975,361	6,400,479	4,525,499	1,975,361	6,500,860	4,627,767	1,975,361	6,603,128
2018	4,457,764	1,975,361	6,433,125	4,592,620	1,975,361	6,567,980	4,731,260	1,975,361	6,706,621
2019	4,490,291	1,975,361	6,465,652	4,660,079	1,975,361	6,635,439	4,836,188	1,975,361	6,811,549
2020	4,552,179	1,975,361	6,527,540	4,758,111	1,975,361	6,733,472	4,973,581	1,975,361	6,948,941
2021	4,554,822	1,975,361	6,530,183	4,795,607	1,975,361	6,770,968	5,049,712	1,975,361	7,025,073
2022	4,586,825	1,975,361	6,562,186	4,863,645	1,975,361	6,839,006	5,158,248	1,975,361	7,133,609
2023	4,618,587	1,975,361	6,593,947	4,931,706	1,975,361	6,907,067	5,267,709	1,975,361	7,243,070
2024	4,680,301	1,975,361	6,655,662	5,031,540	1,975,361	7,006,901	5,411,528	1,975,361	7,386,888
2025	4,681,484	1,975,361	6,656,845	5,068,049	1,975,361	7,043,410	5,489,621	1,975,361	7,464,982
2026	4,712,605	1,975,361	6,687,966	5,136,272	1,975,361	7,111,633	5,601,963	1,975,361	7,577,324
2027	4,743,470	1,975,361	6,718,831	5,204,430	1,975,361	7,179,791	5,715,062	1,975,361	7,690,423
2028	4,804,697	1,975,361	6,780,058	5,305,216	1,975,361	7,280,577	5,863,915	1,975,361	7,839,276
2029	4,804,353	1,975,361	6,779,714	5,340,339	1,975,361	7,315,699	5,943,155	1,975,361	7,918,516
2030	4,834,361	1,975,361	6,809,722	5,408,037	1,975,361	7,383,398	6,058,046	1,975,361	8,033,407
2031	4,864,210	1,975,361	6,839,571	5,475,831	1,975,361	7,451,192	6,173,920	1,975,361	8,149,280
2032	4,924,924	1,975,361	6,900,285	5,577,334	1,975,361	7,552,695	6,327,350	1,975,361	8,302,711
2033	4,923,180	1,975,361	6,898,541	5,611,120	1,975,361	7,586,481	6,407,640	1,975,361	8,383,001
2034	4,952,376	1,975,361	6,927,737	5,678,756	1,975,361	7,654,117	6,525,704	1,975,361	8,501,065

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.42%	0.00%	0.98%	2.18%	0.00%	1.50%	2.94%	0.00%	2.03%
2017	0.08%	0.00%	0.06%	0.83%	0.00%	0.58%	1.59%	0.00%	1.11%
2018	0.74%	0.00%	0.51%	1.48%	0.00%	1.03%	2.24%	0.00%	1.57%
2019	0.73%	0.00%	0.51%	1.47%	0.00%	1.03%	2.22%	0.00%	1.56%
2020	1.38%	0.00%	0.96%	2.10%	0.00%	1.48%	2.84%	0.00%	2.02%
2021	0.06%	0.00%	0.04%	0.79%	0.00%	0.56%	1.53%	0.00%	1.10%
2022	0.70%	0.00%	0.49%	1.42%	0.00%	1.00%	2.15%	0.00%	1.54%
2023	0.69%	0.00%	0.48%	1.40%	0.00%	1.00%	2.12%	0.00%	1.53%
2024	1.34%	0.00%	0.94%	2.02%	0.00%	1.45%	2.73%	0.00%	1.99%
2025	0.03%	0.00%	0.02%	0.73%	0.00%	0.52%	1.44%	0.00%	1.06%
2026	0.66%	0.00%	0.47%	1.35%	0.00%	0.97%	2.05%	0.00%	1.50%
2027	0.65%	0.00%	0.46%	1.33%	0.00%	0.96%	2.02%	0.00%	1.49%
2028	1.29%	0.00%	0.91%	1.94%	0.00%	1.40%	2.60%	0.00%	1.94%
2029	-0.01%	0.00%	-0.01%	0.66%	0.00%	0.48%	1.35%	0.00%	1.01%
2030	0.62%	0.00%	0.44%	1.27%	0.00%	0.93%	1.93%	0.00%	1.45%
2031	0.62%	0.00%	0.44%	1.25%	0.00%	0.92%	1.91%	0.00%	1.44%
2032	1.25%	0.00%	0.89%	1.85%	0.00%	1.36%	2.49%	0.00%	1.88%
2033	-0.04%	0.00%	-0.03%	0.61%	0.00%	0.45%	1.27%	0.00%	0.97%
2034	0.59%	0.00%	0.42%	1.21%	0.00%	0.89%	1.84%	0.00%	1.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	5,412	60,573	65,985	5,412	60,904	66,316	5,412	61,235	66,647
2016	5,412	60,903	66,315	5,412	61,570	66,982	5,412	62,243	67,655
2017	5,412	61,232	66,644	5,412	62,241	67,652	5,412	63,267	68,679
2018	5,412	61,561	66,973	5,412	62,915	68,327	5,412	64,307	69,719
2019	5,412	61,888	67,300	5,412	63,594	69,006	5,412	65,361	70,773
2020	5,412	62,214	67,626	5,412	64,273	69,685	5,412	66,426	71,838
2021	5,412	62,538	67,950	5,412	64,957	70,369	5,412	67,505	72,917
2022	5,412	62,861	68,273	5,412	65,641	71,053	5,412	68,596	74,008
2023	5,412	63,181	68,593	5,412	66,326	71,738	5,412	69,695	75,107
2024	5,412	63,500	68,912	5,412	67,013	72,425	5,412	70,806	76,218
2025	5,412	63,815	69,227	5,412	67,698	73,110	5,412	71,923	77,335
2026	5,412	64,129	69,541	5,412	68,385	73,796	5,412	73,051	78,463
2027	5,412	64,441	69,853	5,412	69,070	74,482	5,412	74,186	79,598
2028	5,412	64,749	70,161	5,412	69,755	75,167	5,412	75,328	80,740
2029	5,412	65,055	70,467	5,412	70,438	75,850	5,412	76,475	81,887
2030	5,412	65,358	70,770	5,412	71,119	76,531	5,412	77,627	83,039
2031	5,412	65,659	71,071	5,412	71,802	77,214	5,412	78,790	84,202
2032	5,412	65,958	71,370	5,412	72,482	77,894	5,412	79,958	85,370
2033	5,412	66,255	71,667	5,412	73,163	78,575	5,412	81,134	86,545
2034	5,412	66,550	71,962	5,412	73,844	79,256	5,412	82,317	87,729

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.54%	0.50%	0.00%	1.09%	1.00%	0.00%	1.65%	1.51%
2017	0.00%	0.54%	0.50%	0.00%	1.09%	1.00%	0.00%	1.64%	1.51%
2018	0.00%	0.54%	0.49%	0.00%	1.08%	1.00%	0.00%	1.64%	1.51%
2019	0.00%	0.53%	0.49%	0.00%	1.08%	0.99%	0.00%	1.64%	1.51%
2020	0.00%	0.53%	0.48%	0.00%	1.07%	0.99%	0.00%	1.63%	1.51%
2021	0.00%	0.52%	0.48%	0.00%	1.06%	0.98%	0.00%	1.63%	1.50%
2022	0.00%	0.52%	0.47%	0.00%	1.05%	0.97%	0.00%	1.61%	1.49%
2023	0.00%	0.51%	0.47%	0.00%	1.04%	0.96%	0.00%	1.60%	1.49%
2024	0.00%	0.50%	0.46%	0.00%	1.04%	0.96%	0.00%	1.59%	1.48%
2025	0.00%	0.50%	0.46%	0.00%	1.02%	0.95%	0.00%	1.58%	1.47%
2026	0.00%	0.49%	0.45%	0.00%	1.01%	0.94%	0.00%	1.57%	1.46%
2027	0.00%	0.49%	0.45%	0.00%	1.00%	0.93%	0.00%	1.55%	1.45%
2028	0.00%	0.48%	0.44%	0.00%	0.99%	0.92%	0.00%	1.54%	1.43%
2029	0.00%	0.47%	0.44%	0.00%	0.98%	0.91%	0.00%	1.52%	1.42%
2030	0.00%	0.47%	0.43%	0.00%	0.97%	0.90%	0.00%	1.51%	1.41%
2031	0.00%	0.46%	0.43%	0.00%	0.96%	0.89%	0.00%	1.50%	1.40%
2032	0.00%	0.45%	0.42%	0.00%	0.95%	0.88%	0.00%	1.48%	1.39%
2033	0.00%	0.45%	0.42%	0.00%	0.94%	0.87%	0.00%	1.47%	1.38%
2034	0.00%	0.45%	0.41%	0.00%	0.93%	0.87%	0.00%	1.46%	1.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,317,337	4,310,990	5,628,327	1,324,694	4,333,374	5,658,068	1,332,050	4,355,759	5,687,810
2016	1,330,712	4,353,563	5,684,275	1,345,601	4,398,869	5,744,471	1,360,641	4,444,613	5,805,254
2017	1,331,931	4,355,478	5,687,409	1,354,325	4,423,643	5,777,968	1,377,169	4,493,116	5,870,285
2018	1,339,176	4,377,608	5,716,784	1,369,251	4,469,167	5,838,418	1,400,227	4,563,346	5,963,572
2019	1,346,383	4,399,641	5,746,025	1,384,235	4,514,894	5,899,129	1,423,590	4,634,520	6,058,110
2020	1,359,725	4,442,194	5,801,919	1,405,636	4,581,979	5,987,614	1,453,813	4,728,357	6,182,170
2021	1,360,648	4,443,306	5,803,954	1,414,292	4,606,680	6,020,972	1,471,098	4,779,256	6,250,353
2022	1,367,706	4,464,939	5,832,645	1,429,359	4,652,717	6,082,075	1,495,228	4,852,773	6,348,001
2023	1,374,701	4,486,391	5,861,092	1,444,417	4,698,737	6,143,154	1,519,555	4,926,872	6,446,427
2024	1,387,974	4,528,785	5,916,759	1,466,181	4,766,969	6,233,150	1,551,199	5,024,978	6,576,177
2025	1,388,527	4,528,828	5,917,355	1,474,544	4,790,840	6,265,384	1,568,841	5,076,972	6,645,813
2026	1,395,355	4,549,803	5,945,158	1,489,599	4,836,881	6,326,480	1,593,776	5,152,894	6,746,670
2027	1,402,119	4,570,589	5,972,708	1,504,629	4,882,845	6,387,474	1,618,869	5,229,278	6,848,147
2028	1,415,262	4,612,610	6,027,872	1,526,578	4,951,630	6,478,208	1,651,630	5,330,660	6,982,290
2029	1,415,439	4,611,544	6,026,983	1,534,565	4,974,394	6,508,959	1,669,447	5,383,163	7,052,610
2030	1,421,993	4,631,705	6,053,699	1,549,460	5,019,944	6,569,404	1,694,908	5,460,592	7,155,500
2031	1,428,506	4,651,748	6,080,254	1,564,365	5,065,532	6,629,897	1,720,576	5,538,639	7,259,214
2032	1,441,519	4,693,384	6,134,902	1,586,451	5,134,709	6,721,160	1,754,352	5,642,964	7,397,316
2033	1,441,354	4,691,305	6,132,658	1,594,078	5,156,411	6,750,488	1,772,317	5,695,903	7,468,219
2034	1,447,705	4,710,871	6,158,576	1,608,916	5,201,802	6,810,718	1,798,437	5,775,272	7,573,708

Annual Change

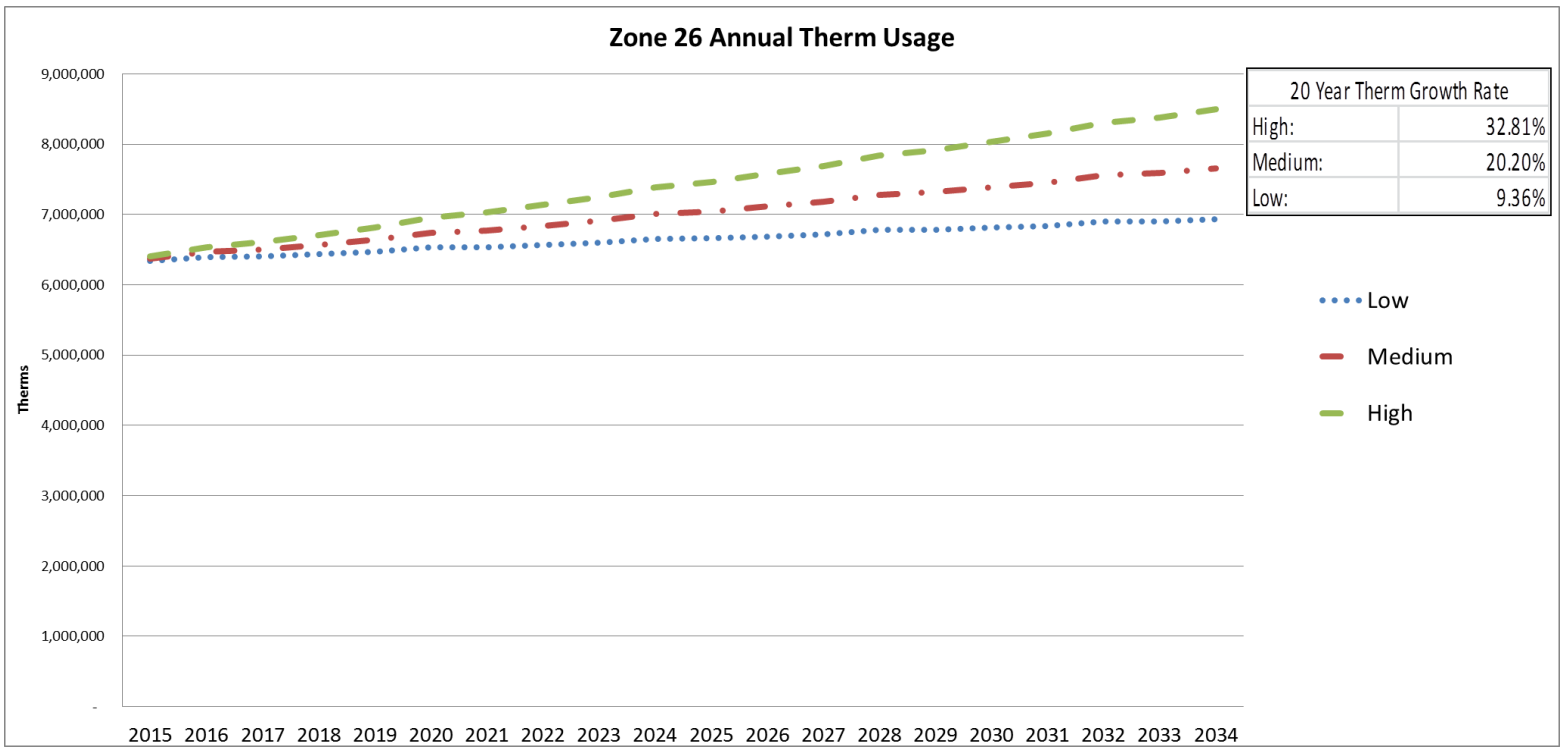
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.99%	0.99%	1.58%	1.51%	1.53%	2.15%	2.04%	2.06%
2017	0.09%	0.04%	0.06%	0.65%	0.56%	0.58%	1.21%	1.09%	1.12%
2018	0.54%	0.51%	0.52%	1.10%	1.03%	1.05%	1.67%	1.56%	1.59%
2019	0.54%	0.50%	0.51%	1.09%	1.02%	1.04%	1.67%	1.56%	1.59%
2020	0.99%	0.97%	0.97%	1.55%	1.49%	1.50%	2.12%	2.02%	2.05%
2021	0.07%	0.03%	0.04%	0.62%	0.54%	0.56%	1.19%	1.08%	1.10%
2022	0.52%	0.49%	0.49%	1.07%	1.00%	1.01%	1.64%	1.54%	1.56%
2023	0.51%	0.48%	0.49%	1.05%	0.99%	1.00%	1.63%	1.53%	1.55%
2024	0.97%	0.94%	0.95%	1.51%	1.45%	1.46%	2.08%	1.99%	2.01%
2025	0.04%	0.00%	0.01%	0.57%	0.50%	0.52%	1.14%	1.03%	1.06%
2026	0.49%	0.46%	0.47%	1.02%	0.96%	0.98%	1.59%	1.50%	1.52%
2027	0.48%	0.46%	0.46%	1.01%	0.95%	0.96%	1.57%	1.48%	1.50%
2028	0.94%	0.92%	0.92%	1.46%	1.41%	1.42%	2.02%	1.94%	1.96%
2029	0.01%	-0.02%	-0.01%	0.52%	0.46%	0.47%	1.08%	0.98%	1.01%
2030	0.46%	0.44%	0.44%	0.97%	0.92%	0.93%	1.53%	1.44%	1.46%
2031	0.46%	0.43%	0.44%	0.96%	0.91%	0.92%	1.51%	1.43%	1.45%
2032	0.91%	0.90%	0.90%	1.41%	1.37%	1.38%	1.96%	1.88%	1.90%
2033	-0.01%	-0.04%	-0.04%	0.48%	0.42%	0.44%	1.02%	0.94%	0.96%
2034	0.44%	0.42%	0.42%	0.93%	0.88%	0.89%	1.47%	1.39%	1.41%

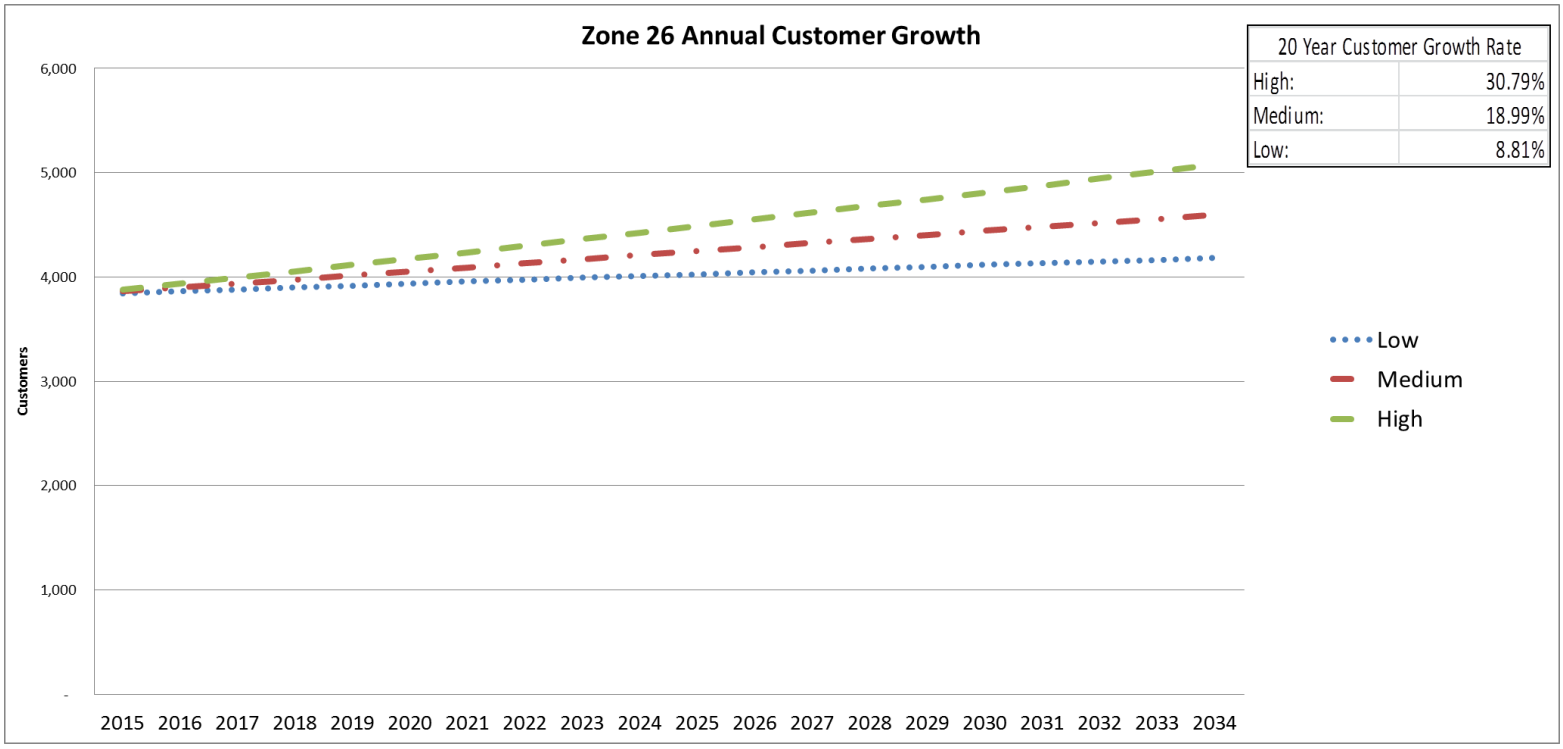
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,654	1,190	3,844	2,667	1,195	3,863	2,681	1,201	3,881
2016	2,667	1,195	3,863	2,694	1,206	3,901	2,722	1,217	3,939
2017	2,681	1,201	3,881	2,721	1,217	3,939	2,763	1,234	3,997
2018	2,694	1,206	3,900	2,749	1,228	3,977	2,805	1,251	4,056
2019	2,707	1,212	3,919	2,776	1,240	4,016	2,848	1,268	4,116
2020	2,720	1,217	3,937	2,804	1,251	4,054	2,891	1,286	4,177
2021	2,733	1,222	3,956	2,831	1,262	4,093	2,935	1,304	4,238
2022	2,746	1,228	3,974	2,859	1,273	4,132	2,979	1,322	4,300
2023	2,759	1,233	3,992	2,887	1,284	4,171	3,023	1,340	4,363
2024	2,772	1,238	4,010	2,914	1,296	4,210	3,068	1,358	4,426
2025	2,785	1,243	4,028	2,942	1,307	4,249	3,113	1,376	4,489
2026	2,797	1,248	4,046	2,969	1,318	4,288	3,159	1,394	4,553
2027	2,810	1,254	4,063	2,997	1,329	4,327	3,205	1,413	4,617
2028	2,822	1,259	4,081	3,025	1,341	4,365	3,251	1,432	4,682
2029	2,834	1,264	4,098	3,052	1,352	4,404	3,297	1,450	4,747
2030	2,847	1,269	4,115	3,079	1,363	4,442	3,343	1,469	4,812
2031	2,859	1,274	4,132	3,107	1,374	4,481	3,390	1,488	4,878
2032	2,871	1,279	4,149	3,134	1,385	4,519	3,437	1,507	4,944
2033	2,882	1,283	4,166	3,161	1,396	4,558	3,484	1,526	5,010
2034	2,894	1,288	4,183	3,189	1,407	4,596	3,532	1,545	5,077

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.46%	0.49%	1.01%	0.91%	0.98%	1.52%	1.38%	1.48%
2017	0.50%	0.45%	0.48%	1.01%	0.91%	0.98%	1.52%	1.38%	1.48%
2018	0.50%	0.45%	0.48%	1.00%	0.91%	0.98%	1.52%	1.38%	1.48%
2019	0.49%	0.45%	0.48%	1.00%	0.91%	0.97%	1.52%	1.38%	1.48%
2020	0.49%	0.44%	0.47%	0.99%	0.90%	0.96%	1.51%	1.38%	1.47%
2021	0.48%	0.44%	0.47%	0.98%	0.90%	0.96%	1.51%	1.38%	1.47%
2022	0.48%	0.44%	0.46%	0.98%	0.89%	0.95%	1.50%	1.37%	1.46%
2023	0.47%	0.43%	0.46%	0.97%	0.88%	0.94%	1.49%	1.36%	1.45%
2024	0.46%	0.43%	0.45%	0.96%	0.88%	0.93%	1.49%	1.36%	1.45%
2025	0.46%	0.42%	0.45%	0.95%	0.87%	0.92%	1.47%	1.34%	1.43%
2026	0.45%	0.42%	0.44%	0.94%	0.86%	0.92%	1.46%	1.34%	1.42%
2027	0.45%	0.41%	0.44%	0.93%	0.85%	0.91%	1.45%	1.33%	1.41%
2028	0.44%	0.41%	0.43%	0.92%	0.84%	0.90%	1.44%	1.32%	1.40%
2029	0.43%	0.40%	0.42%	0.91%	0.83%	0.88%	1.42%	1.30%	1.39%
2030	0.43%	0.39%	0.42%	0.90%	0.82%	0.87%	1.41%	1.29%	1.37%
2031	0.42%	0.39%	0.41%	0.89%	0.82%	0.87%	1.40%	1.28%	1.36%
2032	0.42%	0.39%	0.41%	0.88%	0.81%	0.86%	1.39%	1.27%	1.35%
2033	0.41%	0.38%	0.40%	0.87%	0.80%	0.85%	1.37%	1.26%	1.34%
2034	0.41%	0.38%	0.40%	0.86%	0.80%	0.84%	1.36%	1.26%	1.33%


Zone 26 Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.81%
Medium: 20.20%
Low: 9.36%
Low
Medium
High


Zone 26 Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.79%
Medium: 18.99%
Low: 8.81%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 30-S

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	27,831,131	11,293,777	39,124,909	28,024,937	11,293,777	39,318,714	28,218,742	11,293,777	39,512,520
2016	28,199,334	11,293,777	39,493,111	28,590,688	11,293,777	39,884,465	28,984,063	11,293,777	40,277,841
2017	28,218,695	11,293,777	39,512,473	28,806,102	11,293,777	40,099,879	29,399,577	11,293,777	40,693,354
2018	28,412,614	11,293,777	39,706,391	29,199,978	11,293,777	40,493,755	29,999,545	11,293,777	41,293,322
2019	28,606,412	11,293,777	39,900,190	29,595,621	11,293,777	40,889,398	30,605,270	11,293,777	41,899,048
2020	28,976,998	11,293,777	40,270,775	30,174,255	11,293,777	41,468,032	31,402,411	11,293,777	42,696,189
2021	28,991,944	11,293,777	40,285,721	30,388,683	11,293,777	41,682,461	31,828,655	11,293,777	43,122,433
2022	29,183,581	11,293,777	40,477,358	30,785,860	11,293,777	42,079,637	32,445,934	11,293,777	43,739,712
2023	29,374,004	11,293,777	40,667,781	31,182,478	11,293,777	42,476,255	33,065,391	11,293,777	44,359,169
2024	29,745,168	11,293,777	41,038,945	31,770,198	11,293,777	43,063,975	33,888,864	11,293,777	45,182,641
2025	29,751,888	11,293,777	41,045,665	31,975,320	11,293,777	43,269,097	34,312,755	11,293,777	45,606,532
2026	29,939,073	11,293,777	41,232,851	32,370,901	11,293,777	43,664,678	34,939,607	11,293,777	46,233,385
2027	30,124,767	11,293,777	41,418,544	32,765,200	11,293,777	44,058,978	35,567,403	11,293,777	46,861,180
2028	30,493,551	11,293,777	41,787,328	33,355,457	11,293,777	44,649,234	36,406,853	11,293,777	47,700,630
2029	30,491,235	11,293,777	41,785,012	33,548,827	11,293,777	44,842,604	36,823,836	11,293,777	48,117,614
2030	30,671,865	11,293,777	41,965,643	33,937,752	11,293,777	45,231,529	37,451,735	11,293,777	48,745,512
2031	30,851,798	11,293,777	42,145,575	34,326,918	11,293,777	45,620,696	38,082,849	11,293,777	49,376,626
2032	31,217,919	11,293,777	42,511,697	34,918,564	11,293,777	46,212,341	38,936,016	11,293,777	50,229,794
2033	31,207,531	11,293,777	42,501,309	35,101,483	11,293,777	46,395,260	39,347,394	11,293,777	50,641,172
2034	31,383,811	11,293,777	42,677,588	35,487,843	11,293,777	46,781,620	39,982,319	11,293,777	51,276,097

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	0.00%	0.94%	2.02%	0.00%	1.44%	2.71%	0.00%	1.94%
2017	0.07%	0.00%	0.05%	0.75%	0.00%	0.54%	1.43%	0.00%	1.03%
2018	0.69%	0.00%	0.49%	1.37%	0.00%	0.98%	2.04%	0.00%	1.47%
2019	0.68%	0.00%	0.49%	1.35%	0.00%	0.98%	2.02%	0.00%	1.47%
2020	1.30%	0.00%	0.93%	1.96%	0.00%	1.42%	2.60%	0.00%	1.90%
2021	0.05%	0.00%	0.04%	0.71%	0.00%	0.52%	1.36%	0.00%	1.00%
2022	0.66%	0.00%	0.48%	1.31%	0.00%	0.95%	1.94%	0.00%	1.43%
2023	0.65%	0.00%	0.47%	1.29%	0.00%	0.94%	1.91%	0.00%	1.42%
2024	1.26%	0.00%	0.91%	1.88%	0.00%	1.38%	2.49%	0.00%	1.86%
2025	0.02%	0.00%	0.02%	0.65%	0.00%	0.48%	1.25%	0.00%	0.94%
2026	0.63%	0.00%	0.46%	1.24%	0.00%	0.91%	1.83%	0.00%	1.37%
2027	0.62%	0.00%	0.45%	1.22%	0.00%	0.90%	1.80%	0.00%	1.36%
2028	1.22%	0.00%	0.89%	1.80%	0.00%	1.34%	2.36%	0.00%	1.79%
2029	-0.01%	0.00%	-0.01%	0.58%	0.00%	0.43%	1.15%	0.00%	0.87%
2030	0.59%	0.00%	0.43%	1.16%	0.00%	0.87%	1.71%	0.00%	1.30%
2031	0.59%	0.00%	0.43%	1.15%	0.00%	0.86%	1.69%	0.00%	1.29%
2032	1.19%	0.00%	0.87%	1.72%	0.00%	1.30%	2.24%	0.00%	1.73%
2033	-0.03%	0.00%	-0.02%	0.52%	0.00%	0.40%	1.06%	0.00%	0.82%
2034	0.56%	0.00%	0.41%	1.10%	0.00%	0.83%	1.61%	0.00%	1.25%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	30,942	349,676	380,618	30,942	351,572	382,514	30,942	353,469	384,411
2016	30,942	351,572	382,514	30,942	355,386	386,328	30,942	359,219	390,161
2017	30,942	353,469	384,411	30,942	359,218	390,160	30,942	365,026	395,968
2018	30,942	355,366	386,308	30,942	363,073	394,015	30,942	370,899	401,840
2019	30,942	357,263	388,205	30,942	366,945	397,887	30,942	376,827	407,769
2020	30,942	359,149	390,091	30,942	370,816	401,757	30,942	382,784	413,726
2021	30,942	361,036	391,978	30,942	374,707	405,649	30,942	388,802	419,744
2022	30,942	362,912	393,853	30,942	378,594	409,536	30,942	394,844	425,786
2023	30,942	364,775	395,717	30,942	382,476	413,418	30,942	400,908	431,850
2024	30,942	366,634	397,576	30,942	386,367	417,309	30,942	407,015	437,957
2025	30,942	368,474	399,415	30,942	390,237	421,179	30,942	413,119	444,061
2026	30,942	370,306	401,247	30,942	394,109	425,051	30,942	419,256	450,198
2027	30,942	372,123	403,065	30,942	397,969	428,911	30,942	425,403	456,345
2028	30,942	373,926	404,868	30,942	401,817	432,758	30,942	431,559	462,501
2029	30,942	375,710	406,652	30,942	405,641	436,583	30,942	437,706	468,648
2030	30,942	377,478	408,420	30,942	409,449	440,390	30,942	443,855	474,796
2031	30,942	379,240	410,181	30,942	413,259	444,201	30,942	450,035	480,977
2032	30,942	380,985	411,927	30,942	417,053	447,995	30,942	456,217	487,158
2033	30,942	382,722	413,664	30,942	420,843	451,785	30,942	462,419	493,361
2034	30,942	384,447	415,389	30,942	424,626	455,568	30,942	468,638	499,580

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.54%	0.50%	0.00%	1.08%	1.00%	0.00%	1.63%	1.50%
2017	0.00%	0.54%	0.50%	0.00%	1.08%	0.99%	0.00%	1.62%	1.49%
2018	0.00%	0.54%	0.49%	0.00%	1.07%	0.99%	0.00%	1.61%	1.48%
2019	0.00%	0.53%	0.49%	0.00%	1.07%	0.98%	0.00%	1.60%	1.48%
2020	0.00%	0.53%	0.49%	0.00%	1.05%	0.97%	0.00%	1.58%	1.46%
2021	0.00%	0.53%	0.48%	0.00%	1.05%	0.97%	0.00%	1.57%	1.45%
2022	0.00%	0.52%	0.48%	0.00%	1.04%	0.96%	0.00%	1.55%	1.44%
2023	0.00%	0.51%	0.47%	0.00%	1.03%	0.95%	0.00%	1.54%	1.42%
2024	0.00%	0.51%	0.47%	0.00%	1.02%	0.94%	0.00%	1.52%	1.41%
2025	0.00%	0.50%	0.46%	0.00%	1.00%	0.93%	0.00%	1.50%	1.39%
2026	0.00%	0.50%	0.46%	0.00%	0.99%	0.92%	0.00%	1.49%	1.38%
2027	0.00%	0.49%	0.45%	0.00%	0.98%	0.91%	0.00%	1.47%	1.37%
2028	0.00%	0.48%	0.45%	0.00%	0.97%	0.90%	0.00%	1.45%	1.35%
2029	0.00%	0.48%	0.44%	0.00%	0.95%	0.88%	0.00%	1.42%	1.33%
2030	0.00%	0.47%	0.43%	0.00%	0.94%	0.87%	0.00%	1.40%	1.31%
2031	0.00%	0.47%	0.43%	0.00%	0.93%	0.87%	0.00%	1.39%	1.30%
2032	0.00%	0.46%	0.43%	0.00%	0.92%	0.85%	0.00%	1.37%	1.29%
2033	0.00%	0.46%	0.42%	0.00%	0.91%	0.85%	0.00%	1.36%	1.27%
2034	0.00%	0.45%	0.42%	0.00%	0.90%	0.84%	0.00%	1.34%	1.26%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	22,631,918	12,946,240	35,578,158	22,747,125	13,008,892	35,756,017	22,862,332	13,071,544	35,933,876
2016	22,850,854	13,066,243	35,917,096	23,083,517	13,192,754	36,276,271	23,317,399	13,319,910	36,637,309
2017	22,862,267	13,071,546	35,933,813	23,211,459	13,261,434	36,472,893	23,564,307	13,453,260	37,017,567
2018	22,977,507	13,134,251	36,111,758	23,445,576	13,388,773	36,834,349	23,920,996	13,647,194	37,568,190
2019	23,092,665	13,196,922	36,289,587	23,680,737	13,516,687	37,197,424	24,281,121	13,842,983	38,124,104
2020	23,313,056	13,317,694	36,630,750	24,024,930	13,704,680	37,729,610	24,755,418	14,101,538	38,856,955
2021	23,321,774	13,321,587	36,643,361	24,152,205	13,773,046	37,925,251	25,008,676	14,238,318	39,246,994
2022	23,435,659	13,383,553	36,819,212	24,388,347	13,901,422	38,289,769	25,375,849	14,437,757	39,813,605
2023	23,548,835	13,445,122	36,993,956	24,624,198	14,029,598	38,653,796	25,744,401	14,637,858	40,382,259
2024	23,769,630	13,566,069	37,335,698	24,973,976	14,220,474	39,194,451	26,234,735	14,904,795	41,139,530
2025	23,773,449	13,567,290	37,340,739	25,095,756	14,285,781	39,381,537	26,486,740	15,040,693	41,527,432
2026	23,884,719	13,627,802	37,512,522	25,331,071	14,413,583	39,744,654	26,859,885	15,243,092	42,102,977
2027	23,995,126	13,687,822	37,682,948	25,565,686	14,540,942	40,106,628	27,233,709	15,445,739	42,679,448
2028	24,214,615	13,807,963	38,022,578	25,917,257	14,732,537	40,649,793	27,734,082	15,717,636	43,451,718
2029	24,213,062	13,806,247	38,019,310	26,032,097	14,793,988	40,826,085	27,982,138	15,851,172	43,833,310
2030	24,320,511	13,864,605	38,185,117	26,263,664	14,919,539	41,183,203	28,356,319	16,053,712	44,410,031
2031	24,427,541	13,922,739	38,350,280	26,495,378	15,045,167	41,540,545	28,732,441	16,257,277	44,989,718
2032	24,645,548	14,041,987	38,687,536	26,848,045	15,237,115	42,085,160	29,241,493	16,533,412	45,774,905
2033	24,639,192	14,037,650	38,676,841	26,956,704	15,295,139	42,251,843	29,486,347	16,665,021	46,151,368
2034	24,744,081	14,094,588	38,838,669	27,186,853	15,419,810	42,606,664	29,864,966	16,869,708	46,734,673

Annual Change

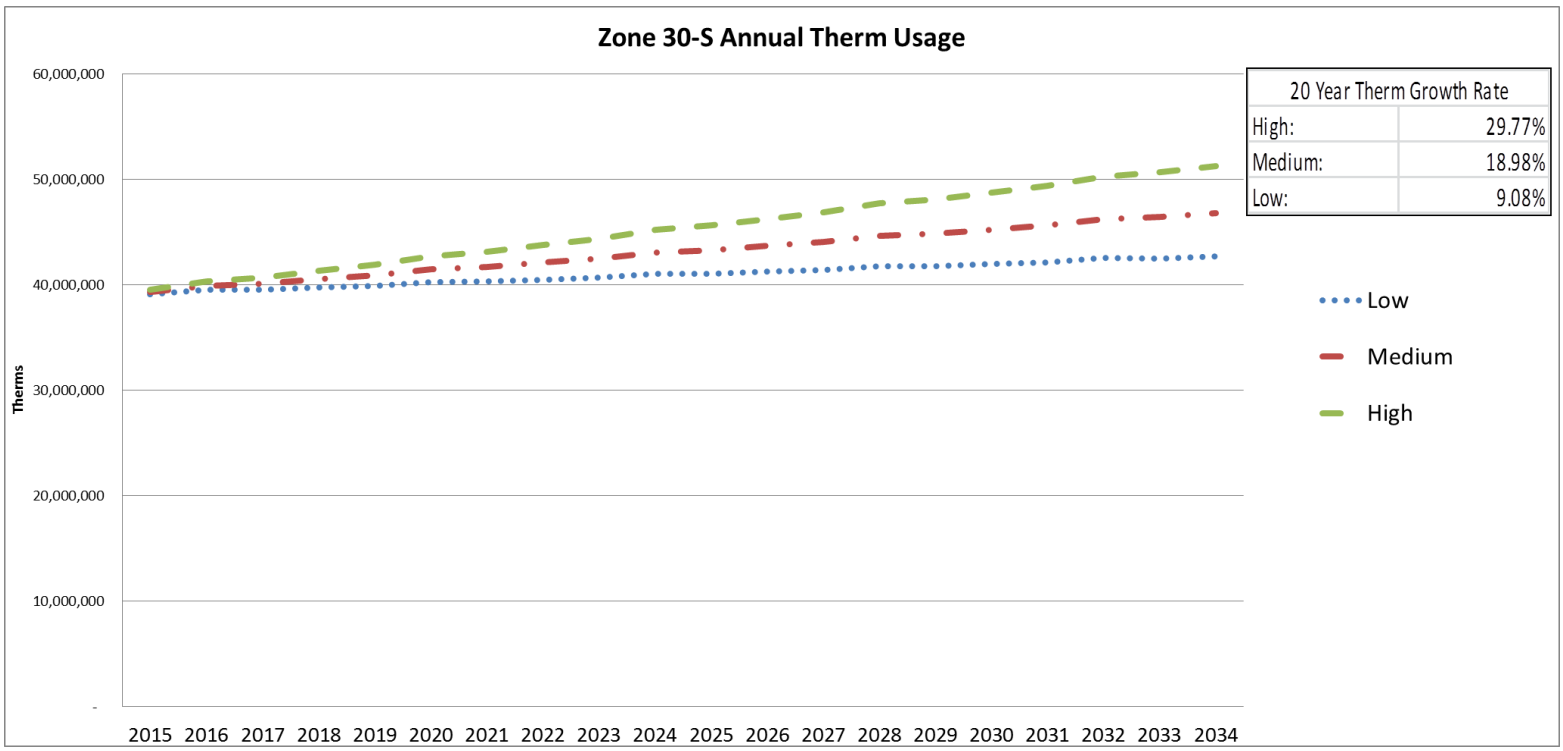
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.97%	0.93%	0.95%	1.48%	1.41%	1.46%	1.99%	1.90%	1.96%
2017	0.05%	0.04%	0.05%	0.55%	0.52%	0.54%	1.06%	1.00%	1.04%
2018	0.50%	0.48%	0.50%	1.01%	0.96%	0.99%	1.51%	1.44%	1.49%
2019	0.50%	0.48%	0.49%	1.00%	0.96%	0.99%	1.51%	1.43%	1.48%
2020	0.95%	0.92%	0.94%	1.45%	1.39%	1.43%	1.95%	1.87%	1.92%
2021	0.04%	0.03%	0.03%	0.53%	0.50%	0.52%	1.02%	0.97%	1.00%
2022	0.49%	0.47%	0.48%	0.98%	0.93%	0.96%	1.47%	1.40%	1.44%
2023	0.48%	0.46%	0.47%	0.97%	0.92%	0.95%	1.45%	1.39%	1.43%
2024	0.94%	0.90%	0.92%	1.42%	1.36%	1.40%	1.90%	1.82%	1.88%
2025	0.02%	0.01%	0.01%	0.49%	0.46%	0.48%	0.96%	0.91%	0.94%
2026	0.47%	0.45%	0.46%	0.94%	0.89%	0.92%	1.41%	1.35%	1.39%
2027	0.46%	0.44%	0.45%	0.93%	0.88%	0.91%	1.39%	1.33%	1.37%
2028	0.91%	0.88%	0.90%	1.38%	1.32%	1.35%	1.84%	1.76%	1.81%
2029	-0.01%	-0.01%	-0.01%	0.44%	0.42%	0.43%	0.89%	0.85%	0.88%
2030	0.44%	0.42%	0.44%	0.89%	0.85%	0.87%	1.34%	1.28%	1.32%
2031	0.44%	0.42%	0.43%	0.88%	0.84%	0.87%	1.33%	1.27%	1.31%
2032	0.89%	0.86%	0.88%	1.33%	1.28%	1.31%	1.77%	1.70%	1.75%
2033	-0.03%	-0.03%	-0.03%	0.40%	0.38%	0.40%	0.84%	0.80%	0.82%
2034	0.43%	0.41%	0.42%	0.85%	0.82%	0.84%	1.28%	1.23%	1.26%

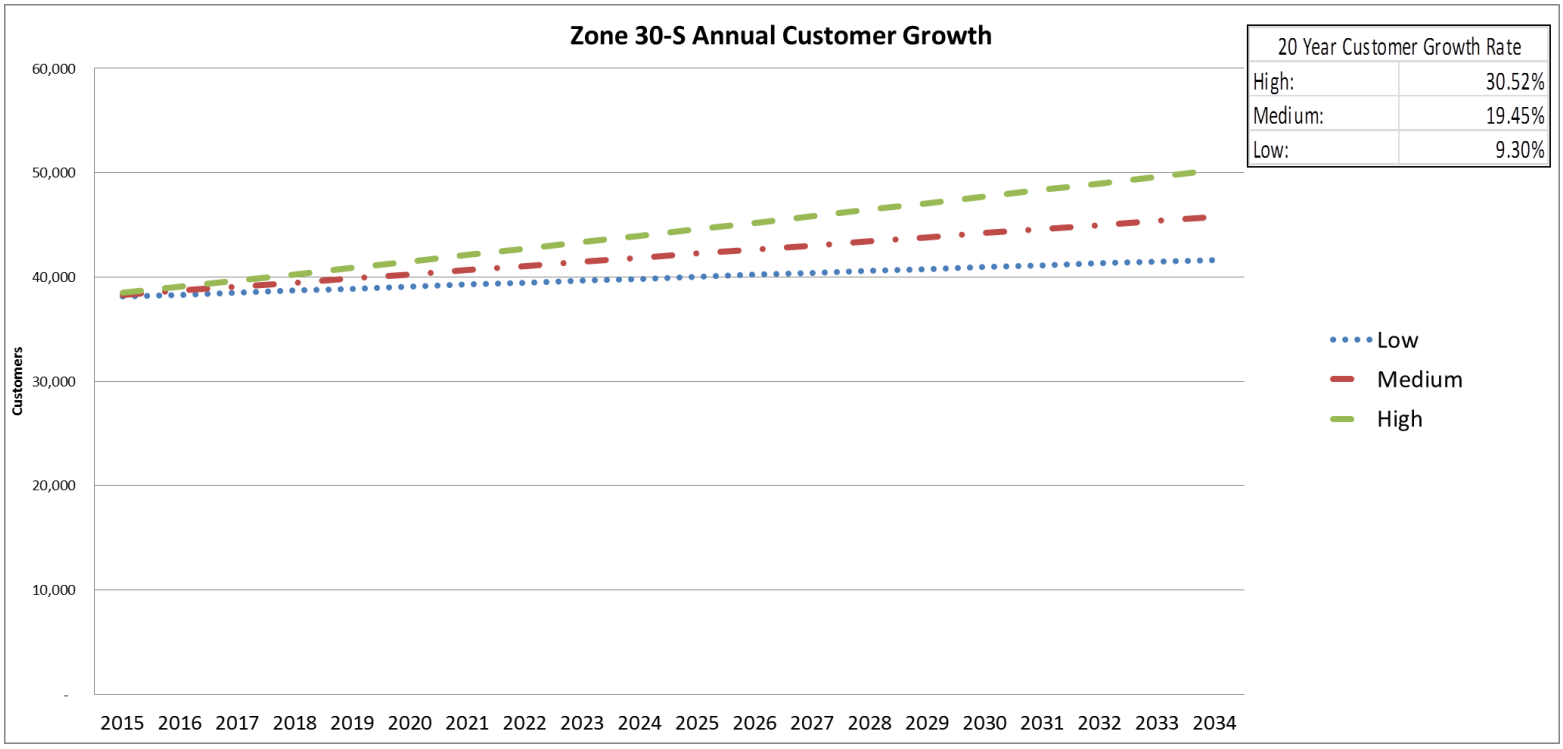
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	34,410	3,701	38,111	34,585	3,719	38,304	34,761	3,737	38,498
2016	34,585	3,719	38,304	34,938	3,755	38,693	35,293	3,790	39,084
2017	34,761	3,737	38,497	35,293	3,790	39,083	35,831	3,845	39,675
2018	34,936	3,754	38,691	35,650	3,826	39,476	36,374	3,899	40,274
2019	35,112	3,772	38,884	36,008	3,863	39,871	36,923	3,955	40,878
2020	35,287	3,790	39,076	36,367	3,899	40,265	37,475	4,011	41,485
2021	35,461	3,807	39,269	36,727	3,935	40,662	38,032	4,067	42,099
2022	35,635	3,825	39,460	37,087	3,971	41,058	38,592	4,123	42,715
2023	35,807	3,842	39,650	37,446	4,008	41,454	39,154	4,180	43,333
2024	35,979	3,860	39,839	37,807	4,044	41,851	39,720	4,237	43,956
2025	36,150	3,877	40,026	38,165	4,080	42,245	40,285	4,294	44,579
2026	36,319	3,894	40,213	38,524	4,116	42,640	40,854	4,351	45,205
2027	36,487	3,911	40,398	38,881	4,152	43,034	41,424	4,408	45,832
2028	36,654	3,928	40,582	39,238	4,188	43,426	41,995	4,466	46,460
2029	36,820	3,944	40,764	39,592	4,224	43,816	42,565	4,523	47,088
2030	36,983	3,961	40,944	39,945	4,259	44,205	43,135	4,580	47,715
2031	37,147	3,977	41,124	40,298	4,295	44,593	43,709	4,638	48,346
2032	37,308	3,994	41,302	40,650	4,330	44,980	44,282	4,695	48,977
2033	37,469	4,010	41,479	41,002	4,366	45,367	44,858	4,753	49,611
2034	37,629	4,026	41,655	41,353	4,401	45,753	45,435	4,811	50,246

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.51%	0.48%	0.51%	1.02%	0.96%	1.01%	1.53%	1.44%	1.52%
2017	0.51%	0.48%	0.50%	1.02%	0.95%	1.01%	1.52%	1.43%	1.51%
2018	0.51%	0.47%	0.50%	1.01%	0.95%	1.01%	1.52%	1.43%	1.51%
2019	0.50%	0.47%	0.50%	1.01%	0.95%	1.00%	1.51%	1.42%	1.50%
2020	0.50%	0.47%	0.49%	1.00%	0.94%	0.99%	1.49%	1.41%	1.49%
2021	0.49%	0.47%	0.49%	0.99%	0.93%	0.98%	1.49%	1.40%	1.48%
2022	0.49%	0.46%	0.49%	0.98%	0.92%	0.97%	1.47%	1.39%	1.46%
2023	0.48%	0.46%	0.48%	0.97%	0.91%	0.96%	1.46%	1.37%	1.45%
2024	0.48%	0.45%	0.48%	0.96%	0.91%	0.96%	1.45%	1.36%	1.44%
2025	0.47%	0.45%	0.47%	0.95%	0.89%	0.94%	1.42%	1.34%	1.42%
2026	0.47%	0.44%	0.47%	0.94%	0.89%	0.93%	1.41%	1.33%	1.40%
2027	0.46%	0.44%	0.46%	0.93%	0.88%	0.92%	1.39%	1.32%	1.39%
2028	0.46%	0.43%	0.46%	0.92%	0.86%	0.91%	1.38%	1.30%	1.37%
2029	0.45%	0.42%	0.45%	0.90%	0.85%	0.90%	1.36%	1.28%	1.35%
2030	0.44%	0.42%	0.44%	0.89%	0.84%	0.89%	1.34%	1.27%	1.33%
2031	0.44%	0.42%	0.44%	0.88%	0.83%	0.88%	1.33%	1.26%	1.32%
2032	0.44%	0.41%	0.43%	0.87%	0.82%	0.87%	1.31%	1.24%	1.31%
2033	0.43%	0.41%	0.43%	0.86%	0.82%	0.86%	1.30%	1.23%	1.29%
2034	0.43%	0.40%	0.42%	0.86%	0.81%	0.85%	1.29%	1.22%	1.28%


Zone 30-S Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 29.77%
Medium: 18.98%
Low: 9.08%
Low
Medium
High


Zone 30-S Annual Customer Growth
Customers
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.52%
Medium: 19.45%
Low: 9.30%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 30-W

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	68,397,741	21,225,799	89,623,539	69,153,837	21,225,799	90,379,636	69,909,934	21,225,799	91,135,733
2016	69,554,491	21,225,799	90,780,290	71,083,267	21,225,799	92,309,065	72,625,032	21,225,799	93,850,830
2017	69,900,761	21,225,799	91,126,560	72,198,517	21,225,799	93,424,315	74,535,243	21,225,799	95,761,042
2018	70,648,551	21,225,799	91,874,350	73,732,455	21,225,799	94,958,254	76,894,680	21,225,799	98,120,479
2019	71,393,005	21,225,799	92,618,803	75,272,181	21,225,799	96,497,980	79,282,463	21,225,799	100,508,262
2020	72,549,880	21,225,799	93,775,679	77,252,715	21,225,799	98,478,513	82,153,770	21,225,799	103,379,568
2021	72,869,820	21,225,799	94,095,618	78,363,929	21,225,799	99,589,728	84,135,326	21,225,799	105,361,125
2022	73,601,934	21,225,799	94,827,732	79,915,018	21,225,799	101,140,816	86,598,922	21,225,799	107,824,721
2023	74,328,553	21,225,799	95,554,352	81,466,529	21,225,799	102,692,328	89,082,383	21,225,799	110,308,181
2024	75,481,932	21,225,799	96,707,730	83,488,451	21,225,799	104,714,249	92,096,418	21,225,799	113,322,217
2025	75,767,962	21,225,799	96,993,761	84,575,475	21,225,799	105,801,273	94,115,927	21,225,799	115,341,726
2026	76,480,141	21,225,799	97,705,940	86,131,121	21,225,799	107,356,919	96,662,942	21,225,799	117,888,741
2027	77,186,491	21,225,799	98,412,289	87,685,442	21,225,799	108,911,240	99,226,512	21,225,799	120,452,311
2028	78,330,153	21,225,799	99,555,951	89,732,380	21,225,799	110,958,179	102,356,797	21,225,799	123,582,595
2029	78,581,224	21,225,799	99,807,022	90,787,909	21,225,799	112,013,707	104,398,889	21,225,799	125,624,688
2030	79,269,331	21,225,799	100,495,129	92,334,865	21,225,799	113,560,664	107,005,296	21,225,799	128,231,095
2031	79,953,630	21,225,799	101,179,429	93,883,934	21,225,799	115,109,732	109,633,290	21,225,799	130,859,088
2032	81,087,131	21,225,799	102,312,930	95,951,389	21,225,799	117,177,188	112,870,869	21,225,799	134,096,667
2033	81,306,395	21,225,799	102,532,194	96,977,577	21,225,799	118,203,376	114,935,249	21,225,799	136,161,047
2034	81,976,056	21,225,799	103,201,854	98,524,423	21,225,799	119,750,222	117,612,800	21,225,799	138,838,599

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.69%	0.00%	1.29%	2.79%	0.00%	2.13%	3.88%	0.00%	2.98%
2017	0.50%	0.00%	0.38%	1.57%	0.00%	1.21%	2.63%	0.00%	2.04%
2018	1.07%	0.00%	0.82%	2.12%	0.00%	1.64%	3.17%	0.00%	2.46%
2019	1.05%	0.00%	0.81%	2.09%	0.00%	1.62%	3.11%	0.00%	2.43%
2020	1.62%	0.00%	1.25%	2.63%	0.00%	2.05%	3.62%	0.00%	2.86%
2021	0.44%	0.00%	0.34%	1.44%	0.00%	1.13%	2.41%	0.00%	1.92%
2022	1.00%	0.00%	0.78%	1.98%	0.00%	1.56%	2.93%	0.00%	2.34%
2023	0.99%	0.00%	0.77%	1.94%	0.00%	1.53%	2.87%	0.00%	2.30%
2024	1.55%	0.00%	1.21%	2.48%	0.00%	1.97%	3.38%	0.00%	2.73%
2025	0.38%	0.00%	0.30%	1.30%	0.00%	1.04%	2.19%	0.00%	1.78%
2026	0.94%	0.00%	0.73%	1.84%	0.00%	1.47%	2.71%	0.00%	2.21%
2027	0.92%	0.00%	0.72%	1.80%	0.00%	1.45%	2.65%	0.00%	2.17%
2028	1.48%	0.00%	1.16%	2.33%	0.00%	1.88%	3.15%	0.00%	2.60%
2029	0.32%	0.00%	0.25%	1.18%	0.00%	0.95%	2.00%	0.00%	1.65%
2030	0.88%	0.00%	0.69%	1.70%	0.00%	1.38%	2.50%	0.00%	2.07%
2031	0.86%	0.00%	0.68%	1.68%	0.00%	1.36%	2.46%	0.00%	2.05%
2032	1.42%	0.00%	1.12%	2.20%	0.00%	1.80%	2.95%	0.00%	2.47%
2033	0.27%	0.00%	0.21%	1.07%	0.00%	0.88%	1.83%	0.00%	1.54%
2034	0.82%	0.00%	0.65%	1.60%	0.00%	1.31%	2.33%	0.00%	1.97%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	58,153	954,851	1,013,004	58,153	963,399	1,021,551	58,153	971,946	1,030,099
2016	58,153	963,363	1,021,516	58,153	980,568	1,038,721	58,153	997,920	1,056,073
2017	58,153	971,842	1,029,995	58,153	997,817	1,055,970	58,153	1,024,233	1,082,386
2018	58,153	980,295	1,038,448	58,153	1,015,158	1,073,310	58,153	1,050,905	1,109,058
2019	58,153	988,711	1,046,864	58,153	1,032,563	1,090,716	58,153	1,077,898	1,136,051
2020	58,153	997,073	1,055,226	58,153	1,050,000	1,108,153	58,153	1,105,159	1,163,312
2021	58,153	1,005,405	1,063,558	58,153	1,067,514	1,125,667	58,153	1,132,758	1,190,911
2022	58,153	1,013,682	1,071,834	58,153	1,085,048	1,143,201	58,153	1,160,608	1,218,761
2023	58,153	1,021,895	1,080,048	58,153	1,102,587	1,160,740	58,153	1,188,683	1,246,836
2024	58,153	1,030,071	1,088,224	58,153	1,120,179	1,178,332	58,153	1,217,058	1,275,210
2025	58,153	1,038,167	1,096,320	58,153	1,137,732	1,195,885	58,153	1,245,586	1,303,738
2026	58,153	1,046,218	1,104,370	58,153	1,155,318	1,213,471	58,153	1,274,379	1,332,532
2027	58,153	1,054,202	1,112,355	58,153	1,172,889	1,231,042	58,153	1,303,360	1,361,513
2028	58,153	1,062,125	1,120,278	58,153	1,190,449	1,248,602	58,153	1,332,533	1,390,686
2029	58,153	1,069,969	1,128,121	58,153	1,207,961	1,266,114	58,153	1,361,833	1,419,985
2030	58,153	1,077,747	1,135,900	58,153	1,225,448	1,283,601	58,153	1,391,298	1,449,450
2031	58,153	1,085,483	1,143,635	58,153	1,242,960	1,301,113	58,153	1,421,007	1,479,160
2032	58,153	1,093,151	1,151,304	58,153	1,260,440	1,318,593	58,153	1,450,865	1,509,018
2033	58,153	1,100,774	1,158,927	58,153	1,277,932	1,336,085	58,153	1,480,945	1,539,098
2034	58,153	1,108,344	1,166,497	58,153	1,295,419	1,353,571	58,153	1,511,215	1,569,368

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.89%	0.84%	0.00%	1.78%	1.68%	0.00%	2.67%	2.52%
2017	0.00%	0.88%	0.83%	0.00%	1.76%	1.66%	0.00%	2.64%	2.49%
2018	0.00%	0.87%	0.82%	0.00%	1.74%	1.64%	0.00%	2.60%	2.46%
2019	0.00%	0.86%	0.81%	0.00%	1.71%	1.62%	0.00%	2.57%	2.43%
2020	0.00%	0.85%	0.80%	0.00%	1.69%	1.60%	0.00%	2.53%	2.40%
2021	0.00%	0.84%	0.79%	0.00%	1.67%	1.58%	0.00%	2.50%	2.37%
2022	0.00%	0.82%	0.78%	0.00%	1.64%	1.56%	0.00%	2.46%	2.34%
2023	0.00%	0.81%	0.77%	0.00%	1.62%	1.53%	0.00%	2.42%	2.30%
2024	0.00%	0.80%	0.76%	0.00%	1.60%	1.52%	0.00%	2.39%	2.28%
2025	0.00%	0.79%	0.74%	0.00%	1.57%	1.49%	0.00%	2.34%	2.24%
2026	0.00%	0.78%	0.73%	0.00%	1.55%	1.47%	0.00%	2.31%	2.21%
2027	0.00%	0.76%	0.72%	0.00%	1.52%	1.45%	0.00%	2.27%	2.17%
2028	0.00%	0.75%	0.71%	0.00%	1.50%	1.43%	0.00%	2.24%	2.14%
2029	0.00%	0.74%	0.70%	0.00%	1.47%	1.40%	0.00%	2.20%	2.11%
2030	0.00%	0.73%	0.69%	0.00%	1.45%	1.38%	0.00%	2.16%	2.08%
2031	0.00%	0.72%	0.68%	0.00%	1.43%	1.36%	0.00%	2.14%	2.05%
2032	0.00%	0.71%	0.67%	0.00%	1.41%	1.34%	0.00%	2.10%	2.02%
2033	0.00%	0.70%	0.66%	0.00%	1.39%	1.33%	0.00%	2.07%	1.99%
2034	0.00%	0.69%	0.65%	0.00%	1.37%	1.31%	0.00%	2.04%	1.97%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	56,674,158	30,024,907	86,699,065	57,154,888	30,276,478	87,431,366	57,635,619	30,528,049	88,163,668
2016	57,413,161	30,406,961	87,820,122	58,385,268	30,915,541	89,300,809	59,365,677	31,428,415	90,794,092
2017	57,629,724	30,525,040	88,154,764	59,090,712	31,289,516	90,380,228	60,576,605	32,066,873	92,643,478
2018	58,105,107	30,773,891	88,878,998	60,065,989	31,799,899	91,865,887	62,076,922	32,851,794	94,928,716
2019	58,578,351	31,021,645	89,599,996	61,044,947	32,312,208	93,357,155	63,595,329	33,646,105	97,241,433
2020	59,317,518	31,403,665	90,721,183	62,308,154	32,968,011	95,276,164	65,425,476	34,597,865	100,023,341
2021	59,517,109	31,513,156	91,030,266	63,010,707	33,340,898	96,351,605	66,681,510	35,260,291	101,941,801
2022	59,982,469	31,756,830	91,739,299	63,996,920	33,856,967	97,853,886	68,248,349	36,079,669	104,328,018
2023	60,444,328	31,998,681	92,443,009	64,983,419	34,373,165	99,356,584	69,827,907	36,905,599	106,733,505
2024	61,181,375	32,379,450	93,560,825	66,273,304	35,042,455	101,315,759	71,749,636	37,904,225	109,653,861
2025	61,359,223	32,477,801	93,837,024	66,960,216	35,407,509	102,367,724	73,029,615	38,579,466	111,609,081
2026	61,811,873	32,714,865	94,526,738	67,949,379	35,925,057	103,874,436	74,649,817	39,426,380	114,076,197
2027	62,260,816	32,949,991	95,210,807	68,937,727	36,442,148	105,379,875	76,280,647	40,278,736	116,559,383
2028	62,991,816	33,327,421	96,319,237	70,243,935	37,119,442	107,363,378	78,277,216	41,315,352	119,592,568
2029	63,147,266	33,414,272	96,561,538	70,910,557	37,474,233	108,384,790	79,571,338	41,998,315	121,569,653
2030	63,584,601	33,643,334	97,227,935	71,894,285	37,988,831	109,883,116	81,229,676	42,864,740	124,094,416
2031	64,019,508	33,871,133	97,890,642	72,879,367	38,504,124	111,383,491	82,901,816	43,738,294	126,640,110
2032	64,744,179	34,245,078	98,989,257	74,199,030	39,187,931	113,386,961	84,967,534	44,809,916	129,777,451
2033	64,879,244	34,321,472	99,200,716	74,846,724	39,533,181	114,379,905	86,275,574	45,500,531	131,776,105
2034	65,304,830	34,544,410	99,849,240	75,830,437	40,047,705	115,878,142	87,979,464	46,390,413	134,369,877

Annual Change

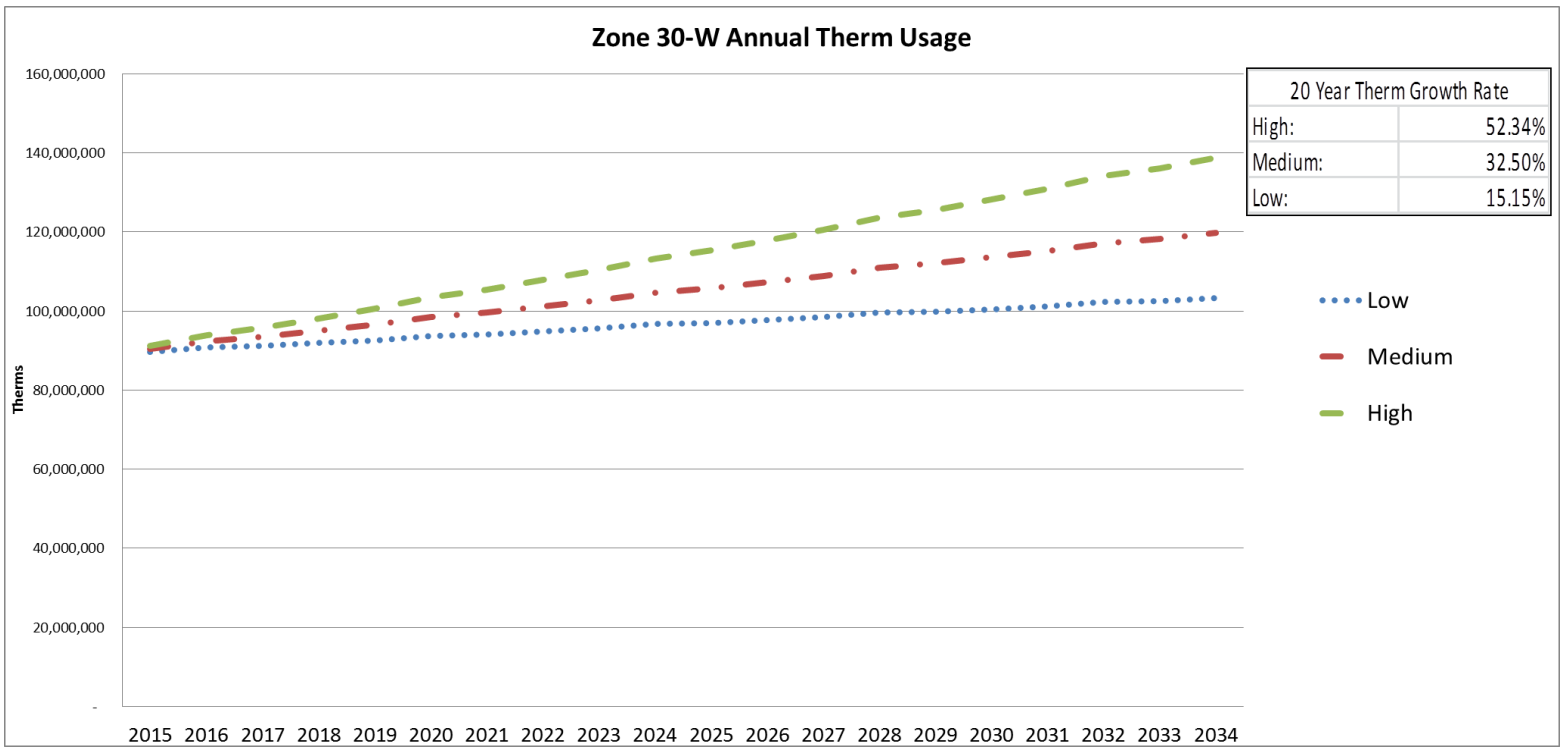
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.30%	1.27%	1.29%	2.15%	2.11%	2.14%	3.00%	2.95%	2.98%
2017	0.38%	0.39%	0.38%	1.21%	1.21%	1.21%	2.04%	2.03%	2.04%
2018	0.82%	0.82%	0.82%	1.65%	1.63%	1.64%	2.48%	2.45%	2.47%
2019	0.81%	0.81%	0.81%	1.63%	1.61%	1.62%	2.45%	2.42%	2.44%
2020	1.26%	1.23%	1.25%	2.07%	2.03%	2.06%	2.88%	2.83%	2.86%
2021	0.34%	0.35%	0.34%	1.13%	1.13%	1.13%	1.92%	1.91%	1.92%
2022	0.78%	0.77%	0.78%	1.57%	1.55%	1.56%	2.35%	2.32%	2.34%
2023	0.77%	0.76%	0.77%	1.54%	1.52%	1.54%	2.31%	2.29%	2.31%
2024	1.22%	1.19%	1.21%	1.98%	1.95%	1.97%	2.75%	2.71%	2.74%
2025	0.29%	0.30%	0.30%	1.04%	1.04%	1.04%	1.78%	1.78%	1.78%
2026	0.74%	0.73%	0.74%	1.48%	1.46%	1.47%	2.22%	2.20%	2.21%
2027	0.73%	0.72%	0.72%	1.45%	1.44%	1.45%	2.18%	2.16%	2.18%
2028	1.17%	1.15%	1.16%	1.89%	1.86%	1.88%	2.62%	2.57%	2.60%
2029	0.25%	0.26%	0.25%	0.95%	0.96%	0.95%	1.65%	1.65%	1.65%
2030	0.69%	0.69%	0.69%	1.39%	1.37%	1.38%	2.08%	2.06%	2.08%
2031	0.68%	0.68%	0.68%	1.37%	1.36%	1.37%	2.06%	2.04%	2.05%
2032	1.13%	1.10%	1.12%	1.81%	1.78%	1.80%	2.49%	2.45%	2.48%
2033	0.21%	0.22%	0.21%	0.87%	0.88%	0.88%	1.54%	1.54%	1.54%
2034	0.66%	0.65%	0.65%	1.31%	1.30%	1.31%	1.97%	1.96%	1.97%

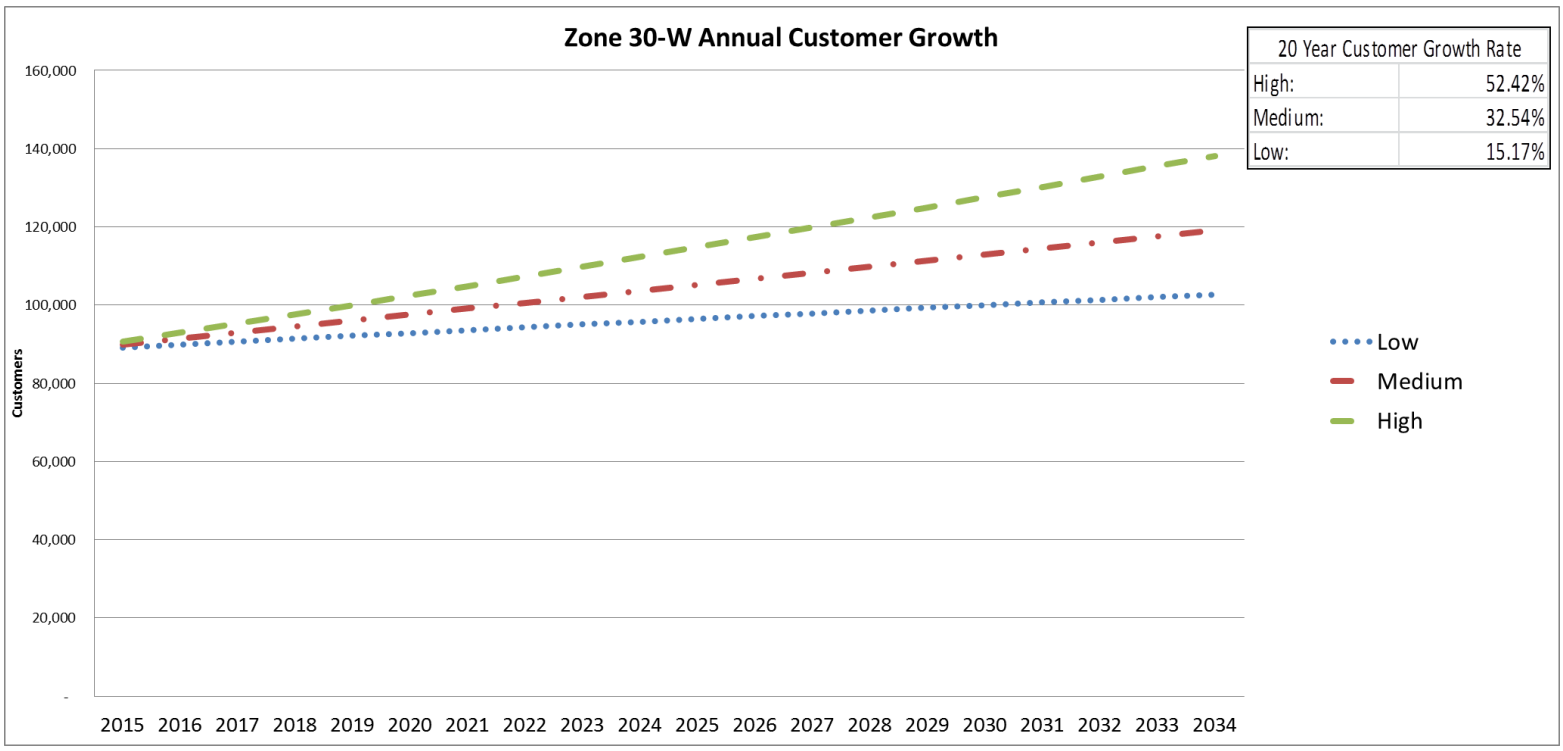
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	79,379	9,786	89,164	80,050	9,868	89,918	80,721	9,950	90,671
2016	80,047	9,868	89,915	81,398	10,033	91,431	82,760	10,200	92,960
2017	80,712	9,949	90,662	82,752	10,199	92,951	84,825	10,453	95,279
2018	81,376	10,031	91,407	84,113	10,366	94,479	86,920	10,710	97,629
2019	82,037	10,112	92,148	85,479	10,533	96,013	89,039	10,970	100,008
2020	82,693	10,192	92,885	86,848	10,701	97,550	91,179	11,232	102,411
2021	83,347	10,272	93,619	88,223	10,870	99,093	93,346	11,497	104,843
2022	83,997	10,352	94,349	89,600	11,038	100,638	95,532	11,765	107,298
2023	84,642	10,431	95,073	90,977	11,207	102,184	97,737	12,035	109,772
2024	85,283	10,510	95,793	92,358	11,376	103,734	99,965	12,308	112,273
2025	85,919	10,588	96,506	93,736	11,545	105,281	102,204	12,582	114,787
2026	86,551	10,665	97,216	95,116	11,714	106,831	104,465	12,859	117,325
2027	87,178	10,742	97,919	96,496	11,883	108,379	106,741	13,138	119,879
2028	87,799	10,818	98,617	97,874	12,052	109,927	109,032	13,419	122,450
2029	88,415	10,894	99,309	99,249	12,221	111,470	111,332	13,700	125,032
2030	89,026	10,968	99,994	100,622	12,389	113,011	113,646	13,984	127,630
2031	89,633	11,043	100,676	101,997	12,557	114,555	115,979	14,269	130,248
2032	90,235	11,117	101,352	103,369	12,726	116,095	118,323	14,556	132,880
2033	90,833	11,190	102,023	104,743	12,894	117,637	120,686	14,846	135,531
2034	91,427	11,263	102,690	106,116	13,062	119,178	123,063	15,137	138,199

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.84%	0.84%	0.84%	1.68%	1.67%	1.68%	2.53%	2.51%	2.52%
2017	0.83%	0.83%	0.83%	1.66%	1.65%	1.66%	2.50%	2.48%	2.49%
2018	0.82%	0.82%	0.82%	1.65%	1.64%	1.64%	2.47%	2.45%	2.47%
2019	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.44%	2.42%	2.44%
2020	0.80%	0.80%	0.80%	1.60%	1.59%	1.60%	2.40%	2.39%	2.40%
2021	0.79%	0.79%	0.79%	1.58%	1.57%	1.58%	2.38%	2.36%	2.38%
2022	0.78%	0.78%	0.78%	1.56%	1.55%	1.56%	2.34%	2.33%	2.34%
2023	0.77%	0.76%	0.77%	1.54%	1.53%	1.54%	2.31%	2.30%	2.31%
2024	0.76%	0.75%	0.76%	1.52%	1.51%	1.52%	2.28%	2.27%	2.28%
2025	0.75%	0.74%	0.74%	1.49%	1.48%	1.49%	2.24%	2.23%	2.24%
2026	0.74%	0.73%	0.74%	1.47%	1.47%	1.47%	2.21%	2.20%	2.21%
2027	0.72%	0.72%	0.72%	1.45%	1.44%	1.45%	2.18%	2.17%	2.18%
2028	0.71%	0.71%	0.71%	1.43%	1.42%	1.43%	2.15%	2.14%	2.14%
2029	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.11%	2.10%	2.11%
2030	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.08%	2.07%	2.08%
2031	0.68%	0.68%	0.68%	1.37%	1.36%	1.37%	2.05%	2.04%	2.05%
2032	0.67%	0.67%	0.67%	1.35%	1.34%	1.34%	2.02%	2.01%	2.02%
2033	0.66%	0.66%	0.66%	1.33%	1.32%	1.33%	2.00%	1.99%	2.00%
2034	0.65%	0.65%	0.65%	1.31%	1.30%	1.31%	1.97%	1.96%	1.97%


Zone 30-W Annual Therm Usage
Therms
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 52.34%
Medium: 32.50%
Low: 15.15%
Low
Medium
High


Zone 30-W Annual Customer Growth
Customers
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 52.42%
Medium: 32.54%
Low: 15.17%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone GTN

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	39,629,090	10,345,659	49,974,749	40,139,670	10,345,659	50,485,329	40,650,250	10,345,659	50,995,909
2016	40,359,771	10,345,659	50,705,430	41,391,944	10,345,659	51,737,603	42,435,355	10,345,659	52,781,014
2017	40,636,543	10,345,659	50,982,202	42,187,821	10,345,659	52,533,480	43,772,712	10,345,659	54,118,371
2018	41,134,263	10,345,659	51,479,922	43,215,910	10,345,659	53,561,569	45,364,896	10,345,659	55,710,555
2019	41,627,835	10,345,659	51,973,494	44,245,994	10,345,659	54,591,653	46,976,553	10,345,659	57,322,212
2020	42,349,964	10,345,659	52,695,623	45,523,500	10,345,659	55,869,159	48,866,502	10,345,659	59,212,161
2021	42,601,446	10,345,659	52,947,104	46,308,714	10,345,659	56,654,373	50,252,442	10,345,659	60,598,101
2022	43,081,593	10,345,659	53,427,251	47,340,983	10,345,659	57,686,642	51,915,809	10,345,659	62,261,468
2023	43,556,872	10,345,659	53,902,531	48,372,554	10,345,659	58,718,213	53,593,831	10,345,659	63,939,490
2024	44,270,364	10,345,659	54,616,022	49,671,186	10,345,659	60,016,845	55,581,297	10,345,659	65,926,956
2025	44,494,345	10,345,659	54,840,004	50,435,680	10,345,659	60,781,339	56,996,457	10,345,659	67,342,116
2026	44,956,284	10,345,659	55,301,943	51,466,140	10,345,659	61,811,799	58,718,958	10,345,659	69,064,616
2027	45,413,383	10,345,659	55,759,042	52,494,807	10,345,659	62,840,466	60,453,571	10,345,659	70,799,230
2028	46,116,182	10,345,659	56,461,841	53,806,236	10,345,659	64,151,894	62,523,344	10,345,659	72,869,003
2029	46,313,305	10,345,659	56,658,964	54,546,140	10,345,659	64,891,799	63,957,182	10,345,659	74,302,841
2030	46,756,101	10,345,659	57,101,760	55,568,192	10,345,659	65,913,851	65,724,700	10,345,659	76,070,359
2031	47,195,344	10,345,659	57,541,003	56,590,296	10,345,659	66,935,954	67,506,657	10,345,659	77,852,316
2032	47,888,125	10,345,659	58,233,783	57,912,291	10,345,659	68,257,950	69,652,752	10,345,659	79,998,410
2033	48,061,390	10,345,659	58,407,049	58,629,679	10,345,659	68,975,338	71,104,673	10,345,659	81,450,332
2034	48,488,823	10,345,659	58,834,482	59,647,958	10,345,659	69,993,617	72,922,098	10,345,659	83,267,757

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.84%	0.00%	1.46%	3.12%	0.00%	2.48%	4.39%	0.00%	3.50%
2017	0.69%	0.00%	0.55%	1.92%	0.00%	1.54%	3.15%	0.00%	2.53%
2018	1.22%	0.00%	0.98%	2.44%	0.00%	1.96%	3.64%	0.00%	2.94%
2019	1.20%	0.00%	0.96%	2.38%	0.00%	1.92%	3.55%	0.00%	2.89%
2020	1.73%	0.00%	1.39%	2.89%	0.00%	2.34%	4.02%	0.00%	3.30%
2021	0.59%	0.00%	0.48%	1.72%	0.00%	1.41%	2.84%	0.00%	2.34%
2022	1.13%	0.00%	0.91%	2.23%	0.00%	1.82%	3.31%	0.00%	2.74%
2023	1.10%	0.00%	0.89%	2.18%	0.00%	1.79%	3.23%	0.00%	2.70%
2024	1.64%	0.00%	1.32%	2.68%	0.00%	2.21%	3.71%	0.00%	3.11%
2025	0.51%	0.00%	0.41%	1.54%	0.00%	1.27%	2.55%	0.00%	2.15%
2026	1.04%	0.00%	0.84%	2.04%	0.00%	1.70%	3.02%	0.00%	2.56%
2027	1.02%	0.00%	0.83%	2.00%	0.00%	1.66%	2.95%	0.00%	2.51%
2028	1.55%	0.00%	1.26%	2.50%	0.00%	2.09%	3.42%	0.00%	2.92%
2029	0.43%	0.00%	0.35%	1.38%	0.00%	1.15%	2.29%	0.00%	1.97%
2030	0.96%	0.00%	0.78%	1.87%	0.00%	1.58%	2.76%	0.00%	2.38%
2031	0.94%	0.00%	0.77%	1.84%	0.00%	1.55%	2.71%	0.00%	2.34%
2032	1.47%	0.00%	1.20%	2.34%	0.00%	1.98%	3.18%	0.00%	2.76%
2033	0.36%	0.00%	0.30%	1.24%	0.00%	1.05%	2.08%	0.00%	1.81%
2034	0.89%	0.00%	0.73%	1.74%	0.00%	1.48%	2.56%	0.00%	2.23%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	28,344	584,217	612,561	28,344	590,417	618,761	28,344	596,617	624,961
2016	28,344	590,360	618,704	28,344	602,839	631,184	28,344	615,454	643,798
2017	28,344	596,453	624,797	28,344	615,292	643,636	28,344	634,538	662,882
2018	28,344	602,499	630,843	28,344	627,779	656,124	28,344	653,876	682,220
2019	28,344	608,495	636,839	28,344	640,292	668,636	28,344	673,451	701,796
2020	28,344	614,430	642,774	28,344	652,803	681,147	28,344	693,221	721,565
2021	28,344	620,324	648,669	28,344	665,351	693,695	28,344	713,243	741,587
2022	28,344	626,159	654,503	28,344	677,892	706,236	28,344	733,448	761,792
2023	28,344	631,934	660,279	28,344	690,425	718,769	28,344	753,831	782,175
2024	28,344	637,663	666,007	28,344	702,972	731,317	28,344	774,426	802,771
2025	28,344	643,328	671,672	28,344	715,492	743,837	28,344	795,164	823,509
2026	28,344	648,942	677,286	28,344	728,013	756,358	28,344	816,089	844,433
2027	28,344	654,498	682,842	28,344	740,512	768,857	28,344	837,160	865,504
2028	28,344	659,999	688,343	28,344	752,995	781,339	28,344	858,383	886,727
2029	28,344	665,437	693,781	28,344	765,439	793,783	28,344	879,720	908,064
2030	28,344	670,820	699,164	28,344	777,858	806,202	28,344	901,191	929,535
2031	28,344	676,159	704,504	28,344	790,279	818,623	28,344	922,837	951,181
2032	28,344	681,444	709,788	28,344	802,670	831,014	28,344	944,605	972,949
2033	28,344	686,688	715,032	28,344	815,061	843,406	28,344	966,544	994,888
2034	28,344	691,885	720,229	28,344	827,436	855,780	28,344	988,621	1,016,965

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.05%	1.00%	0.00%	2.10%	2.01%	0.00%	3.16%	3.01%
2017	0.00%	1.03%	0.98%	0.00%	2.07%	1.97%	0.00%	3.10%	2.96%
2018	0.00%	1.01%	0.97%	0.00%	2.03%	1.94%	0.00%	3.05%	2.92%
2019	0.00%	1.00%	0.95%	0.00%	1.99%	1.91%	0.00%	2.99%	2.87%
2020	0.00%	0.98%	0.93%	0.00%	1.95%	1.87%	0.00%	2.94%	2.82%
2021	0.00%	0.96%	0.92%	0.00%	1.92%	1.84%	0.00%	2.89%	2.77%
2022	0.00%	0.94%	0.90%	0.00%	1.88%	1.81%	0.00%	2.83%	2.72%
2023	0.00%	0.92%	0.88%	0.00%	1.85%	1.77%	0.00%	2.78%	2.68%
2024	0.00%	0.91%	0.87%	0.00%	1.82%	1.75%	0.00%	2.73%	2.63%
2025	0.00%	0.89%	0.85%	0.00%	1.78%	1.71%	0.00%	2.68%	2.58%
2026	0.00%	0.87%	0.84%	0.00%	1.75%	1.68%	0.00%	2.63%	2.54%
2027	0.00%	0.86%	0.82%	0.00%	1.72%	1.65%	0.00%	2.58%	2.50%
2028	0.00%	0.84%	0.81%	0.00%	1.69%	1.62%	0.00%	2.54%	2.45%
2029	0.00%	0.82%	0.79%	0.00%	1.65%	1.59%	0.00%	2.49%	2.41%
2030	0.00%	0.81%	0.78%	0.00%	1.62%	1.56%	0.00%	2.44%	2.36%
2031	0.00%	0.80%	0.76%	0.00%	1.60%	1.54%	0.00%	2.40%	2.33%
2032	0.00%	0.78%	0.75%	0.00%	1.57%	1.51%	0.00%	2.36%	2.29%
2033	0.00%	0.77%	0.74%	0.00%	1.54%	1.49%	0.00%	2.32%	2.25%
2034	0.00%	0.76%	0.73%	0.00%	1.52%	1.47%	0.00%	2.28%	2.22%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	29,254,809	19,793,020	49,047,829	29,567,843	19,984,220	49,552,063	29,880,877	20,175,419	50,056,296
2016	29,698,992	20,070,050	49,769,042	30,331,748	20,456,630	50,788,378	30,971,463	20,847,364	51,818,827
2017	29,871,945	20,170,697	50,042,642	30,822,696	20,751,868	51,574,564	31,794,257	21,345,467	53,139,724
2018	30,176,597	20,357,470	50,534,066	31,452,207	21,137,489	52,589,696	32,769,502	21,942,411	54,711,913
2019	30,478,568	20,542,796	51,021,364	32,082,723	21,524,029	53,606,751	33,756,451	22,546,832	56,303,283
2020	30,917,052	20,816,997	51,734,049	32,861,429	22,006,444	54,867,873	34,910,704	23,258,569	58,169,273
2021	31,073,873	20,908,648	51,982,521	33,344,790	22,298,477	55,643,268	35,762,049	23,775,781	59,537,830
2022	31,367,290	21,089,200	52,456,490	33,976,143	22,686,228	56,662,371	36,780,199	24,399,958	61,180,157
2023	31,657,656	21,267,982	52,925,638	34,606,979	23,073,787	57,680,766	37,807,282	25,029,665	62,836,947
2024	32,090,530	21,539,209	53,629,739	35,398,209	23,564,481	58,962,690	39,021,038	25,778,192	64,799,231
2025	32,230,088	21,620,863	53,850,951	35,868,199	23,849,246	59,717,445	39,889,564	26,306,869	66,196,433
2026	32,512,053	21,794,823	54,306,876	36,498,021	24,236,652	60,734,674	40,943,638	26,953,455	67,897,094
2027	32,791,001	21,967,011	54,758,011	37,126,676	24,623,440	61,750,116	42,005,105	27,604,603	69,609,707
2028	33,217,178	22,234,360	55,451,538	37,925,637	25,119,051	63,044,689	43,269,491	28,383,884	71,653,375
2029	33,339,991	22,306,159	55,646,150	38,380,087	25,394,941	63,775,029	44,148,985	28,919,884	73,068,869
2030	33,610,030	22,473,099	56,083,130	39,004,491	25,779,406	64,783,897	45,230,523	29,583,437	74,813,960
2031	33,877,845	22,638,747	56,516,592	39,628,860	26,163,947	65,792,806	46,320,873	30,252,436	76,573,310
2032	34,297,794	22,902,427	57,200,221	40,434,274	26,663,571	67,097,846	47,632,334	31,060,141	78,692,475
2033	34,405,732	22,965,473	57,371,205	40,874,474	26,931,348	67,805,822	48,522,410	31,603,259	80,125,669
2034	34,666,166	23,126,807	57,792,973	41,496,279	27,314,627	68,810,906	49,634,345	32,285,668	81,920,013

Annual Change

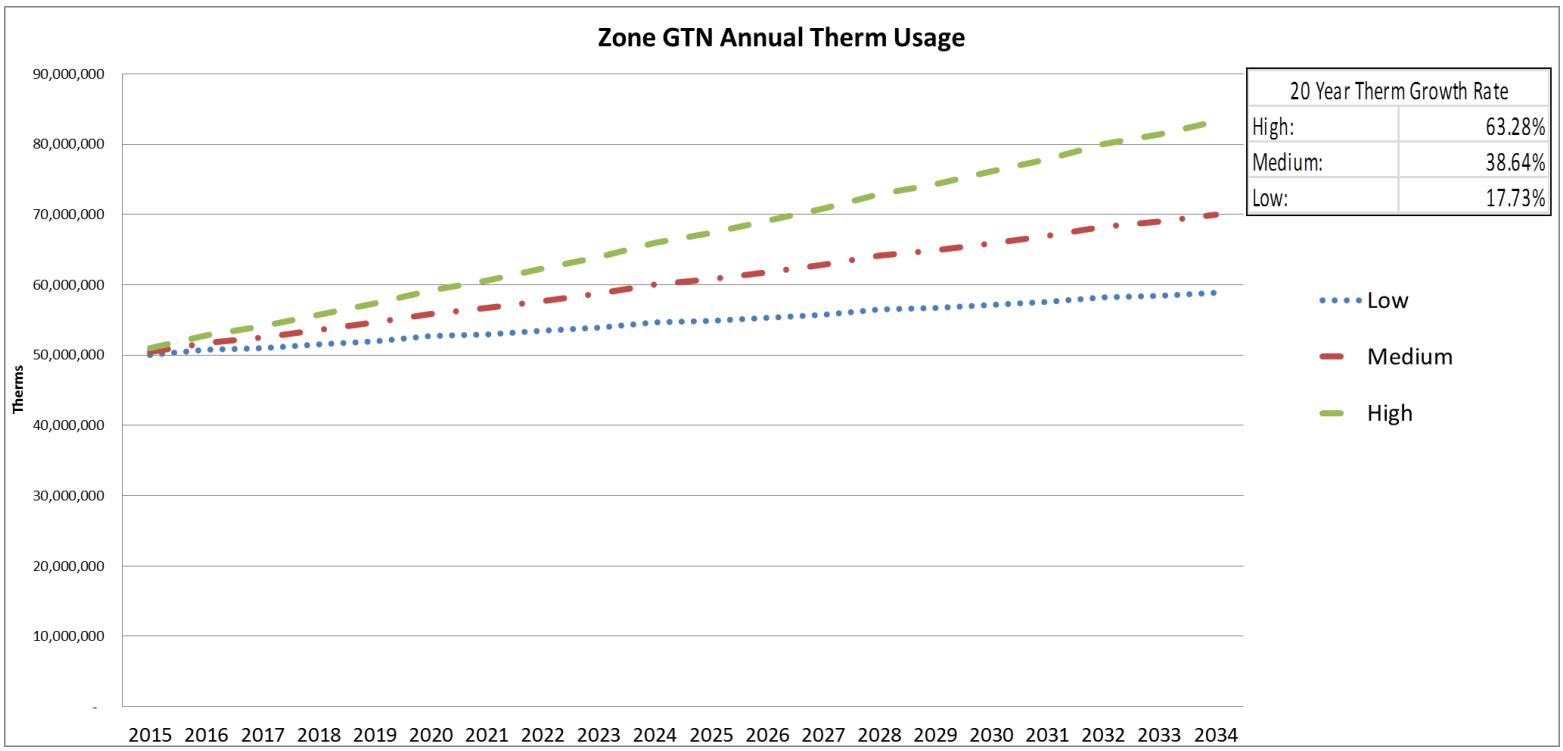
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.52%	1.40%	1.47%	2.58%	2.36%	2.49%	3.65%	3.33%	3.52%
2017	0.58%	0.50%	0.55%	1.62%	1.44%	1.55%	2.66%	2.39%	2.55%
2018	1.02%	0.93%	0.98%	2.04%	1.86%	1.97%	3.07%	2.80%	2.96%
2019	1.00%	0.91%	0.96%	2.00%	1.83%	1.93%	3.01%	2.75%	2.91%
2020	1.44%	1.33%	1.40%	2.43%	2.24%	2.35%	3.42%	3.16%	3.31%
2021	0.51%	0.44%	0.48%	1.47%	1.33%	1.41%	2.44%	2.22%	2.35%
2022	0.94%	0.86%	0.91%	1.89%	1.74%	1.83%	2.85%	2.63%	2.76%
2023	0.93%	0.85%	0.89%	1.86%	1.71%	1.80%	2.79%	2.58%	2.71%
2024	1.37%	1.28%	1.33%	2.29%	2.13%	2.22%	3.21%	2.99%	3.12%
2025	0.43%	0.38%	0.41%	1.33%	1.21%	1.28%	2.23%	2.05%	2.16%
2026	0.87%	0.80%	0.85%	1.76%	1.62%	1.70%	2.64%	2.46%	2.57%
2027	0.86%	0.79%	0.83%	1.72%	1.60%	1.67%	2.59%	2.42%	2.52%
2028	1.30%	1.22%	1.27%	2.15%	2.01%	2.10%	3.01%	2.82%	2.94%
2029	0.37%	0.32%	0.35%	1.20%	1.10%	1.16%	2.03%	1.89%	1.98%
2030	0.81%	0.75%	0.79%	1.63%	1.51%	1.58%	2.45%	2.29%	2.39%
2031	0.80%	0.74%	0.77%	1.60%	1.49%	1.56%	2.41%	2.26%	2.35%
2032	1.24%	1.16%	1.21%	2.03%	1.91%	1.98%	2.83%	2.67%	2.77%
2033	0.31%	0.28%	0.30%	1.09%	1.00%	1.06%	1.87%	1.75%	1.82%
2034	0.76%	0.70%	0.74%	1.52%	1.42%	1.48%	2.29%	2.16%	2.24%

Customer Count Forecast

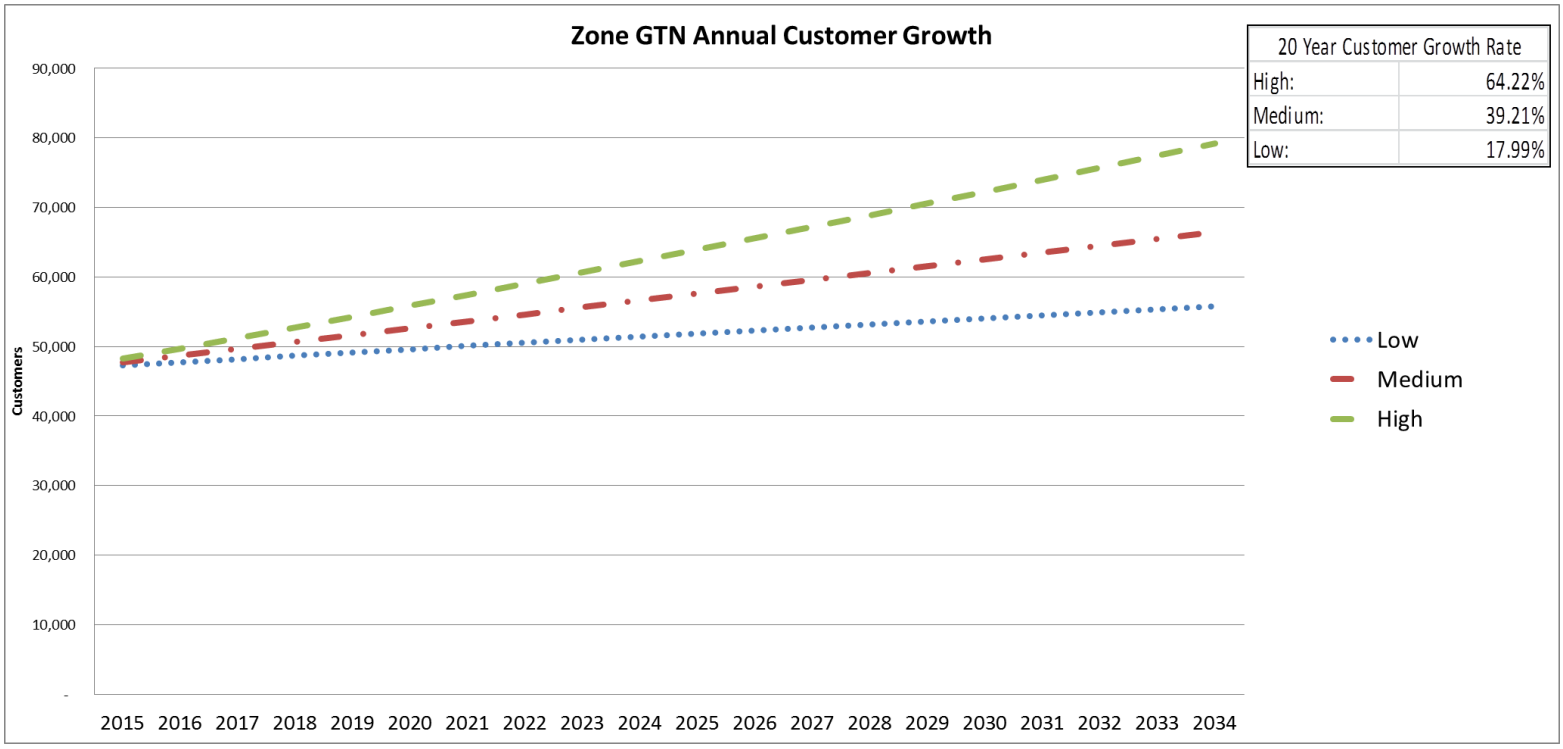
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	40,704	6,541	47,246	41,130	6,606	47,736	41,555	6,671	48,226
2016	41,126	6,606	47,731	41,982	6,736	48,718	42,847	6,869	49,716
2017	41,544	6,669	48,213	42,836	6,867	49,703	44,156	7,069	51,225
2018	41,958	6,733	48,691	43,692	6,998	50,690	45,482	7,271	52,753
2019	42,369	6,796	49,164	44,549	7,129	51,678	46,824	7,476	54,300
2020	42,775	6,858	49,633	45,407	7,260	52,667	48,179	7,684	55,863
2021	43,179	6,920	50,099	46,266	7,392	53,658	49,551	7,894	57,445
2022	43,578	6,981	50,559	47,125	7,523	54,648	50,936	8,105	59,041
2023	43,973	7,042	51,015	47,983	7,655	55,638	52,333	8,319	60,652
2024	44,365	7,102	51,467	48,843	7,786	56,629	53,744	8,535	62,279
2025	44,753	7,161	51,914	49,700	7,918	57,617	55,165	8,753	63,917
2026	45,137	7,220	52,357	50,557	8,049	58,606	56,598	8,972	65,570
2027	45,517	7,279	52,795	51,412	8,180	59,593	58,042	9,193	67,235
2028	45,893	7,336	53,229	52,267	8,311	60,578	59,496	9,415	68,912
2029	46,265	7,393	53,658	53,118	8,442	61,560	60,958	9,639	70,597
2030	46,633	7,450	54,082	53,968	8,572	62,540	62,429	9,864	72,293
2031	46,997	7,506	54,503	54,818	8,702	63,521	63,912	10,091	74,003
2032	47,359	7,562	54,920	55,666	8,833	64,499	65,403	10,320	75,723
2033	47,717	7,617	55,333	56,514	8,963	65,477	66,906	10,550	77,456
2034	48,072	7,671	55,743	57,360	9,092	66,453	68,418	10,781	79,199

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.98%	1.03%	2.07%	1.97%	2.06%	3.11%	2.96%	3.09%
2017	1.02%	0.97%	1.01%	2.03%	1.94%	2.02%	3.05%	2.91%	3.03%
2018	1.00%	0.95%	0.99%	2.00%	1.91%	1.99%	3.00%	2.87%	2.98%
2019	0.98%	0.93%	0.97%	1.96%	1.87%	1.95%	2.95%	2.82%	2.93%
2020	0.96%	0.92%	0.95%	1.92%	1.84%	1.91%	2.89%	2.77%	2.88%
2021	0.94%	0.90%	0.94%	1.89%	1.81%	1.88%	2.85%	2.73%	2.83%
2022	0.92%	0.88%	0.92%	1.86%	1.78%	1.85%	2.79%	2.68%	2.78%
2023	0.91%	0.87%	0.90%	1.82%	1.75%	1.81%	2.74%	2.64%	2.73%
2024	0.89%	0.85%	0.89%	1.79%	1.72%	1.78%	2.70%	2.60%	2.68%
2025	0.87%	0.84%	0.87%	1.75%	1.69%	1.75%	2.64%	2.55%	2.63%
2026	0.86%	0.82%	0.85%	1.72%	1.66%	1.72%	2.60%	2.51%	2.59%
2027	0.84%	0.81%	0.84%	1.69%	1.63%	1.68%	2.55%	2.46%	2.54%
2028	0.83%	0.79%	0.82%	1.66%	1.60%	1.65%	2.51%	2.42%	2.49%
2029	0.81%	0.78%	0.81%	1.63%	1.57%	1.62%	2.46%	2.38%	2.45%
2030	0.80%	0.76%	0.79%	1.60%	1.54%	1.59%	2.41%	2.34%	2.40%
2031	0.78%	0.75%	0.78%	1.57%	1.52%	1.57%	2.38%	2.30%	2.37%
2032	0.77%	0.74%	0.76%	1.55%	1.49%	1.54%	2.33%	2.26%	2.32%
2033	0.76%	0.73%	0.75%	1.52%	1.47%	1.52%	2.30%	2.23%	2.29%
2034	0.74%	0.72%	0.74%	1.50%	1.45%	1.49%	2.26%	2.19%	2.25%



20 Year Therm Growth Rate	
High:	63.28%
Medium:	38.64%
Low:	17.73%



20 Year Customer Growth Rate	
High:	64.22%
Medium:	39.21%
Low:	17.99%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone ME-OR

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,982,723	3,708,055	12,690,779	9,020,775	3,708,055	12,728,830	9,058,826	3,708,055	12,766,881
2016	9,081,027	3,708,055	12,789,083	9,158,004	3,708,055	12,866,059	9,235,212	3,708,055	12,943,267
2017	9,059,832	3,708,055	12,767,888	9,175,689	3,708,055	12,883,744	9,292,245	3,708,055	13,000,300
2018	9,098,884	3,708,055	12,806,939	9,254,501	3,708,055	12,962,556	9,411,531	3,708,055	13,119,587
2019	9,138,288	3,708,055	12,846,344	9,334,268	3,708,055	13,042,323	9,532,632	3,708,055	13,240,687
2020	9,238,278	3,708,055	12,946,333	9,475,853	3,708,055	13,183,909	9,717,051	3,708,055	13,425,106
2021	9,217,126	3,708,055	12,925,182	9,494,594	3,708,055	13,202,649	9,777,152	3,708,055	13,485,207
2022	9,256,715	3,708,055	12,964,771	9,575,472	3,708,055	13,283,527	9,901,065	3,708,055	13,609,120
2023	9,296,105	3,708,055	13,004,160	9,656,188	3,708,055	13,364,243	10,025,107	3,708,055	13,733,162
2024	9,397,059	3,708,055	13,105,114	9,800,725	3,708,055	13,508,780	10,215,547	3,708,055	13,923,602
2025	9,374,757	3,708,055	13,082,812	9,818,092	3,708,055	13,526,147	10,275,042	3,708,055	13,983,098
2026	9,413,789	3,708,055	13,121,844	9,898,800	3,708,055	13,606,856	10,400,195	3,708,055	14,108,250
2027	9,452,703	3,708,055	13,160,759	9,979,506	3,708,055	13,687,562	10,525,715	3,708,055	14,233,770
2028	9,553,533	3,708,055	13,261,589	10,124,754	3,708,055	13,832,809	10,718,751	3,708,055	14,426,807
2029	9,529,573	3,708,055	13,237,629	10,139,633	3,708,055	13,847,688	10,775,853	3,708,055	14,483,908
2030	9,567,534	3,708,055	13,275,589	10,219,053	3,708,055	13,927,109	10,900,457	3,708,055	14,608,512
2031	9,605,461	3,708,055	13,313,517	10,298,631	3,708,055	14,006,686	11,025,663	3,708,055	14,733,718
2032	9,706,104	3,708,055	13,414,159	10,444,408	3,708,055	14,152,463	11,220,972	3,708,055	14,929,027
2033	9,680,762	3,708,055	13,388,818	10,457,297	3,708,055	14,165,353	11,276,369	3,708,055	14,984,425
2034	9,718,139	3,708,055	13,426,195	10,536,387	3,708,055	14,244,442	11,401,863	3,708,055	15,109,919

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.09%	0.00%	0.77%	1.52%	0.00%	1.08%	1.95%	0.00%	1.38%
2017	-0.23%	0.00%	-0.17%	0.19%	0.00%	0.14%	0.62%	0.00%	0.44%
2018	0.43%	0.00%	0.31%	0.86%	0.00%	0.61%	1.28%	0.00%	0.92%
2019	0.43%	0.00%	0.31%	0.86%	0.00%	0.62%	1.29%	0.00%	0.92%
2020	1.09%	0.00%	0.78%	1.52%	0.00%	1.09%	1.93%	0.00%	1.39%
2021	-0.23%	0.00%	-0.16%	0.20%	0.00%	0.14%	0.62%	0.00%	0.45%
2022	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2023	0.43%	0.00%	0.30%	0.84%	0.00%	0.61%	1.25%	0.00%	0.91%
2024	1.09%	0.00%	0.78%	1.50%	0.00%	1.08%	1.90%	0.00%	1.39%
2025	-0.24%	0.00%	-0.17%	0.18%	0.00%	0.13%	0.58%	0.00%	0.43%
2026	0.42%	0.00%	0.30%	0.82%	0.00%	0.60%	1.22%	0.00%	0.90%
2027	0.41%	0.00%	0.30%	0.82%	0.00%	0.59%	1.21%	0.00%	0.89%
2028	1.07%	0.00%	0.77%	1.46%	0.00%	1.06%	1.83%	0.00%	1.36%
2029	-0.25%	0.00%	-0.18%	0.15%	0.00%	0.11%	0.53%	0.00%	0.40%
2030	0.40%	0.00%	0.29%	0.78%	0.00%	0.57%	1.16%	0.00%	0.86%
2031	0.40%	0.00%	0.29%	0.78%	0.00%	0.57%	1.15%	0.00%	0.86%
2032	1.05%	0.00%	0.76%	1.42%	0.00%	1.04%	1.77%	0.00%	1.33%
2033	-0.26%	0.00%	-0.19%	0.12%	0.00%	0.09%	0.49%	0.00%	0.37%
2034	0.39%	0.00%	0.28%	0.76%	0.00%	0.56%	1.11%	0.00%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	10,159	159,123	169,282	10,159	159,630	169,789	10,159	160,138	170,297
2016	10,159	159,634	169,793	10,159	160,656	170,815	10,159	161,681	171,840
2017	10,159	160,151	170,310	10,159	161,697	171,856	10,159	163,251	173,410
2018	10,159	160,672	170,831	10,159	162,748	172,907	10,159	164,842	175,001
2019	10,159	161,198	171,357	10,159	163,812	173,971	10,159	166,458	176,617
2020	10,159	161,722	171,881	10,159	164,876	175,035	10,159	168,078	178,237
2021	10,159	162,249	172,408	10,159	165,950	176,109	10,159	169,719	179,878
2022	10,159	162,777	172,936	10,159	167,029	177,188	10,159	171,372	181,531
2023	10,159	163,303	173,462	10,159	168,106	178,265	10,159	173,027	183,186
2024	10,159	163,830	173,989	10,159	169,189	179,348	10,159	174,696	184,855
2025	10,159	164,352	174,511	10,159	170,265	180,425	10,159	176,361	186,520
2026	10,159	164,873	175,032	10,159	171,342	181,501	10,159	178,030	188,189
2027	10,159	165,392	175,551	10,159	172,419	182,578	10,159	179,704	189,863
2028	10,159	165,907	176,066	10,159	173,491	183,650	10,159	181,377	191,536
2029	10,159	166,417	176,576	10,159	174,554	184,714	10,159	183,041	193,200
2030	10,159	166,923	177,082	10,159	175,614	185,773	10,159	184,703	194,862
2031	10,159	167,429	177,588	10,159	176,675	186,834	10,159	186,373	196,532
2032	10,159	167,933	178,092	10,159	177,735	187,894	10,159	188,045	198,204
2033	10,159	168,434	178,593	10,159	178,792	188,951	10,159	189,717	199,876
2034	10,159	168,932	179,091	10,159	179,847	190,006	10,159	191,391	201,550

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.96%	0.91%
2017	0.00%	0.32%	0.30%	0.00%	0.65%	0.61%	0.00%	0.97%	0.91%
2018	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2019	0.00%	0.33%	0.31%	0.00%	0.65%	0.62%	0.00%	0.98%	0.92%
2020	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2021	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2022	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2023	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.97%	0.91%
2024	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.96%	0.91%
2025	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.95%	0.90%
2026	0.00%	0.32%	0.30%	0.00%	0.63%	0.60%	0.00%	0.95%	0.90%
2027	0.00%	0.31%	0.30%	0.00%	0.63%	0.59%	0.00%	0.94%	0.89%
2028	0.00%	0.31%	0.29%	0.00%	0.62%	0.59%	0.00%	0.93%	0.88%
2029	0.00%	0.31%	0.29%	0.00%	0.61%	0.58%	0.00%	0.92%	0.87%
2030	0.00%	0.30%	0.29%	0.00%	0.61%	0.57%	0.00%	0.91%	0.86%
2031	0.00%	0.30%	0.29%	0.00%	0.60%	0.57%	0.00%	0.90%	0.86%
2032	0.00%	0.30%	0.28%	0.00%	0.60%	0.57%	0.00%	0.90%	0.85%
2033	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.89%	0.84%
2034	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.88%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,474,672	5,880,808	11,355,480	5,491,080	5,898,452	11,389,532	5,507,487	5,916,096	11,423,583
2016	5,519,133	5,925,235	11,444,368	5,552,339	5,960,920	11,513,259	5,585,644	5,996,713	11,582,357
2017	5,507,923	5,916,560	11,424,483	5,557,882	5,970,279	11,528,161	5,608,142	6,024,321	11,632,464
2018	5,524,763	5,934,665	11,459,428	5,591,869	6,006,817	11,598,686	5,659,583	6,079,626	11,739,209
2019	5,541,757	5,952,933	11,494,690	5,626,268	6,043,798	11,670,066	5,711,808	6,135,769	11,847,577
2020	5,586,973	5,998,125	11,585,097	5,689,461	6,108,252	11,797,713	5,793,511	6,220,060	12,013,571
2021	5,575,757	5,989,481	11,565,238	5,695,411	6,118,123	11,813,534	5,817,260	6,249,126	12,066,386
2022	5,592,831	6,007,833	11,600,664	5,730,292	6,155,616	11,885,908	5,870,700	6,306,569	12,177,270
2023	5,609,819	6,026,092	11,635,911	5,765,103	6,193,032	11,958,136	5,924,197	6,364,071	12,288,268
2024	5,655,477	6,071,715	11,727,192	5,829,623	6,258,822	12,088,445	6,008,581	6,451,103	12,459,683
2025	5,643,741	6,062,551	11,706,292	5,834,931	6,268,082	12,103,013	6,031,991	6,479,929	12,511,919
2026	5,660,576	6,080,643	11,741,219	5,869,741	6,305,493	12,175,234	6,085,968	6,537,942	12,623,910
2027	5,677,360	6,098,680	11,776,041	5,904,549	6,342,902	12,247,452	6,140,105	6,596,124	12,736,229
2028	5,722,991	6,144,230	11,867,221	5,969,430	6,408,990	12,378,420	6,225,692	6,684,311	12,910,004
2029	5,710,515	6,134,310	11,844,826	5,973,614	6,417,123	12,390,737	6,247,991	6,712,069	12,960,060
2030	5,726,889	6,151,905	11,878,794	6,007,869	6,453,935	12,461,804	6,301,734	6,769,825	13,071,559
2031	5,743,248	6,169,484	11,912,731	6,042,192	6,490,819	12,533,012	6,355,737	6,827,858	13,183,596
2032	5,788,823	6,214,932	12,003,755	6,107,354	6,557,121	12,664,476	6,442,388	6,917,050	13,359,438
2033	5,775,728	6,204,384	11,980,112	6,110,630	6,564,358	12,674,989	6,463,874	6,944,058	13,407,932
2034	5,791,850	6,221,706	12,013,557	6,144,745	6,601,014	12,745,759	6,518,004	7,002,222	13,520,225

Annual Change

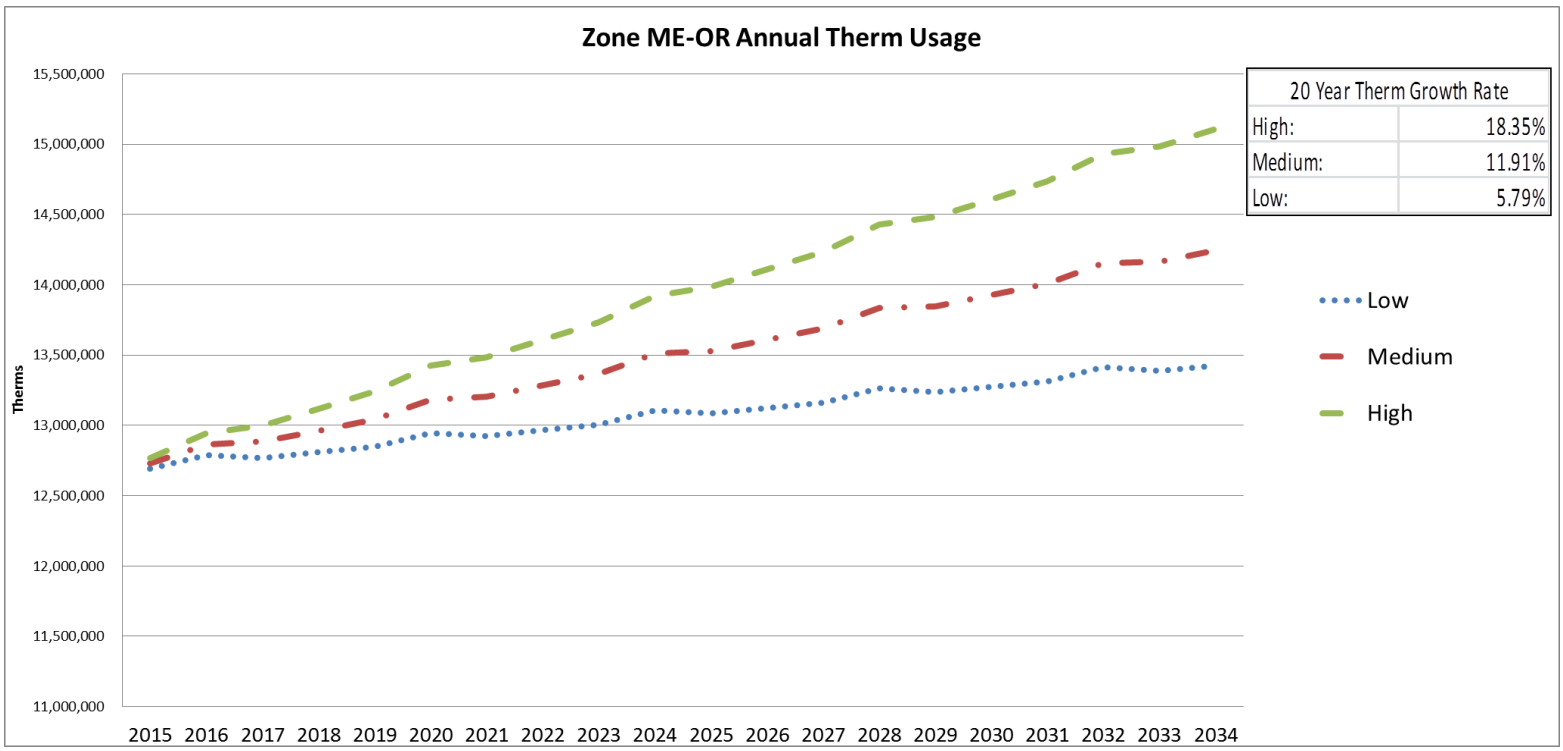
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.76%	0.78%	1.12%	1.06%	1.09%	1.42%	1.36%	1.39%
2017	-0.20%	-0.15%	-0.17%	0.10%	0.16%	0.13%	0.40%	0.46%	0.43%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2020	0.82%	0.76%	0.79%	1.12%	1.07%	1.09%	1.43%	1.37%	1.40%
2021	-0.20%	-0.14%	-0.17%	0.10%	0.16%	0.13%	0.41%	0.47%	0.44%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.76%	0.78%	1.12%	1.06%	1.09%	1.42%	1.37%	1.39%
2025	-0.21%	-0.15%	-0.18%	0.09%	0.15%	0.12%	0.39%	0.45%	0.42%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.90%	0.90%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.75%	0.77%	1.10%	1.04%	1.07%	1.39%	1.34%	1.36%
2029	-0.22%	-0.16%	-0.19%	0.07%	0.13%	0.10%	0.36%	0.42%	0.39%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.74%	0.76%	1.08%	1.02%	1.05%	1.36%	1.31%	1.33%
2033	-0.23%	-0.17%	-0.20%	0.05%	0.11%	0.08%	0.33%	0.39%	0.36%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

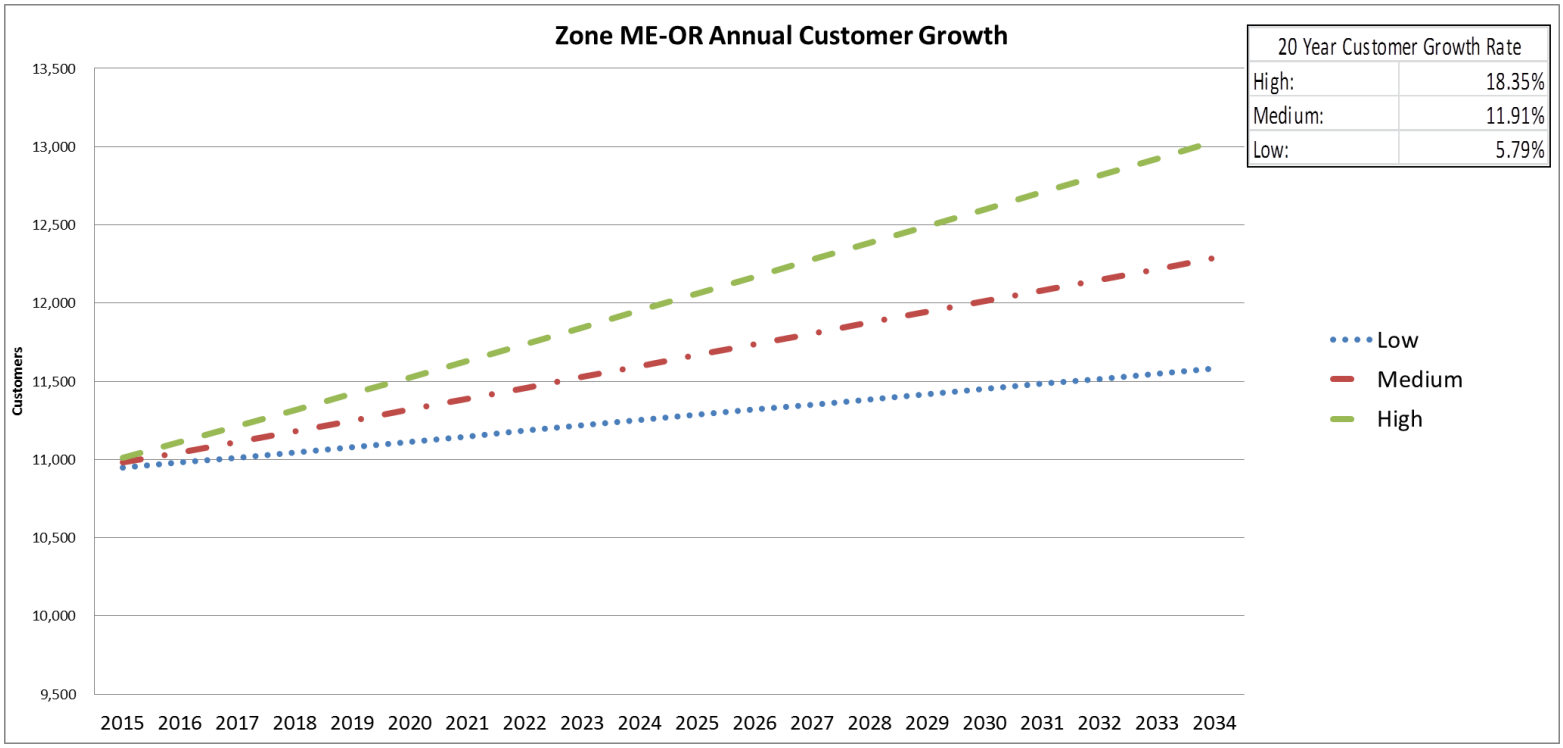
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	9,288	1,659	10,947	9,316	1,664	10,980	9,344	1,669	11,013
2016	9,316	1,664	10,980	9,372	1,674	11,046	9,428	1,684	11,113
2017	9,345	1,669	11,014	9,429	1,684	11,114	9,515	1,700	11,214
2018	9,373	1,674	11,047	9,487	1,695	11,182	9,602	1,715	11,317
2019	9,402	1,679	11,081	9,545	1,705	11,250	9,690	1,731	11,421
2020	9,431	1,685	11,115	9,604	1,715	11,319	9,779	1,747	11,526
2021	9,460	1,690	11,149	9,663	1,726	11,389	9,869	1,763	11,632
2022	9,489	1,695	11,183	9,722	1,737	11,458	9,960	1,779	11,739
2023	9,517	1,700	11,217	9,781	1,747	11,528	10,051	1,795	11,846
2024	9,546	1,705	11,252	9,840	1,758	11,598	10,142	1,812	11,954
2025	9,575	1,710	11,285	9,899	1,768	11,668	10,234	1,828	12,062
2026	9,604	1,715	11,319	9,958	1,779	11,737	10,325	1,844	12,170
2027	9,632	1,721	11,353	10,017	1,789	11,807	10,417	1,861	12,278
2028	9,660	1,726	11,386	10,076	1,800	11,876	10,509	1,877	12,386
2029	9,688	1,731	11,419	10,135	1,810	11,945	10,600	1,894	12,494
2030	9,716	1,736	11,452	10,193	1,821	12,014	10,691	1,910	12,601
2031	9,744	1,741	11,484	10,251	1,831	12,082	10,783	1,926	12,709
2032	9,771	1,745	11,517	10,309	1,842	12,151	10,875	1,943	12,817
2033	9,799	1,750	11,549	10,367	1,852	12,219	10,967	1,959	12,926
2034	9,826	1,755	11,582	10,425	1,862	12,287	11,058	1,975	13,034

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.90%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Zone ME-OR Annual Therm Usage
Therms
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
11,500,000
11,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.35%
Medium: 11.91%
Low: 5.79%
Low
Medium
High


Zone ME-OR Annual Customer Growth
Customers
13,500
13,000
12,500
12,000
11,500
11,000
10,500
10,000
9,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.35%
Medium: 11.91%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone ME-WA

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	10,223,690	4,501,171	14,724,861	10,233,510	4,501,171	14,734,681	10,243,330	4,501,171	14,744,501
2016	10,288,483	4,501,171	14,789,654	10,307,640	4,501,171	14,808,811	10,326,834	4,501,171	14,828,004
2017	10,216,549	4,501,171	14,717,720	10,244,324	4,501,171	14,745,495	10,272,208	4,501,171	14,773,379
2018	10,215,971	4,501,171	14,717,141	10,251,885	4,501,171	14,753,056	10,288,019	4,501,171	14,789,189
2019	10,217,055	4,501,171	14,718,225	10,260,652	4,501,171	14,761,823	10,304,616	4,501,171	14,805,787
2020	10,288,136	4,501,171	14,789,307	10,339,459	4,501,171	14,840,630	10,391,336	4,501,171	14,892,506
2021	10,222,473	4,501,171	14,723,644	10,280,491	4,501,171	14,781,661	10,339,282	4,501,171	14,840,452
2022	10,226,506	4,501,171	14,727,676	10,291,389	4,501,171	14,792,560	10,357,309	4,501,171	14,858,479
2023	10,230,822	4,501,171	14,731,993	10,302,461	4,501,171	14,803,631	10,375,434	4,501,171	14,876,605
2024	10,305,886	4,501,171	14,807,057	10,384,261	4,501,171	14,885,431	10,464,315	4,501,171	14,965,485
2025	10,241,703	4,501,171	14,742,874	10,326,198	4,501,171	14,827,369	10,412,740	4,501,171	14,913,910
2026	10,247,268	4,501,171	14,748,439	10,338,153	4,501,171	14,839,323	10,431,497	4,501,171	14,932,667
2027	10,253,129	4,501,171	14,754,299	10,350,302	4,501,171	14,851,473	10,450,384	4,501,171	14,951,555
2028	10,328,483	4,501,171	14,829,653	10,432,399	4,501,171	14,933,569	10,539,725	4,501,171	15,040,895
2029	10,264,071	4,501,171	14,765,242	10,373,999	4,501,171	14,875,170	10,487,842	4,501,171	14,989,012
2030	10,269,144	4,501,171	14,770,314	10,385,525	4,501,171	14,886,696	10,506,377	4,501,171	15,007,547
2031	10,274,856	4,501,171	14,776,027	10,397,504	4,501,171	14,898,675	10,525,214	4,501,171	15,026,384
2032	10,350,167	4,501,171	14,851,338	10,479,657	4,501,171	14,980,828	10,614,861	4,501,171	15,116,032
2033	10,286,202	4,501,171	14,787,373	10,421,398	4,501,171	14,922,568	10,562,945	4,501,171	15,064,116
2034	10,291,944	4,501,171	14,793,115	10,433,528	4,501,171	14,934,698	10,582,163	4,501,171	15,083,333

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.00%	0.44%	0.72%	0.00%	0.50%	0.82%	0.00%	0.57%
2017	-0.70%	0.00%	-0.49%	-0.61%	0.00%	-0.43%	-0.53%	0.00%	-0.37%
2018	-0.01%	0.00%	0.00%	0.07%	0.00%	0.05%	0.15%	0.00%	0.11%
2019	0.01%	0.00%	0.01%	0.09%	0.00%	0.06%	0.16%	0.00%	0.11%
2020	0.70%	0.00%	0.48%	0.77%	0.00%	0.53%	0.84%	0.00%	0.59%
2021	-0.64%	0.00%	-0.44%	-0.57%	0.00%	-0.40%	-0.50%	0.00%	-0.35%
2022	0.04%	0.00%	0.03%	0.11%	0.00%	0.07%	0.17%	0.00%	0.12%
2023	0.04%	0.00%	0.03%	0.11%	0.00%	0.07%	0.18%	0.00%	0.12%
2024	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.86%	0.00%	0.60%
2025	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2026	0.05%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2027	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2028	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.85%	0.00%	0.60%
2029	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2030	0.05%	0.00%	0.03%	0.11%	0.00%	0.08%	0.18%	0.00%	0.12%
2031	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2032	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.85%	0.00%	0.60%
2033	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2034	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	12,332	176,074	188,406	12,332	176,181	188,513	12,332	176,288	188,620
2016	12,332	175,988	188,320	12,332	176,194	188,526	12,332	176,399	188,731
2017	12,332	175,929	188,261	12,332	176,225	188,557	12,332	176,522	188,854
2018	12,332	175,896	188,228	12,332	176,275	188,607	12,332	176,656	188,988
2019	12,332	175,885	188,217	12,332	176,340	188,672	12,332	176,799	189,131
2020	12,332	175,882	188,214	12,332	176,412	188,744	12,332	176,946	189,278
2021	12,332	175,906	188,238	12,332	176,501	188,833	12,332	177,104	189,436
2022	12,332	175,934	188,266	12,332	176,594	188,926	12,332	177,264	189,596
2023	12,332	175,966	188,298	12,332	176,690	189,022	12,332	177,426	189,758
2024	12,332	176,016	188,348	12,332	176,798	189,130	12,332	177,595	189,927
2025	12,332	176,061	188,393	12,332	176,902	189,234	12,332	177,762	190,094
2026	12,332	176,110	188,442	12,332	177,009	189,341	12,332	177,931	190,263
2027	12,332	176,163	188,495	12,332	177,119	189,451	12,332	178,102	190,434
2028	12,332	176,215	188,547	12,332	177,229	189,561	12,332	178,273	190,605
2029	12,332	176,259	188,591	12,332	177,332	189,664	12,332	178,441	190,773
2030	12,332	176,302	188,634	12,332	177,435	189,766	12,332	178,607	190,939
2031	12,332	176,354	188,686	12,332	177,543	189,875	12,332	178,778	191,110
2032	12,332	176,405	188,737	12,332	177,651	189,983	12,332	178,949	191,281
2033	12,332	176,457	188,789	12,332	177,759	190,091	12,332	179,120	191,452
2034	12,332	176,509	188,841	12,332	177,870	190,202	12,332	179,295	191,627

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	-0.05%	-0.05%	0.00%	0.01%	0.01%	0.00%	0.06%	0.06%
2017	0.00%	-0.03%	-0.03%	0.00%	0.02%	0.02%	0.00%	0.07%	0.07%
2018	0.00%	-0.02%	-0.02%	0.00%	0.03%	0.03%	0.00%	0.08%	0.07%
2019	0.00%	-0.01%	-0.01%	0.00%	0.04%	0.03%	0.00%	0.08%	0.08%
2020	0.00%	0.00%	0.00%	0.00%	0.04%	0.04%	0.00%	0.08%	0.08%
2021	0.00%	0.01%	0.01%	0.00%	0.05%	0.05%	0.00%	0.09%	0.08%
2022	0.00%	0.02%	0.01%	0.00%	0.05%	0.05%	0.00%	0.09%	0.08%
2023	0.00%	0.02%	0.02%	0.00%	0.05%	0.05%	0.00%	0.09%	0.09%
2024	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2025	0.00%	0.03%	0.02%	0.00%	0.06%	0.06%	0.00%	0.09%	0.09%
2026	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2027	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2028	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2029	0.00%	0.02%	0.02%	0.00%	0.06%	0.05%	0.00%	0.09%	0.09%
2030	0.00%	0.02%	0.02%	0.00%	0.06%	0.05%	0.00%	0.09%	0.09%
2031	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2032	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2033	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2034	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,916,174	4,923,945	11,840,119	6,919,520	4,927,036	11,846,556	6,922,866	4,930,127	11,852,993
2016	6,946,619	4,945,080	11,891,700	6,953,031	4,951,091	11,904,122	6,959,452	4,957,113	11,916,565
2017	6,909,236	4,921,011	11,830,248	6,918,343	4,929,700	11,848,044	6,927,477	4,938,422	11,865,899
2018	6,907,262	4,920,559	11,827,821	6,918,787	4,931,756	11,850,543	6,930,363	4,943,018	11,873,381
2019	6,906,118	4,920,670	11,826,788	6,919,805	4,934,216	11,854,022	6,933,577	4,947,872	11,881,449
2020	6,939,681	4,943,930	11,883,612	6,955,508	4,959,827	11,915,336	6,971,462	4,975,889	11,947,351
2021	6,905,473	4,921,997	11,827,471	6,922,969	4,939,914	11,862,883	6,940,641	4,958,062	11,898,702
2022	6,905,813	4,923,109	11,828,922	6,925,014	4,943,091	11,868,105	6,944,449	4,963,381	11,907,830
2023	6,906,308	4,924,319	11,830,628	6,927,159	4,946,329	11,873,487	6,948,310	4,968,735	11,917,045
2024	6,941,857	4,948,925	11,890,782	6,964,266	4,972,932	11,937,199	6,987,054	4,997,439	11,984,493
2025	6,908,442	4,927,505	11,835,947	6,932,233	4,953,342	11,885,575	6,956,482	4,979,787	11,936,270
2026	6,909,583	4,929,142	11,838,725	6,934,819	4,956,879	11,891,699	6,960,607	4,985,347	11,945,954
2027	6,910,881	4,930,881	11,841,762	6,937,511	4,960,483	11,897,994	6,964,791	4,990,950	11,955,741
2028	6,946,589	4,955,583	11,902,171	6,974,754	4,987,178	11,961,932	7,003,681	5,019,785	12,023,466
2029	6,913,121	4,934,099	11,847,220	6,942,637	4,967,494	11,910,132	6,973,028	5,002,053	11,975,080
2030	6,914,060	4,935,575	11,849,636	6,945,068	4,970,895	11,915,963	6,977,072	5,007,542	11,984,614
2031	6,915,326	4,937,270	11,852,596	6,947,721	4,974,449	11,922,170	6,981,245	5,013,130	11,994,375
2032	6,951,026	4,961,956	11,912,982	6,984,984	5,001,153	11,986,137	7,020,216	5,042,045	12,062,261
2033	6,917,839	4,940,636	11,858,475	6,953,015	4,981,537	11,934,551	6,989,604	5,024,323	12,013,927
2034	6,919,142	4,942,344	11,861,486	6,955,763	4,985,145	11,940,908	6,993,954	5,030,038	12,023,992

Annual Change

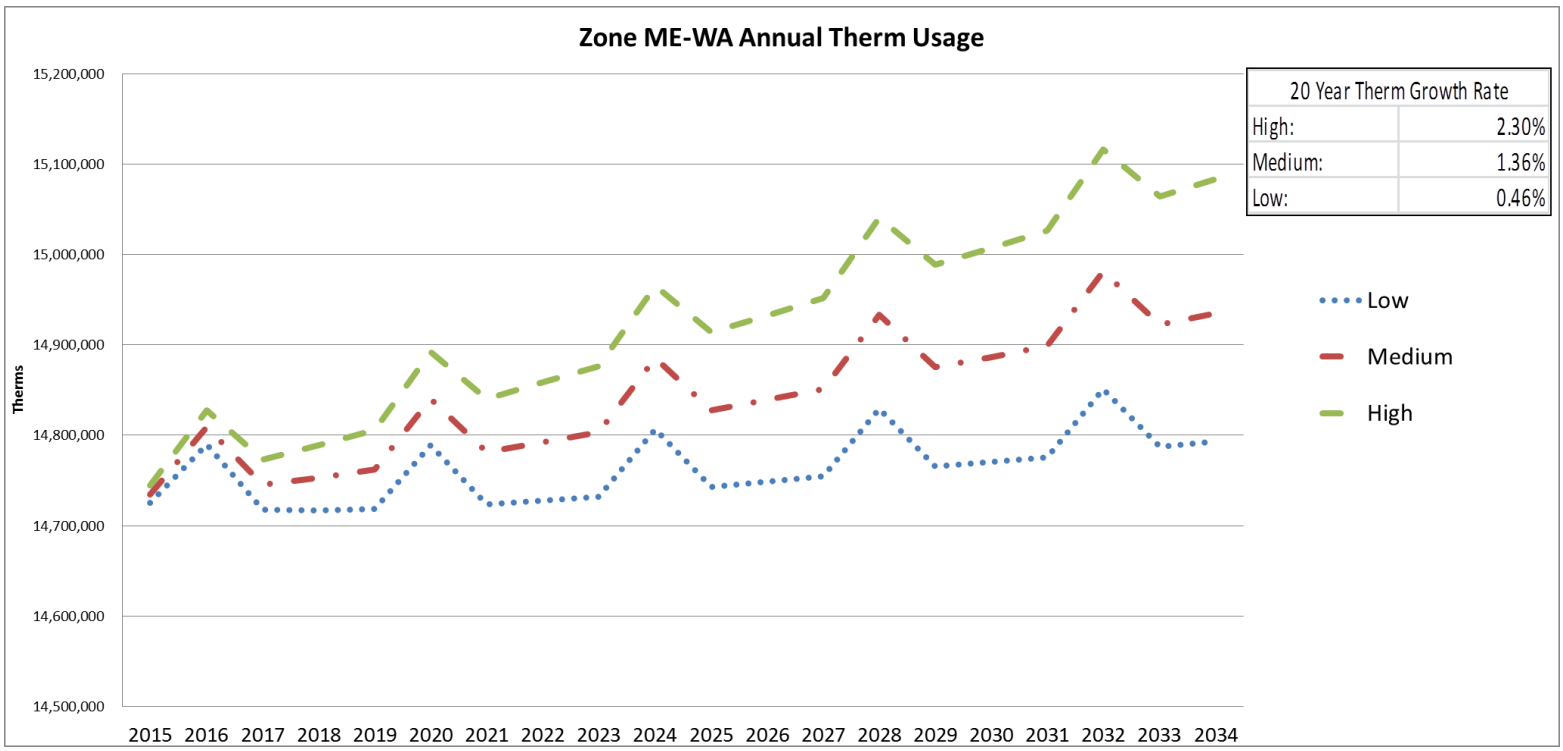
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.44%	0.43%	0.44%	0.48%	0.49%	0.49%	0.53%	0.55%	0.54%
2017	-0.54%	-0.49%	-0.52%	-0.50%	-0.43%	-0.47%	-0.46%	-0.38%	-0.43%
2018	-0.03%	-0.01%	-0.02%	0.01%	0.04%	0.02%	0.04%	0.09%	0.06%
2019	-0.02%	0.00%	-0.01%	0.01%	0.05%	0.03%	0.05%	0.10%	0.07%
2020	0.49%	0.47%	0.48%	0.52%	0.52%	0.52%	0.55%	0.57%	0.55%
2021	-0.49%	-0.44%	-0.47%	-0.47%	-0.40%	-0.44%	-0.44%	-0.36%	-0.41%
2022	0.00%	0.02%	0.01%	0.03%	0.06%	0.04%	0.05%	0.11%	0.08%
2023	0.01%	0.02%	0.01%	0.03%	0.07%	0.05%	0.06%	0.11%	0.08%
2024	0.51%	0.50%	0.51%	0.54%	0.54%	0.54%	0.56%	0.58%	0.57%
2025	-0.48%	-0.43%	-0.46%	-0.46%	-0.39%	-0.43%	-0.44%	-0.35%	-0.40%
2026	0.02%	0.03%	0.02%	0.04%	0.07%	0.05%	0.06%	0.11%	0.08%
2027	0.02%	0.04%	0.03%	0.04%	0.07%	0.05%	0.06%	0.11%	0.08%
2028	0.52%	0.50%	0.51%	0.54%	0.54%	0.54%	0.56%	0.58%	0.57%
2029	-0.48%	-0.43%	-0.46%	-0.46%	-0.39%	-0.43%	-0.44%	-0.35%	-0.40%
2030	0.01%	0.03%	0.02%	0.04%	0.07%	0.05%	0.06%	0.11%	0.08%
2031	0.02%	0.03%	0.02%	0.04%	0.07%	0.05%	0.06%	0.11%	0.08%
2032	0.52%	0.50%	0.51%	0.54%	0.54%	0.54%	0.56%	0.58%	0.57%
2033	-0.48%	-0.43%	-0.46%	-0.46%	-0.39%	-0.43%	-0.44%	-0.35%	-0.40%
2034	0.02%	0.03%	0.03%	0.04%	0.07%	0.05%	0.06%	0.11%	0.08%

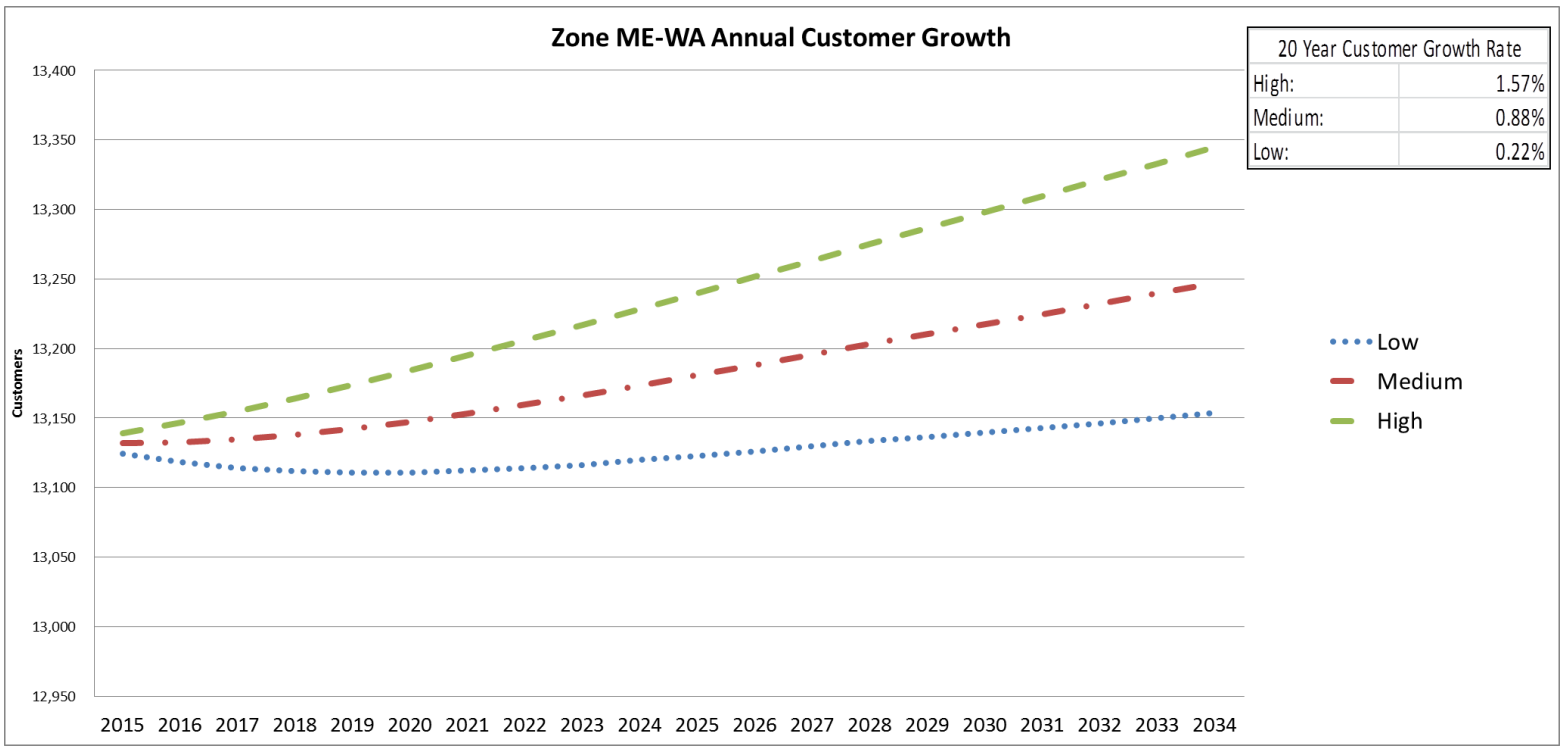
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	11,686	1,438	13,124	11,693	1,439	13,132	11,699	1,440	13,139
2016	11,681	1,438	13,118	11,693	1,439	13,133	11,706	1,441	13,147
2017	11,677	1,437	13,114	11,695	1,440	13,135	11,713	1,442	13,155
2018	11,675	1,437	13,112	11,697	1,441	13,138	11,720	1,444	13,164
2019	11,674	1,437	13,111	11,701	1,441	13,142	11,729	1,445	13,174
2020	11,673	1,437	13,111	11,705	1,442	13,147	11,737	1,447	13,184
2021	11,675	1,438	13,112	11,710	1,443	13,153	11,747	1,448	13,195
2022	11,676	1,438	13,114	11,716	1,444	13,160	11,756	1,450	13,206
2023	11,678	1,438	13,116	11,721	1,445	13,166	11,766	1,451	13,217
2024	11,681	1,439	13,120	11,728	1,446	13,174	11,776	1,453	13,229
2025	11,684	1,439	13,123	11,734	1,447	13,181	11,785	1,455	13,240
2026	11,686	1,440	13,126	11,740	1,448	13,188	11,795	1,456	13,252
2027	11,690	1,440	13,130	11,747	1,449	13,196	11,806	1,458	13,263
2028	11,693	1,441	13,133	11,753	1,450	13,203	11,816	1,460	13,275
2029	11,695	1,441	13,136	11,759	1,451	13,210	11,825	1,461	13,287
2030	11,698	1,442	13,139	11,765	1,452	13,217	11,835	1,463	13,298
2031	11,701	1,442	13,143	11,772	1,453	13,225	11,845	1,464	13,310
2032	11,704	1,443	13,146	11,778	1,454	13,232	11,855	1,466	13,321
2033	11,707	1,443	13,150	11,784	1,455	13,240	11,865	1,468	13,333
2034	11,710	1,444	13,154	11,791	1,456	13,247	11,876	1,469	13,345

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.05%	-0.04%	-0.05%	0.00%	0.02%	0.01%	0.05%	0.08%	0.06%
2017	-0.03%	-0.02%	-0.03%	0.01%	0.03%	0.02%	0.06%	0.09%	0.06%
2018	-0.02%	-0.01%	-0.02%	0.02%	0.04%	0.03%	0.07%	0.09%	0.07%
2019	-0.01%	0.00%	-0.01%	0.03%	0.05%	0.03%	0.07%	0.10%	0.07%
2020	0.00%	0.01%	0.00%	0.03%	0.05%	0.04%	0.07%	0.10%	0.08%
2021	0.01%	0.02%	0.01%	0.04%	0.06%	0.05%	0.08%	0.11%	0.08%
2022	0.01%	0.02%	0.01%	0.05%	0.06%	0.05%	0.08%	0.11%	0.08%
2023	0.02%	0.02%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.08%
2024	0.02%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2025	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2026	0.02%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2027	0.03%	0.04%	0.03%	0.06%	0.07%	0.06%	0.09%	0.11%	0.09%
2028	0.03%	0.04%	0.03%	0.05%	0.07%	0.06%	0.09%	0.11%	0.09%
2029	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2030	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2031	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2032	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2033	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2034	0.03%	0.03%	0.03%	0.06%	0.07%	0.06%	0.09%	0.11%	0.09%


Zone ME-WA Annual Therm Usage
Therms
15,200,000
15,100,000
15,000,000
14,900,000
14,800,000
14,700,000
14,600,000
14,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 2.30%
Medium: 1.36%
Low: 0.46%
Low
Medium
High


Zone ME-WA Annual Customer Growth
Customers
13,400
13,350
13,300
13,250
13,200
13,150
13,100
13,050
13,000
12,950
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 1.57%
Medium: 0.88%
Low: 0.22%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bellingham Disctrict

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	36,040,658	10,930,271	46,970,929	36,486,999	10,930,271	47,417,270	36,933,340	10,930,271	47,863,611
2016	36,696,655	10,930,271	47,626,927	37,599,542	10,930,271	48,529,813	38,510,905	10,930,271	49,441,177
2017	36,926,747	10,930,271	47,857,019	38,284,376	10,930,271	49,214,647	39,667,438	10,930,271	50,597,709
2018	37,366,919	10,930,271	48,297,191	39,189,694	10,930,271	50,119,965	41,063,578	10,930,271	51,993,849
2019	37,804,813	10,930,271	48,735,085	40,098,535	10,930,271	51,028,806	42,477,810	10,930,271	53,408,081
2020	38,459,451	10,930,271	49,389,722	41,241,372	10,930,271	52,171,643	44,152,647	10,930,271	55,082,919
2021	38,672,637	10,930,271	49,602,908	41,923,889	10,930,271	52,854,160	45,356,093	10,930,271	56,286,365
2022	39,102,510	10,930,271	50,032,781	42,839,988	10,930,271	53,770,259	46,819,475	10,930,271	57,749,747
2023	39,529,011	10,930,271	50,459,283	43,756,710	10,930,271	54,686,982	48,296,328	10,930,271	59,226,599
2024	40,180,592	10,930,271	51,110,863	44,924,648	10,930,271	55,854,919	50,061,312	10,930,271	60,991,584
2025	40,373,278	10,930,271	51,303,549	45,594,307	10,930,271	56,524,578	51,293,865	10,930,271	62,224,136
2026	40,790,715	10,930,271	51,720,987	46,514,145	10,930,271	57,444,416	52,812,748	10,930,271	63,743,019
2027	41,204,718	10,930,271	52,134,989	47,433,777	10,930,271	58,364,048	54,343,448	10,930,271	65,273,719
2028	41,850,205	10,930,271	52,780,476	48,618,153	10,930,271	59,548,425	56,184,477	10,930,271	67,114,748
2029	42,021,911	10,930,271	52,952,183	49,270,553	10,930,271	60,200,824	57,436,728	10,930,271	68,366,999
2030	42,424,994	10,930,271	53,355,265	50,187,074	10,930,271	61,117,345	58,997,997	10,930,271	69,928,268
2031	42,825,689	10,930,271	53,755,961	51,105,051	10,930,271	62,035,322	60,573,471	10,930,271	71,503,742
2032	43,464,903	10,930,271	54,395,174	52,303,129	10,930,271	63,233,400	62,485,097	10,930,271	73,415,368
2033	43,617,538	10,930,271	54,547,809	52,939,347	10,930,271	63,869,618	63,756,417	10,930,271	74,686,689
2034	44,009,361	10,930,271	54,939,633	53,856,913	10,930,271	64,787,184	65,365,867	10,930,271	76,296,138

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.82%	0.00%	1.40%	3.05%	0.00%	2.35%	4.27%	0.00%	3.30%
2017	0.63%	0.00%	0.48%	1.82%	0.00%	1.41%	3.00%	0.00%	2.34%
2018	1.19%	0.00%	0.92%	2.36%	0.00%	1.84%	3.52%	0.00%	2.76%
2019	1.17%	0.00%	0.91%	2.32%	0.00%	1.81%	3.44%	0.00%	2.72%
2020	1.73%	0.00%	1.34%	2.85%	0.00%	2.24%	3.94%	0.00%	3.14%
2021	0.55%	0.00%	0.43%	1.65%	0.00%	1.31%	2.73%	0.00%	2.18%
2022	1.11%	0.00%	0.87%	2.19%	0.00%	1.73%	3.23%	0.00%	2.60%
2023	1.09%	0.00%	0.85%	2.14%	0.00%	1.70%	3.15%	0.00%	2.56%
2024	1.65%	0.00%	1.29%	2.67%	0.00%	2.14%	3.65%	0.00%	2.98%
2025	0.48%	0.00%	0.38%	1.49%	0.00%	1.20%	2.46%	0.00%	2.02%
2026	1.03%	0.00%	0.81%	2.02%	0.00%	1.63%	2.96%	0.00%	2.44%
2027	1.01%	0.00%	0.80%	1.98%	0.00%	1.60%	2.90%	0.00%	2.40%
2028	1.57%	0.00%	1.24%	2.50%	0.00%	2.03%	3.39%	0.00%	2.82%
2029	0.41%	0.00%	0.33%	1.34%	0.00%	1.10%	2.23%	0.00%	1.87%
2030	0.96%	0.00%	0.76%	1.86%	0.00%	1.52%	2.72%	0.00%	2.28%
2031	0.94%	0.00%	0.75%	1.83%	0.00%	1.50%	2.67%	0.00%	2.25%
2032	1.49%	0.00%	1.19%	2.34%	0.00%	1.93%	3.16%	0.00%	2.67%
2033	0.35%	0.00%	0.28%	1.22%	0.00%	1.01%	2.03%	0.00%	1.73%
2034	0.90%	0.00%	0.72%	1.73%	0.00%	1.44%	2.52%	0.00%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	29,946	504,163	534,109	29,946	509,238	539,184	29,946	514,313	544,259
2016	29,946	509,212	539,158	29,946	519,434	549,379	29,946	529,751	559,697
2017	29,946	514,238	544,184	29,946	529,676	559,622	29,946	545,403	575,349
2018	29,946	519,244	549,190	29,946	539,971	569,916	29,946	561,278	591,224
2019	29,946	524,223	554,169	29,946	550,305	580,251	29,946	577,360	607,306
2020	29,946	529,168	559,114	29,946	560,661	590,607	29,946	593,618	623,563
2021	29,946	534,091	564,037	29,946	571,061	601,007	29,946	610,089	640,035
2022	29,946	538,979	568,925	29,946	581,478	611,424	29,946	626,729	656,675
2023	29,946	543,829	573,775	29,946	591,902	621,848	29,946	643,522	673,468
2024	29,946	548,652	578,598	29,946	602,357	632,303	29,946	660,506	690,452
2025	29,946	553,429	583,375	29,946	612,798	642,743	29,946	677,607	707,553
2026	29,946	558,176	588,122	29,946	623,257	653,203	29,946	694,879	724,825
2027	29,946	562,883	592,829	29,946	633,714	663,660	29,946	712,284	742,230
2028	29,946	567,553	597,499	29,946	644,169	674,115	29,946	729,823	759,769
2029	29,946	572,176	602,122	29,946	654,600	684,546	29,946	747,458	777,404
2030	29,946	576,759	606,705	29,946	665,022	694,968	29,946	765,211	795,157
2031	29,946	581,316	611,261	29,946	675,460	705,406	29,946	783,126	813,072
2032	29,946	585,832	615,778	29,946	685,885	715,831	29,946	801,149	831,095
2033	29,946	590,320	620,266	29,946	696,318	726,264	29,946	819,319	849,265
2034	29,946	594,775	624,721	29,946	706,752	736,698	29,946	837,621	867,566

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.00%	0.95%	0.00%	2.00%	1.89%	0.00%	3.00%	2.84%
2017	0.00%	0.99%	0.93%	0.00%	1.97%	1.86%	0.00%	2.95%	2.80%
2018	0.00%	0.97%	0.92%	0.00%	1.94%	1.84%	0.00%	2.91%	2.76%
2019	0.00%	0.96%	0.91%	0.00%	1.91%	1.81%	0.00%	2.87%	2.72%
2020	0.00%	0.94%	0.89%	0.00%	1.88%	1.78%	0.00%	2.82%	2.68%
2021	0.00%	0.93%	0.88%	0.00%	1.86%	1.76%	0.00%	2.77%	2.64%
2022	0.00%	0.92%	0.87%	0.00%	1.82%	1.73%	0.00%	2.73%	2.60%
2023	0.00%	0.90%	0.85%	0.00%	1.79%	1.70%	0.00%	2.68%	2.56%
2024	0.00%	0.89%	0.84%	0.00%	1.77%	1.68%	0.00%	2.64%	2.52%
2025	0.00%	0.87%	0.83%	0.00%	1.73%	1.65%	0.00%	2.59%	2.48%
2026	0.00%	0.86%	0.81%	0.00%	1.71%	1.63%	0.00%	2.55%	2.44%
2027	0.00%	0.84%	0.80%	0.00%	1.68%	1.60%	0.00%	2.50%	2.40%
2028	0.00%	0.83%	0.79%	0.00%	1.65%	1.58%	0.00%	2.46%	2.36%
2029	0.00%	0.81%	0.77%	0.00%	1.62%	1.55%	0.00%	2.42%	2.32%
2030	0.00%	0.80%	0.76%	0.00%	1.59%	1.52%	0.00%	2.38%	2.28%
2031	0.00%	0.79%	0.75%	0.00%	1.57%	1.50%	0.00%	2.34%	2.25%
2032	0.00%	0.78%	0.74%	0.00%	1.54%	1.48%	0.00%	2.30%	2.22%
2033	0.00%	0.77%	0.73%	0.00%	1.52%	1.46%	0.00%	2.27%	2.19%
2034	0.00%	0.75%	0.72%	0.00%	1.50%	1.44%	0.00%	2.23%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,877,365	14,900,269	45,777,634	31,170,788	15,041,855	46,212,642	31,464,210	15,183,440	46,647,651
2016	31,310,824	15,106,191	46,417,015	31,904,420	15,392,558	47,296,978	32,503,589	15,681,614	48,185,203
2017	31,459,876	15,181,349	46,641,225	32,352,375	15,612,009	47,964,384	33,261,596	16,050,736	49,312,331
2018	31,749,243	15,320,978	47,070,221	32,947,527	15,899,189	48,846,716	34,179,412	16,493,611	50,673,024
2019	32,037,112	15,459,885	47,496,997	33,544,995	16,187,487	49,732,481	35,109,122	16,942,226	52,051,348
2020	32,469,758	15,665,295	48,135,054	34,298,710	16,547,634	50,846,344	36,212,709	17,470,999	53,683,708
2021	32,607,613	15,735,172	48,342,785	34,744,972	16,766,516	51,511,488	37,001,293	17,855,259	54,856,552
2022	32,890,208	15,871,534	48,761,743	35,347,210	17,057,117	52,404,326	37,963,313	18,319,466	56,282,779
2023	33,170,587	16,006,827	49,177,414	35,949,857	17,347,915	53,297,772	38,934,188	18,787,945	57,722,133
2024	33,601,303	16,211,190	49,812,493	36,720,243	17,715,857	54,436,100	40,097,310	19,345,045	59,442,355
2025	33,725,600	16,274,643	50,000,242	37,157,879	17,930,829	55,088,709	40,904,751	19,738,809	60,643,560
2026	34,000,019	16,407,061	50,407,079	37,762,573	18,222,617	55,985,190	41,903,255	20,220,622	62,123,877
2027	34,272,179	16,538,389	50,810,569	38,367,131	18,514,339	56,881,470	42,909,527	20,706,184	63,615,710
2028	34,698,966	16,740,743	51,439,709	39,148,494	18,887,328	58,035,822	44,122,922	21,287,127	65,410,049
2029	34,809,392	16,797,617	51,607,010	39,574,609	19,096,995	58,671,604	44,943,024	21,687,421	66,630,445
2030	35,074,373	16,925,482	51,999,855	40,177,119	19,387,731	59,564,850	45,969,389	22,182,680	68,152,070
2031	35,337,785	17,052,590	52,390,375	40,780,587	19,678,929	60,459,516	47,005,091	22,682,447	69,687,538
2032	35,760,521	17,252,881	53,013,402	41,571,126	20,056,097	61,627,223	48,265,186	23,285,499	71,550,685
2033	35,858,334	17,303,779	53,162,113	41,986,429	20,260,800	62,247,229	49,097,528	23,692,130	72,789,658
2034	36,115,912	17,428,073	53,543,985	42,589,624	20,551,868	63,141,492	50,155,562	24,202,675	74,358,237

Annual Change

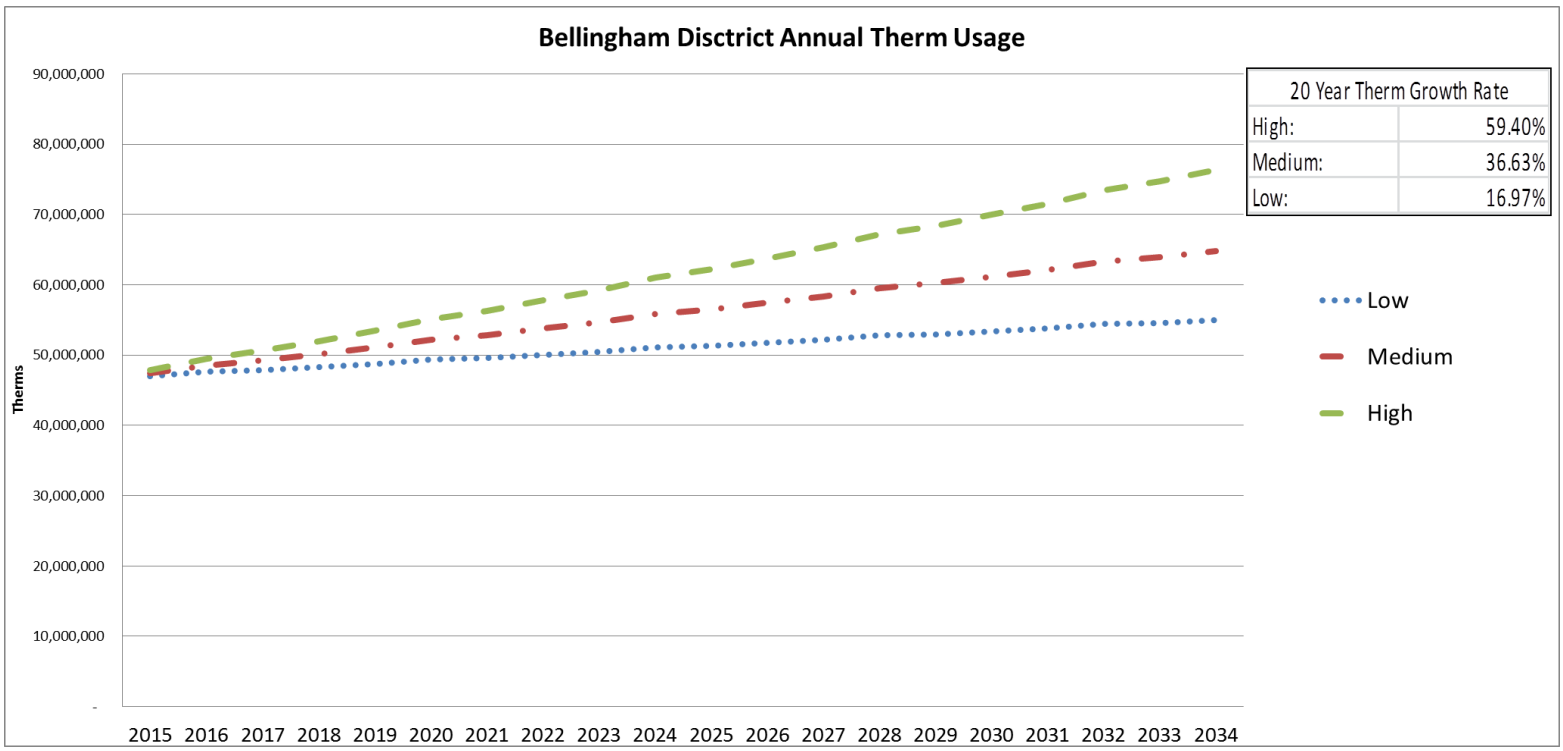
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.38%	1.40%	2.35%	2.33%	2.35%	3.30%	3.28%	3.30%
2017	0.48%	0.50%	0.48%	1.40%	1.43%	1.41%	2.33%	2.35%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.33%	1.34%	2.25%	2.22%	2.24%	3.14%	3.12%	3.14%
2021	0.42%	0.45%	0.43%	1.30%	1.32%	1.31%	2.18%	2.20%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.28%	1.29%	2.14%	2.12%	2.14%	2.99%	2.97%	2.98%
2025	0.37%	0.39%	0.38%	1.19%	1.21%	1.20%	2.01%	2.04%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.25%	1.22%	1.24%	2.04%	2.01%	2.03%	2.83%	2.81%	2.82%
2029	0.32%	0.34%	0.33%	1.09%	1.11%	1.10%	1.86%	1.88%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.20%	1.17%	1.19%	1.94%	1.92%	1.93%	2.68%	2.66%	2.67%
2033	0.27%	0.30%	0.28%	1.00%	1.02%	1.01%	1.72%	1.75%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

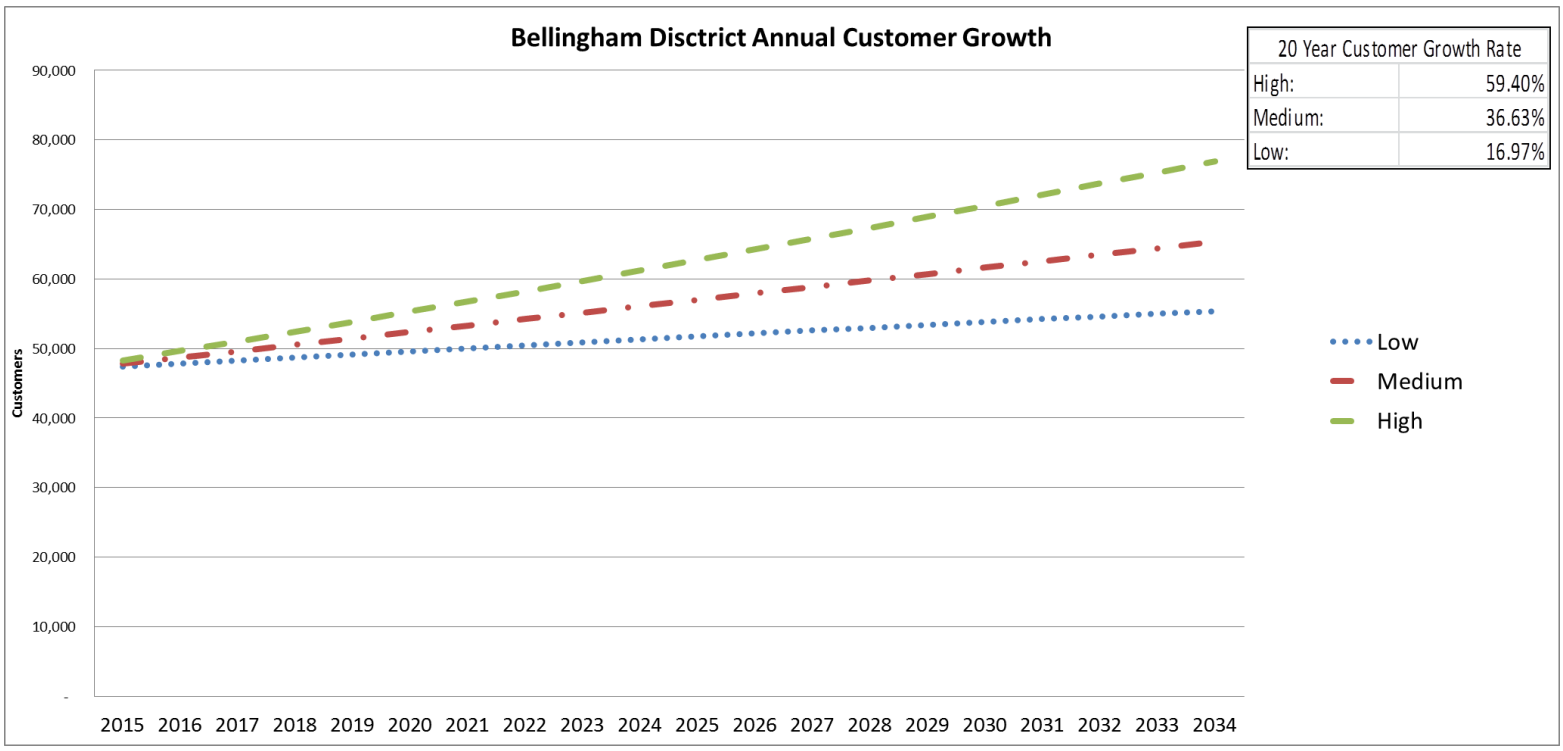
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	42,344	5,028	47,372	42,747	5,076	47,823	43,149	5,124	48,273
2016	42,745	5,076	47,820	43,555	5,172	48,727	44,373	5,269	49,642
2017	43,143	5,123	48,266	44,367	5,268	49,635	45,614	5,416	51,030
2018	43,540	5,170	48,710	45,183	5,365	50,548	46,873	5,566	52,438
2019	43,935	5,217	49,152	46,003	5,462	51,465	48,148	5,717	53,865
2020	44,327	5,264	49,590	46,824	5,560	52,384	49,436	5,870	55,307
2021	44,717	5,310	50,027	47,648	5,658	53,306	50,742	6,025	56,768
2022	45,105	5,356	50,460	48,474	5,756	54,230	52,062	6,182	58,244
2023	45,489	5,402	50,891	49,300	5,854	55,155	53,393	6,340	59,733
2024	45,871	5,447	51,318	50,129	5,953	56,082	54,740	6,500	61,240
2025	46,250	5,492	51,742	50,957	6,051	57,008	56,095	6,661	62,756
2026	46,627	5,537	52,163	51,786	6,149	57,936	57,465	6,824	64,288
2027	47,000	5,581	52,581	52,615	6,248	58,863	58,845	6,987	65,832
2028	47,370	5,625	52,995	53,444	6,346	59,790	60,235	7,152	67,388
2029	47,736	5,668	53,405	54,271	6,444	60,716	61,633	7,318	68,952
2030	48,100	5,712	53,811	55,098	6,542	61,640	63,041	7,486	70,527
2031	48,461	5,754	54,216	55,925	6,641	62,566	64,461	7,654	72,116
2032	48,819	5,797	54,616	56,752	6,739	63,490	65,890	7,824	73,714
2033	49,175	5,839	55,014	57,579	6,837	64,416	67,331	7,995	75,326
2034	49,528	5,881	55,409	58,406	6,935	65,341	68,782	8,167	76,949

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Bellingham Disctrict Annual Therm Usage
Therms
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.40%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Bellingham Disctrict Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.40%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Mount Vernon District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	32,357,083	10,295,527	42,652,610	32,666,839	10,295,527	42,962,366	32,976,595	10,295,527	43,272,122
2016	32,857,836	10,295,527	43,153,363	33,483,725	10,295,527	43,779,252	34,114,126	10,295,527	44,409,654
2017	32,974,014	10,295,527	43,269,541	33,914,141	10,295,527	44,209,668	34,867,805	10,295,527	45,163,332
2018	33,281,632	10,295,527	43,577,159	34,542,762	10,295,527	44,838,289	35,831,102	10,295,527	46,126,629
2019	33,588,191	10,295,527	43,883,719	35,173,646	10,295,527	45,469,173	36,804,653	10,295,527	47,100,181
2020	34,090,429	10,295,527	44,385,956	36,011,343	10,295,527	46,306,870	38,001,122	10,295,527	48,296,650
2021	34,197,183	10,295,527	44,492,710	36,440,041	10,295,527	46,735,568	38,779,233	10,295,527	49,074,760
2022	34,499,424	10,295,527	44,794,951	37,075,030	10,295,527	47,370,557	39,779,447	10,295,527	50,074,974
2023	34,799,542	10,295,527	45,095,069	37,709,819	10,295,527	48,005,346	40,786,055	10,295,527	51,081,582
2024	35,301,339	10,295,527	45,596,867	38,563,803	10,295,527	48,859,331	42,035,106	10,295,527	52,330,633
2025	35,394,684	10,295,527	45,690,211	38,981,168	10,295,527	49,276,695	42,822,062	10,295,527	53,117,590
2026	35,689,426	10,295,527	45,984,953	39,616,976	10,295,527	49,912,503	43,850,195	10,295,527	54,145,722
2027	35,981,773	10,295,527	46,277,300	40,251,665	10,295,527	50,547,192	44,883,064	10,295,527	55,178,592
2028	36,479,948	10,295,527	46,775,475	41,114,227	10,295,527	51,409,754	46,172,320	10,295,527	56,467,847
2029	36,559,312	10,295,527	46,854,840	41,517,355	10,295,527	51,812,883	46,962,162	10,295,527	57,257,689
2030	36,844,337	10,295,527	47,139,864	42,147,791	10,295,527	52,443,319	48,007,299	10,295,527	58,302,826
2031	37,127,941	10,295,527	47,423,468	42,778,883	10,295,527	53,074,410	49,059,819	10,295,527	59,355,346
2032	37,622,228	10,295,527	47,917,755	43,648,260	10,295,527	53,943,788	50,385,771	10,295,527	60,681,299
2033	37,688,857	10,295,527	47,984,385	44,038,231	10,295,527	54,333,758	51,178,831	10,295,527	61,474,359
2034	37,966,695	10,295,527	48,262,222	44,667,511	10,295,527	54,963,038	52,246,933	10,295,527	62,542,461

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.55%	0.00%	1.17%	2.50%	0.00%	1.90%	3.45%	0.00%	2.63%
2017	0.35%	0.00%	0.27%	1.29%	0.00%	0.98%	2.21%	0.00%	1.70%
2018	0.93%	0.00%	0.71%	1.85%	0.00%	1.42%	2.76%	0.00%	2.13%
2019	0.92%	0.00%	0.70%	1.83%	0.00%	1.41%	2.72%	0.00%	2.11%
2020	1.50%	0.00%	1.14%	2.38%	0.00%	1.84%	3.25%	0.00%	2.54%
2021	0.31%	0.00%	0.24%	1.19%	0.00%	0.93%	2.05%	0.00%	1.61%
2022	0.88%	0.00%	0.68%	1.74%	0.00%	1.36%	2.58%	0.00%	2.04%
2023	0.87%	0.00%	0.67%	1.71%	0.00%	1.34%	2.53%	0.00%	2.01%
2024	1.44%	0.00%	1.11%	2.26%	0.00%	1.78%	3.06%	0.00%	2.45%
2025	0.26%	0.00%	0.20%	1.08%	0.00%	0.85%	1.87%	0.00%	1.50%
2026	0.83%	0.00%	0.65%	1.63%	0.00%	1.29%	2.40%	0.00%	1.94%
2027	0.82%	0.00%	0.64%	1.60%	0.00%	1.27%	2.36%	0.00%	1.91%
2028	1.38%	0.00%	1.08%	2.14%	0.00%	1.71%	2.87%	0.00%	2.34%
2029	0.22%	0.00%	0.17%	0.98%	0.00%	0.78%	1.71%	0.00%	1.40%
2030	0.78%	0.00%	0.61%	1.52%	0.00%	1.22%	2.23%	0.00%	1.83%
2031	0.77%	0.00%	0.60%	1.50%	0.00%	1.20%	2.19%	0.00%	1.81%
2032	1.33%	0.00%	1.04%	2.03%	0.00%	1.64%	2.70%	0.00%	2.23%
2033	0.18%	0.00%	0.14%	0.89%	0.00%	0.72%	1.57%	0.00%	1.31%
2034	0.74%	0.00%	0.58%	1.43%	0.00%	1.16%	2.09%	0.00%	1.74%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	28,207	450,689	478,896	28,207	454,161	482,367	28,207	457,632	485,839
2016	28,207	454,151	482,357	28,207	461,135	489,342	28,207	468,169	496,376
2017	28,207	457,604	485,811	28,207	468,141	496,348	28,207	478,830	507,037
2018	28,207	461,052	489,259	28,207	475,187	503,394	28,207	489,627	517,834
2019	28,207	464,488	492,695	28,207	482,258	510,465	28,207	500,538	528,745
2020	28,207	467,905	496,112	28,207	489,340	517,547	28,207	511,541	539,748
2021	28,207	471,314	499,521	28,207	496,453	524,660	28,207	522,669	550,876
2022	28,207	474,702	502,909	28,207	503,570	531,777	28,207	533,879	562,086
2023	28,207	478,066	506,273	28,207	510,685	538,892	28,207	545,160	573,367
2024	28,207	481,419	509,626	28,207	517,822	546,029	28,207	556,551	584,758
2025	28,207	484,738	512,945	28,207	524,935	553,142	28,207	567,978	596,185
2026	28,207	488,042	516,249	28,207	532,061	560,268	28,207	579,500	607,707
2027	28,207	491,319	519,526	28,207	539,175	567,382	28,207	591,075	619,282
2028	28,207	494,572	522,779	28,207	546,280	574,487	28,207	602,710	630,917
2029	28,207	497,793	526,000	28,207	553,361	581,567	28,207	614,374	642,581
2030	28,207	500,988	529,195	28,207	560,426	588,633	28,207	626,086	654,293
2031	28,207	504,167	532,374	28,207	567,500	595,706	28,207	637,881	666,088
2032	28,207	507,319	535,526	28,207	574,555	602,762	28,207	649,716	677,923
2033	28,207	510,455	538,662	28,207	581,614	609,821	28,207	661,626	689,833
2034	28,207	513,569	541,776	28,207	588,667	616,874	28,207	673,594	701,801

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.77%	0.72%	0.00%	1.54%	1.45%	0.00%	2.30%	2.17%
2017	0.00%	0.76%	0.72%	0.00%	1.52%	1.43%	0.00%	2.28%	2.15%
2018	0.00%	0.75%	0.71%	0.00%	1.51%	1.42%	0.00%	2.25%	2.13%
2019	0.00%	0.75%	0.70%	0.00%	1.49%	1.40%	0.00%	2.23%	2.11%
2020	0.00%	0.74%	0.69%	0.00%	1.47%	1.39%	0.00%	2.20%	2.08%
2021	0.00%	0.73%	0.69%	0.00%	1.45%	1.37%	0.00%	2.18%	2.06%
2022	0.00%	0.72%	0.68%	0.00%	1.43%	1.36%	0.00%	2.14%	2.03%
2023	0.00%	0.71%	0.67%	0.00%	1.41%	1.34%	0.00%	2.11%	2.01%
2024	0.00%	0.70%	0.66%	0.00%	1.40%	1.32%	0.00%	2.09%	1.99%
2025	0.00%	0.69%	0.65%	0.00%	1.37%	1.30%	0.00%	2.05%	1.95%
2026	0.00%	0.68%	0.64%	0.00%	1.36%	1.29%	0.00%	2.03%	1.93%
2027	0.00%	0.67%	0.63%	0.00%	1.34%	1.27%	0.00%	2.00%	1.90%
2028	0.00%	0.66%	0.63%	0.00%	1.32%	1.25%	0.00%	1.97%	1.88%
2029	0.00%	0.65%	0.62%	0.00%	1.30%	1.23%	0.00%	1.94%	1.85%
2030	0.00%	0.64%	0.61%	0.00%	1.28%	1.21%	0.00%	1.91%	1.82%
2031	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.88%	1.80%
2032	0.00%	0.63%	0.59%	0.00%	1.24%	1.18%	0.00%	1.86%	1.78%
2033	0.00%	0.62%	0.59%	0.00%	1.23%	1.17%	0.00%	1.83%	1.76%
2034	0.00%	0.61%	0.58%	0.00%	1.21%	1.16%	0.00%	1.81%	1.73%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25,796,793	15,124,638	40,921,431	25,984,101	15,234,623	41,218,724	26,171,408	15,344,609	41,516,017
2016	26,102,337	15,300,770	41,403,107	26,480,848	15,522,984	42,003,831	26,862,087	15,746,801	42,608,888
2017	26,169,848	15,343,690	41,513,539	26,738,337	15,677,507	42,415,844	27,315,010	16,016,137	43,331,146
2018	26,355,865	15,452,913	41,808,777	27,118,462	15,900,710	43,019,172	27,897,510	16,358,182	44,255,692
2019	26,541,240	15,561,760	42,103,000	27,499,953	16,124,721	43,624,674	28,486,207	16,703,878	45,190,085
2020	26,847,760	15,738,370	42,586,129	28,009,443	16,420,377	44,429,820	29,212,767	17,126,867	46,339,634
2021	26,909,496	15,777,984	42,687,481	28,265,735	16,574,382	44,840,117	29,680,217	17,405,031	47,085,248
2022	27,092,261	15,885,296	42,977,556	28,649,710	16,799,850	45,449,560	30,285,036	17,760,204	48,045,240
2023	27,273,742	15,991,853	43,265,595	29,033,562	17,025,250	46,058,812	30,893,719	18,117,654	49,011,372
2024	27,580,072	16,168,260	43,748,332	29,553,061	17,326,598	46,879,659	31,652,325	18,559,181	50,211,506
2025	27,633,624	16,203,158	43,836,781	29,802,336	17,476,679	47,279,016	32,124,864	18,840,657	50,965,520
2026	27,811,854	16,307,804	44,119,659	30,186,806	17,702,440	47,889,246	32,746,562	19,205,758	51,952,320
2027	27,988,636	16,411,602	44,400,238	30,570,596	17,927,809	48,498,405	33,371,120	19,572,552	52,943,672
2028	28,292,850	16,586,678	44,879,528	31,095,441	18,232,114	49,327,556	34,154,294	20,028,225	54,182,518
2029	28,337,874	16,616,654	44,954,529	31,335,948	18,377,238	49,713,186	34,628,314	20,310,895	54,939,208
2030	28,510,228	16,717,851	45,228,079	31,717,165	18,601,101	50,318,266	35,260,287	20,682,059	55,942,346
2031	28,681,724	16,818,543	45,500,267	32,098,780	18,825,195	50,923,975	35,896,725	21,055,847	56,952,572
2032	28,983,658	16,992,197	45,975,856	32,627,905	19,131,833	51,759,738	36,702,348	21,524,418	58,226,766
2033	29,020,910	17,017,693	46,038,603	32,860,294	19,272,381	52,132,676	37,178,046	21,808,401	58,986,447
2034	29,188,918	17,116,337	46,305,255	33,240,812	19,495,837	52,736,649	37,823,902	22,187,738	60,011,640

Annual Change

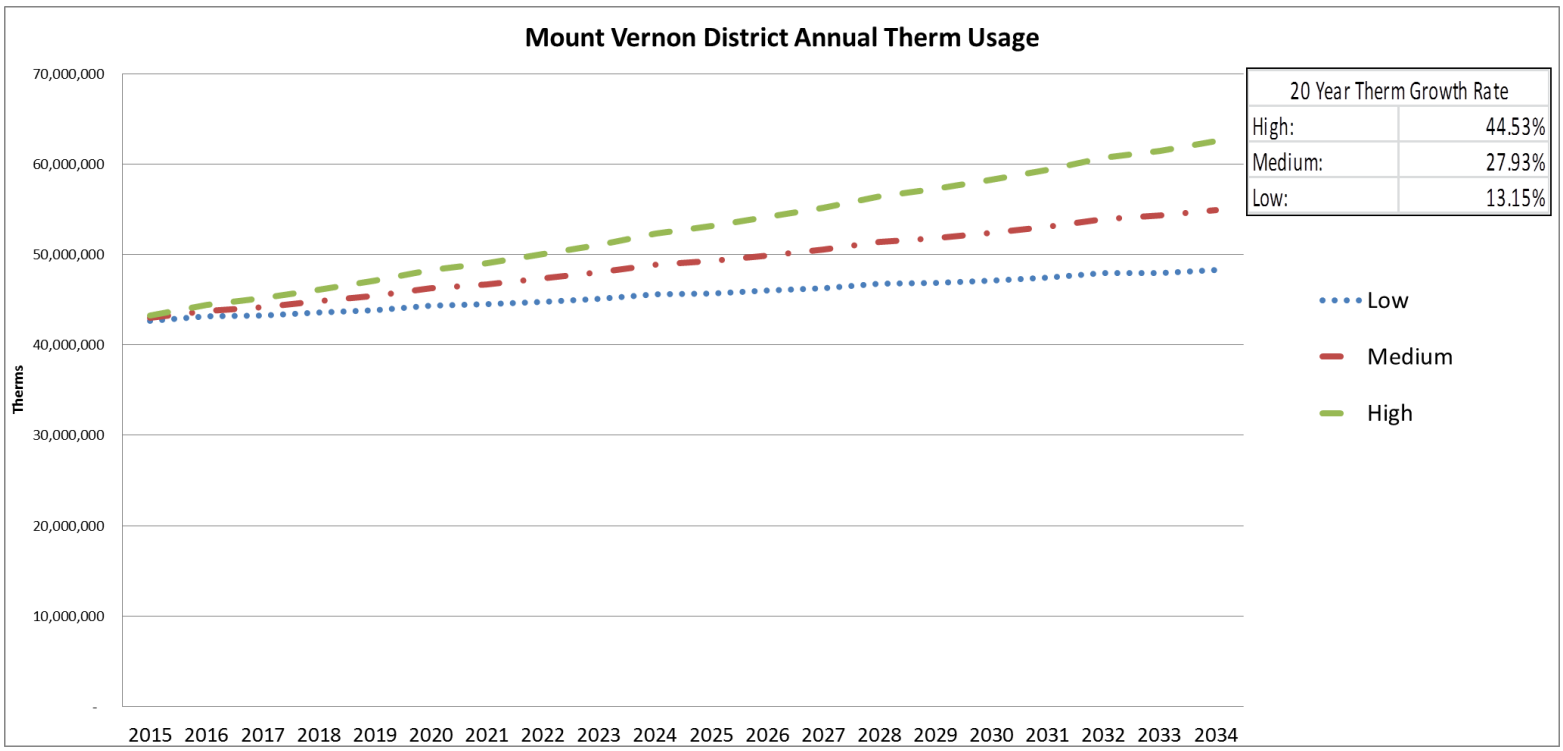
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	1.16%	1.18%	1.91%	1.89%	1.90%	2.64%	2.62%	2.63%
2017	0.26%	0.28%	0.27%	0.97%	1.00%	0.98%	1.69%	1.71%	1.70%
2018	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.14%	2.13%
2019	0.70%	0.70%	0.70%	1.41%	1.41%	1.41%	2.11%	2.11%	2.11%
2020	1.15%	1.13%	1.15%	1.85%	1.83%	1.85%	2.55%	2.53%	2.54%
2021	0.23%	0.25%	0.24%	0.92%	0.94%	0.92%	1.60%	1.62%	1.61%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.12%	1.10%	1.12%	1.79%	1.77%	1.78%	2.46%	2.44%	2.45%
2025	0.19%	0.22%	0.20%	0.84%	0.87%	0.85%	1.49%	1.52%	1.50%
2026	0.64%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2027	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2028	1.09%	1.07%	1.08%	1.72%	1.70%	1.71%	2.35%	2.33%	2.34%
2029	0.16%	0.18%	0.17%	0.77%	0.80%	0.78%	1.39%	1.41%	1.40%
2030	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2031	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.81%	1.81%
2032	1.05%	1.03%	1.05%	1.65%	1.63%	1.64%	2.24%	2.23%	2.24%
2033	0.13%	0.15%	0.14%	0.71%	0.73%	0.72%	1.30%	1.32%	1.30%
2034	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%

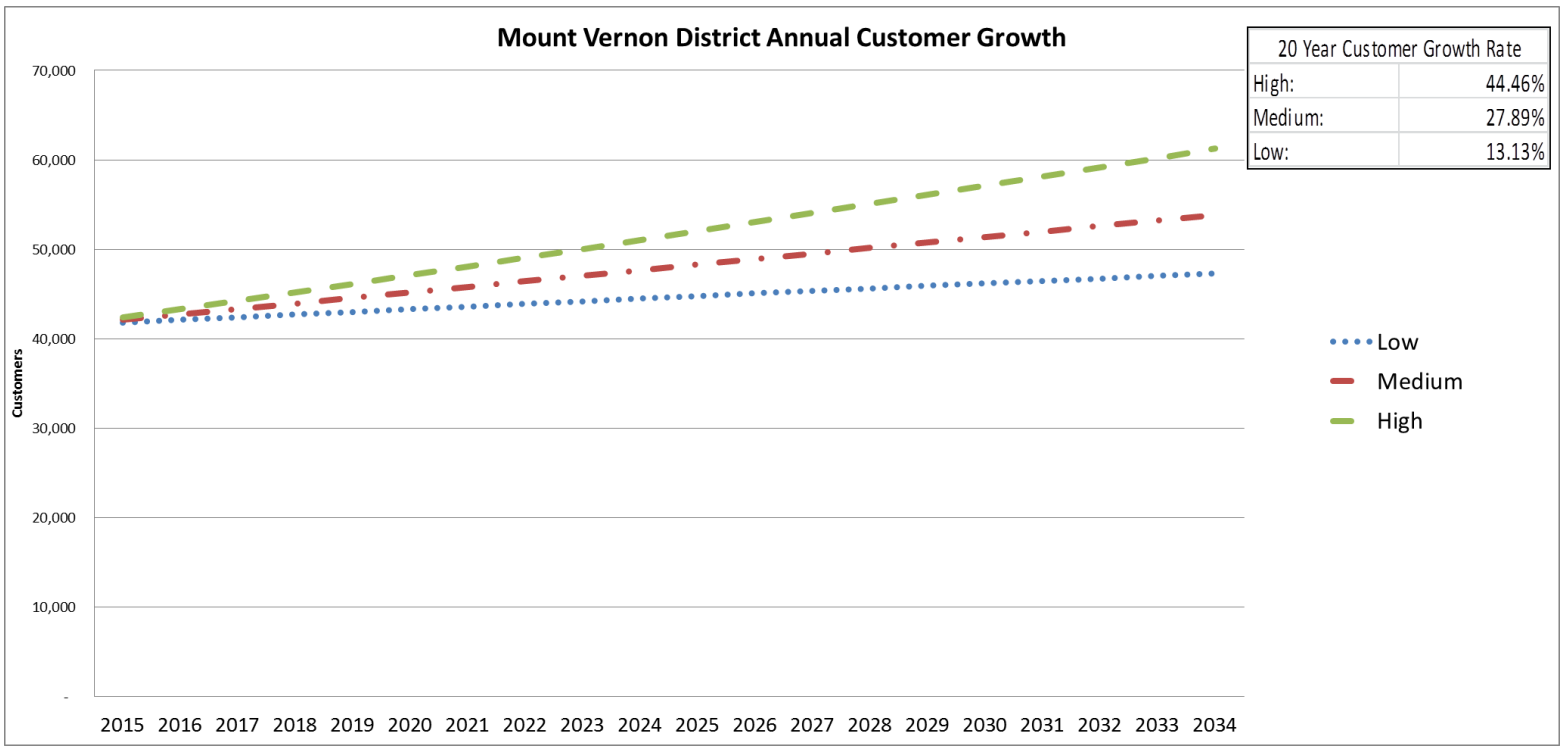
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	37,034	4,758	41,792	37,303	4,792	42,095	37,572	4,827	42,398
2016	37,302	4,792	42,094	37,843	4,861	42,704	38,387	4,931	43,318
2017	37,569	4,826	42,396	38,385	4,931	43,316	39,212	5,037	44,249
2018	37,836	4,861	42,697	38,930	5,001	43,931	40,047	5,144	45,191
2019	38,102	4,895	42,997	39,477	5,071	44,548	40,891	5,252	46,144
2020	38,366	4,929	43,295	40,025	5,141	45,166	41,742	5,362	47,104
2021	38,630	4,962	43,593	40,575	5,212	45,787	42,603	5,472	48,075
2022	38,892	4,996	43,888	41,126	5,282	46,408	43,471	5,583	49,054
2023	39,153	5,029	44,182	41,676	5,353	47,029	44,344	5,695	50,039
2024	39,412	5,063	44,475	42,228	5,424	47,652	45,225	5,808	51,033
2025	39,669	5,096	44,764	42,779	5,494	48,273	46,109	5,921	52,030
2026	39,924	5,128	45,053	43,330	5,565	48,895	47,001	6,036	53,036
2027	40,178	5,161	45,339	43,880	5,636	49,516	47,896	6,151	54,047
2028	40,429	5,193	45,623	44,430	5,706	50,136	48,796	6,266	55,062
2029	40,679	5,225	45,904	44,978	5,776	50,754	49,699	6,382	56,081
2030	40,926	5,257	46,183	45,525	5,847	51,371	50,605	6,498	57,103
2031	41,172	5,288	46,460	46,072	5,917	51,989	51,518	6,615	58,133
2032	41,416	5,320	46,735	46,618	5,987	52,605	52,433	6,732	59,166
2033	41,658	5,351	47,009	47,164	6,057	53,221	53,355	6,851	60,205
2034	41,899	5,382	47,281	47,710	6,127	53,836	54,281	6,969	61,250

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.72%	0.72%	0.72%	1.45%	1.44%	1.45%	2.17%	2.17%	2.17%
2017	0.72%	0.71%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%
2018	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2019	0.70%	0.70%	0.70%	1.41%	1.40%	1.41%	2.11%	2.10%	2.11%
2020	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2021	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.03%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.00%	2.01%
2024	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.98%	1.99%
2025	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.95%	1.95%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.64%	0.63%	0.63%	1.27%	1.27%	1.27%	1.91%	1.90%	1.91%
2028	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2029	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2030	0.61%	0.61%	0.61%	1.22%	1.21%	1.22%	1.82%	1.82%	1.82%
2031	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.78%	1.77%	1.78%
2033	0.59%	0.58%	0.59%	1.17%	1.17%	1.17%	1.76%	1.75%	1.76%
2034	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.73%	1.74%


Mount Vernon District Annual Therm Usage
Therms
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 44.53%
Medium: 27.93%
Low: 13.15%
Low
Medium
High


Mount Vernon District Annual Customer Growth
Customers
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 44.46%
Medium: 27.89%
Low: 13.13%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bremerton District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,277,702	8,971,425	33,249,127	24,457,667	8,971,425	33,429,092	24,637,632	8,971,425	33,609,057
2016	24,606,718	8,971,425	33,578,143	24,970,120	8,971,425	33,941,546	25,335,479	8,971,425	34,306,905
2017	24,637,408	8,971,425	33,608,833	25,182,918	8,971,425	34,154,343	25,734,300	8,971,425	34,705,725
2018	24,817,309	8,971,425	33,788,734	25,548,561	8,971,425	34,519,986	26,291,618	8,971,425	35,263,043
2019	24,997,045	8,971,425	33,968,471	25,915,813	8,971,425	34,887,238	26,854,354	8,971,425	35,825,779
2020	25,328,218	8,971,425	34,299,644	26,440,429	8,971,425	35,411,855	27,582,532	8,971,425	36,553,958
2021	25,354,708	8,971,425	34,326,133	26,652,409	8,971,425	35,623,835	27,991,936	8,971,425	36,963,361
2022	25,532,497	8,971,425	34,503,923	27,021,432	8,971,425	35,992,857	28,566,284	8,971,425	37,537,709
2023	25,709,222	8,971,425	34,680,647	27,390,132	8,971,425	36,361,557	29,143,072	8,971,425	38,114,497
2024	26,040,982	8,971,425	35,012,407	27,923,589	8,971,425	36,895,015	29,896,812	8,971,425	38,868,237
2025	26,060,033	8,971,425	35,031,459	28,127,613	8,971,425	37,099,039	30,305,533	8,971,425	39,276,958
2026	26,233,844	8,971,425	35,205,269	28,495,750	8,971,425	37,467,176	30,890,156	8,971,425	39,861,581
2027	26,406,384	8,971,425	35,377,809	28,863,001	8,971,425	37,834,427	31,476,237	8,971,425	40,447,663
2028	26,736,232	8,971,425	35,707,657	29,399,714	8,971,425	38,371,139	32,246,686	8,971,425	41,218,111
2029	26,747,127	8,971,425	35,718,552	29,593,557	8,971,425	38,564,982	32,650,561	8,971,425	41,621,986
2030	26,915,222	8,971,425	35,886,648	29,956,539	8,971,425	38,927,964	33,238,194	8,971,425	42,209,619
2031	27,082,646	8,971,425	36,054,071	30,319,763	8,971,425	39,291,188	33,828,959	8,971,425	42,800,384
2032	27,410,295	8,971,425	36,381,720	30,858,604	8,971,425	39,830,030	34,613,935	8,971,425	43,585,361
2033	27,413,893	8,971,425	36,385,318	31,043,390	8,971,425	40,014,815	35,014,040	8,971,425	43,985,465
2034	27,578,079	8,971,425	36,549,504	31,404,518	8,971,425	40,375,943	35,609,485	8,971,425	44,580,910

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.36%	0.00%	0.99%	2.10%	0.00%	1.53%	2.83%	0.00%	2.08%
2017	0.12%	0.00%	0.09%	0.85%	0.00%	0.63%	1.57%	0.00%	1.16%
2018	0.73%	0.00%	0.54%	1.45%	0.00%	1.07%	2.17%	0.00%	1.61%
2019	0.72%	0.00%	0.53%	1.44%	0.00%	1.06%	2.14%	0.00%	1.60%
2020	1.32%	0.00%	0.97%	2.02%	0.00%	1.50%	2.71%	0.00%	2.03%
2021	0.10%	0.00%	0.08%	0.80%	0.00%	0.60%	1.48%	0.00%	1.12%
2022	0.70%	0.00%	0.52%	1.38%	0.00%	1.04%	2.05%	0.00%	1.55%
2023	0.69%	0.00%	0.51%	1.36%	0.00%	1.02%	2.02%	0.00%	1.54%
2024	1.29%	0.00%	0.96%	1.95%	0.00%	1.47%	2.59%	0.00%	1.98%
2025	0.07%	0.00%	0.05%	0.73%	0.00%	0.55%	1.37%	0.00%	1.05%
2026	0.67%	0.00%	0.50%	1.31%	0.00%	0.99%	1.93%	0.00%	1.49%
2027	0.66%	0.00%	0.49%	1.29%	0.00%	0.98%	1.90%	0.00%	1.47%
2028	1.25%	0.00%	0.93%	1.86%	0.00%	1.42%	2.45%	0.00%	1.90%
2029	0.04%	0.00%	0.03%	0.66%	0.00%	0.51%	1.25%	0.00%	0.98%
2030	0.63%	0.00%	0.47%	1.23%	0.00%	0.94%	1.80%	0.00%	1.41%
2031	0.62%	0.00%	0.47%	1.21%	0.00%	0.93%	1.78%	0.00%	1.40%
2032	1.21%	0.00%	0.91%	1.78%	0.00%	1.37%	2.32%	0.00%	1.83%
2033	0.01%	0.00%	0.01%	0.60%	0.00%	0.46%	1.16%	0.00%	0.92%
2034	0.60%	0.00%	0.45%	1.16%	0.00%	0.90%	1.70%	0.00%	1.35%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	24,579	302,613	327,192	24,579	304,384	328,963	24,579	306,155	330,734
2016	24,579	304,383	328,962	24,579	307,943	332,522	24,579	311,523	336,102
2017	24,579	306,153	330,732	24,579	311,521	336,100	24,579	316,947	341,526
2018	24,579	307,923	332,502	24,579	315,119	339,698	24,579	322,431	347,010
2019	24,579	309,692	334,271	24,579	318,733	343,312	24,579	327,969	352,548
2020	24,579	311,451	336,031	24,579	322,348	346,927	24,579	333,537	358,116
2021	24,579	313,211	337,790	24,579	325,981	350,561	24,579	339,163	363,742
2022	24,579	314,961	339,540	24,579	329,613	354,192	24,579	344,815	369,394
2023	24,579	316,700	341,279	24,579	333,241	357,820	24,579	350,491	375,070
2024	24,579	318,434	343,014	24,579	336,878	361,457	24,579	356,210	380,789
2025	24,579	320,152	344,731	24,579	340,498	365,078	24,579	361,930	386,510
2026	24,579	321,862	346,442	24,579	344,121	368,700	24,579	367,683	392,263
2027	24,579	323,560	348,140	24,579	347,735	372,314	24,579	373,451	398,030
2028	24,579	325,246	349,825	24,579	351,339	375,919	24,579	379,231	403,810
2029	24,579	326,913	351,493	24,579	354,924	379,503	24,579	385,007	409,586
2030	24,579	328,568	353,147	24,579	358,496	383,075	24,579	390,790	415,369
2031	24,579	330,215	354,794	24,579	362,070	386,650	24,579	396,603	421,182
2032	24,579	331,849	356,429	24,579	365,632	390,211	24,579	402,423	427,002
2033	24,579	333,475	358,054	24,579	369,191	393,771	24,579	408,265	432,844
2034	24,579	335,091	359,670	24,579	372,745	397,324	24,579	414,125	438,704

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.58%	0.54%	0.00%	1.17%	1.08%	0.00%	1.75%	1.62%
2017	0.00%	0.58%	0.54%	0.00%	1.16%	1.08%	0.00%	1.74%	1.61%
2018	0.00%	0.58%	0.54%	0.00%	1.16%	1.07%	0.00%	1.73%	1.61%
2019	0.00%	0.57%	0.53%	0.00%	1.15%	1.06%	0.00%	1.72%	1.60%
2020	0.00%	0.57%	0.53%	0.00%	1.13%	1.05%	0.00%	1.70%	1.58%
2021	0.00%	0.57%	0.52%	0.00%	1.13%	1.05%	0.00%	1.69%	1.57%
2022	0.00%	0.56%	0.52%	0.00%	1.11%	1.04%	0.00%	1.67%	1.55%
2023	0.00%	0.55%	0.51%	0.00%	1.10%	1.02%	0.00%	1.65%	1.54%
2024	0.00%	0.55%	0.51%	0.00%	1.09%	1.02%	0.00%	1.63%	1.52%
2025	0.00%	0.54%	0.50%	0.00%	1.07%	1.00%	0.00%	1.61%	1.50%
2026	0.00%	0.53%	0.50%	0.00%	1.06%	0.99%	0.00%	1.59%	1.49%
2027	0.00%	0.53%	0.49%	0.00%	1.05%	0.98%	0.00%	1.57%	1.47%
2028	0.00%	0.52%	0.48%	0.00%	1.04%	0.97%	0.00%	1.55%	1.45%
2029	0.00%	0.51%	0.48%	0.00%	1.02%	0.95%	0.00%	1.52%	1.43%
2030	0.00%	0.51%	0.47%	0.00%	1.01%	0.94%	0.00%	1.50%	1.41%
2031	0.00%	0.50%	0.47%	0.00%	1.00%	0.93%	0.00%	1.49%	1.40%
2032	0.00%	0.49%	0.46%	0.00%	0.98%	0.92%	0.00%	1.47%	1.38%
2033	0.00%	0.49%	0.46%	0.00%	0.97%	0.91%	0.00%	1.45%	1.37%
2034	0.00%	0.48%	0.45%	0.00%	0.96%	0.90%	0.00%	1.44%	1.35%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	20,246,951	10,518,755	30,765,707	20,356,541	10,575,689	30,932,230	20,466,130	10,632,623	31,098,753
2016	20,449,351	10,622,467	31,071,818	20,670,666	10,737,429	31,408,096	20,893,173	10,853,011	31,746,184
2017	20,465,993	10,632,552	31,098,545	20,798,180	10,805,131	31,603,311	21,133,942	10,979,567	32,113,509
2018	20,575,543	10,689,466	31,265,010	21,020,837	10,920,806	31,941,643	21,473,319	11,155,881	32,629,201
2019	20,684,993	10,746,328	31,431,321	21,244,474	11,036,991	32,281,465	21,815,996	11,333,910	33,149,905
2020	20,888,751	10,850,714	31,739,465	21,566,096	11,202,562	32,768,658	22,261,646	11,563,868	33,825,513
2021	20,902,791	10,859,479	31,762,269	21,693,022	11,270,022	32,963,044	22,508,723	11,693,797	34,202,520
2022	21,011,055	10,915,725	31,926,780	21,917,737	11,386,767	33,304,504	22,858,470	11,875,499	34,733,968
2023	21,118,671	10,971,633	32,090,304	22,142,256	11,503,409	33,645,665	23,209,703	12,057,973	35,267,676
2024	21,322,829	11,076,197	32,399,026	22,469,352	11,671,761	34,141,113	23,671,060	12,295,991	35,967,051
2025	21,332,297	11,082,617	32,414,913	22,591,343	11,736,720	34,328,063	23,917,580	12,425,731	36,343,311
2026	21,438,138	11,137,604	32,575,741	22,815,519	11,853,185	34,668,703	24,273,584	12,610,683	36,884,268
2027	21,543,205	11,192,189	32,735,394	23,039,155	11,969,369	35,008,524	24,630,477	12,796,097	37,426,574
2028	21,746,242	11,296,140	33,042,382	23,368,323	12,138,734	35,507,057	25,102,152	13,039,375	38,141,527
2029	21,750,700	11,299,987	33,050,687	23,484,025	12,200,489	35,684,514	25,345,578	13,167,608	38,513,186
2030	21,853,061	11,353,166	33,206,227	23,705,061	12,315,323	36,020,384	25,703,415	13,353,513	39,056,927
2031	21,955,013	11,406,132	33,361,145	23,926,245	12,430,233	36,356,478	26,063,159	13,540,408	39,603,568
2032	22,156,752	11,509,380	33,666,132	24,256,799	12,600,255	36,857,054	26,543,825	13,788,256	40,332,081
2033	22,156,725	11,510,926	33,667,651	24,366,896	12,659,161	37,026,056	26,784,811	13,915,323	40,700,134
2034	22,256,706	11,562,869	33,819,574	24,586,804	12,773,408	37,360,211	27,147,405	14,103,699	41,251,104

Annual Change

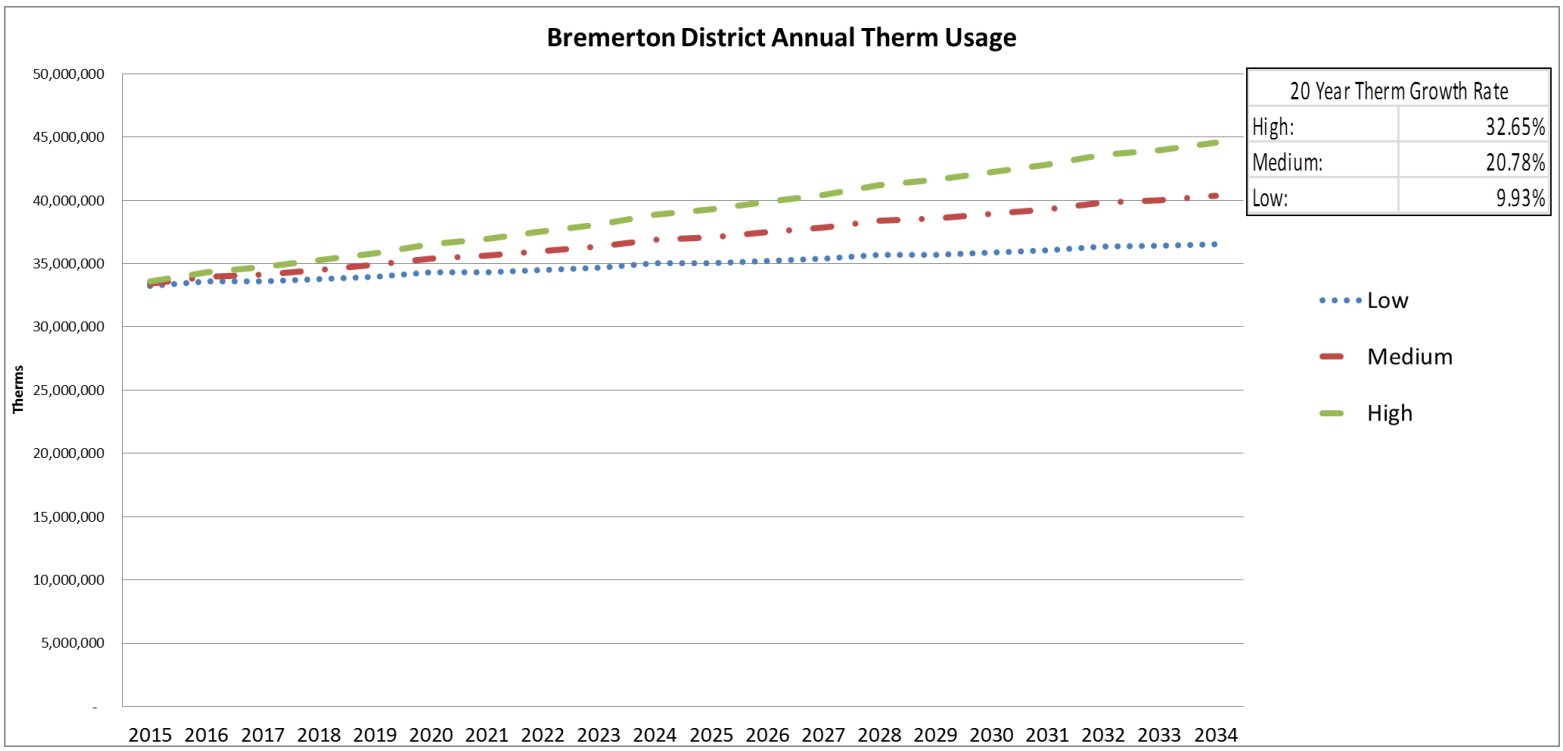
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.00%	0.99%	0.99%	1.54%	1.53%	1.54%	2.09%	2.07%	2.08%
2017	0.08%	0.09%	0.09%	0.62%	0.63%	0.62%	1.15%	1.17%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.99%	0.97%	0.98%	1.51%	1.50%	1.51%	2.04%	2.03%	2.04%
2021	0.07%	0.08%	0.07%	0.59%	0.60%	0.59%	1.11%	1.12%	1.11%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.97%	0.95%	0.96%	1.48%	1.46%	1.47%	1.99%	1.97%	1.98%
2025	0.04%	0.06%	0.05%	0.54%	0.56%	0.55%	1.04%	1.06%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.94%	0.93%	0.94%	1.43%	1.41%	1.42%	1.92%	1.90%	1.91%
2029	0.02%	0.03%	0.03%	0.50%	0.51%	0.50%	0.97%	0.98%	0.97%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.92%	0.91%	0.91%	1.38%	1.37%	1.38%	1.84%	1.83%	1.84%
2033	0.00%	0.01%	0.00%	0.45%	0.47%	0.46%	0.91%	0.92%	0.91%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

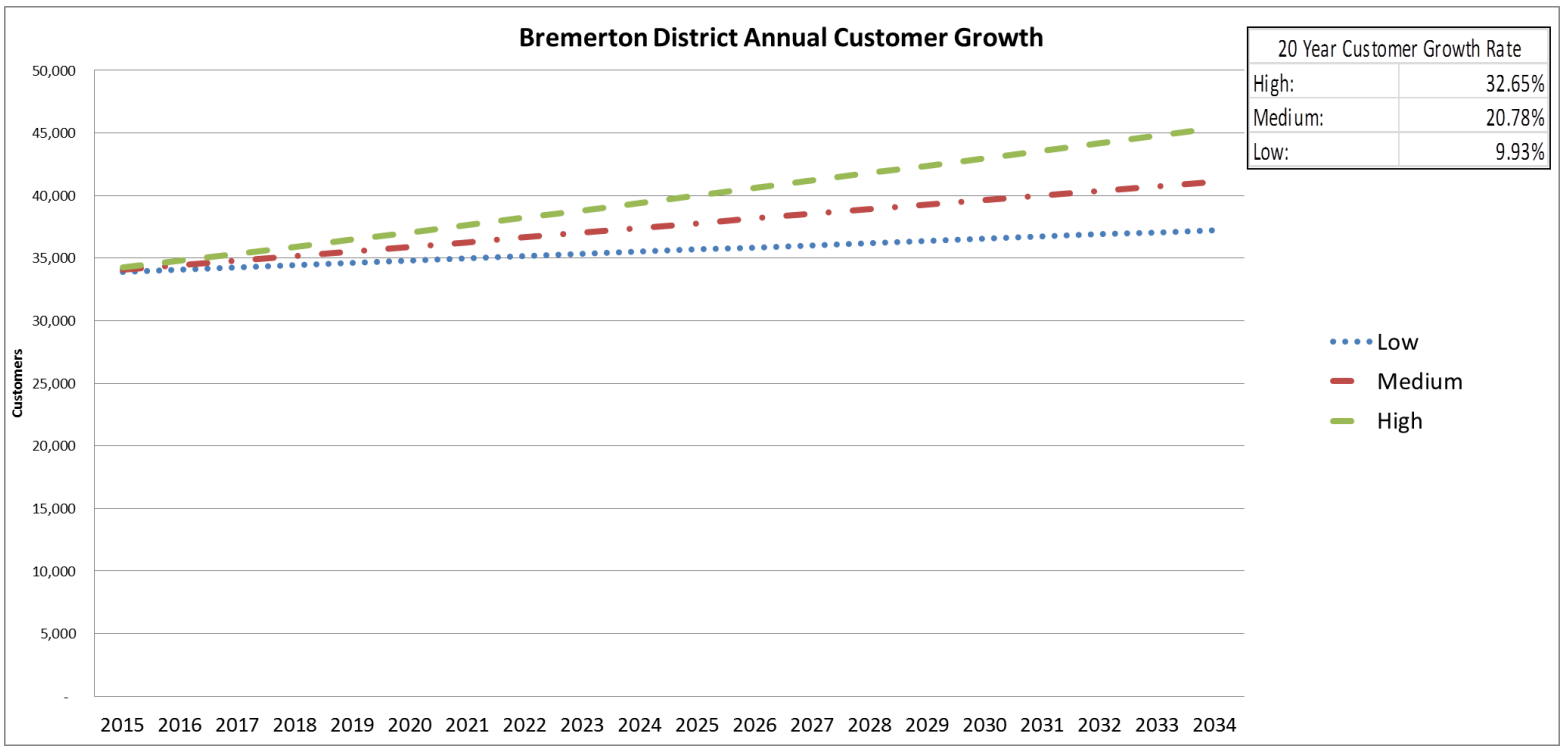
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,924	2,947	33,871	31,091	2,963	34,054	31,258	2,979	34,237
2016	31,091	2,963	34,054	31,427	2,995	34,422	31,766	3,027	34,793
2017	31,258	2,979	34,237	31,765	3,027	34,793	32,278	3,076	35,354
2018	31,425	2,995	34,420	32,106	3,060	35,165	32,797	3,126	35,922
2019	31,593	3,011	34,603	32,447	3,092	35,539	33,320	3,176	36,495
2020	31,759	3,027	34,786	32,789	3,125	35,914	33,846	3,226	37,072
2021	31,925	3,043	34,968	33,132	3,158	36,290	34,378	3,276	37,654
2022	32,091	3,058	35,149	33,475	3,190	36,666	34,912	3,327	38,239
2023	32,255	3,074	35,329	33,818	3,223	37,041	35,449	3,378	38,827
2024	32,419	3,090	35,508	34,162	3,256	37,418	35,989	3,430	39,419
2025	32,581	3,105	35,686	34,504	3,288	37,793	36,530	3,481	40,011
2026	32,743	3,121	35,863	34,847	3,321	38,168	37,073	3,533	40,607
2027	32,903	3,136	36,039	35,188	3,354	38,542	37,619	3,585	41,204
2028	33,063	3,151	36,214	35,529	3,386	38,915	38,165	3,637	41,802
2029	33,220	3,166	36,386	35,868	3,418	39,286	38,711	3,689	42,400
2030	33,377	3,181	36,557	36,205	3,450	39,656	39,257	3,741	42,999
2031	33,532	3,196	36,728	36,543	3,483	40,026	39,807	3,794	43,600
2032	33,687	3,210	36,897	36,880	3,515	40,394	40,357	3,846	44,203
2033	33,840	3,225	37,065	37,216	3,547	40,763	40,909	3,899	44,808
2034	33,993	3,240	37,233	37,552	3,579	41,131	41,463	3,952	45,414

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2017	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.61%	1.61%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2021	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2025	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.48%	0.48%	0.48%	0.97%	0.97%	0.97%	1.45%	1.45%	1.45%
2029	0.48%	0.48%	0.48%	0.95%	0.95%	0.95%	1.43%	1.43%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%	1.38%	1.38%	1.38%
2033	0.46%	0.46%	0.46%	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%


Bremerton District Annual Therm Usage
Therms
50,000,000
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High


Bremerton District Annual Customer Growth
Customers
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Longview District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,245,541	1,859,912	6,105,453	4,276,386	1,859,912	6,136,299	4,307,232	1,859,912	6,167,145
2016	4,305,281	1,859,912	6,165,193	4,367,718	1,859,912	6,227,630	4,430,747	1,859,912	6,290,660
2017	4,306,878	1,859,912	6,166,790	4,400,810	1,859,912	6,260,722	4,496,512	1,859,912	6,356,424
2018	4,337,404	1,859,912	6,197,316	4,463,574	1,859,912	6,323,486	4,593,291	1,859,912	6,453,203
2019	4,367,806	1,859,912	6,227,719	4,526,627	1,859,912	6,386,540	4,691,370	1,859,912	6,551,282
2020	4,427,566	1,859,912	6,287,478	4,620,207	1,859,912	6,480,119	4,821,777	1,859,912	6,681,690
2021	4,428,076	1,859,912	6,287,988	4,653,202	1,859,912	6,513,114	4,890,787	1,859,912	6,750,700
2022	4,457,944	1,859,912	6,317,856	4,716,692	1,859,912	6,576,604	4,992,064	1,859,912	6,851,976
2023	4,487,565	1,859,912	6,347,477	4,780,156	1,859,912	6,640,069	5,094,125	1,859,912	6,954,037
2024	4,547,137	1,859,912	6,407,049	4,875,348	1,859,912	6,735,260	5,230,405	1,859,912	7,090,317
2025	4,546,174	1,859,912	6,406,086	4,907,167	1,859,912	6,767,079	5,300,818	1,859,912	7,160,731
2026	4,575,146	1,859,912	6,435,058	4,970,654	1,859,912	6,830,567	5,405,339	1,859,912	7,265,251
2027	4,603,860	1,859,912	6,463,772	5,034,031	1,859,912	6,893,943	5,510,475	1,859,912	7,370,387
2028	4,662,934	1,859,912	6,522,846	5,129,990	1,859,912	6,989,902	5,651,221	1,859,912	7,511,134
2029	4,660,433	1,859,912	6,520,346	5,160,239	1,859,912	7,020,152	5,722,209	1,859,912	7,582,122
2030	4,688,283	1,859,912	6,548,195	5,223,021	1,859,912	7,082,933	5,828,706	1,859,912	7,688,618
2031	4,715,973	1,859,912	6,575,885	5,285,853	1,859,912	7,145,765	5,936,038	1,859,912	7,795,950
2032	4,774,526	1,859,912	6,634,438	5,382,349	1,859,912	7,242,262	6,080,781	1,859,912	7,940,693
2033	4,770,620	1,859,912	6,630,532	5,411,086	1,859,912	7,270,998	6,152,239	1,859,912	8,012,151
2034	4,797,653	1,859,912	6,657,565	5,473,630	1,859,912	7,333,542	6,261,324	1,859,912	8,121,236

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	0.00%	0.98%	2.14%	0.00%	1.49%	2.87%	0.00%	2.00%
2017	0.04%	0.00%	0.03%	0.76%	0.00%	0.53%	1.48%	0.00%	1.05%
2018	0.71%	0.00%	0.50%	1.43%	0.00%	1.00%	2.15%	0.00%	1.52%
2019	0.70%	0.00%	0.49%	1.41%	0.00%	1.00%	2.14%	0.00%	1.52%
2020	1.37%	0.00%	0.96%	2.07%	0.00%	1.47%	2.78%	0.00%	1.99%
2021	0.01%	0.00%	0.01%	0.71%	0.00%	0.51%	1.43%	0.00%	1.03%
2022	0.67%	0.00%	0.47%	1.36%	0.00%	0.97%	2.07%	0.00%	1.50%
2023	0.66%	0.00%	0.47%	1.35%	0.00%	0.97%	2.04%	0.00%	1.49%
2024	1.33%	0.00%	0.94%	1.99%	0.00%	1.43%	2.68%	0.00%	1.96%
2025	-0.02%	0.00%	-0.02%	0.65%	0.00%	0.47%	1.35%	0.00%	0.99%
2026	0.64%	0.00%	0.45%	1.29%	0.00%	0.94%	1.97%	0.00%	1.46%
2027	0.63%	0.00%	0.45%	1.28%	0.00%	0.93%	1.95%	0.00%	1.45%
2028	1.28%	0.00%	0.91%	1.91%	0.00%	1.39%	2.55%	0.00%	1.91%
2029	-0.05%	0.00%	-0.04%	0.59%	0.00%	0.43%	1.26%	0.00%	0.95%
2030	0.60%	0.00%	0.43%	1.22%	0.00%	0.89%	1.86%	0.00%	1.40%
2031	0.59%	0.00%	0.42%	1.20%	0.00%	0.89%	1.84%	0.00%	1.40%
2032	1.24%	0.00%	0.89%	1.83%	0.00%	1.35%	2.44%	0.00%	1.86%
2033	-0.08%	0.00%	-0.06%	0.53%	0.00%	0.40%	1.18%	0.00%	0.90%
2034	0.57%	0.00%	0.41%	1.16%	0.00%	0.86%	1.77%	0.00%	1.36%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	5,096	58,402	63,498	5,096	58,710	63,806	5,096	59,018	64,114
2016	5,096	58,709	63,805	5,096	59,330	64,426	5,096	59,956	65,052
2017	5,096	59,015	64,111	5,096	59,953	65,049	5,096	60,909	66,004
2018	5,096	59,321	64,416	5,096	60,581	65,677	5,096	61,876	66,971
2019	5,096	59,625	64,721	5,096	61,211	66,307	5,096	62,855	67,951
2020	5,096	59,927	65,023	5,096	61,843	66,939	5,096	63,845	68,941
2021	5,096	60,229	65,324	5,096	62,478	67,573	5,096	64,847	69,943
2022	5,096	60,528	65,624	5,096	63,113	68,208	5,096	65,859	70,954
2023	5,096	60,825	65,921	5,096	63,748	68,843	5,096	66,878	71,973
2024	5,096	61,121	66,216	5,096	64,384	69,480	5,096	67,907	73,003
2025	5,096	61,413	66,509	5,096	65,018	70,114	5,096	68,941	74,036
2026	5,096	61,704	66,799	5,096	65,654	70,749	5,096	69,984	75,079
2027	5,096	61,992	67,087	5,096	66,288	71,383	5,096	71,033	76,128
2028	5,096	62,277	67,373	5,096	66,920	72,016	5,096	72,087	77,183
2029	5,096	62,559	67,655	5,096	67,550	72,646	5,096	73,144	78,240
2030	5,096	62,839	67,935	5,096	68,178	73,274	5,096	74,206	79,301
2031	5,096	63,117	68,213	5,096	68,807	73,902	5,096	75,275	80,371
2032	5,096	63,392	68,488	5,096	69,433	74,529	5,096	76,349	81,445
2033	5,096	63,666	68,761	5,096	70,059	75,155	5,096	77,429	82,525
2034	5,096	63,937	69,033	5,096	70,685	75,780	5,096	78,516	83,611

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.53%	0.48%	0.00%	1.06%	0.97%	0.00%	1.59%	1.46%
2017	0.00%	0.52%	0.48%	0.00%	1.05%	0.97%	0.00%	1.59%	1.46%
2018	0.00%	0.52%	0.48%	0.00%	1.05%	0.96%	0.00%	1.59%	1.46%
2019	0.00%	0.51%	0.47%	0.00%	1.04%	0.96%	0.00%	1.58%	1.46%
2020	0.00%	0.51%	0.47%	0.00%	1.03%	0.95%	0.00%	1.57%	1.46%
2021	0.00%	0.50%	0.46%	0.00%	1.03%	0.95%	0.00%	1.57%	1.45%
2022	0.00%	0.50%	0.46%	0.00%	1.02%	0.94%	0.00%	1.56%	1.45%
2023	0.00%	0.49%	0.45%	0.00%	1.01%	0.93%	0.00%	1.55%	1.44%
2024	0.00%	0.49%	0.45%	0.00%	1.00%	0.92%	0.00%	1.54%	1.43%
2025	0.00%	0.48%	0.44%	0.00%	0.99%	0.91%	0.00%	1.52%	1.42%
2026	0.00%	0.47%	0.44%	0.00%	0.98%	0.91%	0.00%	1.51%	1.41%
2027	0.00%	0.47%	0.43%	0.00%	0.97%	0.90%	0.00%	1.50%	1.40%
2028	0.00%	0.46%	0.43%	0.00%	0.95%	0.89%	0.00%	1.48%	1.38%
2029	0.00%	0.45%	0.42%	0.00%	0.94%	0.87%	0.00%	1.47%	1.37%
2030	0.00%	0.45%	0.41%	0.00%	0.93%	0.86%	0.00%	1.45%	1.36%
2031	0.00%	0.44%	0.41%	0.00%	0.92%	0.86%	0.00%	1.44%	1.35%
2032	0.00%	0.44%	0.40%	0.00%	0.91%	0.85%	0.00%	1.43%	1.34%
2033	0.00%	0.43%	0.40%	0.00%	0.90%	0.84%	0.00%	1.41%	1.33%
2034	0.00%	0.43%	0.39%	0.00%	0.89%	0.83%	0.00%	1.40%	1.32%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,317,337	4,300,816	5,618,153	1,324,694	4,323,108	5,647,802	1,332,050	4,345,399	5,677,450
2016	1,330,712	4,343,296	5,674,008	1,345,601	4,388,414	5,734,015	1,360,641	4,433,967	5,794,608
2017	1,331,931	4,345,118	5,677,048	1,354,325	4,412,997	5,767,322	1,377,169	4,482,179	5,859,347
2018	1,339,176	4,367,153	5,706,329	1,369,251	4,458,327	5,827,578	1,400,227	4,552,110	5,952,337
2019	1,346,383	4,389,092	5,735,476	1,384,235	4,503,859	5,888,094	1,423,590	4,622,981	6,046,572
2020	1,359,725	4,431,551	5,791,276	1,405,636	4,570,746	5,976,382	1,453,813	4,716,509	6,170,322
2021	1,360,648	4,432,569	5,793,216	1,414,292	4,595,248	6,009,540	1,471,098	4,767,091	6,238,189
2022	1,367,706	4,454,106	5,821,812	1,429,359	4,641,083	6,070,442	1,495,228	4,840,286	6,335,515
2023	1,374,701	4,475,464	5,850,165	1,444,417	4,686,900	6,131,316	1,519,555	4,914,058	6,433,612
2024	1,387,974	4,517,763	5,905,737	1,466,181	4,754,926	6,221,107	1,551,199	5,011,830	6,563,028
2025	1,388,527	4,517,711	5,906,238	1,474,544	4,778,589	6,253,132	1,568,841	5,063,483	6,632,324
2026	1,395,355	4,538,590	5,933,945	1,489,599	4,824,420	6,314,019	1,593,776	5,139,058	6,732,835
2027	1,402,119	4,559,281	5,961,400	1,504,629	4,870,172	6,374,801	1,618,869	5,215,089	6,833,958
2028	1,415,262	4,601,207	6,016,469	1,526,578	4,938,743	6,465,321	1,651,630	5,316,112	6,967,742
2029	1,415,439	4,600,045	6,015,484	1,534,565	4,961,291	6,495,856	1,669,447	5,368,249	7,037,696
2030	1,421,993	4,620,110	6,042,104	1,549,460	5,006,623	6,556,083	1,694,908	5,445,305	7,140,214
2031	1,428,506	4,640,058	6,068,564	1,564,365	5,051,991	6,616,356	1,720,576	5,522,974	7,243,549
2032	1,441,519	4,681,597	6,123,116	1,586,451	5,120,946	6,707,397	1,754,352	5,626,914	7,381,266
2033	1,441,354	4,679,423	6,120,776	1,594,078	5,142,424	6,736,501	1,772,317	5,679,461	7,451,778
2034	1,447,705	4,698,893	6,146,598	1,608,916	5,187,589	6,796,505	1,798,437	5,758,432	7,556,869

Annual Change

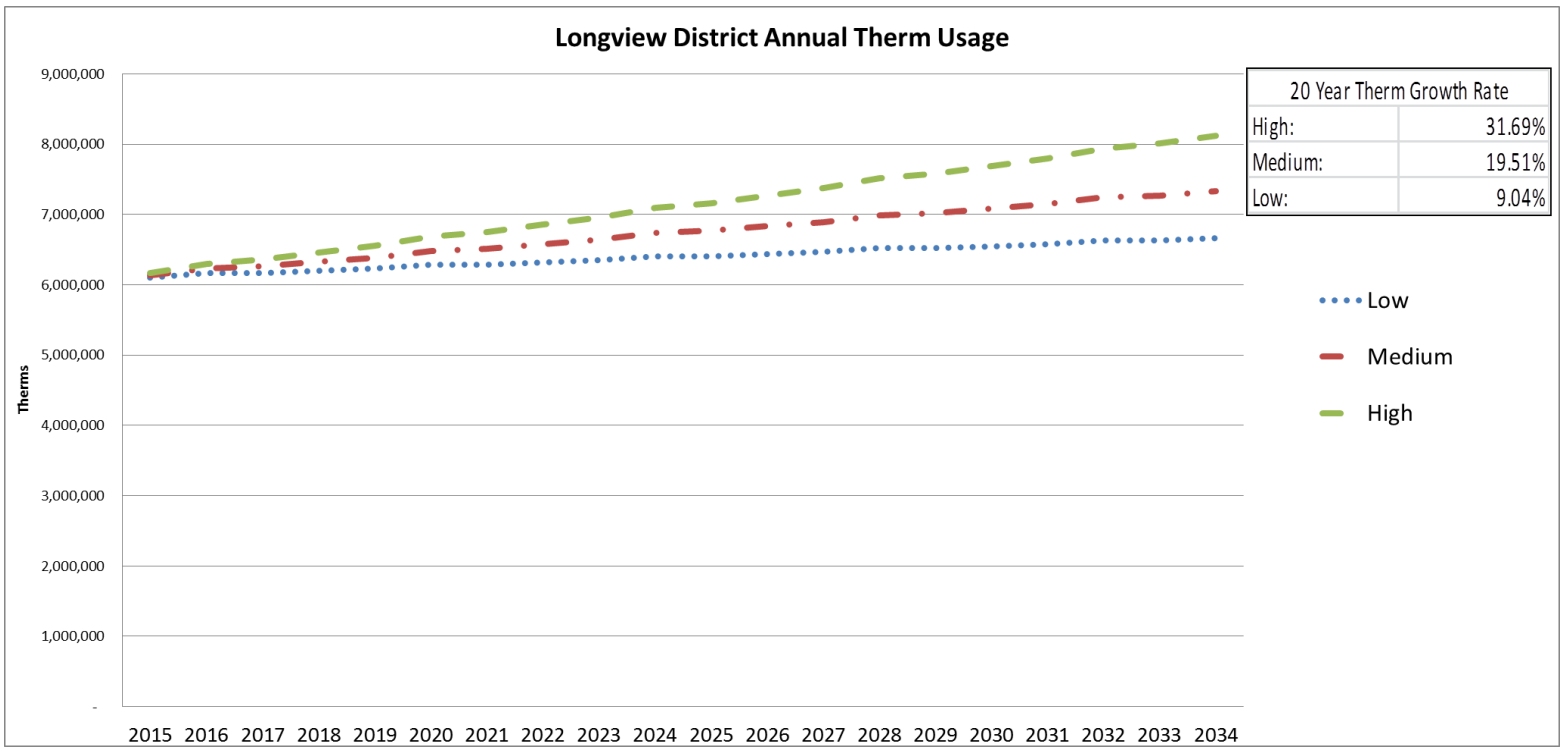
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.99%	0.99%	1.58%	1.51%	1.53%	2.15%	2.04%	2.06%
2017	0.09%	0.04%	0.05%	0.65%	0.56%	0.58%	1.21%	1.09%	1.12%
2018	0.54%	0.51%	0.52%	1.10%	1.03%	1.04%	1.67%	1.56%	1.59%
2019	0.54%	0.50%	0.51%	1.09%	1.02%	1.04%	1.67%	1.56%	1.58%
2020	0.99%	0.97%	0.97%	1.55%	1.49%	1.50%	2.12%	2.02%	2.05%
2021	0.07%	0.02%	0.03%	0.62%	0.54%	0.55%	1.19%	1.07%	1.10%
2022	0.52%	0.49%	0.49%	1.07%	1.00%	1.01%	1.64%	1.54%	1.56%
2023	0.51%	0.48%	0.49%	1.05%	0.99%	1.00%	1.63%	1.52%	1.55%
2024	0.97%	0.95%	0.95%	1.51%	1.45%	1.46%	2.08%	1.99%	2.01%
2025	0.04%	0.00%	0.01%	0.57%	0.50%	0.51%	1.14%	1.03%	1.06%
2026	0.49%	0.46%	0.47%	1.02%	0.96%	0.97%	1.59%	1.49%	1.52%
2027	0.48%	0.46%	0.46%	1.01%	0.95%	0.96%	1.57%	1.48%	1.50%
2028	0.94%	0.92%	0.92%	1.46%	1.41%	1.42%	2.02%	1.94%	1.96%
2029	0.01%	-0.03%	-0.02%	0.52%	0.46%	0.47%	1.08%	0.98%	1.00%
2030	0.46%	0.44%	0.44%	0.97%	0.91%	0.93%	1.53%	1.44%	1.46%
2031	0.46%	0.43%	0.44%	0.96%	0.91%	0.92%	1.51%	1.43%	1.45%
2032	0.91%	0.90%	0.90%	1.41%	1.36%	1.38%	1.96%	1.88%	1.90%
2033	-0.01%	-0.05%	-0.04%	0.48%	0.42%	0.43%	1.02%	0.93%	0.96%
2034	0.44%	0.42%	0.42%	0.93%	0.88%	0.89%	1.47%	1.39%	1.41%

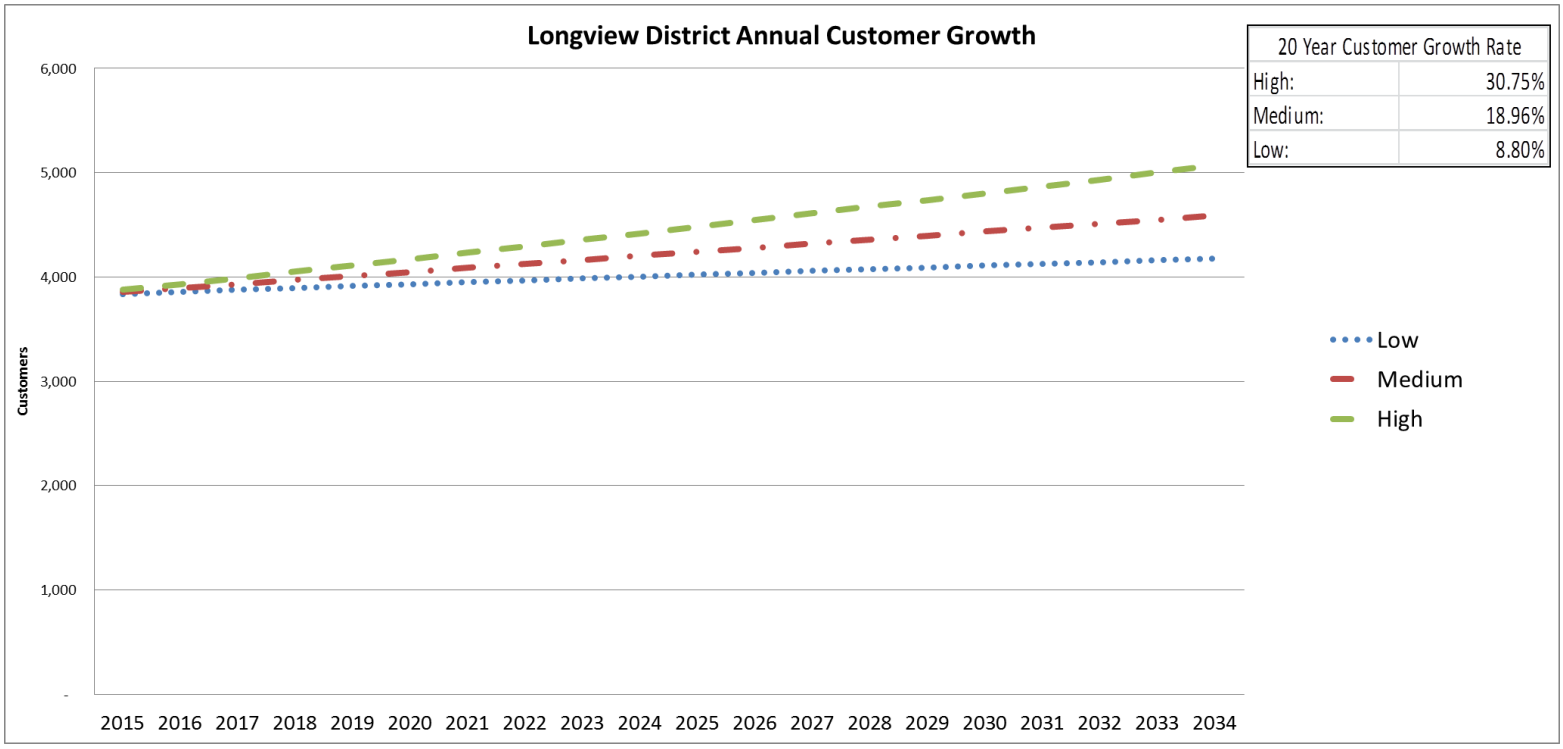
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,654	1,185	3,839	2,667	1,190	3,858	2,681	1,196	3,876
2016	2,667	1,190	3,857	2,694	1,201	3,895	2,722	1,212	3,934
2017	2,681	1,196	3,876	2,721	1,212	3,933	2,763	1,229	3,992
2018	2,694	1,201	3,895	2,749	1,223	3,972	2,805	1,246	4,051
2019	2,707	1,206	3,913	2,776	1,234	4,010	2,848	1,263	4,111
2020	2,720	1,212	3,932	2,804	1,245	4,049	2,891	1,280	4,171
2021	2,733	1,217	3,950	2,831	1,256	4,088	2,935	1,298	4,232
2022	2,746	1,222	3,968	2,859	1,267	4,126	2,979	1,315	4,294
2023	2,759	1,227	3,987	2,887	1,279	4,165	3,023	1,333	4,356
2024	2,772	1,233	4,005	2,914	1,290	4,204	3,068	1,351	4,419
2025	2,785	1,238	4,022	2,942	1,301	4,243	3,113	1,369	4,482
2026	2,797	1,243	4,040	2,969	1,312	4,282	3,159	1,388	4,546
2027	2,810	1,248	4,058	2,997	1,323	4,320	3,205	1,406	4,610
2028	2,822	1,253	4,075	3,025	1,334	4,359	3,251	1,424	4,675
2029	2,834	1,258	4,092	3,052	1,345	4,397	3,297	1,443	4,740
2030	2,847	1,263	4,110	3,079	1,356	4,436	3,343	1,461	4,804
2031	2,859	1,268	4,127	3,107	1,367	4,474	3,390	1,480	4,870
2032	2,871	1,273	4,143	3,134	1,378	4,513	3,437	1,499	4,936
2033	2,882	1,278	4,160	3,161	1,389	4,551	3,484	1,518	5,002
2034	2,894	1,282	4,177	3,189	1,400	4,589	3,532	1,537	5,068

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.45%	0.49%	1.01%	0.91%	0.98%	1.52%	1.37%	1.48%
2017	0.50%	0.45%	0.48%	1.01%	0.91%	0.98%	1.52%	1.37%	1.48%
2018	0.50%	0.45%	0.48%	1.00%	0.91%	0.97%	1.52%	1.38%	1.48%
2019	0.49%	0.45%	0.48%	1.00%	0.90%	0.97%	1.52%	1.38%	1.48%
2020	0.49%	0.44%	0.47%	0.99%	0.90%	0.96%	1.51%	1.37%	1.47%
2021	0.48%	0.44%	0.47%	0.98%	0.89%	0.96%	1.51%	1.37%	1.47%
2022	0.48%	0.43%	0.46%	0.98%	0.89%	0.95%	1.50%	1.36%	1.46%
2023	0.47%	0.43%	0.46%	0.97%	0.88%	0.94%	1.49%	1.36%	1.45%
2024	0.46%	0.42%	0.45%	0.96%	0.87%	0.93%	1.49%	1.35%	1.44%
2025	0.46%	0.42%	0.45%	0.95%	0.86%	0.92%	1.47%	1.34%	1.43%
2026	0.45%	0.41%	0.44%	0.94%	0.86%	0.91%	1.46%	1.33%	1.42%
2027	0.45%	0.41%	0.44%	0.93%	0.85%	0.90%	1.45%	1.32%	1.41%
2028	0.44%	0.40%	0.43%	0.92%	0.84%	0.89%	1.44%	1.31%	1.40%
2029	0.43%	0.40%	0.42%	0.91%	0.83%	0.88%	1.42%	1.30%	1.38%
2030	0.43%	0.39%	0.42%	0.90%	0.82%	0.87%	1.41%	1.29%	1.37%
2031	0.42%	0.39%	0.41%	0.89%	0.81%	0.87%	1.40%	1.28%	1.36%
2032	0.42%	0.38%	0.41%	0.88%	0.80%	0.86%	1.39%	1.27%	1.35%
2033	0.41%	0.38%	0.40%	0.87%	0.80%	0.85%	1.37%	1.26%	1.34%
2034	0.41%	0.38%	0.40%	0.86%	0.79%	0.84%	1.36%	1.25%	1.33%


Longview District Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 31.69%
Medium: 19.51%
Low: 9.04%
Low
Medium
High


Longview District Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.75%
Medium: 18.96%
Low: 8.80%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Aberdeen District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,553,430	2,322,352	5,875,782	3,567,270	2,322,352	5,889,622	3,581,110	2,322,352	5,903,462
2016	3,592,616	2,322,352	5,914,968	3,620,567	2,322,352	5,942,919	3,648,584	2,322,352	5,970,936
2017	3,581,288	2,322,352	5,903,640	3,623,184	2,322,352	5,945,536	3,665,277	2,322,352	5,987,629
2018	3,595,305	2,322,352	5,917,657	3,651,417	2,322,352	5,973,769	3,707,927	2,322,352	6,030,279
2019	3,609,367	2,322,352	5,931,719	3,679,808	2,322,352	6,002,160	3,750,916	2,322,352	6,073,268
2020	3,648,779	2,322,352	5,971,131	3,733,826	2,322,352	6,056,178	3,819,879	2,322,352	6,142,231
2021	3,637,236	2,322,352	5,959,588	3,736,274	2,322,352	6,058,626	3,836,719	2,322,352	6,159,071
2022	3,651,083	2,322,352	5,973,435	3,764,428	2,322,352	6,086,780	3,879,651	2,322,352	6,202,003
2023	3,664,782	2,322,352	5,987,134	3,792,346	2,322,352	6,114,698	3,922,320	2,322,352	6,244,672
2024	3,704,186	2,322,352	6,026,539	3,846,608	2,322,352	6,168,960	3,992,052	2,322,352	6,314,404
2025	3,691,855	2,322,352	6,014,207	3,847,707	2,322,352	6,170,059	4,007,222	2,322,352	6,329,574
2026	3,705,230	2,322,352	6,027,582	3,875,150	2,322,352	6,197,502	4,049,451	2,322,352	6,371,804
2027	3,718,383	2,322,352	6,040,735	3,902,199	2,322,352	6,224,551	4,091,166	2,322,352	6,413,518
2028	3,757,319	2,322,352	6,079,671	3,955,743	2,322,352	6,278,095	4,160,167	2,322,352	6,482,519
2029	3,744,108	2,322,352	6,066,460	3,955,270	2,322,352	6,277,622	4,173,276	2,322,352	6,495,628
2030	3,756,643	2,322,352	6,078,995	3,981,213	2,322,352	6,303,565	4,213,541	2,322,352	6,535,893
2031	3,769,152	2,322,352	6,091,504	4,007,156	2,322,352	6,329,508	4,253,890	2,322,352	6,576,242
2032	3,807,624	2,322,352	6,129,977	4,059,960	2,322,352	6,382,312	4,322,081	2,322,352	6,644,433
2033	3,793,639	2,322,352	6,115,991	4,058,093	2,322,352	6,380,445	4,333,354	2,322,352	6,655,706
2034	3,805,732	2,322,352	6,128,084	4,083,325	2,322,352	6,405,677	4,372,835	2,322,352	6,695,187

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.00%	0.67%	1.49%	0.00%	0.90%	1.88%	0.00%	1.14%
2017	-0.32%	0.00%	-0.19%	0.07%	0.00%	0.04%	0.46%	0.00%	0.28%
2018	0.39%	0.00%	0.24%	0.78%	0.00%	0.47%	1.16%	0.00%	0.71%
2019	0.39%	0.00%	0.24%	0.78%	0.00%	0.48%	1.16%	0.00%	0.71%
2020	1.09%	0.00%	0.66%	1.47%	0.00%	0.90%	1.84%	0.00%	1.14%
2021	-0.32%	0.00%	-0.19%	0.07%	0.00%	0.04%	0.44%	0.00%	0.27%
2022	0.38%	0.00%	0.23%	0.75%	0.00%	0.46%	1.12%	0.00%	0.70%
2023	0.38%	0.00%	0.23%	0.74%	0.00%	0.46%	1.10%	0.00%	0.69%
2024	1.08%	0.00%	0.66%	1.43%	0.00%	0.89%	1.78%	0.00%	1.12%
2025	-0.33%	0.00%	-0.20%	0.03%	0.00%	0.02%	0.38%	0.00%	0.24%
2026	0.36%	0.00%	0.22%	0.71%	0.00%	0.44%	1.05%	0.00%	0.67%
2027	0.36%	0.00%	0.22%	0.70%	0.00%	0.44%	1.03%	0.00%	0.65%
2028	1.05%	0.00%	0.64%	1.37%	0.00%	0.86%	1.69%	0.00%	1.08%
2029	-0.35%	0.00%	-0.22%	-0.01%	0.00%	-0.01%	0.32%	0.00%	0.20%
2030	0.33%	0.00%	0.21%	0.66%	0.00%	0.41%	0.96%	0.00%	0.62%
2031	0.33%	0.00%	0.21%	0.65%	0.00%	0.41%	0.96%	0.00%	0.62%
2032	1.02%	0.00%	0.63%	1.32%	0.00%	0.83%	1.60%	0.00%	1.04%
2033	-0.37%	0.00%	-0.23%	-0.05%	0.00%	-0.03%	0.26%	0.00%	0.17%
2034	0.32%	0.00%	0.20%	0.62%	0.00%	0.40%	0.91%	0.00%	0.59%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	6,363	47,063	53,425	6,363	47,189	53,551	6,363	47,315	53,677
2016	6,363	47,189	53,552	6,363	47,443	53,805	6,363	47,696	54,059
2017	6,363	47,316	53,679	6,363	47,697	54,060	6,363	48,080	54,442
2018	6,363	47,444	53,806	6,363	47,954	54,316	6,363	48,468	54,830
2019	6,363	47,571	53,934	6,363	48,212	54,575	6,363	48,858	55,221
2020	6,363	47,698	54,061	6,363	48,468	54,831	6,363	49,247	55,610
2021	6,363	47,825	54,187	6,363	48,725	55,088	6,363	49,639	56,001
2022	6,363	47,951	54,313	6,363	48,981	55,344	6,363	50,029	56,392
2023	6,363	48,075	54,438	6,363	49,235	55,598	6,363	50,417	56,780
2024	6,363	48,200	54,562	6,363	49,489	55,852	6,363	50,806	57,168
2025	6,363	48,321	54,684	6,363	49,739	56,101	6,363	51,189	57,552
2026	6,363	48,443	54,806	6,363	49,988	56,351	6,363	51,573	57,936
2027	6,363	48,563	54,925	6,363	50,234	56,597	6,363	51,952	58,315
2028	6,363	48,681	55,043	6,363	50,477	56,840	6,363	52,328	58,690
2029	6,363	48,797	55,159	6,363	50,717	57,079	6,363	52,699	59,061
2030	6,363	48,911	55,273	6,363	50,952	57,315	6,363	53,065	59,428
2031	6,363	49,024	55,387	6,363	51,188	57,551	6,363	53,432	59,794
2032	6,363	49,136	55,499	6,363	51,421	57,783	6,363	53,794	60,156
2033	6,363	49,247	55,610	6,363	51,652	58,014	6,363	54,154	60,517
2034	6,363	49,357	55,720	6,363	51,881	58,244	6,363	54,513	60,876

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.81%	0.71%
2017	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.80%	0.71%
2018	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.81%	0.71%
2019	0.00%	0.27%	0.24%	0.00%	0.54%	0.48%	0.00%	0.81%	0.71%
2020	0.00%	0.27%	0.23%	0.00%	0.53%	0.47%	0.00%	0.80%	0.70%
2021	0.00%	0.27%	0.23%	0.00%	0.53%	0.47%	0.00%	0.80%	0.70%
2022	0.00%	0.26%	0.23%	0.00%	0.53%	0.46%	0.00%	0.79%	0.70%
2023	0.00%	0.26%	0.23%	0.00%	0.52%	0.46%	0.00%	0.78%	0.69%
2024	0.00%	0.26%	0.23%	0.00%	0.52%	0.46%	0.00%	0.77%	0.68%
2025	0.00%	0.25%	0.22%	0.00%	0.50%	0.45%	0.00%	0.75%	0.67%
2026	0.00%	0.25%	0.22%	0.00%	0.50%	0.44%	0.00%	0.75%	0.67%
2027	0.00%	0.25%	0.22%	0.00%	0.49%	0.44%	0.00%	0.74%	0.65%
2028	0.00%	0.24%	0.21%	0.00%	0.48%	0.43%	0.00%	0.72%	0.64%
2029	0.00%	0.24%	0.21%	0.00%	0.47%	0.42%	0.00%	0.71%	0.63%
2030	0.00%	0.23%	0.21%	0.00%	0.47%	0.41%	0.00%	0.69%	0.62%
2031	0.00%	0.23%	0.21%	0.00%	0.46%	0.41%	0.00%	0.69%	0.62%
2032	0.00%	0.23%	0.20%	0.00%	0.45%	0.40%	0.00%	0.68%	0.61%
2033	0.00%	0.23%	0.20%	0.00%	0.45%	0.40%	0.00%	0.67%	0.60%
2034	0.00%	0.22%	0.20%	0.00%	0.44%	0.40%	0.00%	0.66%	0.59%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,384,966	2,427,485	4,812,451	2,390,584	2,433,203	4,823,787	2,396,202	2,438,921	4,835,122
2016	2,401,502	2,443,776	4,845,279	2,412,851	2,455,324	4,868,175	2,424,226	2,466,900	4,891,125
2017	2,396,274	2,438,994	4,835,268	2,413,279	2,456,303	4,869,582	2,430,365	2,473,693	4,904,058
2018	2,401,963	2,444,785	4,846,748	2,424,739	2,467,967	4,892,706	2,447,676	2,491,313	4,938,989
2019	2,407,671	2,450,594	4,858,266	2,436,263	2,479,696	4,915,959	2,465,126	2,509,073	4,974,199
2020	2,424,305	2,466,980	4,891,285	2,458,834	2,502,117	4,960,951	2,493,772	2,537,670	5,031,442
2021	2,418,983	2,462,108	4,881,091	2,459,183	2,503,024	4,962,207	2,499,953	2,544,521	5,044,474
2022	2,424,604	2,467,829	4,892,433	2,470,610	2,514,656	4,985,266	2,517,379	2,562,258	5,079,637
2023	2,430,164	2,473,488	4,903,652	2,481,942	2,526,189	5,008,131	2,534,698	2,579,886	5,114,584
2024	2,446,801	2,489,872	4,936,672	2,504,624	2,548,713	5,053,338	2,563,675	2,608,804	5,172,479
2025	2,441,153	2,484,673	4,925,826	2,504,413	2,549,061	5,053,473	2,569,160	2,614,962	5,184,121
2026	2,446,582	2,490,199	4,936,780	2,515,552	2,560,399	5,075,951	2,586,301	2,632,408	5,218,709
2027	2,451,921	2,495,633	4,947,553	2,526,531	2,571,573	5,098,104	2,603,232	2,649,642	5,252,874
2028	2,468,373	2,511,823	4,980,196	2,548,934	2,593,803	5,142,736	2,631,930	2,678,260	5,310,191
2029	2,462,362	2,506,260	4,968,623	2,548,072	2,593,499	5,141,571	2,636,560	2,683,564	5,320,125
2030	2,467,450	2,511,439	4,978,889	2,558,603	2,604,217	5,162,819	2,652,904	2,700,199	5,353,104
2031	2,472,528	2,516,607	4,989,135	2,569,133	2,614,934	5,184,067	2,669,282	2,716,869	5,386,150
2032	2,488,797	2,532,607	5,021,404	2,591,246	2,636,860	5,228,106	2,697,668	2,745,156	5,442,824
2033	2,482,467	2,526,723	5,009,190	2,589,808	2,635,978	5,225,787	2,701,536	2,749,698	5,451,234
2034	2,487,375	2,531,719	5,019,095	2,600,050	2,646,403	5,246,452	2,717,561	2,766,009	5,483,570

Annual Change

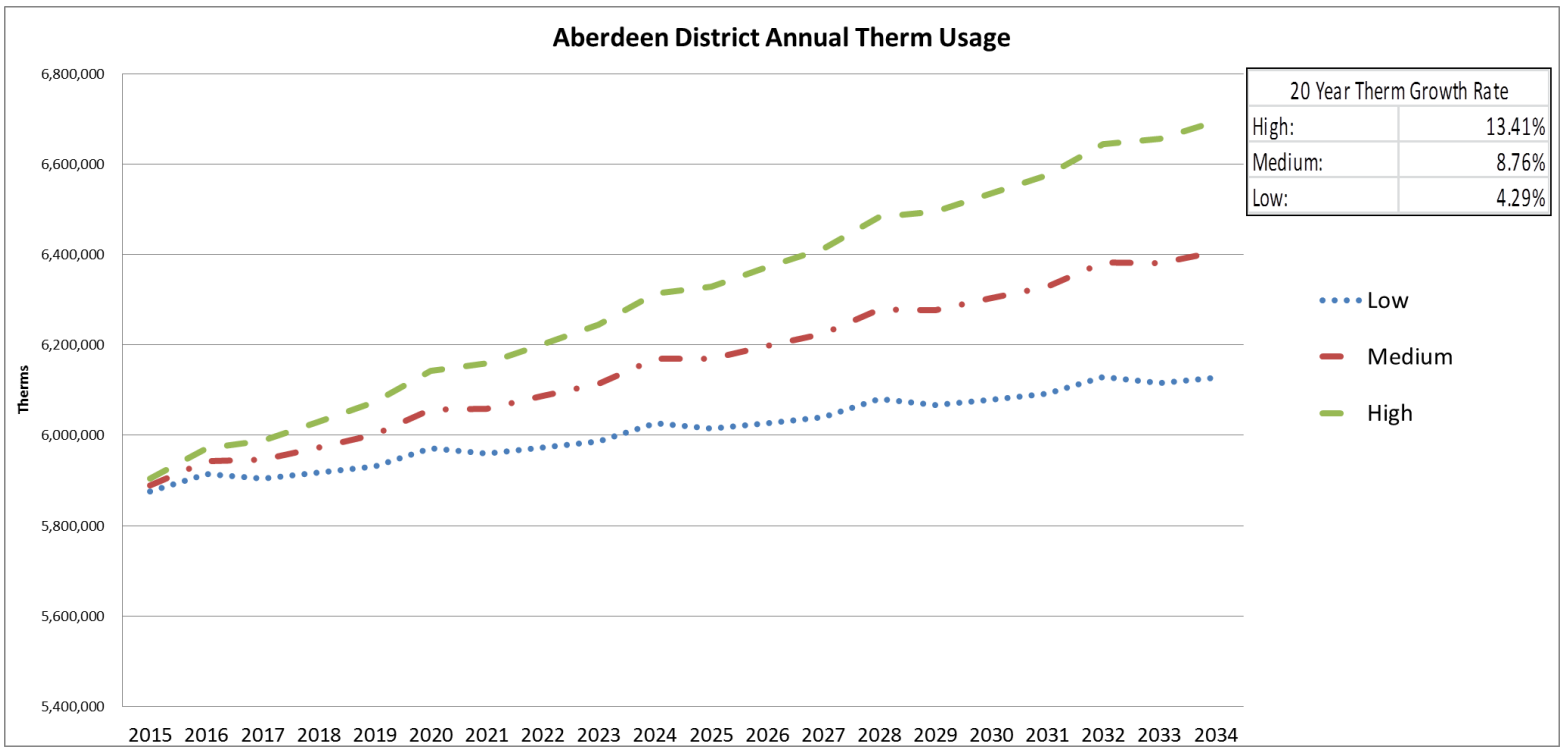
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.67%	0.68%	0.93%	0.91%	0.92%	1.17%	1.15%	1.16%
2017	-0.22%	-0.20%	-0.21%	0.02%	0.04%	0.03%	0.25%	0.28%	0.26%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.69%	0.67%	0.68%	0.93%	0.90%	0.92%	1.16%	1.14%	1.15%
2021	-0.22%	-0.20%	-0.21%	0.01%	0.04%	0.03%	0.25%	0.27%	0.26%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.68%	0.66%	0.67%	0.91%	0.89%	0.90%	1.14%	1.12%	1.13%
2025	-0.23%	-0.21%	-0.22%	-0.01%	0.01%	0.00%	0.21%	0.24%	0.23%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.67%	0.65%	0.66%	0.89%	0.86%	0.88%	1.10%	1.08%	1.09%
2029	-0.24%	-0.22%	-0.23%	-0.03%	-0.01%	-0.02%	0.18%	0.20%	0.19%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.66%	0.64%	0.65%	0.86%	0.84%	0.85%	1.06%	1.04%	1.05%
2033	-0.25%	-0.23%	-0.24%	-0.06%	-0.03%	-0.04%	0.14%	0.17%	0.15%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

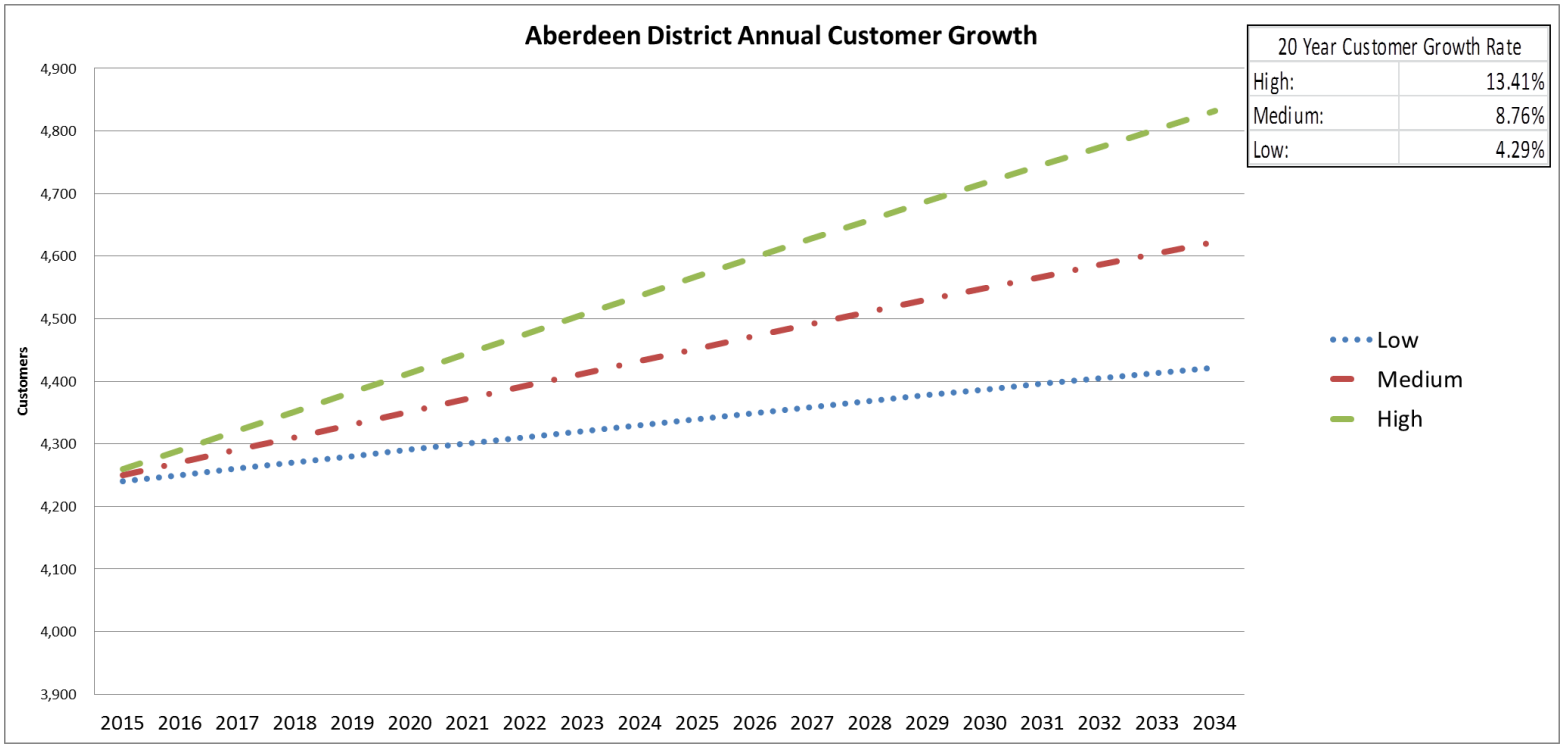
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,486	754	4,240	3,494	756	4,250	3,503	758	4,260
2016	3,494	756	4,250	3,511	759	4,270	3,528	763	4,291
2017	3,503	758	4,260	3,528	763	4,291	3,553	768	4,321
2018	3,511	759	4,270	3,544	767	4,311	3,578	774	4,352
2019	3,519	761	4,281	3,561	770	4,331	3,603	779	4,383
2020	3,528	763	4,291	3,578	774	4,352	3,629	785	4,414
2021	3,536	765	4,301	3,595	777	4,372	3,654	790	4,445
2022	3,544	767	4,311	3,611	781	4,393	3,680	796	4,476
2023	3,552	768	4,321	3,628	785	4,413	3,705	801	4,506
2024	3,560	770	4,330	3,645	788	4,433	3,730	807	4,537
2025	3,568	772	4,340	3,661	792	4,453	3,755	812	4,568
2026	3,576	774	4,350	3,677	795	4,472	3,781	818	4,598
2027	3,584	775	4,359	3,693	799	4,492	3,805	823	4,628
2028	3,592	777	4,369	3,709	802	4,511	3,830	828	4,658
2029	3,599	778	4,378	3,725	806	4,530	3,854	834	4,688
2030	3,607	780	4,387	3,740	809	4,549	3,878	839	4,717
2031	3,614	782	4,396	3,755	812	4,568	3,902	844	4,746
2032	3,622	783	4,405	3,771	816	4,586	3,925	849	4,774
2033	3,629	785	4,414	3,786	819	4,604	3,949	854	4,803
2034	3,636	786	4,422	3,801	822	4,623	3,972	859	4,832

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2017	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2021	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.68%	0.68%	0.68%
2025	0.22%	0.22%	0.22%	0.45%	0.45%	0.45%	0.67%	0.67%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.21%	0.21%	0.21%	0.43%	0.43%	0.43%	0.64%	0.64%	0.64%
2029	0.21%	0.21%	0.21%	0.42%	0.42%	0.42%	0.63%	0.63%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.61%	0.61%	0.61%
2033	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.60%	0.60%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%


Aberdeen District Annual Therm Usage
Therms
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High


Aberdeen District Annual Customer Growth
Customers
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
4,100
4,000
3,900
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kennewick District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,687,481	7,130,339	28,817,821	21,862,416	7,130,339	28,992,756	22,037,352	7,130,339	29,167,691
2016	22,001,574	7,130,339	29,131,913	22,354,907	7,130,339	29,485,247	22,710,422	7,130,339	29,840,761
2017	22,036,218	7,130,339	29,166,558	22,566,388	7,130,339	29,696,727	23,103,095	7,130,339	30,233,435
2018	22,210,221	7,130,339	29,340,560	22,920,866	7,130,339	30,051,205	23,644,643	7,130,339	30,774,983
2019	22,383,651	7,130,339	29,513,990	23,276,318	7,130,339	30,406,658	24,190,954	7,130,339	31,321,294
2020	22,698,956	7,130,339	29,829,295	23,779,871	7,130,339	30,910,210	24,893,977	7,130,339	32,024,316
2021	22,728,214	7,130,339	29,858,553	23,988,857	7,130,339	31,119,197	25,295,882	7,130,339	32,426,222
2022	22,899,177	7,130,339	30,029,516	24,345,532	7,130,339	31,475,871	25,853,846	7,130,339	32,984,186
2023	23,068,884	7,130,339	30,199,224	24,701,644	7,130,339	31,831,984	26,414,155	7,130,339	33,544,494
2024	23,384,196	7,130,339	30,514,536	25,213,522	7,130,339	32,343,862	27,143,145	7,130,339	34,273,484
2025	23,405,378	7,130,339	30,535,717	25,413,789	7,130,339	32,544,129	27,544,219	7,130,339	34,674,558
2026	23,571,885	7,130,339	30,702,224	25,769,158	7,130,339	32,899,498	28,112,879	7,130,339	35,243,219
2027	23,737,044	7,130,339	30,867,384	26,123,600	7,130,339	33,253,939	28,683,182	7,130,339	35,813,521
2028	24,050,204	7,130,339	31,180,544	26,638,787	7,130,339	33,769,127	29,430,066	7,130,339	36,560,406
2029	24,062,907	7,130,339	31,193,246	26,828,618	7,130,339	33,958,957	29,826,794	7,130,339	36,957,134
2030	24,223,534	7,130,339	31,353,873	27,178,926	7,130,339	34,309,266	30,399,569	7,130,339	37,529,908
2031	24,383,379	7,130,339	31,513,719	27,529,349	7,130,339	34,659,688	30,975,512	7,130,339	38,105,851
2032	24,694,271	7,130,339	31,824,610	28,046,989	7,130,339	35,177,328	31,738,475	7,130,339	38,868,814
2033	24,699,296	7,130,339	31,829,636	28,227,271	7,130,339	35,357,610	32,131,447	7,130,339	39,261,787
2034	24,855,793	7,130,339	31,986,133	28,575,631	7,130,339	35,705,970	32,712,795	7,130,339	39,843,135

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	0.00%	1.09%	2.25%	0.00%	1.70%	3.05%	0.00%	2.31%
2017	0.16%	0.00%	0.12%	0.95%	0.00%	0.72%	1.73%	0.00%	1.32%
2018	0.79%	0.00%	0.60%	1.57%	0.00%	1.19%	2.34%	0.00%	1.79%
2019	0.78%	0.00%	0.59%	1.55%	0.00%	1.18%	2.31%	0.00%	1.78%
2020	1.41%	0.00%	1.07%	2.16%	0.00%	1.66%	2.91%	0.00%	2.24%
2021	0.13%	0.00%	0.10%	0.88%	0.00%	0.68%	1.61%	0.00%	1.26%
2022	0.75%	0.00%	0.57%	1.49%	0.00%	1.15%	2.21%	0.00%	1.72%
2023	0.74%	0.00%	0.57%	1.46%	0.00%	1.13%	2.17%	0.00%	1.70%
2024	1.37%	0.00%	1.04%	2.07%	0.00%	1.61%	2.76%	0.00%	2.17%
2025	0.09%	0.00%	0.07%	0.79%	0.00%	0.62%	1.48%	0.00%	1.17%
2026	0.71%	0.00%	0.55%	1.40%	0.00%	1.09%	2.06%	0.00%	1.64%
2027	0.70%	0.00%	0.54%	1.38%	0.00%	1.08%	2.03%	0.00%	1.62%
2028	1.32%	0.00%	1.01%	1.97%	0.00%	1.55%	2.60%	0.00%	2.09%
2029	0.05%	0.00%	0.04%	0.71%	0.00%	0.56%	1.35%	0.00%	1.09%
2030	0.67%	0.00%	0.51%	1.31%	0.00%	1.03%	1.92%	0.00%	1.55%
2031	0.66%	0.00%	0.51%	1.29%	0.00%	1.02%	1.89%	0.00%	1.53%
2032	1.28%	0.00%	0.99%	1.88%	0.00%	1.49%	2.46%	0.00%	2.00%
2033	0.02%	0.00%	0.02%	0.64%	0.00%	0.51%	1.24%	0.00%	1.01%
2034	0.63%	0.00%	0.49%	1.23%	0.00%	0.99%	1.81%	0.00%	1.48%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	19,535	389,592	409,127	19,535	392,087	411,622	19,535	394,582	414,117
2016	19,535	392,081	411,616	19,535	397,096	416,632	19,535	402,143	421,678
2017	19,535	394,565	414,100	19,535	402,127	421,662	19,535	409,782	429,317
2018	19,535	397,046	416,582	19,535	407,182	426,717	19,535	417,506	437,041
2019	19,535	399,519	419,054	19,535	412,251	431,786	19,535	425,297	444,832
2020	19,535	401,977	421,513	19,535	417,320	436,855	19,535	433,135	452,670
2021	19,535	404,432	423,967	19,535	422,411	441,946	19,535	441,054	460,589
2022	19,535	406,869	426,404	19,535	427,496	447,031	19,535	449,010	468,545
2023	19,535	409,288	428,823	19,535	432,573	452,108	19,535	457,000	476,535
2024	19,535	411,698	431,234	19,535	437,662	457,197	19,535	465,054	484,589
2025	19,535	414,084	433,619	19,535	442,725	462,260	19,535	473,114	492,649
2026	19,535	416,457	435,992	19,535	447,791	467,326	19,535	481,222	500,757
2027	19,535	418,810	438,346	19,535	452,843	472,379	19,535	489,353	508,888
2028	19,535	421,145	440,680	19,535	457,882	477,417	19,535	497,506	517,041
2029	19,535	423,454	442,989	19,535	462,893	482,428	19,535	505,658	525,193
2030	19,535	425,743	445,278	19,535	467,885	487,421	19,535	513,824	533,359
2031	19,535	428,020	447,555	19,535	472,880	492,415	19,535	522,035	541,570
2032	19,535	430,278	449,813	19,535	477,856	497,391	19,535	530,259	549,794
2033	19,535	432,521	452,056	19,535	482,826	502,361	19,535	538,514	558,049
2034	19,535	434,750	454,285	19,535	487,790	507,326	19,535	546,801	566,337

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.92%	1.83%
2017	0.00%	0.63%	0.60%	0.00%	1.27%	1.21%	0.00%	1.90%	1.81%
2018	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.88%	1.80%
2019	0.00%	0.62%	0.59%	0.00%	1.24%	1.19%	0.00%	1.87%	1.78%
2020	0.00%	0.62%	0.59%	0.00%	1.23%	1.17%	0.00%	1.84%	1.76%
2021	0.00%	0.61%	0.58%	0.00%	1.22%	1.17%	0.00%	1.83%	1.75%
2022	0.00%	0.60%	0.57%	0.00%	1.20%	1.15%	0.00%	1.80%	1.73%
2023	0.00%	0.59%	0.57%	0.00%	1.19%	1.14%	0.00%	1.78%	1.71%
2024	0.00%	0.59%	0.56%	0.00%	1.18%	1.13%	0.00%	1.76%	1.69%
2025	0.00%	0.58%	0.55%	0.00%	1.16%	1.11%	0.00%	1.73%	1.66%
2026	0.00%	0.57%	0.55%	0.00%	1.14%	1.10%	0.00%	1.71%	1.65%
2027	0.00%	0.57%	0.54%	0.00%	1.13%	1.08%	0.00%	1.69%	1.62%
2028	0.00%	0.56%	0.53%	0.00%	1.11%	1.07%	0.00%	1.67%	1.60%
2029	0.00%	0.55%	0.52%	0.00%	1.09%	1.05%	0.00%	1.64%	1.58%
2030	0.00%	0.54%	0.52%	0.00%	1.08%	1.03%	0.00%	1.61%	1.55%
2031	0.00%	0.53%	0.51%	0.00%	1.07%	1.02%	0.00%	1.60%	1.54%
2032	0.00%	0.53%	0.50%	0.00%	1.05%	1.01%	0.00%	1.58%	1.52%
2033	0.00%	0.52%	0.50%	0.00%	1.04%	1.00%	0.00%	1.56%	1.50%
2034	0.00%	0.52%	0.49%	0.00%	1.03%	0.99%	0.00%	1.54%	1.49%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,804,923	13,483,248	27,288,171	13,888,115	13,565,053	27,453,168	13,971,307	13,646,858	27,618,165
2016	13,958,054	13,628,286	27,586,340	14,126,124	13,793,480	27,919,603	14,295,224	13,959,689	28,254,913
2017	13,970,765	13,646,306	27,617,070	14,222,870	13,894,190	28,117,060	14,478,067	14,145,114	28,623,181
2018	14,053,510	13,727,655	27,781,164	14,391,420	14,059,898	28,451,318	14,735,538	14,398,249	29,133,787
2019	14,135,979	13,808,730	27,944,708	14,560,419	14,226,044	28,786,462	14,995,242	14,653,572	29,648,814
2020	14,289,756	13,954,271	28,244,027	14,803,804	14,459,492	29,263,296	15,333,541	14,980,143	30,313,683
2021	14,299,806	13,969,787	28,269,593	14,899,136	14,559,043	29,458,179	15,520,380	15,169,860	30,690,240
2022	14,381,084	14,049,689	28,430,772	15,068,657	14,725,702	29,794,359	15,785,501	15,430,512	31,216,013
2023	14,461,754	14,128,996	28,590,751	15,237,883	14,892,077	30,129,960	16,051,678	15,692,218	31,743,896
2024	14,615,597	14,274,475	28,890,072	15,485,328	15,129,258	30,614,585	16,402,435	16,030,636	32,433,070
2025	14,621,691	14,286,219	28,907,911	15,576,241	15,224,717	30,800,957	16,588,399	16,219,896	32,808,295
2026	14,700,821	14,364,006	29,064,827	15,745,049	15,390,673	31,135,722	16,858,406	16,485,359	33,343,765
2027	14,779,297	14,441,158	29,220,455	15,913,380	15,556,180	31,469,559	17,129,121	16,751,550	33,880,671
2028	14,932,164	14,585,559	29,517,723	16,162,468	15,794,727	31,957,195	17,488,440	17,097,995	34,586,435
2029	14,934,106	14,593,347	29,527,453	16,248,128	15,885,295	32,133,423	17,671,810	17,285,152	34,956,962
2030	15,010,399	14,668,351	29,678,750	16,414,407	16,048,786	32,463,194	17,943,513	17,552,323	35,495,836
2031	15,086,318	14,742,983	29,829,301	16,580,725	16,212,308	32,793,033	18,216,677	17,820,923	36,037,600
2032	15,238,147	14,886,260	30,124,406	16,831,031	16,451,833	33,282,864	18,583,660	18,174,549	36,758,209
2033	15,236,330	14,890,467	30,126,797	16,911,877	16,537,926	33,449,802	18,764,723	18,359,871	37,124,594
2034	15,310,634	14,963,515	30,274,149	17,077,136	16,700,419	33,777,555	19,040,273	18,630,844	37,671,116

Annual Change

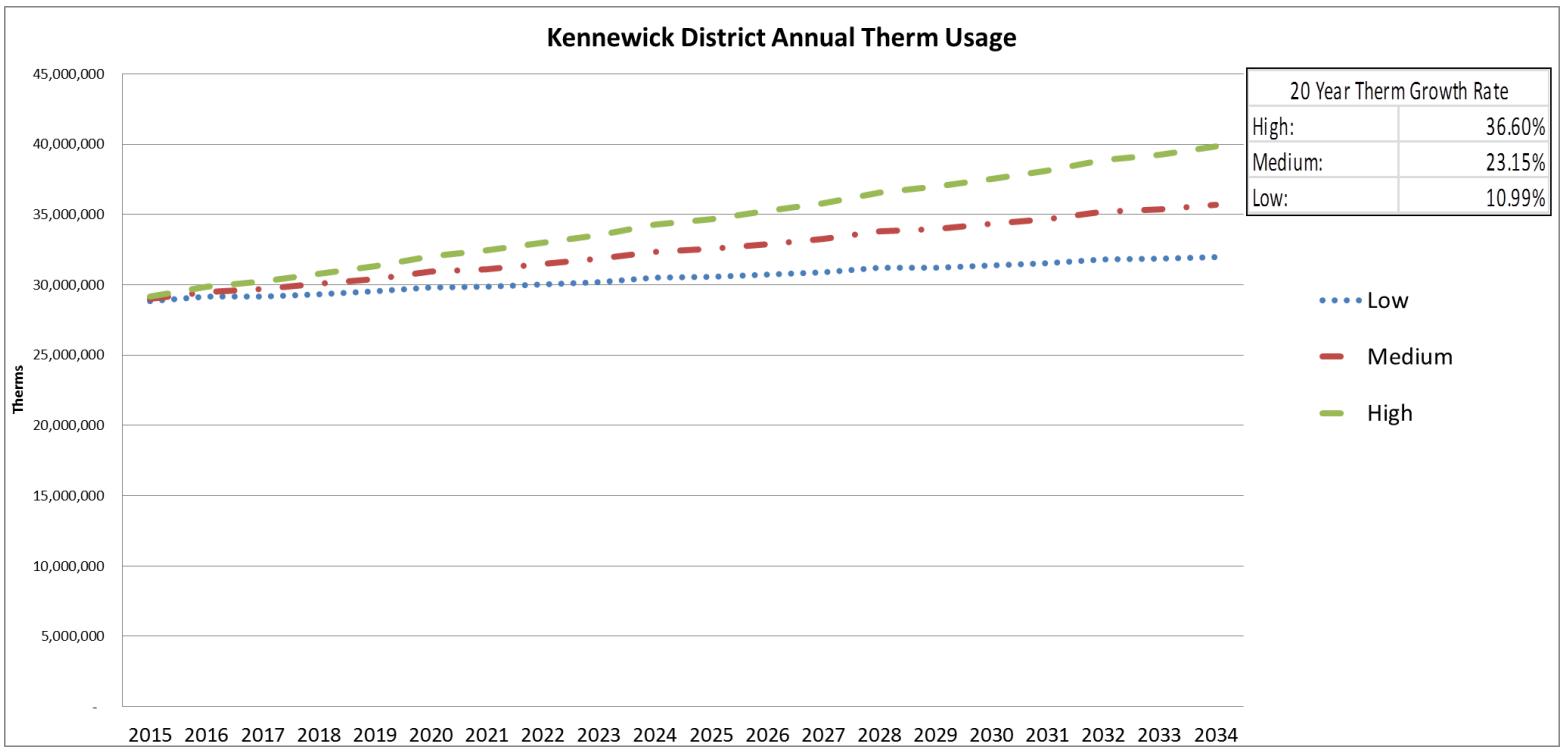
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.11%	1.08%	1.09%	1.71%	1.68%	1.70%	2.32%	2.29%	2.31%
2017	0.09%	0.13%	0.11%	0.68%	0.73%	0.71%	1.28%	1.33%	1.30%
2018	0.59%	0.60%	0.59%	1.19%	1.19%	1.19%	1.78%	1.79%	1.78%
2019	0.59%	0.59%	0.59%	1.17%	1.18%	1.18%	1.76%	1.77%	1.77%
2020	1.09%	1.05%	1.07%	1.67%	1.64%	1.66%	2.26%	2.23%	2.24%
2021	0.07%	0.11%	0.09%	0.64%	0.69%	0.67%	1.22%	1.27%	1.24%
2022	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.72%	1.71%
2023	0.56%	0.56%	0.56%	1.12%	1.13%	1.13%	1.69%	1.70%	1.69%
2024	1.06%	1.03%	1.05%	1.62%	1.59%	1.61%	2.19%	2.16%	2.17%
2025	0.04%	0.08%	0.06%	0.59%	0.63%	0.61%	1.13%	1.18%	1.16%
2026	0.54%	0.54%	0.54%	1.08%	1.09%	1.09%	1.63%	1.64%	1.63%
2027	0.53%	0.54%	0.54%	1.07%	1.08%	1.07%	1.61%	1.61%	1.61%
2028	1.03%	1.00%	1.02%	1.57%	1.53%	1.55%	2.10%	2.07%	2.08%
2029	0.01%	0.05%	0.03%	0.53%	0.57%	0.55%	1.05%	1.09%	1.07%
2030	0.51%	0.51%	0.51%	1.02%	1.03%	1.03%	1.54%	1.55%	1.54%
2031	0.51%	0.51%	0.51%	1.01%	1.02%	1.02%	1.52%	1.53%	1.53%
2032	1.01%	0.97%	0.99%	1.51%	1.48%	1.49%	2.01%	1.98%	2.00%
2033	-0.01%	0.03%	0.01%	0.48%	0.52%	0.50%	0.97%	1.02%	1.00%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.48%	1.47%

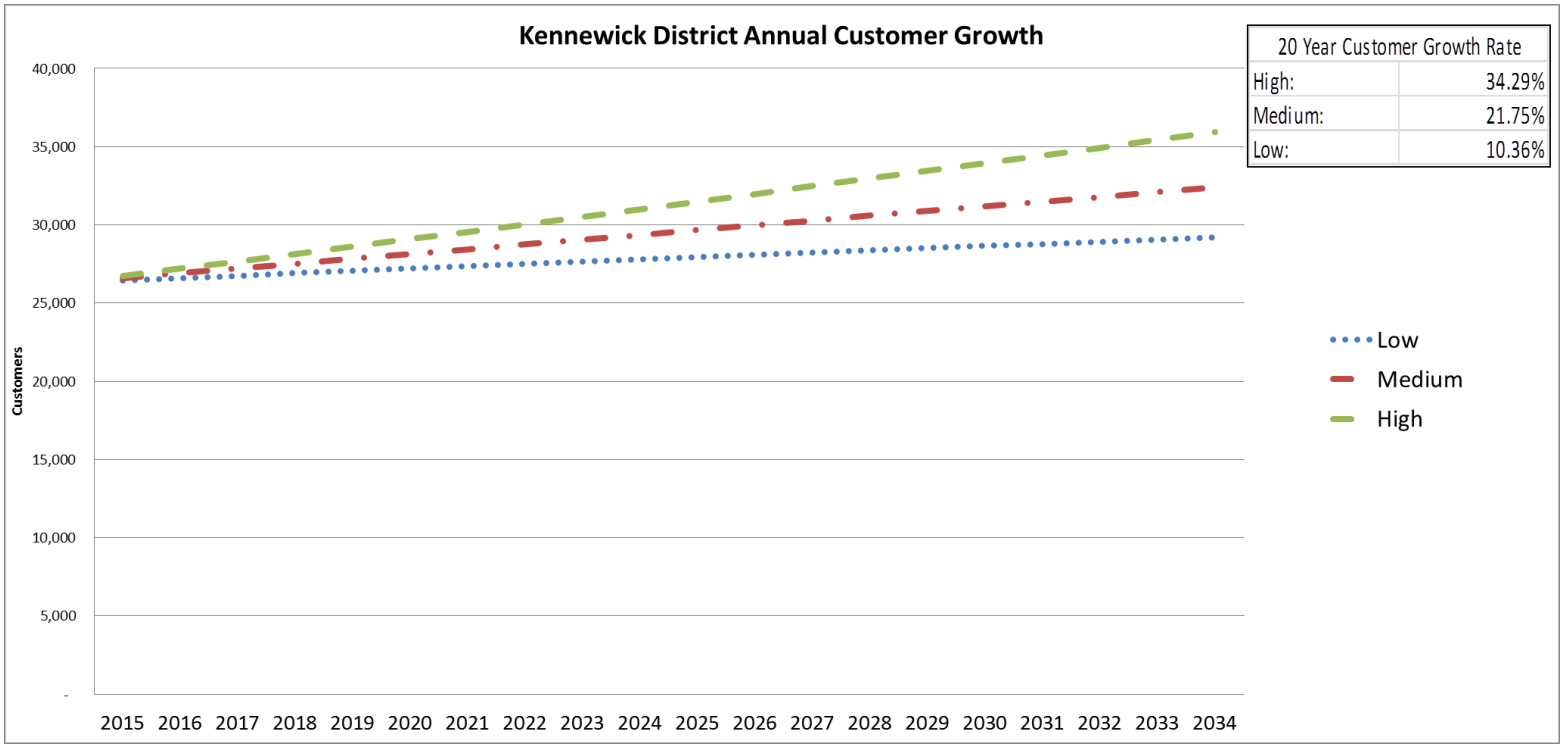
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	23,189	3,266	26,454	23,320	3,285	26,605	23,452	3,304	26,756
2016	23,320	3,285	26,605	23,585	3,323	26,908	23,851	3,361	27,212
2017	23,451	3,304	26,755	23,851	3,361	27,212	24,254	3,419	27,673
2018	23,583	3,322	26,905	24,118	3,399	27,517	24,662	3,478	28,140
2019	23,714	3,341	27,055	24,386	3,438	27,824	25,073	3,537	28,610
2020	23,844	3,360	27,204	24,654	3,477	28,130	25,487	3,597	29,083
2021	23,974	3,379	27,353	24,923	3,515	28,438	25,905	3,657	29,562
2022	24,103	3,397	27,501	25,192	3,554	28,746	26,325	3,717	30,042
2023	24,232	3,416	27,647	25,461	3,593	29,053	26,746	3,778	30,524
2024	24,360	3,434	27,794	25,730	3,631	29,361	27,171	3,839	31,010
2025	24,486	3,452	27,939	25,998	3,670	29,668	27,596	3,900	31,496
2026	24,612	3,470	28,083	26,266	3,708	29,974	28,023	3,962	31,985
2027	24,737	3,488	28,226	26,533	3,747	30,280	28,451	4,023	32,475
2028	24,861	3,506	28,367	26,799	3,785	30,584	28,881	4,085	32,966
2029	24,984	3,524	28,508	27,064	3,823	30,888	29,309	4,147	33,456
2030	25,105	3,541	28,647	27,328	3,861	31,189	29,739	4,209	33,948
2031	25,227	3,559	28,785	27,592	3,899	31,491	30,171	4,271	34,442
2032	25,347	3,576	28,923	27,855	3,937	31,792	30,603	4,333	34,936
2033	25,466	3,593	29,059	28,118	3,975	32,093	31,037	4,396	35,433
2034	25,584	3,610	29,195	28,380	4,013	32,393	31,472	4,458	35,931

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.58%	0.57%	1.13%	1.16%	1.14%	1.70%	1.74%	1.71%
2017	0.56%	0.58%	0.56%	1.13%	1.15%	1.13%	1.69%	1.73%	1.69%
2018	0.56%	0.57%	0.56%	1.12%	1.14%	1.12%	1.68%	1.72%	1.69%
2019	0.56%	0.57%	0.56%	1.11%	1.13%	1.11%	1.67%	1.70%	1.67%
2020	0.55%	0.56%	0.55%	1.10%	1.12%	1.10%	1.65%	1.68%	1.65%
2021	0.55%	0.56%	0.55%	1.09%	1.11%	1.10%	1.64%	1.67%	1.64%
2022	0.54%	0.55%	0.54%	1.08%	1.10%	1.08%	1.62%	1.65%	1.62%
2023	0.53%	0.54%	0.53%	1.07%	1.09%	1.07%	1.60%	1.63%	1.60%
2024	0.53%	0.54%	0.53%	1.06%	1.08%	1.06%	1.59%	1.62%	1.59%
2025	0.52%	0.53%	0.52%	1.04%	1.06%	1.04%	1.56%	1.59%	1.57%
2026	0.51%	0.52%	0.52%	1.03%	1.05%	1.03%	1.55%	1.58%	1.55%
2027	0.51%	0.52%	0.51%	1.02%	1.04%	1.02%	1.53%	1.56%	1.53%
2028	0.50%	0.51%	0.50%	1.00%	1.02%	1.01%	1.51%	1.54%	1.51%
2029	0.49%	0.50%	0.49%	0.99%	1.01%	0.99%	1.49%	1.51%	1.49%
2030	0.49%	0.50%	0.49%	0.98%	0.99%	0.98%	1.47%	1.49%	1.47%
2031	0.48%	0.49%	0.48%	0.97%	0.98%	0.97%	1.45%	1.48%	1.46%
2032	0.48%	0.48%	0.48%	0.95%	0.97%	0.96%	1.43%	1.46%	1.44%
2033	0.47%	0.48%	0.47%	0.94%	0.96%	0.95%	1.42%	1.44%	1.42%
2034	0.47%	0.47%	0.47%	0.93%	0.95%	0.94%	1.40%	1.43%	1.41%


Kennewick District Annual Therm Usage
Therms
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 36.60%
Medium: 23.15%
Low: 10.99%
Low
Medium
High


Kennewick District Annual Customer Growth
Customers
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 34.29%
Medium: 21.75%
Low: 10.36%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Walla Walla District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,747,482	4,043,380	12,790,863	8,751,579	4,043,380	12,794,960	8,755,676	4,043,380	12,799,057
2016	8,798,029	4,043,380	12,841,409	8,805,608	4,043,380	12,848,988	8,813,190	4,043,380	12,856,570
2017	8,728,734	4,043,380	12,772,114	8,739,075	4,043,380	12,782,455	8,749,421	4,043,380	12,792,801
2018	8,722,272	4,043,380	12,765,652	8,734,763	4,043,380	12,778,144	8,747,264	4,043,380	12,790,644
2019	8,717,427	4,043,380	12,760,807	8,731,530	4,043,380	12,774,911	8,745,646	4,043,380	12,789,026
2020	8,774,007	4,043,380	12,817,387	8,789,580	4,043,380	12,832,961	8,805,169	4,043,380	12,848,550
2021	8,710,968	4,043,380	12,754,349	8,727,220	4,043,380	12,770,600	8,743,488	4,043,380	12,786,868
2022	8,709,031	4,043,380	12,752,412	8,725,926	4,043,380	12,769,307	8,742,840	4,043,380	12,786,221
2023	8,707,417	4,043,380	12,750,797	8,724,849	4,043,380	12,768,229	8,742,301	4,043,380	12,785,681
2024	8,767,843	4,043,380	12,811,224	8,785,466	4,043,380	12,828,847	8,803,109	4,043,380	12,846,490
2025	8,706,449	4,043,380	12,749,829	8,724,202	4,043,380	12,767,583	8,741,977	4,043,380	12,785,358
2026	8,706,126	4,043,380	12,749,506	8,723,987	4,043,380	12,767,367	8,741,869	4,043,380	12,785,250
2027	8,706,126	4,043,380	12,749,506	8,723,987	4,043,380	12,767,367	8,741,869	4,043,380	12,785,250
2028	8,766,870	4,043,380	12,810,251	8,784,817	4,043,380	12,828,197	8,802,784	4,043,380	12,846,165
2029	8,705,480	4,043,380	12,748,861	8,723,556	4,043,380	12,766,936	8,741,654	4,043,380	12,785,034
2030	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2031	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2032	8,765,573	4,043,380	12,808,954	8,783,950	4,043,380	12,827,331	8,802,351	4,043,380	12,845,731
2033	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2034	8,704,942	4,043,380	12,748,323	8,723,340	4,043,380	12,766,721	8,741,761	4,043,380	12,785,142

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.58%	0.00%	0.40%	0.62%	0.00%	0.42%	0.66%	0.00%	0.45%
2017	-0.79%	0.00%	-0.54%	-0.76%	0.00%	-0.52%	-0.72%	0.00%	-0.50%
2018	-0.07%	0.00%	-0.05%	-0.05%	0.00%	-0.03%	-0.02%	0.00%	-0.02%
2019	-0.06%	0.00%	-0.04%	-0.04%	0.00%	-0.03%	-0.02%	0.00%	-0.01%
2020	0.65%	0.00%	0.44%	0.66%	0.00%	0.45%	0.68%	0.00%	0.47%
2021	-0.72%	0.00%	-0.49%	-0.71%	0.00%	-0.49%	-0.70%	0.00%	-0.48%
2022	-0.02%	0.00%	-0.02%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	-0.01%
2023	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	0.00%
2024	0.69%	0.00%	0.47%	0.69%	0.00%	0.47%	0.70%	0.00%	0.48%
2025	-0.70%	0.00%	-0.48%	-0.70%	0.00%	-0.48%	-0.69%	0.00%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%
2029	-0.70%	0.00%	-0.48%	-0.70%	0.00%	-0.48%	-0.69%	0.00%	-0.48%
2030	-0.01%	0.00%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%
2033	-0.69%	0.00%	-0.47%	-0.69%	0.00%	-0.47%	-0.69%	0.00%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	11,078	159,821	170,899	11,078	159,876	170,954	11,078	159,931	171,008
2016	11,078	159,683	170,761	11,078	159,784	170,861	11,078	159,884	170,962
2017	11,078	159,571	170,648	11,078	159,709	170,786	11,078	159,847	170,925
2018	11,078	159,484	170,562	11,078	159,651	170,729	11,078	159,818	170,896
2019	11,078	159,419	170,497	11,078	159,608	170,686	11,078	159,797	170,874
2020	11,078	159,363	170,441	11,078	159,570	170,648	11,078	159,778	170,856
2021	11,078	159,333	170,411	11,078	159,550	170,628	11,078	159,768	170,845
2022	11,078	159,307	170,385	11,078	159,533	170,611	11,078	159,759	170,837
2023	11,078	159,286	170,363	11,078	159,519	170,596	11,078	159,752	170,830
2024	11,078	159,281	170,359	11,078	159,516	170,594	11,078	159,750	170,828
2025	11,078	159,273	170,351	11,078	159,510	170,588	11,078	159,747	170,825
2026	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2027	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2028	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2029	11,078	159,260	170,338	11,078	159,501	170,579	11,078	159,743	170,821
2030	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2031	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2032	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2033	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2034	11,078	159,253	170,330	11,078	159,498	170,576	11,078	159,745	170,822

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	-0.09%	-0.08%	0.00%	-0.06%	-0.05%	0.00%	-0.03%	-0.03%
2017	0.00%	-0.07%	-0.07%	0.00%	-0.05%	-0.04%	0.00%	-0.02%	-0.02%
2018	0.00%	-0.05%	-0.05%	0.00%	-0.04%	-0.03%	0.00%	-0.02%	-0.02%
2019	0.00%	-0.04%	-0.04%	0.00%	-0.03%	-0.03%	0.00%	-0.01%	-0.01%
2020	0.00%	-0.04%	-0.03%	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%
2021	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%
2022	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%
2023	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,487,729	4,350,219	10,837,948	6,489,808	4,351,612	10,841,420	6,491,886	4,353,005	10,844,891
2016	6,514,667	4,367,392	10,882,060	6,518,513	4,369,970	10,888,483	6,522,359	4,372,549	10,894,907
2017	6,478,220	4,343,842	10,822,062	6,483,465	4,347,359	10,830,824	6,488,713	4,350,878	10,839,591
2018	6,474,942	4,341,645	10,816,587	6,481,278	4,345,893	10,827,171	6,487,619	4,350,144	10,837,763
2019	6,472,485	4,339,997	10,812,482	6,479,638	4,344,793	10,824,432	6,486,798	4,349,594	10,836,392
2020	6,502,481	4,359,223	10,861,703	6,510,381	4,364,519	10,874,901	6,518,290	4,369,821	10,888,111
2021	6,469,209	4,337,800	10,807,009	6,477,452	4,343,327	10,820,779	6,485,703	4,348,860	10,834,563
2022	6,468,227	4,337,141	10,805,368	6,476,796	4,342,887	10,819,683	6,485,375	4,348,640	10,834,015
2023	6,467,408	4,336,592	10,804,000	6,476,249	4,342,521	10,818,770	6,485,101	4,348,456	10,833,558
2024	6,499,354	4,357,126	10,856,480	6,508,294	4,363,120	10,871,414	6,517,245	4,369,120	10,886,365
2025	6,466,917	4,336,263	10,803,180	6,475,922	4,342,301	10,818,223	6,484,937	4,348,346	10,833,284
2026	6,466,753	4,336,153	10,802,906	6,475,812	4,342,228	10,818,040	6,484,883	4,348,310	10,833,192
2027	6,466,753	4,336,153	10,802,906	6,475,812	4,342,228	10,818,040	6,484,883	4,348,310	10,833,192
2028	6,498,860	4,356,795	10,855,656	6,507,965	4,362,899	10,870,864	6,517,080	4,369,010	10,886,090
2029	6,466,425	4,335,934	10,802,359	6,475,594	4,342,081	10,817,675	6,484,773	4,348,236	10,833,009
2030	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2031	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2032	6,498,202	4,356,354	10,854,556	6,507,525	4,362,604	10,870,130	6,516,860	4,368,862	10,885,722
2033	6,466,098	4,335,714	10,801,812	6,475,375	4,341,935	10,817,310	6,484,664	4,348,163	10,832,826
2034	6,466,153	4,335,751	10,801,903	6,475,484	4,342,008	10,817,492	6,484,828	4,348,273	10,833,101

Annual Change

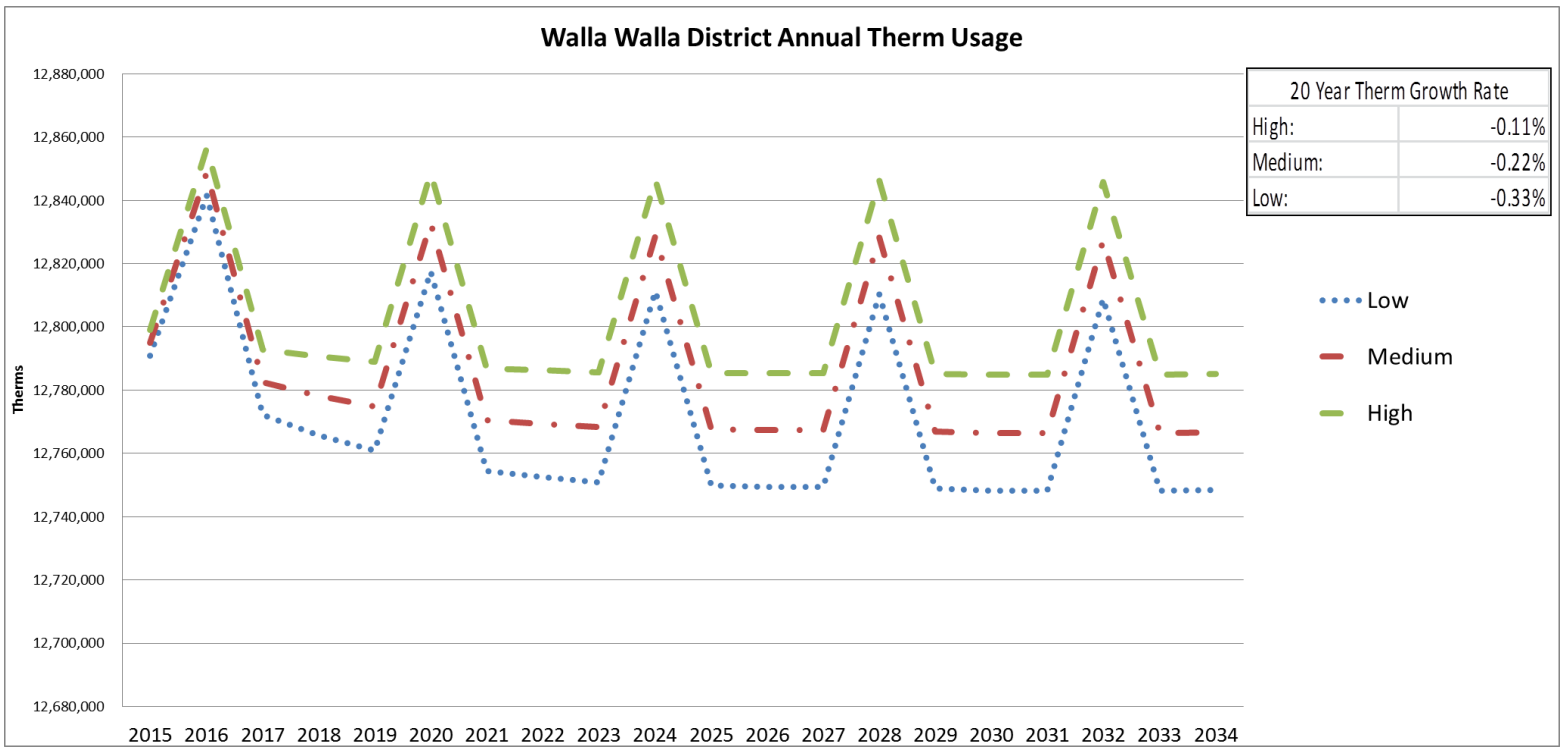
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.42%	0.39%	0.41%	0.44%	0.42%	0.43%	0.47%	0.45%	0.46%
2017	-0.56%	-0.54%	-0.55%	-0.54%	-0.52%	-0.53%	-0.52%	-0.50%	-0.51%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.46%	0.44%	0.46%	0.47%	0.45%	0.47%	0.49%	0.47%	0.48%
2021	-0.51%	-0.49%	-0.50%	-0.51%	-0.49%	-0.50%	-0.50%	-0.48%	-0.49%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.49%	0.47%	0.49%	0.49%	0.47%	0.49%	0.50%	0.48%	0.49%
2025	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%
2029	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%	-0.50%	-0.48%	-0.49%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%	0.50%	0.48%	0.49%
2033	-0.49%	-0.47%	-0.49%	-0.49%	-0.47%	-0.49%	-0.49%	-0.47%	-0.49%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

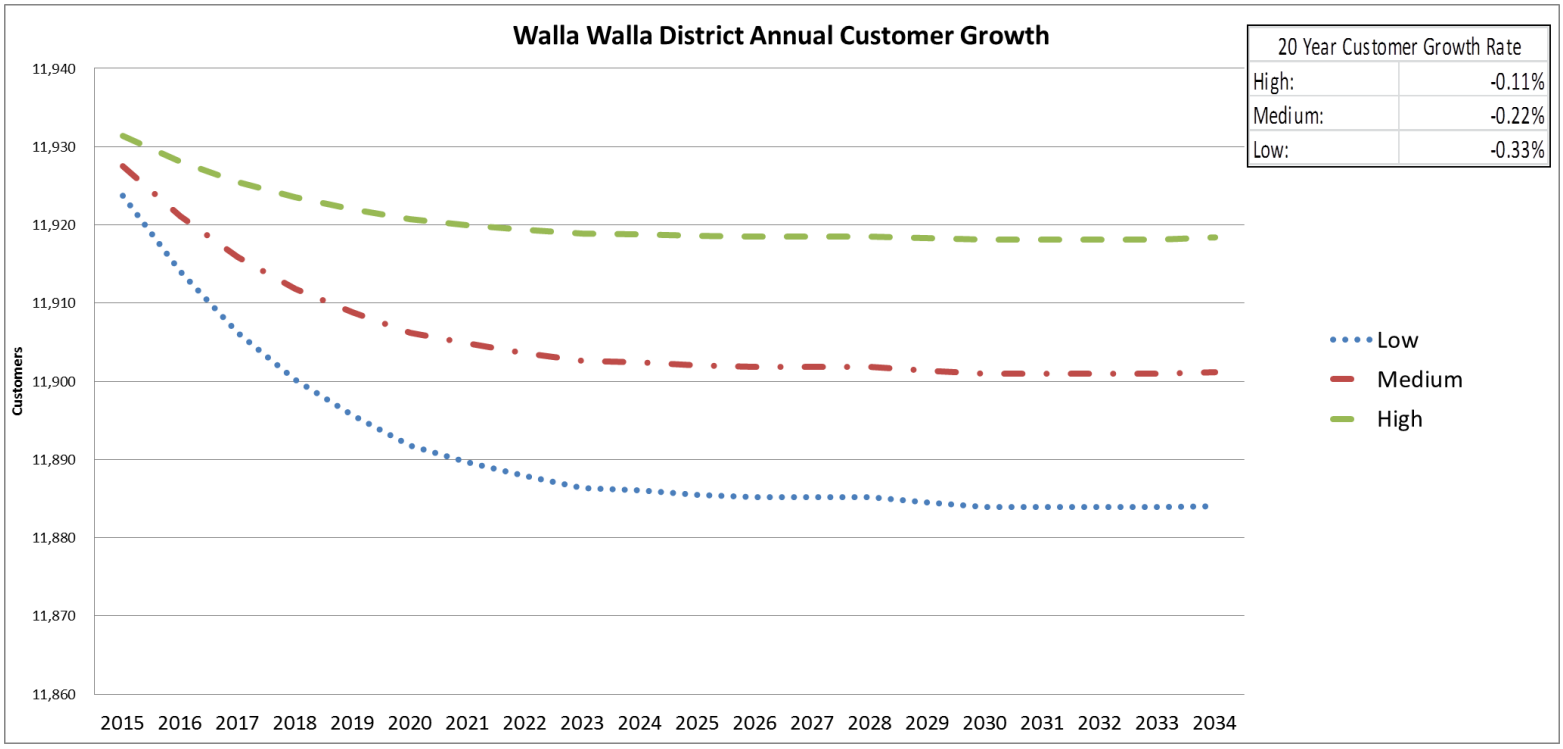
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,654	1,269	11,924	10,658	1,270	11,928	10,661	1,270	11,931
2016	10,646	1,268	11,914	10,652	1,269	11,921	10,658	1,270	11,928
2017	10,639	1,268	11,906	10,647	1,269	11,916	10,656	1,270	11,926
2018	10,633	1,267	11,900	10,644	1,268	11,912	10,654	1,269	11,924
2019	10,629	1,266	11,896	10,641	1,268	11,909	10,653	1,269	11,922
2020	10,626	1,266	11,892	10,639	1,268	11,906	10,652	1,269	11,921
2021	10,624	1,266	11,890	10,637	1,267	11,905	10,651	1,269	11,920
2022	10,622	1,266	11,888	10,636	1,267	11,904	10,650	1,269	11,919
2023	10,621	1,265	11,886	10,635	1,267	11,903	10,650	1,269	11,919
2024	10,621	1,265	11,886	10,635	1,267	11,902	10,650	1,269	11,919
2025	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,919
2026	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2027	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2028	10,620	1,265	11,885	10,635	1,267	11,902	10,650	1,269	11,918
2029	10,619	1,265	11,885	10,634	1,267	11,901	10,649	1,269	11,918
2030	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2031	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2032	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2033	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918
2034	10,619	1,265	11,884	10,634	1,267	11,901	10,649	1,269	11,918

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.08%	-0.08%	-0.08%	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%
2017	-0.07%	-0.07%	-0.07%	-0.04%	-0.04%	-0.04%	-0.02%	-0.02%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
2021	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%


Walla Walla District Annual Therm Usage
Therms
12,880,000
12,860,000
12,840,000
12,820,000
12,800,000
12,780,000
12,760,000
12,740,000
12,720,000
12,700,000
12,680,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High


Walla Walla District Annual Customer Growth
Customers
11,940
11,930
11,920
11,910
11,900
11,890
11,880
11,870
11,860
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Wenatchee District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,461,943	3,428,692	10,890,635	7,535,946	3,428,692	10,964,639	7,609,950	3,428,692	11,038,642
2016	7,572,847	3,428,692	11,001,539	7,722,844	3,428,692	11,151,537	7,873,965	3,428,692	11,302,658
2017	7,610,944	3,428,692	11,039,636	7,837,322	3,428,692	11,266,014	8,067,100	3,428,692	11,495,793
2018	7,685,963	3,428,692	11,114,656	7,990,769	3,428,692	11,419,461	8,302,467	3,428,692	11,731,159
2019	7,761,324	3,428,692	11,190,017	8,146,070	3,428,692	11,574,763	8,542,456	3,428,692	11,971,149
2020	7,874,506	3,428,692	11,303,199	8,342,227	3,428,692	11,770,919	8,827,699	3,428,692	12,256,391
2021	7,912,663	3,428,692	11,341,355	8,461,465	3,428,692	11,890,158	9,035,341	3,428,692	12,464,033
2022	7,988,621	3,428,692	11,417,313	8,621,545	3,428,692	12,050,238	9,288,316	3,428,692	12,717,009
2023	8,064,683	3,428,692	11,493,376	8,783,049	3,428,692	12,211,742	9,545,461	3,428,692	12,974,153
2024	8,179,884	3,428,692	11,608,576	8,988,249	3,428,692	12,416,941	9,852,571	3,428,692	13,281,263
2025	8,217,371	3,428,692	11,646,063	9,110,893	3,428,692	12,539,585	10,073,337	3,428,692	13,502,030
2026	8,293,924	3,428,692	11,722,616	9,277,106	3,428,692	12,705,799	10,343,978	3,428,692	13,772,670
2027	8,370,535	3,428,692	11,799,227	9,444,693	3,428,692	12,873,386	10,618,913	3,428,692	14,047,605
2028	8,487,180	3,428,692	11,915,872	9,658,012	3,428,692	13,086,705	10,947,408	3,428,692	14,376,100
2029	8,523,869	3,428,692	11,952,562	9,783,889	3,428,692	13,212,582	11,181,708	3,428,692	14,610,401
2030	8,600,591	3,428,692	12,029,284	9,955,514	3,428,692	13,384,206	11,469,694	3,428,692	14,898,386
2031	8,677,479	3,428,692	12,106,172	10,128,786	3,428,692	13,557,478	11,762,629	3,428,692	15,191,321
2032	8,795,610	3,428,692	12,224,303	10,350,563	3,428,692	13,779,255	12,114,030	3,428,692	15,542,723
2033	8,831,593	3,428,692	12,260,286	10,479,971	3,428,692	13,908,664	12,363,079	3,428,692	15,791,771
2034	8,908,849	3,428,692	12,337,541	10,657,974	3,428,692	14,086,667	12,670,861	3,428,692	16,099,554

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.49%	0.00%	1.02%	2.48%	0.00%	1.70%	3.47%	0.00%	2.39%
2017	0.50%	0.00%	0.35%	1.48%	0.00%	1.03%	2.45%	0.00%	1.71%
2018	0.99%	0.00%	0.68%	1.96%	0.00%	1.36%	2.92%	0.00%	2.05%
2019	0.98%	0.00%	0.68%	1.94%	0.00%	1.36%	2.89%	0.00%	2.05%
2020	1.46%	0.00%	1.01%	2.41%	0.00%	1.69%	3.34%	0.00%	2.38%
2021	0.48%	0.00%	0.34%	1.43%	0.00%	1.01%	2.35%	0.00%	1.69%
2022	0.96%	0.00%	0.67%	1.89%	0.00%	1.35%	2.80%	0.00%	2.03%
2023	0.95%	0.00%	0.67%	1.87%	0.00%	1.34%	2.77%	0.00%	2.02%
2024	1.43%	0.00%	1.00%	2.34%	0.00%	1.68%	3.22%	0.00%	2.37%
2025	0.46%	0.00%	0.32%	1.36%	0.00%	0.99%	2.24%	0.00%	1.66%
2026	0.93%	0.00%	0.66%	1.82%	0.00%	1.33%	2.69%	0.00%	2.00%
2027	0.92%	0.00%	0.65%	1.81%	0.00%	1.32%	2.66%	0.00%	2.00%
2028	1.39%	0.00%	0.99%	2.26%	0.00%	1.66%	3.09%	0.00%	2.34%
2029	0.43%	0.00%	0.31%	1.30%	0.00%	0.96%	2.14%	0.00%	1.63%
2030	0.90%	0.00%	0.64%	1.75%	0.00%	1.30%	2.58%	0.00%	1.97%
2031	0.89%	0.00%	0.64%	1.74%	0.00%	1.29%	2.55%	0.00%	1.97%
2032	1.36%	0.00%	0.98%	2.19%	0.00%	1.64%	2.99%	0.00%	2.31%
2033	0.41%	0.00%	0.29%	1.25%	0.00%	0.94%	2.06%	0.00%	1.60%
2034	0.87%	0.00%	0.63%	1.70%	0.00%	1.28%	2.49%	0.00%	1.95%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	9,394	111,084	120,477	9,394	111,910	121,304	9,394	112,737	122,131
2016	9,394	111,914	121,308	9,394	113,583	122,977	9,394	115,265	124,659
2017	9,394	112,748	122,142	9,394	115,278	124,671	9,394	117,845	127,239
2018	9,394	113,587	122,980	9,394	116,992	126,386	9,394	120,476	129,870
2019	9,394	114,429	123,822	9,394	118,729	128,122	9,394	123,160	132,553
2020	9,394	115,272	124,666	9,394	120,481	129,874	9,394	125,889	135,283
2021	9,394	116,120	125,514	9,394	122,256	131,649	9,394	128,674	138,068
2022	9,394	116,970	126,363	9,394	124,046	133,440	9,394	131,506	140,899
2023	9,394	117,820	127,214	9,394	125,854	135,248	9,394	134,385	143,779
2024	9,394	118,675	128,068	9,394	127,682	137,076	9,394	137,320	146,713
2025	9,394	119,529	128,922	9,394	129,524	138,918	9,394	140,299	149,693
2026	9,394	120,385	129,779	9,394	131,386	140,780	9,394	143,333	152,726
2027	9,394	121,243	130,637	9,394	133,264	142,657	9,394	146,416	155,810
2028	9,394	122,101	131,495	9,394	135,157	144,551	9,394	149,549	158,943
2029	9,394	122,960	132,354	9,394	137,066	146,460	9,394	152,731	162,125
2030	9,394	123,820	133,213	9,394	138,991	148,385	9,394	155,965	165,359
2031	9,394	124,681	134,075	9,394	140,935	150,328	9,394	159,255	168,649
2032	9,394	125,544	134,938	9,394	142,896	152,290	9,394	162,601	171,995
2033	9,394	126,409	135,802	9,394	144,876	154,270	9,394	166,004	175,397
2034	9,394	127,275	136,668	9,394	146,875	156,269	9,394	169,465	178,858

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.75%	0.69%	0.00%	1.49%	1.38%	0.00%	2.24%	2.07%
2017	0.00%	0.75%	0.69%	0.00%	1.49%	1.38%	0.00%	2.24%	2.07%
2018	0.00%	0.74%	0.69%	0.00%	1.49%	1.38%	0.00%	2.23%	2.07%
2019	0.00%	0.74%	0.68%	0.00%	1.48%	1.37%	0.00%	2.23%	2.07%
2020	0.00%	0.74%	0.68%	0.00%	1.48%	1.37%	0.00%	2.22%	2.06%
2021	0.00%	0.74%	0.68%	0.00%	1.47%	1.37%	0.00%	2.21%	2.06%
2022	0.00%	0.73%	0.68%	0.00%	1.46%	1.36%	0.00%	2.20%	2.05%
2023	0.00%	0.73%	0.67%	0.00%	1.46%	1.35%	0.00%	2.19%	2.04%
2024	0.00%	0.72%	0.67%	0.00%	1.45%	1.35%	0.00%	2.18%	2.04%
2025	0.00%	0.72%	0.67%	0.00%	1.44%	1.34%	0.00%	2.17%	2.03%
2026	0.00%	0.72%	0.66%	0.00%	1.44%	1.34%	0.00%	2.16%	2.03%
2027	0.00%	0.71%	0.66%	0.00%	1.43%	1.33%	0.00%	2.15%	2.02%
2028	0.00%	0.71%	0.66%	0.00%	1.42%	1.33%	0.00%	2.14%	2.01%
2029	0.00%	0.70%	0.65%	0.00%	1.41%	1.32%	0.00%	2.13%	2.00%
2030	0.00%	0.70%	0.65%	0.00%	1.40%	1.31%	0.00%	2.12%	1.99%
2031	0.00%	0.70%	0.65%	0.00%	1.40%	1.31%	0.00%	2.11%	1.99%
2032	0.00%	0.69%	0.64%	0.00%	1.39%	1.30%	0.00%	2.10%	1.98%
2033	0.00%	0.69%	0.64%	0.00%	1.39%	1.30%	0.00%	2.09%	1.98%
2034	0.00%	0.69%	0.64%	0.00%	1.38%	1.30%	0.00%	2.08%	1.97%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,326,801	9,035,486	10,362,288	1,333,230	9,100,388	10,433,618	1,339,659	9,165,289	10,504,948
2016	1,336,212	9,132,912	10,469,123	1,349,184	9,264,540	10,613,724	1,362,222	9,397,197	10,759,420
2017	1,339,719	9,166,201	10,505,920	1,359,263	9,364,906	10,724,169	1,379,006	9,566,727	10,945,734
2018	1,346,205	9,232,039	10,578,243	1,372,434	9,499,706	10,872,140	1,399,063	9,773,691	11,172,754
2019	1,352,719	9,298,180	10,650,899	1,385,729	9,636,186	11,021,915	1,419,412	9,984,867	11,404,279
2020	1,362,245	9,397,718	10,759,963	1,402,182	9,808,882	11,211,064	1,443,138	10,236,337	11,679,475
2021	1,365,732	9,431,102	10,796,833	1,412,485	9,913,700	11,326,185	1,460,669	10,419,320	11,879,990
2022	1,372,227	9,497,867	10,870,093	1,425,940	10,054,728	11,480,668	1,481,571	10,642,688	12,124,259
2023	1,378,698	9,564,770	10,943,468	1,439,411	10,197,156	11,636,567	1,502,600	10,870,039	12,372,639
2024	1,388,292	9,666,229	11,054,521	1,456,270	10,378,311	11,834,582	1,527,368	11,141,880	12,669,248
2025	1,391,623	9,699,164	11,090,787	1,466,514	10,486,618	11,953,132	1,545,217	11,337,529	12,882,747
2026	1,398,066	9,766,599	11,164,665	1,480,120	10,633,563	12,113,683	1,566,766	11,577,633	13,144,399
2027	1,404,473	9,834,142	11,238,615	1,493,716	10,781,892	12,275,609	1,588,400	11,821,903	13,410,303
2028	1,414,015	9,937,112	11,351,127	1,510,727	10,970,935	12,481,663	1,613,821	12,114,170	13,727,991
2029	1,417,182	9,969,486	11,386,668	1,520,875	11,082,613	12,603,488	1,631,921	12,322,994	13,954,915
2030	1,423,488	10,037,282	11,460,770	1,534,445	11,235,012	12,769,457	1,653,816	12,579,930	14,233,746
2031	1,429,774	10,105,271	11,535,045	1,548,032	11,389,030	12,937,062	1,675,840	12,841,626	14,517,466
2032	1,439,283	10,209,771	11,649,054	1,565,221	11,586,267	13,151,488	1,701,949	13,155,797	14,857,746
2033	1,442,289	10,241,668	11,683,957	1,575,267	11,701,620	13,276,886	1,720,283	13,379,028	15,099,311
2034	1,448,522	10,310,100	11,758,622	1,588,920	11,860,273	13,449,192	1,742,711	13,654,988	15,397,699

Annual Change

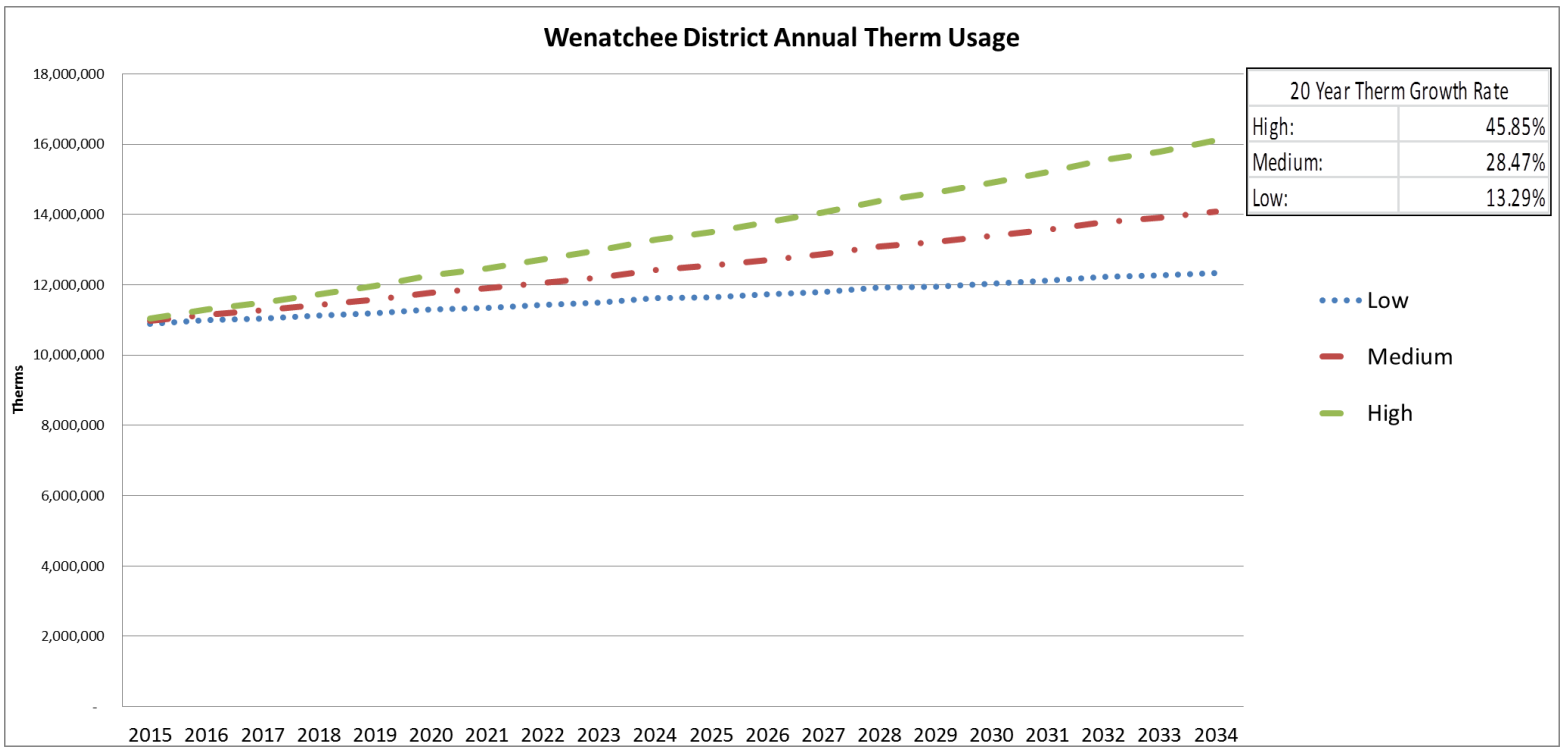
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	1.08%	1.03%	1.20%	1.80%	1.73%	1.68%	2.53%	2.42%
2017	0.26%	0.36%	0.35%	0.75%	1.08%	1.04%	1.23%	1.80%	1.73%
2018	0.48%	0.72%	0.69%	0.97%	1.44%	1.38%	1.45%	2.16%	2.07%
2019	0.48%	0.72%	0.69%	0.97%	1.44%	1.38%	1.45%	2.16%	2.07%
2020	0.70%	1.07%	1.02%	1.19%	1.79%	1.72%	1.67%	2.52%	2.41%
2021	0.26%	0.36%	0.34%	0.73%	1.07%	1.03%	1.21%	1.79%	1.72%
2022	0.48%	0.71%	0.68%	0.95%	1.42%	1.36%	1.43%	2.14%	2.06%
2023	0.47%	0.70%	0.68%	0.94%	1.42%	1.36%	1.42%	2.14%	2.05%
2024	0.70%	1.06%	1.01%	1.17%	1.78%	1.70%	1.65%	2.50%	2.40%
2025	0.24%	0.34%	0.33%	0.70%	1.04%	1.00%	1.17%	1.76%	1.69%
2026	0.46%	0.70%	0.67%	0.93%	1.40%	1.34%	1.39%	2.12%	2.03%
2027	0.46%	0.69%	0.66%	0.92%	1.39%	1.34%	1.38%	2.11%	2.02%
2028	0.68%	1.05%	1.00%	1.14%	1.75%	1.68%	1.60%	2.47%	2.37%
2029	0.22%	0.33%	0.31%	0.67%	1.02%	0.98%	1.12%	1.72%	1.65%
2030	0.44%	0.68%	0.65%	0.89%	1.38%	1.32%	1.34%	2.09%	2.00%
2031	0.44%	0.68%	0.65%	0.89%	1.37%	1.31%	1.33%	2.08%	1.99%
2032	0.67%	1.03%	0.99%	1.11%	1.73%	1.66%	1.56%	2.45%	2.34%
2033	0.21%	0.31%	0.30%	0.64%	1.00%	0.95%	1.08%	1.70%	1.63%
2034	0.43%	0.67%	0.64%	0.87%	1.36%	1.30%	1.30%	2.06%	1.98%

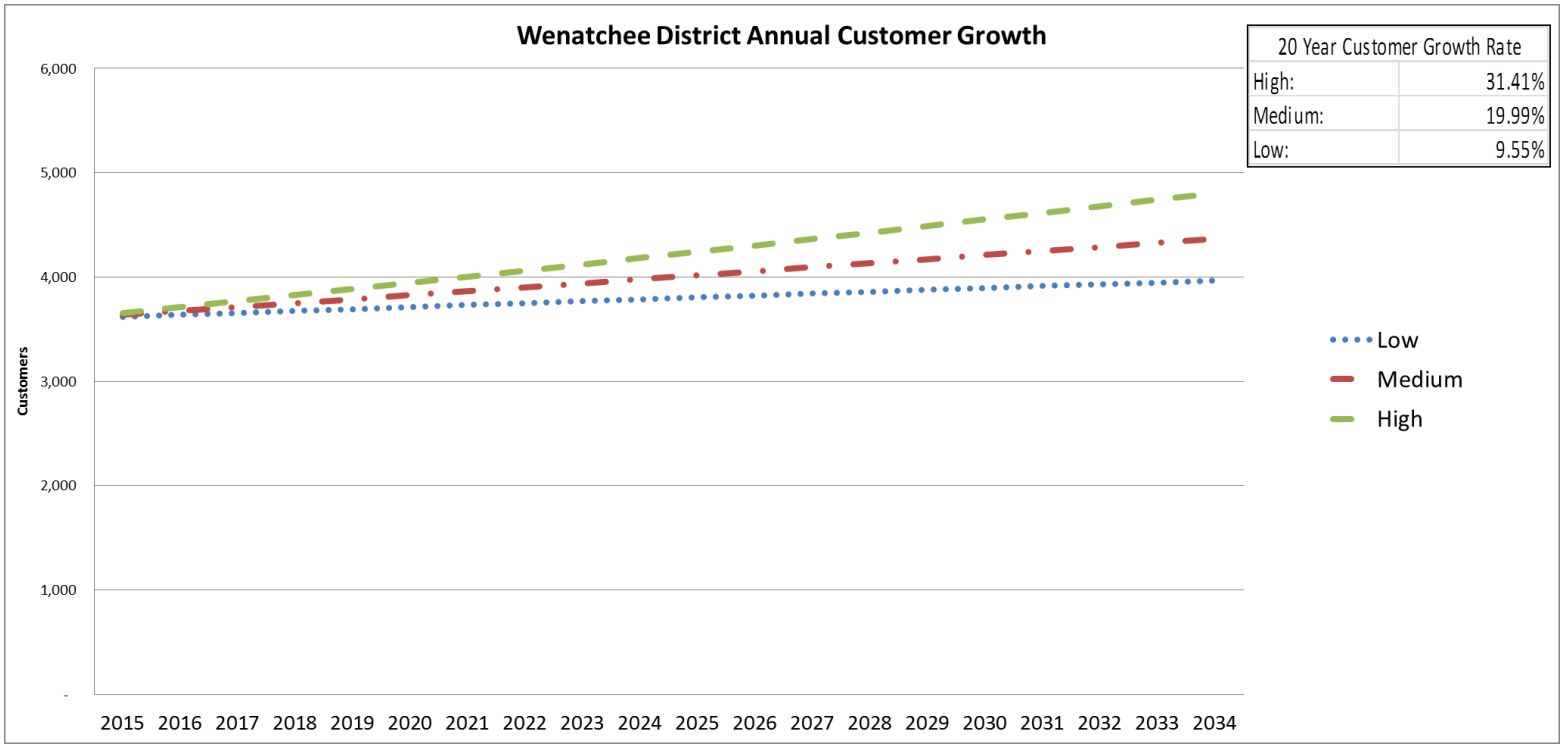
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,541	1,078	3,620	2,554	1,084	3,638	2,567	1,090	3,656
2016	2,554	1,084	3,638	2,579	1,096	3,675	2,605	1,107	3,712
2017	2,567	1,090	3,657	2,605	1,107	3,712	2,643	1,125	3,769
2018	2,579	1,096	3,675	2,631	1,119	3,750	2,683	1,143	3,826
2019	2,592	1,102	3,694	2,657	1,131	3,788	2,722	1,161	3,884
2020	2,605	1,107	3,712	2,682	1,143	3,826	2,762	1,180	3,942
2021	2,617	1,113	3,731	2,709	1,155	3,864	2,803	1,198	4,001
2022	2,630	1,119	3,749	2,735	1,167	3,902	2,844	1,217	4,061
2023	2,643	1,125	3,767	2,761	1,179	3,940	2,885	1,236	4,121
2024	2,655	1,131	3,786	2,788	1,191	3,979	2,926	1,255	4,182
2025	2,668	1,136	3,804	2,814	1,203	4,018	2,968	1,274	4,242
2026	2,680	1,142	3,822	2,841	1,216	4,056	3,010	1,294	4,304
2027	2,693	1,148	3,841	2,867	1,228	4,095	3,052	1,313	4,365
2028	2,705	1,153	3,859	2,894	1,240	4,133	3,094	1,333	4,427
2029	2,718	1,159	3,877	2,920	1,252	4,172	3,137	1,352	4,489
2030	2,730	1,165	3,894	2,946	1,264	4,211	3,180	1,372	4,552
2031	2,742	1,170	3,912	2,973	1,276	4,249	3,223	1,392	4,614
2032	2,754	1,176	3,930	2,999	1,288	4,288	3,266	1,412	4,678
2033	2,766	1,181	3,948	3,026	1,301	4,327	3,309	1,432	4,741
2034	2,779	1,187	3,965	3,052	1,313	4,365	3,353	1,452	4,805

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.54%	0.51%	0.99%	1.07%	1.02%	1.49%	1.61%	1.52%
2017	0.50%	0.53%	0.51%	0.99%	1.07%	1.01%	1.49%	1.61%	1.52%
2018	0.49%	0.53%	0.51%	0.99%	1.07%	1.01%	1.48%	1.60%	1.52%
2019	0.49%	0.53%	0.50%	0.99%	1.06%	1.01%	1.48%	1.60%	1.52%
2020	0.49%	0.53%	0.50%	0.98%	1.05%	1.00%	1.47%	1.58%	1.50%
2021	0.49%	0.53%	0.50%	0.98%	1.05%	1.00%	1.47%	1.58%	1.50%
2022	0.48%	0.52%	0.49%	0.97%	1.04%	0.99%	1.46%	1.57%	1.49%
2023	0.48%	0.52%	0.49%	0.96%	1.03%	0.98%	1.44%	1.55%	1.48%
2024	0.48%	0.51%	0.49%	0.96%	1.03%	0.98%	1.44%	1.55%	1.47%
2025	0.47%	0.51%	0.48%	0.95%	1.02%	0.97%	1.42%	1.53%	1.45%
2026	0.47%	0.50%	0.48%	0.94%	1.01%	0.96%	1.42%	1.52%	1.45%
2027	0.47%	0.50%	0.48%	0.93%	1.00%	0.95%	1.40%	1.50%	1.43%
2028	0.46%	0.49%	0.47%	0.92%	0.99%	0.94%	1.39%	1.49%	1.42%
2029	0.46%	0.49%	0.47%	0.91%	0.98%	0.93%	1.37%	1.47%	1.40%
2030	0.45%	0.48%	0.46%	0.90%	0.97%	0.92%	1.36%	1.46%	1.39%
2031	0.45%	0.48%	0.46%	0.90%	0.96%	0.92%	1.35%	1.45%	1.38%
2032	0.44%	0.48%	0.45%	0.89%	0.95%	0.91%	1.34%	1.43%	1.37%
2033	0.44%	0.47%	0.45%	0.88%	0.95%	0.90%	1.33%	1.42%	1.36%
2034	0.44%	0.47%	0.45%	0.88%	0.94%	0.90%	1.32%	1.41%	1.35%


Wenatchee District Annual Therm Usage
Therms
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 45.85%
Medium: 28.47%
Low: 13.29%
Low
Medium
High


Wenatchee District Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 31.41%
Medium: 19.99%
Low: 9.55%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	30,409,268	8,542,165	38,951,433	30,444,900	8,542,165	38,987,066	30,480,533	8,542,165	39,022,699
2016	30,623,399	8,542,165	39,165,564	30,696,716	8,542,165	39,238,881	30,770,164	8,542,165	39,312,330
2017	30,485,472	8,542,165	39,027,637	30,597,710	8,542,165	39,139,876	30,710,351	8,542,165	39,252,516
2018	30,526,194	8,542,165	39,068,360	30,679,572	8,542,165	39,221,737	30,833,773	8,542,165	39,375,938
2019	30,568,275	8,542,165	39,110,440	30,764,303	8,542,165	39,306,468	30,961,735	8,542,165	39,503,900
2020	30,788,508	8,542,165	39,330,673	31,028,922	8,542,165	39,571,088	31,271,488	8,542,165	39,813,653
2021	30,654,907	8,542,165	39,197,072	30,939,178	8,542,165	39,481,343	31,226,502	8,542,165	39,768,667
2022	30,699,299	8,542,165	39,241,464	31,029,007	8,542,165	39,571,172	31,362,847	8,542,165	39,905,012
2023	30,743,897	8,542,165	39,286,062	31,119,404	8,542,165	39,661,570	31,500,290	8,542,165	40,042,456
2024	30,967,751	8,542,165	39,509,916	31,391,933	8,542,165	39,934,098	31,822,951	8,542,165	40,365,116
2025	30,834,105	8,542,165	39,376,271	31,302,704	8,542,165	39,844,869	31,779,691	8,542,165	40,321,856
2026	30,879,482	8,542,165	39,421,647	31,395,133	8,542,165	39,937,298	31,920,936	8,542,165	40,463,101
2027	30,924,613	8,542,165	39,466,778	31,487,219	8,542,165	40,029,384	32,061,904	8,542,165	40,604,069
2028	31,148,885	8,542,165	39,691,050	31,761,217	8,542,165	40,303,382	32,387,780	8,542,165	40,929,945
2029	31,013,898	8,542,165	39,556,063	31,669,858	8,542,165	40,212,023	32,342,221	8,542,165	40,884,387
2030	31,057,831	8,542,165	39,599,996	31,759,953	8,542,165	40,302,118	32,480,868	8,542,165	41,023,033
2031	31,102,274	8,542,165	39,644,440	31,851,231	8,542,165	40,393,396	32,621,547	8,542,165	41,163,713
2032	31,326,283	8,542,165	39,868,448	32,125,287	8,542,165	40,667,452	32,948,474	8,542,165	41,490,640
2033	31,190,443	8,542,165	39,732,609	32,032,750	8,542,165	40,574,915	32,902,022	8,542,165	41,444,187
2034	31,234,769	8,542,165	39,776,934	32,124,212	8,542,165	40,666,377	33,043,678	8,542,165	41,585,843

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.70%	0.00%	0.55%	0.83%	0.00%	0.65%	0.95%	0.00%	0.74%
2017	-0.45%	0.00%	-0.35%	-0.32%	0.00%	-0.25%	-0.19%	0.00%	-0.15%
2018	0.13%	0.00%	0.10%	0.27%	0.00%	0.21%	0.40%	0.00%	0.31%
2019	0.14%	0.00%	0.11%	0.28%	0.00%	0.22%	0.42%	0.00%	0.32%
2020	0.72%	0.00%	0.56%	0.86%	0.00%	0.67%	1.00%	0.00%	0.78%
2021	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2022	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.34%
2023	0.15%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.34%
2024	0.73%	0.00%	0.57%	0.88%	0.00%	0.69%	1.02%	0.00%	0.81%
2025	-0.43%	0.00%	-0.34%	-0.28%	0.00%	-0.22%	-0.14%	0.00%	-0.11%
2026	0.15%	0.00%	0.12%	0.30%	0.00%	0.23%	0.44%	0.00%	0.35%
2027	0.15%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.35%
2028	0.73%	0.00%	0.57%	0.87%	0.00%	0.68%	1.02%	0.00%	0.80%
2029	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2030	0.14%	0.00%	0.11%	0.28%	0.00%	0.22%	0.43%	0.00%	0.34%
2031	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.43%	0.00%	0.34%
2032	0.72%	0.00%	0.57%	0.86%	0.00%	0.68%	1.00%	0.00%	0.79%
2033	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2034	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.43%	0.00%	0.34%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	23,403	439,151	462,554	23,403	439,566	462,969	23,403	439,981	463,384
2016	23,403	439,585	462,988	23,403	440,435	463,839	23,403	441,288	464,691
2017	23,403	440,040	463,443	23,403	441,348	464,751	23,403	442,662	466,065
2018	23,403	440,515	463,919	23,403	442,304	465,708	23,403	444,103	467,506
2019	23,403	441,007	464,410	23,403	443,295	466,698	23,403	445,599	469,002
2020	23,403	441,505	464,908	23,403	444,299	467,702	23,403	447,118	470,521
2021	23,403	442,020	465,423	23,403	445,340	468,743	23,403	448,694	472,098
2022	23,403	442,540	465,943	23,403	446,390	469,794	23,403	450,289	473,692
2023	23,403	443,062	466,465	23,403	447,448	470,851	23,403	451,897	475,300
2024	23,403	443,593	466,996	23,403	448,527	471,931	23,403	453,541	476,944
2025	23,403	444,117	467,521	23,403	449,593	472,996	23,403	455,166	478,570
2026	23,403	444,648	468,052	23,403	450,675	474,078	23,403	456,819	480,223
2027	23,403	445,177	468,580	23,403	451,753	475,156	23,403	458,469	481,872
2028	23,403	445,704	469,107	23,403	452,830	476,233	23,403	460,120	483,524
2029	23,403	446,222	469,625	23,403	453,890	477,293	23,403	461,749	485,152
2030	23,403	446,736	470,139	23,403	454,944	478,347	23,403	463,370	486,774
2031	23,403	447,256	470,659	23,403	456,012	479,415	23,403	465,016	488,419
2032	23,403	447,771	471,174	23,403	457,071	480,474	23,403	466,650	490,053
2033	23,403	448,288	471,691	23,403	458,136	481,539	23,403	468,297	491,700
2034	23,403	448,807	472,210	23,403	459,206	482,610	23,403	469,954	493,358

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.10%	0.09%	0.00%	0.20%	0.19%	0.00%	0.30%	0.28%
2017	0.00%	0.10%	0.10%	0.00%	0.21%	0.20%	0.00%	0.31%	0.30%
2018	0.00%	0.11%	0.10%	0.00%	0.22%	0.21%	0.00%	0.33%	0.31%
2019	0.00%	0.11%	0.11%	0.00%	0.22%	0.21%	0.00%	0.34%	0.32%
2020	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.32%
2021	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2022	0.00%	0.12%	0.11%	0.00%	0.24%	0.22%	0.00%	0.36%	0.34%
2023	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2024	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2025	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2026	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2028	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2029	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.33%
2031	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.36%	0.34%
2032	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.33%
2033	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2034	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	15,707,391	21,942,963	37,650,354	15,720,288	21,964,320	37,684,608	15,733,184	21,985,678	37,718,862
2016	15,797,487	22,059,907	37,857,393	15,824,107	22,103,776	37,927,883	15,850,768	22,147,732	37,998,500
2017	15,735,217	21,988,420	37,723,637	15,776,065	22,055,497	37,831,562	15,817,038	22,122,838	37,939,876
2018	15,750,207	22,012,605	37,762,812	15,806,176	22,104,140	37,910,316	15,862,404	22,196,212	38,058,616
2019	15,765,757	22,037,544	37,803,301	15,837,457	22,154,386	37,991,844	15,909,599	22,272,145	38,181,744
2020	15,858,363	22,157,875	38,016,238	15,946,489	22,301,004	38,247,493	16,035,295	22,445,534	38,480,829
2021	15,797,886	22,088,781	37,886,667	15,902,228	22,257,904	38,160,132	16,007,538	22,429,010	38,436,548
2022	15,814,399	22,114,991	37,929,390	15,935,591	22,310,997	38,246,587	16,058,096	22,509,684	38,567,780
2023	15,831,005	22,141,307	37,972,312	15,969,189	22,364,403	38,333,592	16,109,087	22,590,985	38,700,072
2024	15,925,113	22,263,633	38,188,747	16,081,446	22,515,436	38,596,882	16,239,963	22,771,662	39,011,624
2025	15,864,650	22,194,484	38,059,135	16,037,412	22,472,609	38,510,021	16,212,857	22,756,159	38,969,015
2026	15,881,596	22,221,213	38,102,809	16,071,847	22,527,142	38,598,989	16,265,350	22,839,629	39,104,979
2027	15,898,450	22,247,797	38,146,246	16,106,145	22,581,478	38,687,623	16,317,716	22,922,956	39,240,672
2028	15,992,760	22,370,321	38,363,081	16,219,016	22,733,307	38,952,323	16,449,845	23,105,472	39,555,318
2029	15,931,785	22,300,391	38,232,175	16,174,136	22,689,270	38,863,407	16,421,761	23,088,728	39,510,489
2030	15,948,175	22,326,277	38,274,452	16,207,643	22,742,471	38,950,114	16,473,155	23,170,778	39,643,932
2031	15,964,782	22,352,442	38,317,225	16,241,634	22,796,330	39,037,964	16,525,362	23,253,979	39,779,341
2032	16,059,018	22,474,783	38,533,801	16,354,548	22,948,164	39,302,712	16,657,871	23,437,116	40,094,987
2033	15,997,725	22,404,348	38,402,073	16,309,208	22,903,452	39,212,659	16,629,380	23,419,916	40,049,296
2034	16,014,306	22,430,425	38,444,731	16,343,286	22,957,399	39,300,685	16,681,948	23,503,696	40,185,644

Annual Change

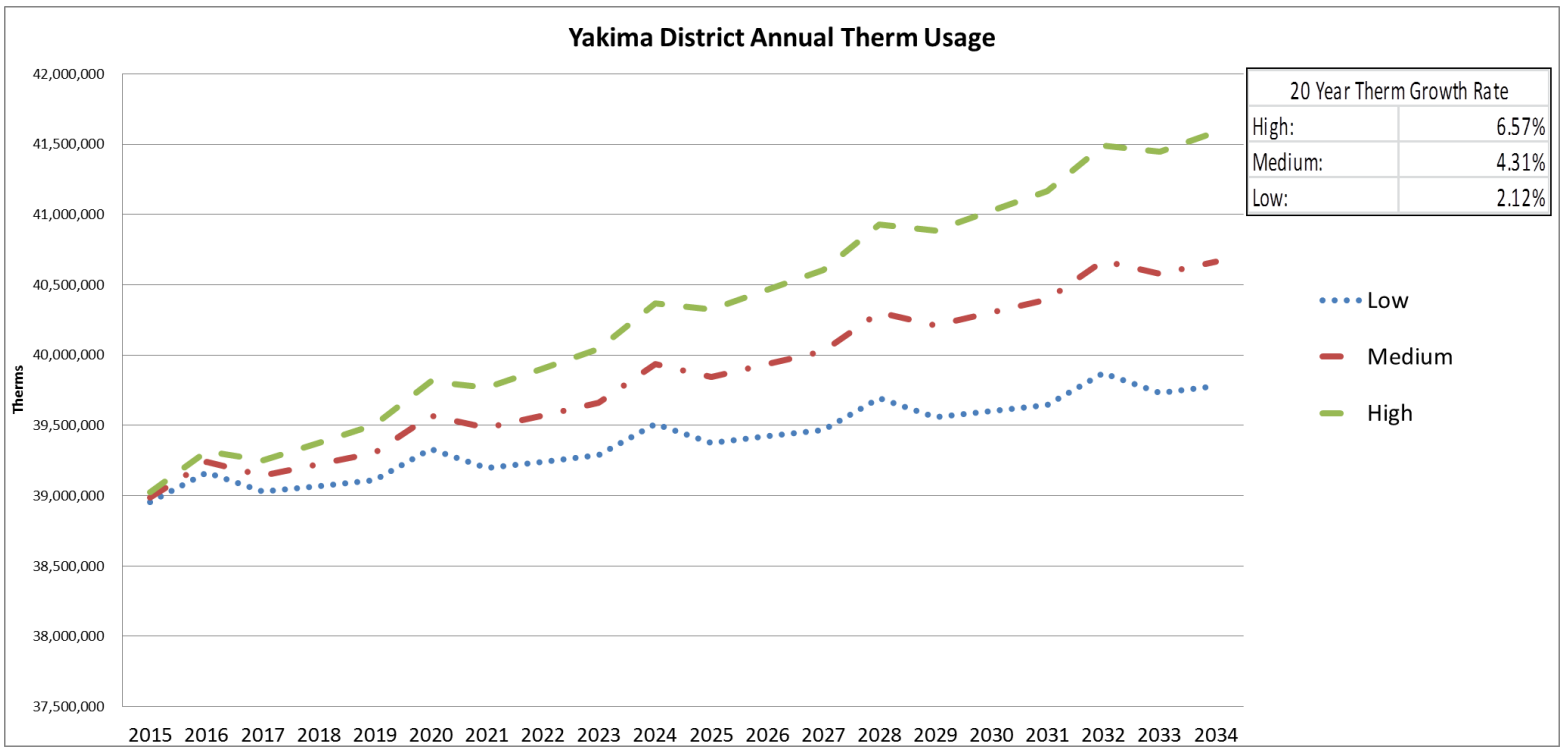
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.53%	0.55%	0.66%	0.63%	0.65%	0.75%	0.74%	0.74%
2017	-0.39%	-0.32%	-0.35%	-0.30%	-0.22%	-0.25%	-0.21%	-0.11%	-0.15%
2018	0.10%	0.11%	0.10%	0.19%	0.22%	0.21%	0.29%	0.33%	0.31%
2019	0.10%	0.11%	0.11%	0.20%	0.23%	0.22%	0.30%	0.34%	0.32%
2020	0.59%	0.55%	0.56%	0.69%	0.66%	0.67%	0.79%	0.78%	0.78%
2021	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.12%
2022	0.10%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2024	0.59%	0.55%	0.57%	0.70%	0.68%	0.69%	0.81%	0.80%	0.81%
2025	-0.38%	-0.31%	-0.34%	-0.27%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2026	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.37%	0.35%
2027	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.35%
2028	0.59%	0.55%	0.57%	0.70%	0.67%	0.68%	0.81%	0.80%	0.80%
2029	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2030	0.10%	0.12%	0.11%	0.21%	0.23%	0.22%	0.31%	0.36%	0.34%
2031	0.10%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2032	0.59%	0.55%	0.57%	0.70%	0.67%	0.68%	0.80%	0.79%	0.79%
2033	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2034	0.10%	0.12%	0.11%	0.21%	0.24%	0.22%	0.32%	0.36%	0.34%

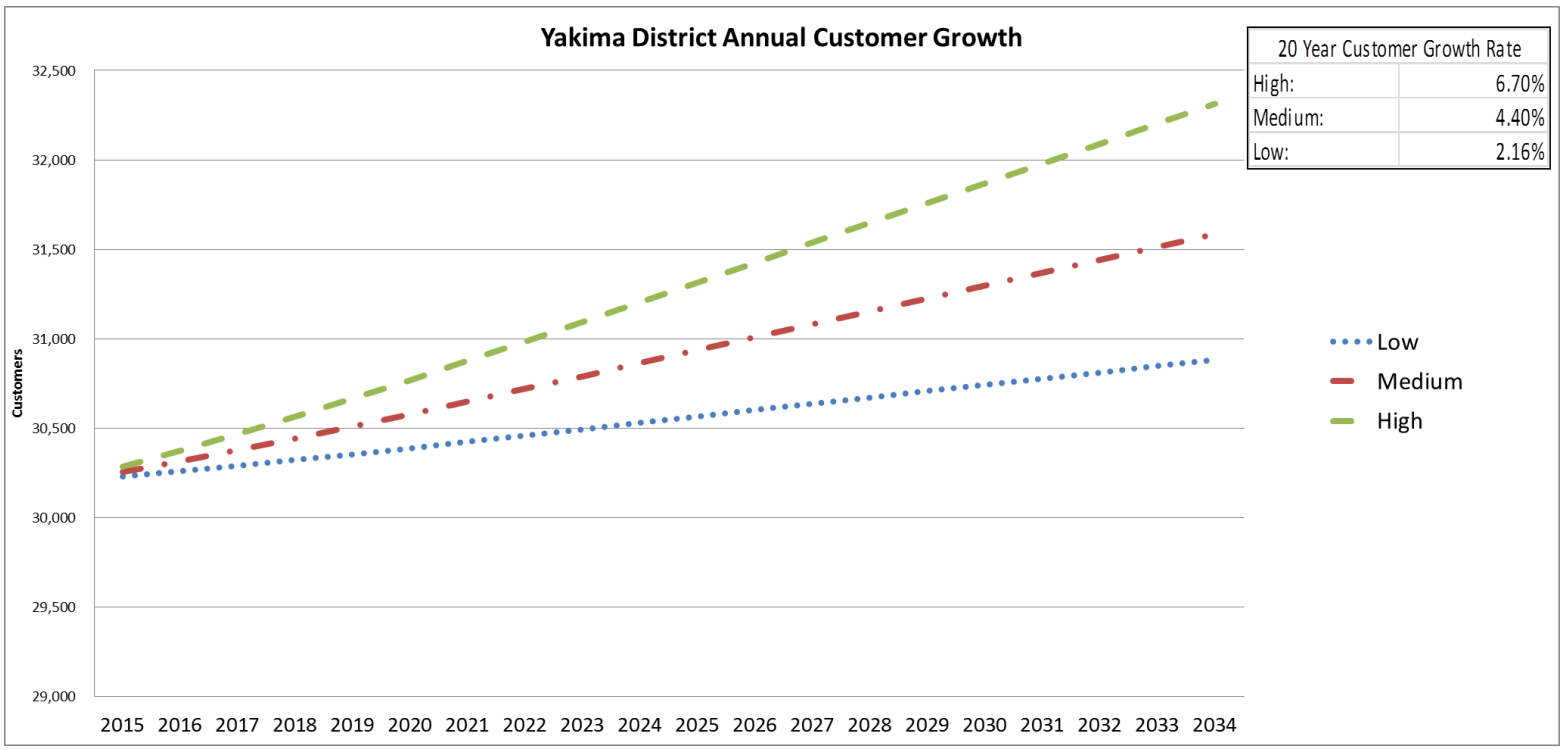
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,995	5,233	30,228	25,018	5,238	30,256	25,041	5,244	30,284
2016	25,019	5,239	30,257	25,066	5,250	30,315	25,113	5,261	30,373
2017	25,044	5,244	30,288	25,116	5,261	30,377	25,189	5,278	30,467
2018	25,070	5,250	30,321	25,169	5,273	30,442	25,268	5,297	30,565
2019	25,097	5,257	30,354	25,223	5,286	30,509	25,351	5,316	30,666
2020	25,125	5,263	30,388	25,279	5,299	30,577	25,434	5,335	30,769
2021	25,153	5,269	30,422	25,336	5,312	30,648	25,521	5,355	30,876
2022	25,182	5,276	30,458	25,394	5,325	30,719	25,609	5,375	30,984
2023	25,210	5,283	30,493	25,452	5,338	30,791	25,697	5,395	31,092
2024	25,240	5,289	30,529	25,512	5,352	30,864	25,788	5,416	31,204
2025	25,269	5,296	30,564	25,570	5,365	30,936	25,877	5,436	31,314
2026	25,298	5,302	30,600	25,630	5,379	31,009	25,968	5,457	31,425
2027	25,327	5,309	30,636	25,689	5,392	31,082	26,059	5,478	31,537
2028	25,356	5,316	30,672	25,749	5,406	31,155	26,150	5,499	31,649
2029	25,384	5,322	30,707	25,807	5,419	31,226	26,240	5,519	31,759
2030	25,413	5,329	30,741	25,865	5,433	31,298	26,329	5,540	31,869
2031	25,441	5,335	30,777	25,924	5,446	31,370	26,420	5,561	31,980
2032	25,470	5,342	30,811	25,982	5,459	31,442	26,510	5,581	32,091
2033	25,498	5,348	30,846	26,041	5,473	31,514	26,600	5,602	32,202
2034	25,527	5,355	30,882	26,100	5,486	31,586	26,692	5,623	32,314

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.19%	0.21%	0.20%	0.29%	0.32%	0.29%
2017	0.10%	0.11%	0.10%	0.20%	0.22%	0.20%	0.30%	0.33%	0.31%
2018	0.10%	0.12%	0.11%	0.21%	0.23%	0.21%	0.32%	0.35%	0.32%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2021	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2022	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.34%	0.38%	0.35%
2023	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2024	0.12%	0.13%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2025	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2026	0.12%	0.13%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2027	0.12%	0.12%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2028	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2029	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2030	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.35%
2031	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2032	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.35%
2033	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2034	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%


Yakima District Annual Therm Usage
Therms
42,000,000
41,500,000
41,000,000
40,500,000
40,000,000
39,500,000
39,000,000
38,500,000
38,000,000
37,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.57%
Medium: 4.31%
Low: 2.12%
Low
Medium
High


Yakima District Annual Customer Growth
Customers
32,500
32,000
31,500
31,000
30,500
30,000
29,500
29,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.70%
Medium: 4.40%
Low: 2.16%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Central Oregon (Bend) District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	39,629,090	10,345,659	49,974,749	40,139,670	10,345,659	50,485,329	40,650,250	10,345,659	50,995,909
2016	40,359,771	10,345,659	50,705,430	41,391,944	10,345,659	51,737,603	42,435,355	10,345,659	52,781,014
2017	40,636,543	10,345,659	50,982,202	42,187,821	10,345,659	52,533,480	43,772,712	10,345,659	54,118,371
2018	41,134,263	10,345,659	51,479,922	43,215,910	10,345,659	53,561,569	45,364,896	10,345,659	55,710,555
2019	41,627,835	10,345,659	51,973,494	44,245,994	10,345,659	54,591,653	46,976,553	10,345,659	57,322,212
2020	42,349,964	10,345,659	52,695,623	45,523,500	10,345,659	55,869,159	48,866,502	10,345,659	59,212,161
2021	42,601,446	10,345,659	52,947,104	46,308,714	10,345,659	56,654,373	50,252,442	10,345,659	60,598,101
2022	43,081,593	10,345,659	53,427,251	47,340,983	10,345,659	57,686,642	51,915,809	10,345,659	62,261,468
2023	43,556,872	10,345,659	53,902,531	48,372,554	10,345,659	58,718,213	53,593,831	10,345,659	63,939,490
2024	44,270,364	10,345,659	54,616,022	49,671,186	10,345,659	60,016,845	55,581,297	10,345,659	65,926,956
2025	44,494,345	10,345,659	54,840,004	50,435,680	10,345,659	60,781,339	56,996,457	10,345,659	67,342,116
2026	44,956,284	10,345,659	55,301,943	51,466,140	10,345,659	61,811,799	58,718,958	10,345,659	69,064,616
2027	45,413,383	10,345,659	55,759,042	52,494,807	10,345,659	62,840,466	60,453,571	10,345,659	70,799,230
2028	46,116,182	10,345,659	56,461,841	53,806,236	10,345,659	64,151,894	62,523,344	10,345,659	72,869,003
2029	46,313,305	10,345,659	56,658,964	54,546,140	10,345,659	64,891,799	63,957,182	10,345,659	74,302,841
2030	46,756,101	10,345,659	57,101,760	55,568,192	10,345,659	65,913,851	65,724,700	10,345,659	76,070,359
2031	47,195,344	10,345,659	57,541,003	56,590,296	10,345,659	66,935,954	67,506,657	10,345,659	77,852,316
2032	47,888,125	10,345,659	58,233,783	57,912,291	10,345,659	68,257,950	69,652,752	10,345,659	79,998,410
2033	48,061,390	10,345,659	58,407,049	58,629,679	10,345,659	68,975,338	71,104,673	10,345,659	81,450,332
2034	48,488,823	10,345,659	58,834,482	59,647,958	10,345,659	69,993,617	72,922,098	10,345,659	83,267,757

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.84%	0.00%	1.46%	3.12%	0.00%	2.48%	4.39%	0.00%	3.50%
2017	0.69%	0.00%	0.55%	1.92%	0.00%	1.54%	3.15%	0.00%	2.53%
2018	1.22%	0.00%	0.98%	2.44%	0.00%	1.96%	3.64%	0.00%	2.94%
2019	1.20%	0.00%	0.96%	2.38%	0.00%	1.92%	3.55%	0.00%	2.89%
2020	1.73%	0.00%	1.39%	2.89%	0.00%	2.34%	4.02%	0.00%	3.30%
2021	0.59%	0.00%	0.48%	1.72%	0.00%	1.41%	2.84%	0.00%	2.34%
2022	1.13%	0.00%	0.91%	2.23%	0.00%	1.82%	3.31%	0.00%	2.74%
2023	1.10%	0.00%	0.89%	2.18%	0.00%	1.79%	3.23%	0.00%	2.70%
2024	1.64%	0.00%	1.32%	2.68%	0.00%	2.21%	3.71%	0.00%	3.11%
2025	0.51%	0.00%	0.41%	1.54%	0.00%	1.27%	2.55%	0.00%	2.15%
2026	1.04%	0.00%	0.84%	2.04%	0.00%	1.70%	3.02%	0.00%	2.56%
2027	1.02%	0.00%	0.83%	2.00%	0.00%	1.66%	2.95%	0.00%	2.51%
2028	1.55%	0.00%	1.26%	2.50%	0.00%	2.09%	3.42%	0.00%	2.92%
2029	0.43%	0.00%	0.35%	1.38%	0.00%	1.15%	2.29%	0.00%	1.97%
2030	0.96%	0.00%	0.78%	1.87%	0.00%	1.58%	2.76%	0.00%	2.38%
2031	0.94%	0.00%	0.77%	1.84%	0.00%	1.55%	2.71%	0.00%	2.34%
2032	1.47%	0.00%	1.20%	2.34%	0.00%	1.98%	3.18%	0.00%	2.76%
2033	0.36%	0.00%	0.30%	1.24%	0.00%	1.05%	2.08%	0.00%	1.81%
2034	0.89%	0.00%	0.73%	1.74%	0.00%	1.48%	2.56%	0.00%	2.23%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	28,344	584,217	612,561	28,344	590,417	618,761	28,344	596,617	624,961
2016	28,344	590,360	618,704	28,344	602,839	631,184	28,344	615,454	643,798
2017	28,344	596,453	624,797	28,344	615,292	643,636	28,344	634,538	662,882
2018	28,344	602,499	630,843	28,344	627,779	656,124	28,344	653,876	682,220
2019	28,344	608,495	636,839	28,344	640,292	668,636	28,344	673,451	701,796
2020	28,344	614,430	642,774	28,344	652,803	681,147	28,344	693,221	721,565
2021	28,344	620,324	648,669	28,344	665,351	693,695	28,344	713,243	741,587
2022	28,344	626,159	654,503	28,344	677,892	706,236	28,344	733,448	761,792
2023	28,344	631,934	660,279	28,344	690,425	718,769	28,344	753,831	782,175
2024	28,344	637,663	666,007	28,344	702,972	731,317	28,344	774,426	802,771
2025	28,344	643,328	671,672	28,344	715,492	743,837	28,344	795,164	823,509
2026	28,344	648,942	677,286	28,344	728,013	756,358	28,344	816,089	844,433
2027	28,344	654,498	682,842	28,344	740,512	768,857	28,344	837,160	865,504
2028	28,344	659,999	688,343	28,344	752,995	781,339	28,344	858,383	886,727
2029	28,344	665,437	693,781	28,344	765,439	793,783	28,344	879,720	908,064
2030	28,344	670,820	699,164	28,344	777,858	806,202	28,344	901,191	929,535
2031	28,344	676,159	704,504	28,344	790,279	818,623	28,344	922,837	951,181
2032	28,344	681,444	709,788	28,344	802,670	831,014	28,344	944,605	972,949
2033	28,344	686,688	715,032	28,344	815,061	843,406	28,344	966,544	994,888
2034	28,344	691,885	720,229	28,344	827,436	855,780	28,344	988,621	1,016,965

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.05%	1.00%	0.00%	2.10%	2.01%	0.00%	3.16%	3.01%
2017	0.00%	1.03%	0.98%	0.00%	2.07%	1.97%	0.00%	3.10%	2.96%
2018	0.00%	1.01%	0.97%	0.00%	2.03%	1.94%	0.00%	3.05%	2.92%
2019	0.00%	1.00%	0.95%	0.00%	1.99%	1.91%	0.00%	2.99%	2.87%
2020	0.00%	0.98%	0.93%	0.00%	1.95%	1.87%	0.00%	2.94%	2.82%
2021	0.00%	0.96%	0.92%	0.00%	1.92%	1.84%	0.00%	2.89%	2.77%
2022	0.00%	0.94%	0.90%	0.00%	1.88%	1.81%	0.00%	2.83%	2.72%
2023	0.00%	0.92%	0.88%	0.00%	1.85%	1.77%	0.00%	2.78%	2.68%
2024	0.00%	0.91%	0.87%	0.00%	1.82%	1.75%	0.00%	2.73%	2.63%
2025	0.00%	0.89%	0.85%	0.00%	1.78%	1.71%	0.00%	2.68%	2.58%
2026	0.00%	0.87%	0.84%	0.00%	1.75%	1.68%	0.00%	2.63%	2.54%
2027	0.00%	0.86%	0.82%	0.00%	1.72%	1.65%	0.00%	2.58%	2.50%
2028	0.00%	0.84%	0.81%	0.00%	1.69%	1.62%	0.00%	2.54%	2.45%
2029	0.00%	0.82%	0.79%	0.00%	1.65%	1.59%	0.00%	2.49%	2.41%
2030	0.00%	0.81%	0.78%	0.00%	1.62%	1.56%	0.00%	2.44%	2.36%
2031	0.00%	0.80%	0.76%	0.00%	1.60%	1.54%	0.00%	2.40%	2.33%
2032	0.00%	0.78%	0.75%	0.00%	1.57%	1.51%	0.00%	2.36%	2.29%
2033	0.00%	0.77%	0.74%	0.00%	1.54%	1.49%	0.00%	2.32%	2.25%
2034	0.00%	0.76%	0.73%	0.00%	1.52%	1.47%	0.00%	2.28%	2.22%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	29,254,809	19,793,020	49,047,829	29,567,843	19,984,220	49,552,063	29,880,877	20,175,419	50,056,296
2016	29,698,992	20,070,050	49,769,042	30,331,748	20,456,630	50,788,378	30,971,463	20,847,364	51,818,827
2017	29,871,945	20,170,697	50,042,642	30,822,696	20,751,868	51,574,564	31,794,257	21,345,467	53,139,724
2018	30,176,597	20,357,470	50,534,066	31,452,207	21,137,489	52,589,696	32,769,502	21,942,411	54,711,913
2019	30,478,568	20,542,796	51,021,364	32,082,723	21,524,029	53,606,751	33,756,451	22,546,832	56,303,283
2020	30,917,052	20,816,997	51,734,049	32,861,429	22,006,444	54,867,873	34,910,704	23,258,569	58,169,273
2021	31,073,873	20,908,648	51,982,521	33,344,790	22,298,477	55,643,268	35,762,049	23,775,781	59,537,830
2022	31,367,290	21,089,200	52,456,490	33,976,143	22,686,228	56,662,371	36,780,199	24,399,958	61,180,157
2023	31,657,656	21,267,982	52,925,638	34,606,979	23,073,787	57,680,766	37,807,282	25,029,665	62,836,947
2024	32,090,530	21,539,209	53,629,739	35,398,209	23,564,481	58,962,690	39,021,038	25,778,192	64,799,231
2025	32,230,088	21,620,863	53,850,951	35,868,199	23,849,246	59,717,445	39,889,564	26,306,869	66,196,433
2026	32,512,053	21,794,823	54,306,876	36,498,021	24,236,652	60,734,674	40,943,638	26,953,455	67,897,094
2027	32,791,001	21,967,011	54,758,011	37,126,676	24,623,440	61,750,116	42,005,105	27,604,603	69,609,707
2028	33,217,178	22,234,360	55,451,538	37,925,637	25,119,051	63,044,689	43,269,491	28,383,884	71,653,375
2029	33,339,991	22,306,159	55,646,150	38,380,087	25,394,941	63,775,029	44,148,985	28,919,884	73,068,869
2030	33,610,030	22,473,099	56,083,130	39,004,491	25,779,406	64,783,897	45,230,523	29,583,437	74,813,960
2031	33,877,845	22,638,747	56,516,592	39,628,860	26,163,947	65,792,806	46,320,873	30,252,436	76,573,310
2032	34,297,794	22,902,427	57,200,221	40,434,274	26,663,571	67,097,846	47,632,334	31,060,141	78,692,475
2033	34,405,732	22,965,473	57,371,205	40,874,474	26,931,348	67,805,822	48,522,410	31,603,259	80,125,669
2034	34,666,166	23,126,807	57,792,973	41,496,279	27,314,627	68,810,906	49,634,345	32,285,668	81,920,013

Annual Change

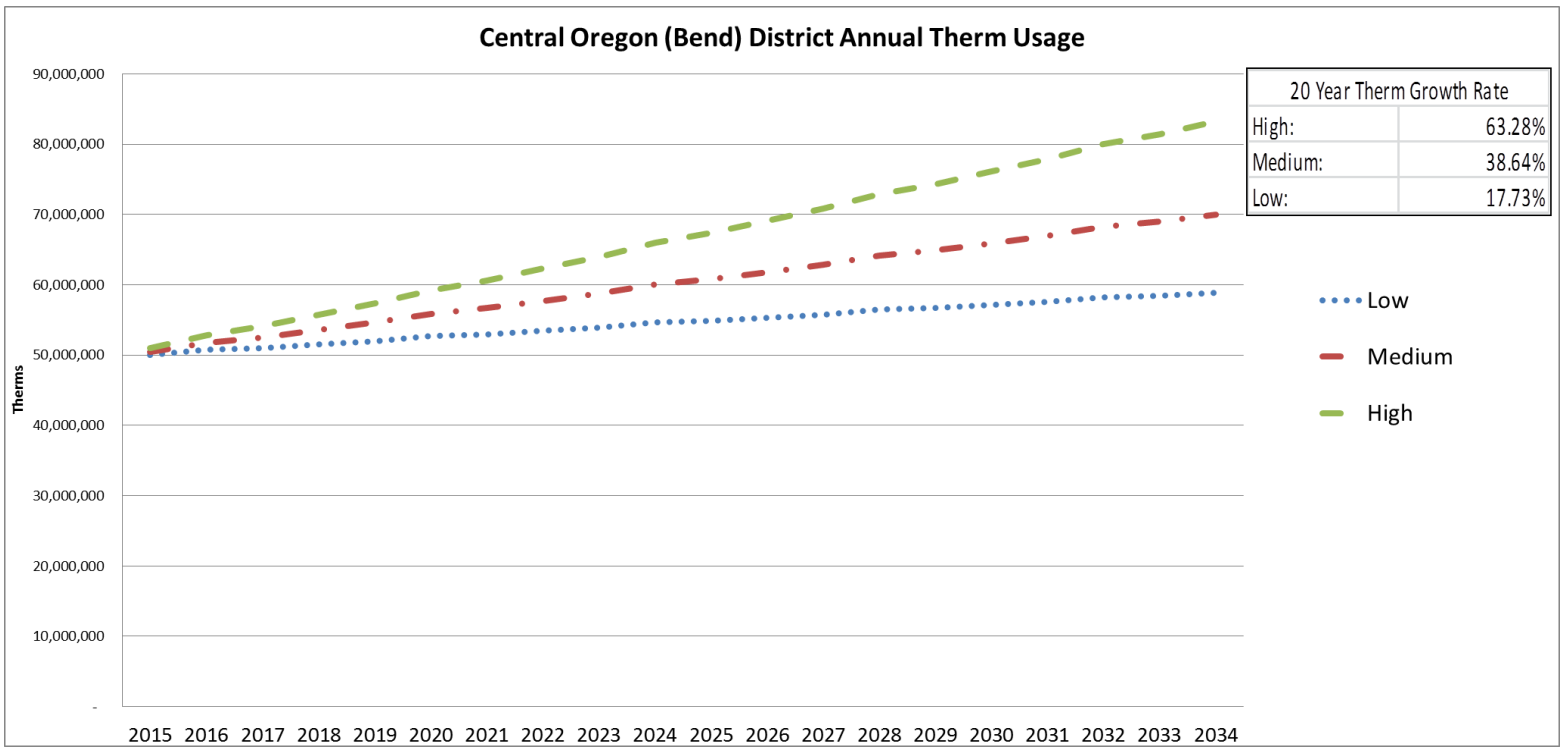
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.52%	1.40%	1.47%	2.58%	2.36%	2.49%	3.65%	3.33%	3.52%
2017	0.58%	0.50%	0.55%	1.62%	1.44%	1.55%	2.66%	2.39%	2.55%
2018	1.02%	0.93%	0.98%	2.04%	1.86%	1.97%	3.07%	2.80%	2.96%
2019	1.00%	0.91%	0.96%	2.00%	1.83%	1.93%	3.01%	2.75%	2.91%
2020	1.44%	1.33%	1.40%	2.43%	2.24%	2.35%	3.42%	3.16%	3.31%
2021	0.51%	0.44%	0.48%	1.47%	1.33%	1.41%	2.44%	2.22%	2.35%
2022	0.94%	0.86%	0.91%	1.89%	1.74%	1.83%	2.85%	2.63%	2.76%
2023	0.93%	0.85%	0.89%	1.86%	1.71%	1.80%	2.79%	2.58%	2.71%
2024	1.37%	1.28%	1.33%	2.29%	2.13%	2.22%	3.21%	2.99%	3.12%
2025	0.43%	0.38%	0.41%	1.33%	1.21%	1.28%	2.23%	2.05%	2.16%
2026	0.87%	0.80%	0.85%	1.76%	1.62%	1.70%	2.64%	2.46%	2.57%
2027	0.86%	0.79%	0.83%	1.72%	1.60%	1.67%	2.59%	2.42%	2.52%
2028	1.30%	1.22%	1.27%	2.15%	2.01%	2.10%	3.01%	2.82%	2.94%
2029	0.37%	0.32%	0.35%	1.20%	1.10%	1.16%	2.03%	1.89%	1.98%
2030	0.81%	0.75%	0.79%	1.63%	1.51%	1.58%	2.45%	2.29%	2.39%
2031	0.80%	0.74%	0.77%	1.60%	1.49%	1.56%	2.41%	2.26%	2.35%
2032	1.24%	1.16%	1.21%	2.03%	1.91%	1.98%	2.83%	2.67%	2.77%
2033	0.31%	0.28%	0.30%	1.09%	1.00%	1.06%	1.87%	1.75%	1.82%
2034	0.76%	0.70%	0.74%	1.52%	1.42%	1.48%	2.29%	2.16%	2.24%

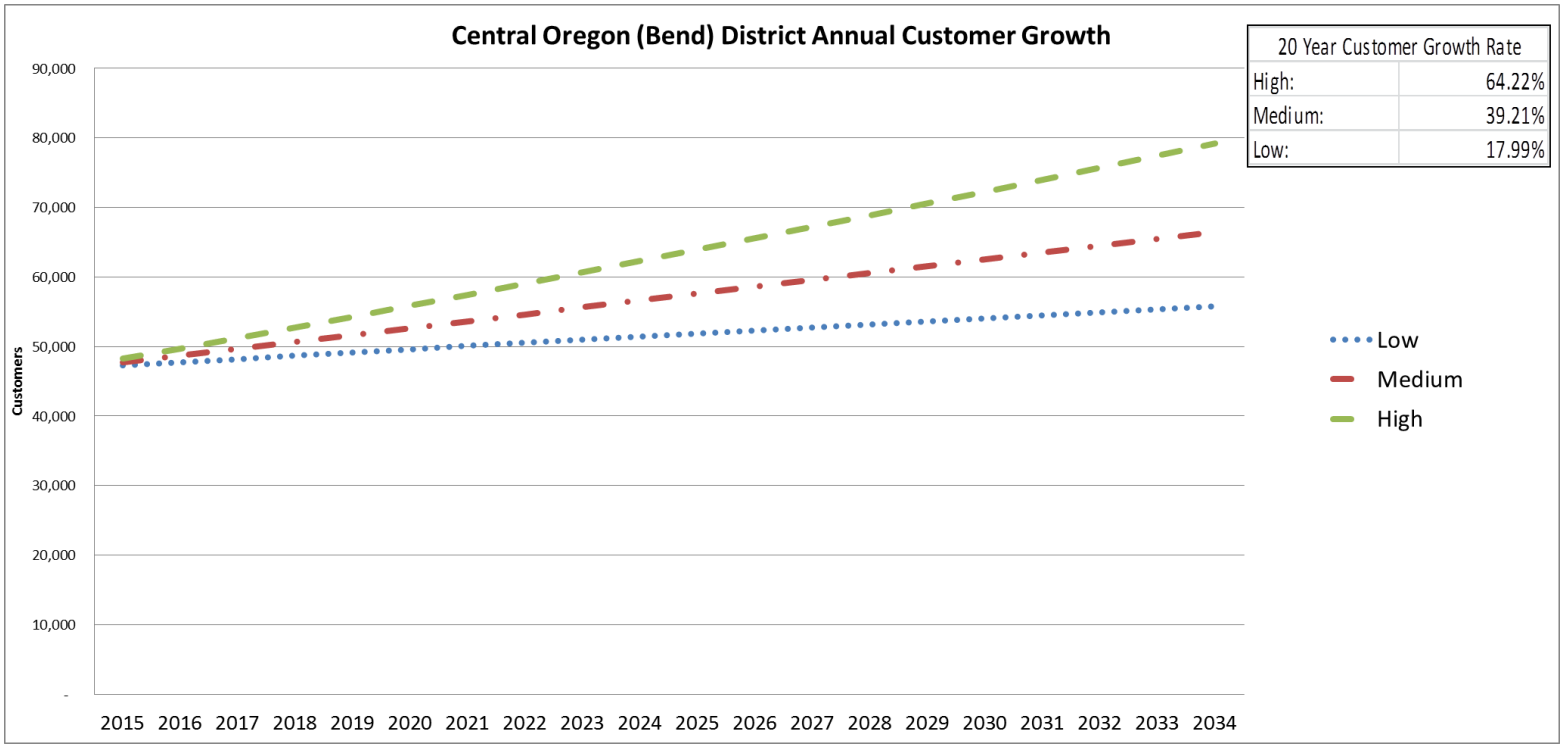
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	40,704	6,541	47,246	41,130	6,606	47,736	41,555	6,671	48,226
2016	41,126	6,606	47,731	41,982	6,736	48,718	42,847	6,869	49,716
2017	41,544	6,669	48,213	42,836	6,867	49,703	44,156	7,069	51,225
2018	41,958	6,733	48,691	43,692	6,998	50,690	45,482	7,271	52,753
2019	42,369	6,796	49,164	44,549	7,129	51,678	46,824	7,476	54,300
2020	42,775	6,858	49,633	45,407	7,260	52,667	48,179	7,684	55,863
2021	43,179	6,920	50,099	46,266	7,392	53,658	49,551	7,894	57,445
2022	43,578	6,981	50,559	47,125	7,523	54,648	50,936	8,105	59,041
2023	43,973	7,042	51,015	47,983	7,655	55,638	52,333	8,319	60,652
2024	44,365	7,102	51,467	48,843	7,786	56,629	53,744	8,535	62,279
2025	44,753	7,161	51,914	49,700	7,918	57,617	55,165	8,753	63,917
2026	45,137	7,220	52,357	50,557	8,049	58,606	56,598	8,972	65,570
2027	45,517	7,279	52,795	51,412	8,180	59,593	58,042	9,193	67,235
2028	45,893	7,336	53,229	52,267	8,311	60,578	59,496	9,415	68,912
2029	46,265	7,393	53,658	53,118	8,442	61,560	60,958	9,639	70,597
2030	46,633	7,450	54,082	53,968	8,572	62,540	62,429	9,864	72,293
2031	46,997	7,506	54,503	54,818	8,702	63,521	63,912	10,091	74,003
2032	47,359	7,562	54,920	55,666	8,833	64,499	65,403	10,320	75,723
2033	47,717	7,617	55,333	56,514	8,963	65,477	66,906	10,550	77,456
2034	48,072	7,671	55,743	57,360	9,092	66,453	68,418	10,781	79,199

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.98%	1.03%	2.07%	1.97%	2.06%	3.11%	2.96%	3.09%
2017	1.02%	0.97%	1.01%	2.03%	1.94%	2.02%	3.05%	2.91%	3.03%
2018	1.00%	0.95%	0.99%	2.00%	1.91%	1.99%	3.00%	2.87%	2.98%
2019	0.98%	0.93%	0.97%	1.96%	1.87%	1.95%	2.95%	2.82%	2.93%
2020	0.96%	0.92%	0.95%	1.92%	1.84%	1.91%	2.89%	2.77%	2.88%
2021	0.94%	0.90%	0.94%	1.89%	1.81%	1.88%	2.85%	2.73%	2.83%
2022	0.92%	0.88%	0.92%	1.86%	1.78%	1.85%	2.79%	2.68%	2.78%
2023	0.91%	0.87%	0.90%	1.82%	1.75%	1.81%	2.74%	2.64%	2.73%
2024	0.89%	0.85%	0.89%	1.79%	1.72%	1.78%	2.70%	2.60%	2.68%
2025	0.87%	0.84%	0.87%	1.75%	1.69%	1.75%	2.64%	2.55%	2.63%
2026	0.86%	0.82%	0.85%	1.72%	1.66%	1.72%	2.60%	2.51%	2.59%
2027	0.84%	0.81%	0.84%	1.69%	1.63%	1.68%	2.55%	2.46%	2.54%
2028	0.83%	0.79%	0.82%	1.66%	1.60%	1.65%	2.51%	2.42%	2.49%
2029	0.81%	0.78%	0.81%	1.63%	1.57%	1.62%	2.46%	2.38%	2.45%
2030	0.80%	0.76%	0.79%	1.60%	1.54%	1.59%	2.41%	2.34%	2.40%
2031	0.78%	0.75%	0.78%	1.57%	1.52%	1.57%	2.38%	2.30%	2.37%
2032	0.77%	0.74%	0.76%	1.55%	1.49%	1.54%	2.33%	2.26%	2.32%
2033	0.76%	0.73%	0.75%	1.52%	1.47%	1.52%	2.30%	2.23%	2.29%
2034	0.74%	0.72%	0.74%	1.50%	1.45%	1.49%	2.26%	2.19%	2.25%


Central Oregon (Bend) District Annual Therm Usage
Therms
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 63.28%
Medium: 38.64%
Low: 17.73%
Low
Medium
High


Central Oregon (Bend) District Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 64.22%
Medium: 39.21%
Low: 17.99%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pendleton District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	10,458,931	4,165,846	14,624,777	10,502,706	4,165,846	14,668,551	10,546,480	4,165,846	14,712,326
2016	10,571,482	4,165,846	14,737,327	10,660,036	4,165,846	14,825,882	10,748,856	4,165,846	14,914,702
2017	10,547,648	4,165,846	14,713,493	10,680,939	4,165,846	14,846,784	10,815,032	4,165,846	14,980,878
2018	10,592,582	4,165,846	14,758,428	10,771,622	4,165,846	14,937,468	10,952,286	4,165,846	15,118,132
2019	10,637,916	4,165,846	14,803,762	10,863,390	4,165,846	15,029,235	11,091,602	4,165,846	15,257,448
2020	10,752,407	4,165,846	14,918,253	11,025,732	4,165,846	15,191,577	11,303,217	4,165,846	15,469,063
2021	10,728,631	4,165,846	14,894,477	11,047,865	4,165,846	15,213,710	11,372,945	4,165,846	15,538,791
2022	10,774,190	4,165,846	14,940,035	11,140,935	4,165,846	15,306,780	11,515,533	4,165,846	15,681,379
2023	10,819,510	4,165,846	14,985,355	11,233,800	4,165,846	15,399,646	11,658,240	4,165,846	15,824,086
2024	10,935,102	4,165,846	15,100,947	11,399,519	4,165,846	15,565,365	11,876,752	4,165,846	16,042,598
2025	10,910,011	4,165,846	15,075,857	11,420,087	4,165,846	15,585,933	11,945,805	4,165,846	16,111,650
2026	10,954,931	4,165,846	15,120,777	11,512,966	4,165,846	15,678,812	12,089,822	4,165,846	16,255,668
2027	10,999,706	4,165,846	15,165,552	11,605,822	4,165,846	15,771,667	12,234,230	4,165,846	16,400,075
2028	11,115,146	4,165,846	15,280,991	11,772,336	4,165,846	15,938,182	12,455,692	4,165,846	16,621,537
2029	11,088,164	4,165,846	15,254,010	11,790,076	4,165,846	15,955,922	12,522,041	4,165,846	16,687,887
2030	11,131,843	4,165,846	15,297,689	11,881,454	4,165,846	16,047,299	12,665,396	4,165,846	16,831,241
2031	11,175,483	4,165,846	15,341,328	11,973,010	4,165,846	16,138,855	12,809,439	4,165,846	16,975,285
2032	11,290,698	4,165,846	15,456,543	12,140,114	4,165,846	16,305,960	13,033,482	4,165,846	17,199,328
2033	11,262,130	4,165,846	15,427,976	12,155,570	4,165,846	16,321,416	13,097,877	4,165,846	17,263,723
2034	11,305,141	4,165,846	15,470,987	12,246,574	4,165,846	16,412,420	13,242,265	4,165,846	17,408,110

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.08%	0.00%	0.77%	1.50%	0.00%	1.07%	1.92%	0.00%	1.38%
2017	-0.23%	0.00%	-0.16%	0.20%	0.00%	0.14%	0.62%	0.00%	0.44%
2018	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2019	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2020	1.08%	0.00%	0.77%	1.49%	0.00%	1.08%	1.91%	0.00%	1.39%
2021	-0.22%	0.00%	-0.16%	0.20%	0.00%	0.15%	0.62%	0.00%	0.45%
2022	0.42%	0.00%	0.31%	0.84%	0.00%	0.61%	1.25%	0.00%	0.92%
2023	0.42%	0.00%	0.30%	0.83%	0.00%	0.61%	1.24%	0.00%	0.91%
2024	1.07%	0.00%	0.77%	1.48%	0.00%	1.08%	1.87%	0.00%	1.38%
2025	-0.23%	0.00%	-0.17%	0.18%	0.00%	0.13%	0.58%	0.00%	0.43%
2026	0.41%	0.00%	0.30%	0.81%	0.00%	0.60%	1.21%	0.00%	0.89%
2027	0.41%	0.00%	0.30%	0.81%	0.00%	0.59%	1.19%	0.00%	0.89%
2028	1.05%	0.00%	0.76%	1.43%	0.00%	1.06%	1.81%	0.00%	1.35%
2029	-0.24%	0.00%	-0.18%	0.15%	0.00%	0.11%	0.53%	0.00%	0.40%
2030	0.39%	0.00%	0.29%	0.78%	0.00%	0.57%	1.14%	0.00%	0.86%
2031	0.39%	0.00%	0.29%	0.77%	0.00%	0.57%	1.14%	0.00%	0.86%
2032	1.03%	0.00%	0.75%	1.40%	0.00%	1.04%	1.75%	0.00%	1.32%
2033	-0.25%	0.00%	-0.18%	0.13%	0.00%	0.09%	0.49%	0.00%	0.37%
2034	0.38%	0.00%	0.28%	0.75%	0.00%	0.56%	1.10%	0.00%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	11,413	175,376	186,789	11,413	175,935	187,349	11,413	176,495	187,908
2016	11,413	175,940	187,353	11,413	177,066	188,479	11,413	178,196	189,609
2017	11,413	176,510	187,923	11,413	178,213	189,626	11,413	179,926	191,340
2018	11,413	177,084	188,497	11,413	179,372	190,785	11,413	181,680	193,093
2019	11,413	177,663	189,076	11,413	180,544	191,958	11,413	183,460	194,874
2020	11,413	178,241	189,654	11,413	181,717	193,130	11,413	185,246	196,660
2021	11,413	178,822	190,236	11,413	182,901	194,315	11,413	187,055	198,469
2022	11,413	179,404	190,818	11,413	184,091	195,504	11,413	188,877	200,291
2023	11,413	179,983	191,397	11,413	185,277	196,691	11,413	190,701	202,114
2024	11,413	180,564	191,978	11,413	186,471	197,884	11,413	192,541	203,954
2025	11,413	181,140	192,553	11,413	187,658	199,071	11,413	194,375	205,789
2026	11,413	181,714	193,127	11,413	188,844	200,258	11,413	196,215	207,629
2027	11,413	182,286	193,699	11,413	190,031	201,444	11,413	198,061	209,474
2028	11,413	182,854	194,267	11,413	191,213	202,626	11,413	199,904	211,317
2029	11,413	183,416	194,829	11,413	192,385	203,798	11,413	201,738	213,152
2030	11,413	183,974	195,388	11,413	193,553	204,966	11,413	203,570	214,983
2031	11,413	184,532	195,945	11,413	194,723	206,136	11,413	205,411	216,824
2032	11,413	185,087	196,500	11,413	195,890	207,304	11,413	207,253	218,666
2033	11,413	185,639	197,052	11,413	197,055	208,469	11,413	209,096	220,510
2034	11,413	186,189	197,602	11,413	198,218	209,632	11,413	210,941	222,355

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.96%	0.91%
2017	0.00%	0.32%	0.30%	0.00%	0.65%	0.61%	0.00%	0.97%	0.91%
2018	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2019	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2020	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2021	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2022	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2023	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.97%	0.91%
2024	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.96%	0.91%
2025	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.95%	0.90%
2026	0.00%	0.32%	0.30%	0.00%	0.63%	0.60%	0.00%	0.95%	0.89%
2027	0.00%	0.31%	0.30%	0.00%	0.63%	0.59%	0.00%	0.94%	0.89%
2028	0.00%	0.31%	0.29%	0.00%	0.62%	0.59%	0.00%	0.93%	0.88%
2029	0.00%	0.31%	0.29%	0.00%	0.61%	0.58%	0.00%	0.92%	0.87%
2030	0.00%	0.30%	0.29%	0.00%	0.61%	0.57%	0.00%	0.91%	0.86%
2031	0.00%	0.30%	0.29%	0.00%	0.60%	0.57%	0.00%	0.90%	0.86%
2032	0.00%	0.30%	0.28%	0.00%	0.60%	0.57%	0.00%	0.90%	0.85%
2033	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.89%	0.84%
2034	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.88%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,903,117	6,454,534	12,357,651	5,920,792	6,473,876	12,394,668	5,938,468	6,493,217	12,431,685
2016	5,951,085	6,502,923	12,454,008	5,986,858	6,542,041	12,528,899	6,022,737	6,581,277	12,604,014
2017	5,938,939	6,493,729	12,432,668	5,992,761	6,552,620	12,545,380	6,046,906	6,611,865	12,658,771
2018	5,957,083	6,513,580	12,470,663	6,029,377	6,592,681	12,622,058	6,102,327	6,672,500	12,774,827
2019	5,975,390	6,533,607	12,508,997	6,066,435	6,633,221	12,699,656	6,158,587	6,734,047	12,892,634
2020	6,024,173	6,582,833	12,607,006	6,134,588	6,703,561	12,838,148	6,246,683	6,826,128	13,072,811
2021	6,012,021	6,573,678	12,585,699	6,140,928	6,714,710	12,855,638	6,272,197	6,858,328	13,130,525
2022	6,030,418	6,593,801	12,624,219	6,178,510	6,755,819	12,934,329	6,329,774	6,921,311	13,251,085
2023	6,048,720	6,613,819	12,662,539	6,216,013	6,796,840	13,012,853	6,387,406	6,984,349	13,371,755
2024	6,097,980	6,663,513	12,761,494	6,285,596	6,868,634	13,154,230	6,478,390	7,079,421	13,557,811
2025	6,085,267	6,653,793	12,739,060	6,291,242	6,879,123	13,170,365	6,503,536	7,111,370	13,614,905
2026	6,103,406	6,673,632	12,777,038	6,328,748	6,920,145	13,248,892	6,561,693	7,174,979	13,736,672
2027	6,121,488	6,693,408	12,814,896	6,366,248	6,961,158	13,327,406	6,620,014	7,238,765	13,858,778
2028	6,170,719	6,743,018	12,913,737	6,436,219	7,033,269	13,469,488	6,712,293	7,335,086	14,047,380
2029	6,157,211	6,732,475	12,889,686	6,440,657	7,042,537	13,483,194	6,736,245	7,365,885	14,102,131
2030	6,174,851	6,751,766	12,926,617	6,477,562	7,082,896	13,560,457	6,794,142	7,429,204	14,223,346
2031	6,192,475	6,771,040	12,963,515	6,514,539	7,123,333	13,637,872	6,852,319	7,492,825	14,345,144
2032	6,241,647	6,820,534	13,062,181	6,584,813	7,195,670	13,780,483	6,945,744	7,590,233	14,535,977
2033	6,227,469	6,809,306	13,036,775	6,588,270	7,203,960	13,792,230	6,968,814	7,620,218	14,589,032
2034	6,244,840	6,828,300	13,073,139	6,625,024	7,244,150	13,869,174	7,027,130	7,683,987	14,711,116

Annual Change

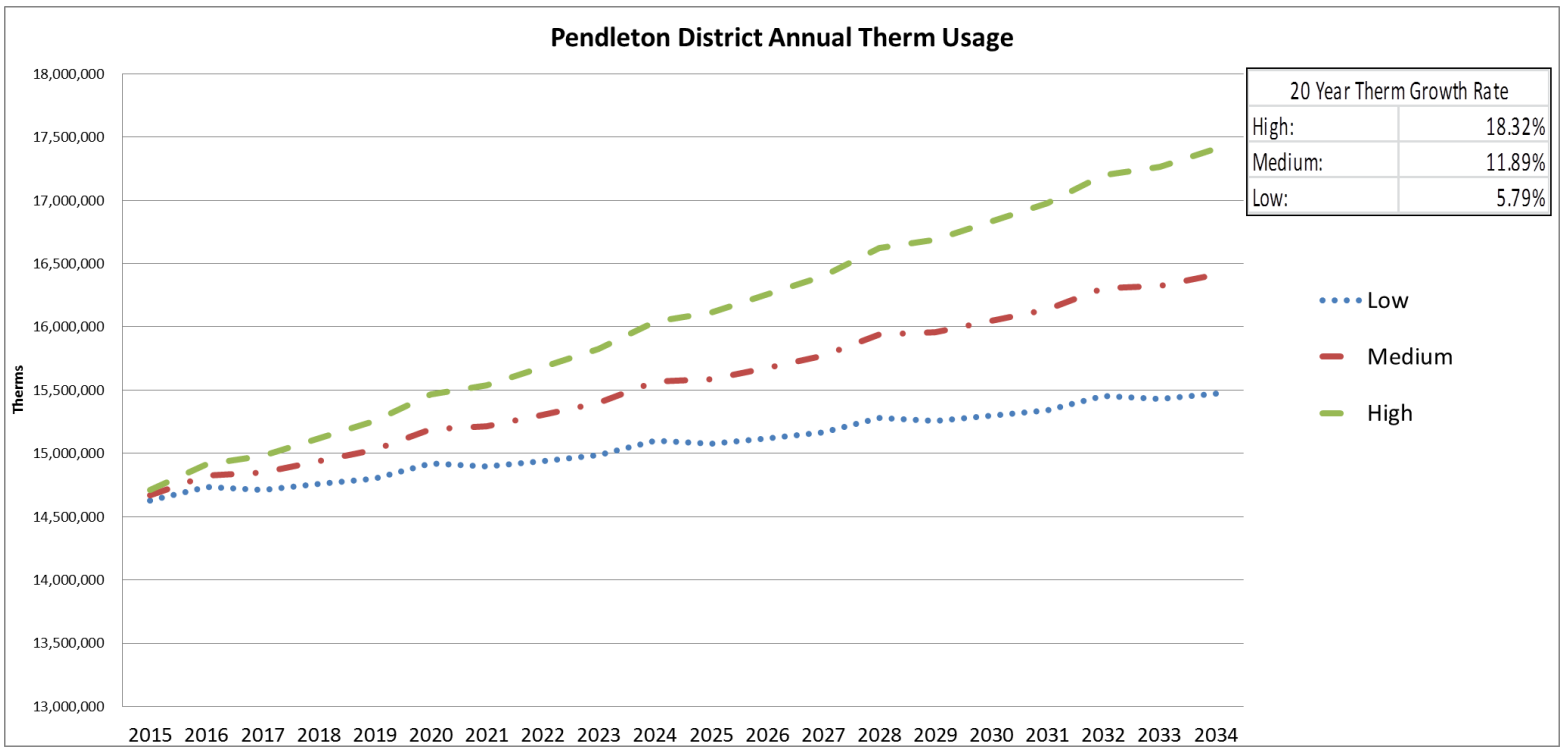
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.75%	0.78%	1.12%	1.05%	1.08%	1.42%	1.36%	1.39%
2017	-0.20%	-0.14%	-0.17%	0.10%	0.16%	0.13%	0.40%	0.46%	0.43%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.82%	0.75%	0.78%	1.12%	1.06%	1.09%	1.43%	1.37%	1.40%
2021	-0.20%	-0.14%	-0.17%	0.10%	0.17%	0.14%	0.41%	0.47%	0.44%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.75%	0.78%	1.12%	1.06%	1.09%	1.42%	1.36%	1.39%
2025	-0.21%	-0.15%	-0.18%	0.09%	0.15%	0.12%	0.39%	0.45%	0.42%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.74%	0.77%	1.10%	1.04%	1.07%	1.39%	1.33%	1.36%
2029	-0.22%	-0.16%	-0.19%	0.07%	0.13%	0.10%	0.36%	0.42%	0.39%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.73%	0.76%	1.08%	1.02%	1.05%	1.36%	1.30%	1.33%
2033	-0.23%	-0.16%	-0.19%	0.05%	0.12%	0.09%	0.33%	0.40%	0.36%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

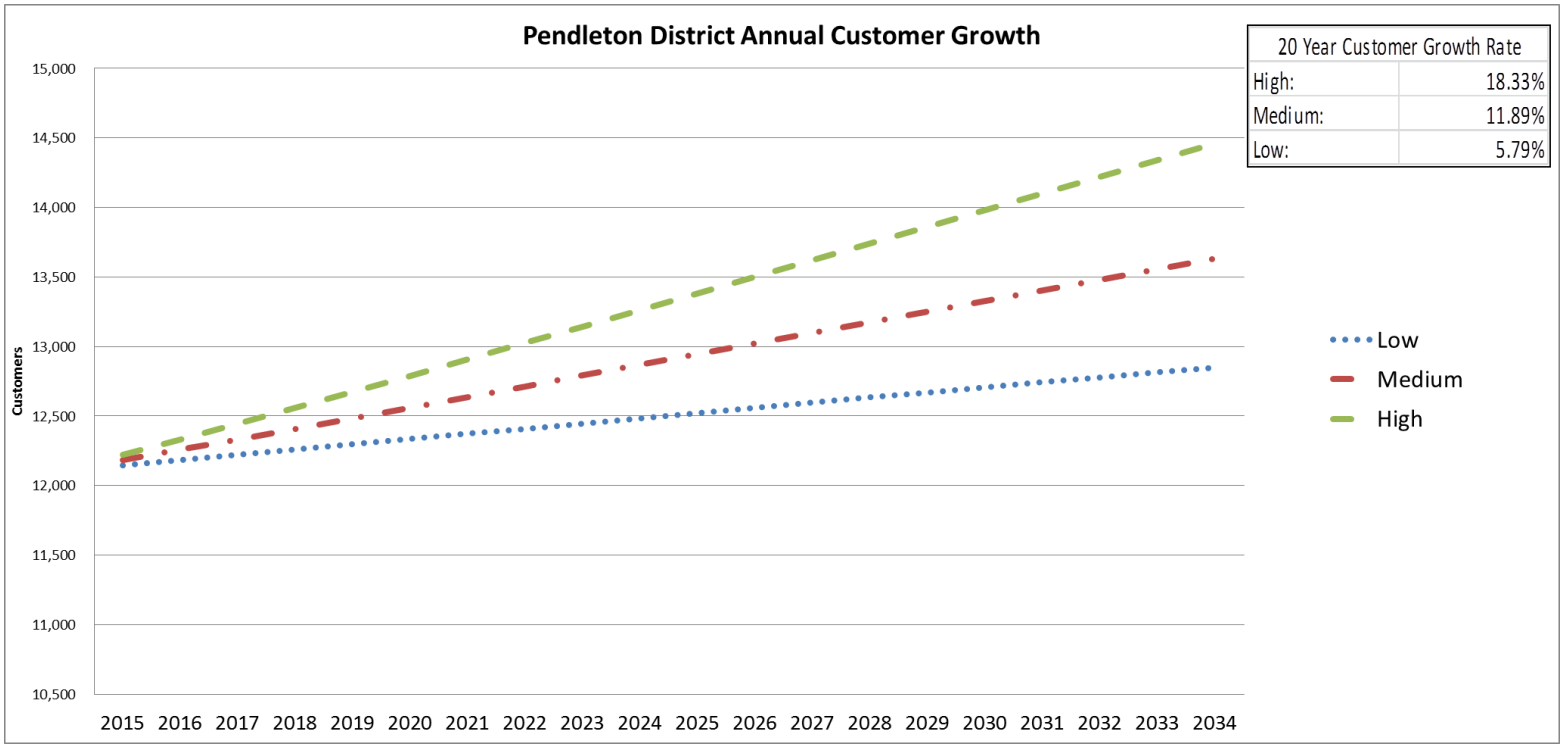
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,320	1,828	12,148	10,351	1,833	12,184	10,382	1,839	12,221
2016	10,351	1,833	12,185	10,413	1,844	12,258	10,476	1,855	12,331
2017	10,383	1,839	12,222	10,477	1,856	12,332	10,571	1,872	12,444
2018	10,414	1,845	12,259	10,541	1,867	12,408	10,668	1,890	12,558
2019	10,446	1,850	12,297	10,606	1,878	12,484	10,767	1,907	12,674
2020	10,478	1,856	12,334	10,670	1,890	12,560	10,865	1,924	12,790
2021	10,510	1,862	12,372	10,736	1,901	12,637	10,965	1,942	12,907
2022	10,543	1,867	12,410	10,801	1,913	12,715	11,066	1,960	13,026
2023	10,575	1,873	12,447	10,867	1,925	12,792	11,167	1,978	13,144
2024	10,607	1,879	12,485	10,933	1,936	12,869	11,268	1,996	13,264
2025	10,638	1,884	12,523	10,998	1,948	12,947	11,370	2,014	13,383
2026	10,670	1,890	12,560	11,064	1,960	13,024	11,471	2,032	13,503
2027	10,702	1,895	12,597	11,130	1,971	13,101	11,573	2,050	13,623
2028	10,733	1,901	12,634	11,195	1,983	13,178	11,675	2,068	13,743
2029	10,764	1,907	12,671	11,260	1,994	13,254	11,776	2,086	13,862
2030	10,795	1,912	12,707	11,324	2,006	13,330	11,877	2,104	13,981
2031	10,826	1,917	12,743	11,389	2,017	13,406	11,979	2,122	14,101
2032	10,856	1,923	12,779	11,453	2,029	13,482	12,081	2,140	14,221
2033	10,887	1,928	12,815	11,518	2,040	13,558	12,183	2,158	14,341
2034	10,917	1,934	12,851	11,582	2,051	13,633	12,285	2,176	14,461

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.62%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Pendleton District Annual Therm Usage
Therms
18,000,000
17,500,000
17,000,000
16,500,000
16,000,000
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.32%
Medium: 11.89%
Low: 5.79%
Low
Medium
High


Pendleton District Annual Customer Growth
Customers
15,000
14,500
14,000
13,500
13,000
12,500
12,000
11,500
11,000
10,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.33%
Medium: 11.89%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Eastern Oregon (Ontario) District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,991,022	1,075,348	9,066,370	8,000,458	1,075,348	9,075,805	8,009,893	1,075,348	9,085,241
2016	8,044,830	1,075,348	9,120,178	8,064,159	1,075,348	9,139,506	8,083,510	1,075,348	9,158,857
2017	8,010,710	1,075,348	9,086,058	8,039,905	1,075,348	9,115,253	8,069,170	1,075,348	9,144,518
2018	8,021,103	1,075,348	9,096,451	8,060,764	1,075,348	9,136,112	8,100,570	1,075,348	9,175,918
2019	8,031,635	1,075,348	9,106,983	8,081,929	1,075,348	9,157,277	8,132,470	1,075,348	9,207,817
2020	8,086,374	1,075,348	9,161,722	8,147,598	1,075,348	9,222,946	8,209,199	1,075,348	9,284,547
2021	8,052,901	1,075,348	9,128,249	8,124,748	1,075,348	9,200,095	8,197,129	1,075,348	9,272,477
2022	8,063,637	1,075,348	9,138,985	8,146,406	1,075,348	9,221,754	8,229,897	1,075,348	9,305,245
2023	8,074,348	1,075,348	9,149,696	8,168,040	1,075,348	9,243,388	8,262,671	1,075,348	9,338,019
2024	8,129,672	1,075,348	9,205,020	8,234,997	1,075,348	9,310,345	8,341,513	1,075,348	9,416,861
2025	8,095,813	1,075,348	9,171,161	8,211,478	1,075,348	9,286,826	8,328,598	1,075,348	9,403,946
2026	8,106,458	1,075,348	9,181,806	8,233,061	1,075,348	9,308,409	8,361,418	1,075,348	9,436,766
2027	8,117,076	1,075,348	9,192,424	8,254,617	1,075,348	9,329,965	8,394,239	1,075,348	9,469,587
2028	8,172,046	1,075,348	9,247,394	8,320,967	1,075,348	9,396,315	8,472,328	1,075,348	9,547,676
2029	8,137,621	1,075,348	9,212,969	8,296,405	1,075,348	9,371,753	8,457,985	1,075,348	9,533,333
2030	8,147,629	1,075,348	9,222,977	8,316,800	1,075,348	9,392,148	8,489,156	1,075,348	9,564,504
2031	8,157,693	1,075,348	9,233,041	8,337,332	1,075,348	9,412,680	8,520,575	1,075,348	9,595,922
2032	8,212,421	1,075,348	9,287,769	8,403,289	1,075,348	9,478,637	8,598,214	1,075,348	9,673,562
2033	8,177,443	1,075,348	9,252,791	8,377,697	1,075,348	9,453,045	8,582,447	1,075,348	9,657,795
2034	8,187,364	1,075,348	9,262,712	8,398,009	1,075,348	9,473,357	8,613,638	1,075,348	9,688,986

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.00%	0.59%	0.80%	0.00%	0.70%	0.92%	0.00%	0.81%
2017	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2018	0.13%	0.00%	0.11%	0.26%	0.00%	0.23%	0.39%	0.00%	0.34%
2019	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2020	0.68%	0.00%	0.60%	0.81%	0.00%	0.72%	0.94%	0.00%	0.83%
2021	-0.41%	0.00%	-0.37%	-0.28%	0.00%	-0.25%	-0.15%	0.00%	-0.13%
2022	0.13%	0.00%	0.12%	0.27%	0.00%	0.24%	0.40%	0.00%	0.35%
2023	0.13%	0.00%	0.12%	0.27%	0.00%	0.23%	0.40%	0.00%	0.35%
2024	0.69%	0.00%	0.60%	0.82%	0.00%	0.72%	0.95%	0.00%	0.84%
2025	-0.42%	0.00%	-0.37%	-0.29%	0.00%	-0.25%	-0.15%	0.00%	-0.14%
2026	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2027	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2028	0.68%	0.00%	0.60%	0.80%	0.00%	0.71%	0.93%	0.00%	0.82%
2029	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.26%	-0.17%	0.00%	-0.15%
2030	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2031	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2032	0.67%	0.00%	0.59%	0.79%	0.00%	0.70%	0.91%	0.00%	0.81%
2033	-0.43%	0.00%	-0.38%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2034	0.12%	0.00%	0.11%	0.24%	0.00%	0.21%	0.36%	0.00%	0.32%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	2,946	108,677	111,623	2,946	108,794	111,741	2,946	108,912	111,858
2016	2,946	108,799	111,745	2,946	109,038	111,984	2,946	109,277	112,223
2017	2,946	108,922	111,868	2,946	109,285	112,231	2,946	109,648	112,594
2018	2,946	109,051	111,997	2,946	109,544	112,490	2,946	110,038	112,984
2019	2,946	109,182	112,128	2,946	109,806	112,752	2,946	110,434	113,380
2020	2,946	109,312	112,258	2,946	110,069	113,015	2,946	110,830	113,777
2021	2,946	109,446	112,392	2,946	110,338	113,284	2,946	111,237	114,183
2022	2,946	109,579	112,525	2,946	110,607	113,553	2,946	111,644	114,590
2023	2,946	109,712	112,658	2,946	110,875	113,821	2,946	112,051	114,997
2024	2,946	109,847	112,793	2,946	111,148	114,095	2,946	112,465	115,411
2025	2,946	109,978	112,924	2,946	111,414	114,361	2,946	112,869	115,815
2026	2,946	110,110	113,056	2,946	111,682	114,628	2,946	113,276	116,222
2027	2,946	110,242	113,188	2,946	111,950	114,896	2,946	113,684	116,630
2028	2,946	110,370	113,316	2,946	112,210	115,157	2,946	114,081	117,027
2029	2,946	110,497	113,443	2,946	112,469	115,415	2,946	114,475	117,421
2030	2,946	110,621	113,567	2,946	112,722	115,668	2,946	114,862	117,808
2031	2,946	110,746	113,692	2,946	112,977	115,923	2,946	115,252	118,199
2032	2,946	110,869	113,815	2,946	113,228	116,174	2,946	115,637	118,583
2033	2,946	110,991	113,938	2,946	113,478	116,424	2,946	116,021	118,967
2034	2,946	111,115	114,061	2,946	113,730	116,676	2,946	116,408	119,354

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.34%	0.33%
2017	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2018	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2019	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2020	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2021	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2022	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2023	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.36%	0.36%
2024	0.00%	0.12%	0.12%	0.00%	0.25%	0.24%	0.00%	0.37%	0.36%
2025	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2026	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2028	0.00%	0.12%	0.11%	0.00%	0.23%	0.23%	0.00%	0.35%	0.34%
2029	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2031	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2032	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%
2033	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.32%
2034	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,949,646	3,977,521	7,927,167	3,953,392	3,981,685	7,935,078	3,957,139	3,985,850	7,942,989
2016	3,973,740	4,000,935	7,974,676	3,981,424	4,009,465	7,990,889	3,989,117	4,018,004	8,007,121
2017	3,957,471	3,986,210	7,943,681	3,969,069	3,999,094	7,968,163	3,980,693	4,012,010	7,992,703
2018	3,961,649	3,990,793	7,952,442	3,977,452	4,008,293	7,985,745	3,993,309	4,025,858	8,019,167
2019	3,965,874	3,995,438	7,961,312	3,985,941	4,017,628	8,003,569	4,006,099	4,039,928	8,046,027
2020	3,990,381	4,019,260	8,009,641	4,014,838	4,046,270	8,061,108	4,039,436	4,073,447	8,112,883
2021	3,974,419	4,004,817	7,979,236	4,003,138	4,036,513	8,039,650	4,032,057	4,068,445	8,100,503
2022	3,978,739	4,009,551	7,988,290	4,011,847	4,046,064	8,057,911	4,045,228	4,082,896	8,128,124
2023	3,983,049	4,014,275	7,997,324	4,020,549	4,055,604	8,076,153	4,058,402	4,097,350	8,155,751
2024	4,007,824	4,038,351	8,046,176	4,050,028	4,084,809	8,134,836	4,092,680	4,131,793	8,224,473
2025	3,991,709	4,023,739	8,015,448	4,038,061	4,074,757	8,112,818	4,084,961	4,126,420	8,211,381
2026	3,995,996	4,028,432	8,024,428	4,046,745	4,084,275	8,131,020	4,098,155	4,140,894	8,239,049
2027	4,000,273	4,033,114	8,033,387	4,055,419	4,093,780	8,149,200	4,111,351	4,155,368	8,266,719
2028	4,024,890	4,057,036	8,081,926	4,084,622	4,122,719	8,207,340	4,145,273	4,189,482	8,334,754
2029	4,008,536	4,042,175	8,050,710	4,072,209	4,112,210	8,184,419	4,136,937	4,183,483	8,320,420
2030	4,012,550	4,046,589	8,059,139	4,080,381	4,121,206	8,201,587	4,149,413	4,197,233	8,346,646
2031	4,016,583	4,051,028	8,067,611	4,088,600	4,130,263	8,218,863	4,161,975	4,211,093	8,373,068
2032	4,041,107	4,074,842	8,115,949	4,117,648	4,159,027	8,276,675	4,195,719	4,245,007	8,440,726
2033	4,024,518	4,059,738	8,084,257	4,104,796	4,148,066	8,252,863	4,186,769	4,238,385	8,425,154
2034	4,028,501	4,064,114	8,092,615	4,112,939	4,157,025	8,269,965	4,199,256	4,252,143	8,451,399

Annual Change

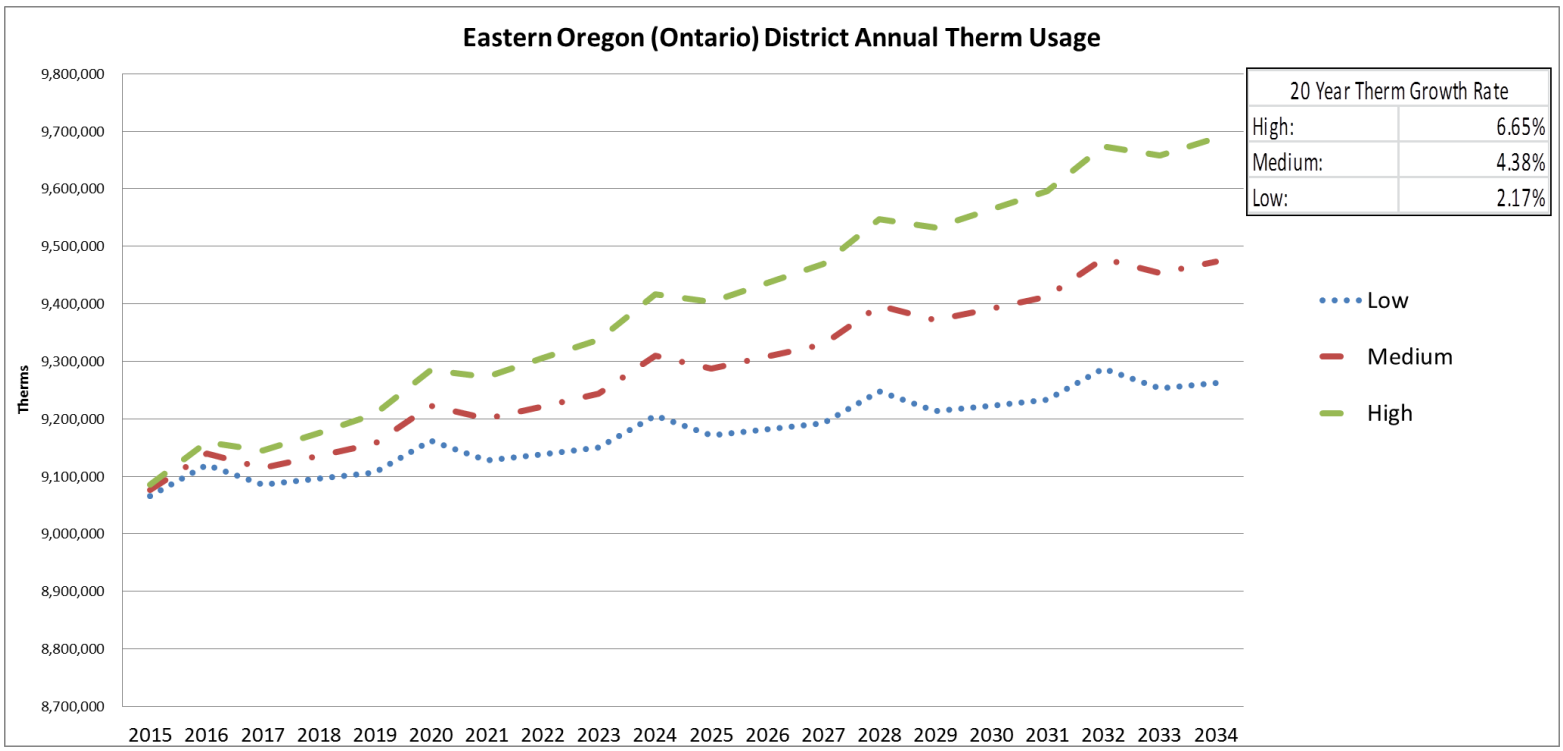
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.61%	0.59%	0.60%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2017	-0.41%	-0.37%	-0.39%	-0.31%	-0.26%	-0.28%	-0.21%	-0.15%	-0.18%
2018	0.11%	0.11%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.33%
2020	0.62%	0.60%	0.61%	0.72%	0.71%	0.72%	0.83%	0.83%	0.83%
2021	-0.40%	-0.36%	-0.38%	-0.29%	-0.24%	-0.27%	-0.18%	-0.12%	-0.15%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.35%	0.34%
2024	0.62%	0.60%	0.61%	0.73%	0.72%	0.73%	0.84%	0.84%	0.84%
2025	-0.40%	-0.36%	-0.38%	-0.30%	-0.25%	-0.27%	-0.19%	-0.13%	-0.16%
2026	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.32%	0.35%	0.34%
2027	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.34%
2028	0.62%	0.59%	0.60%	0.72%	0.71%	0.71%	0.83%	0.82%	0.82%
2029	-0.41%	-0.37%	-0.39%	-0.30%	-0.25%	-0.28%	-0.20%	-0.14%	-0.17%
2030	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.32%
2031	0.10%	0.11%	0.11%	0.20%	0.22%	0.21%	0.30%	0.33%	0.32%
2032	0.61%	0.59%	0.60%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2033	-0.41%	-0.37%	-0.39%	-0.31%	-0.26%	-0.29%	-0.21%	-0.16%	-0.18%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.32%	0.31%

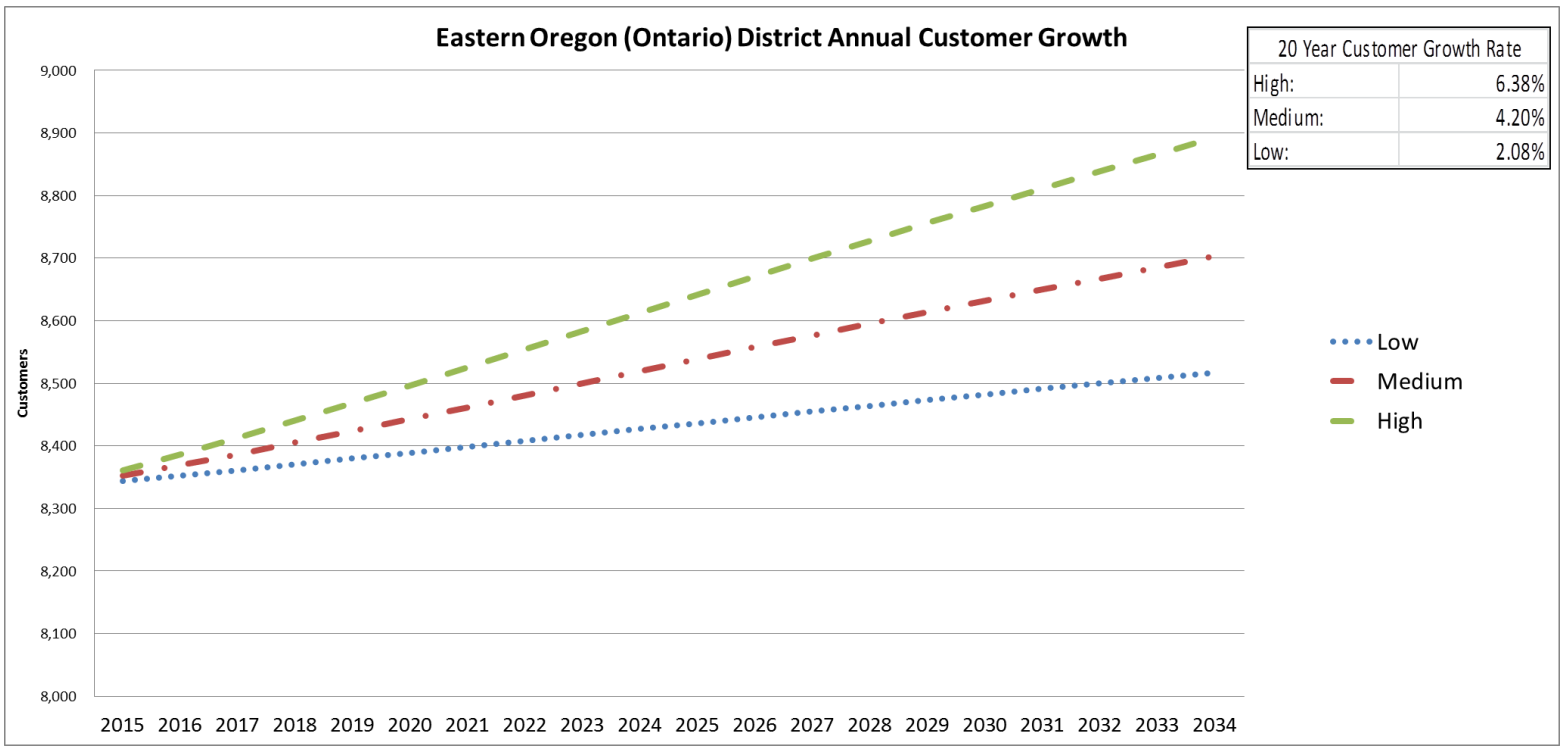
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,918	1,426	8,344	6,924	1,428	8,352	6,931	1,429	8,360
2016	6,925	1,428	8,352	6,938	1,431	8,369	6,952	1,434	8,386
2017	6,932	1,430	8,361	6,953	1,434	8,387	6,974	1,439	8,413
2018	6,939	1,431	8,370	6,968	1,438	8,405	6,996	1,444	8,440
2019	6,947	1,433	8,380	6,983	1,441	8,424	7,019	1,449	8,468
2020	6,954	1,435	8,389	6,998	1,444	8,443	7,042	1,454	8,497
2021	6,962	1,436	8,398	7,014	1,448	8,462	7,066	1,460	8,526
2022	6,970	1,438	8,408	7,029	1,451	8,481	7,090	1,465	8,555
2023	6,978	1,440	8,417	7,045	1,455	8,500	7,113	1,470	8,584
2024	6,985	1,442	8,427	7,061	1,459	8,520	7,137	1,476	8,613
2025	6,993	1,443	8,436	7,077	1,462	8,539	7,161	1,481	8,642
2026	7,001	1,445	8,446	7,092	1,465	8,558	7,185	1,486	8,671
2027	7,009	1,447	8,455	7,108	1,469	8,577	7,208	1,492	8,700
2028	7,016	1,448	8,464	7,123	1,472	8,595	7,231	1,497	8,728
2029	7,023	1,450	8,473	7,138	1,476	8,614	7,254	1,502	8,756
2030	7,031	1,452	8,482	7,153	1,479	8,632	7,277	1,507	8,784
2031	7,038	1,453	8,491	7,167	1,482	8,650	7,299	1,512	8,811
2032	7,045	1,455	8,500	7,182	1,486	8,668	7,322	1,517	8,839
2033	7,052	1,456	8,509	7,197	1,489	8,685	7,344	1,522	8,866
2034	7,059	1,458	8,517	7,211	1,492	8,703	7,367	1,527	8,894

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2017	0.10%	0.11%	0.10%	0.21%	0.23%	0.21%	0.31%	0.34%	0.31%
2018	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.33%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2021	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2024	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.34%
2025	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2026	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2027	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2028	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.32%
2029	0.11%	0.11%	0.11%	0.21%	0.23%	0.21%	0.32%	0.34%	0.32%
2030	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.31%
2031	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.32%
2032	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%
2033	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%


Eastern Oregon (Ontario) District Annual Therm Usage
Therms
9,800,000
9,700,000
9,600,000
9,500,000
9,400,000
9,300,000
9,200,000
9,100,000
9,000,000
8,900,000
8,800,000
8,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.65%
Medium: 4.38%
Low: 2.17%
Low
Medium
High


Eastern Oregon (Ontario) District Annual Customer Growth
Customers
9,000
8,900
8,800
8,700
8,600
8,500
8,400
8,300
8,200
8,100
8,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.38%
Medium: 4.20%
Low: 2.08%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Oregon

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	58,079,043	15,586,852	73,665,896	58,642,833	15,586,852	74,229,686	59,206,623	15,586,852	74,793,476
2016	58,783,891	15,779,045	74,562,936	59,801,872	15,901,120	75,702,992	60,831,379	16,023,195	76,854,573
2017	58,952,610	15,829,143	74,781,753	60,421,675	16,073,842	76,495,517	61,922,815	16,320,951	78,243,766
2018	59,385,614	15,949,187	75,334,801	61,316,459	16,318,690	77,635,149	63,309,168	16,695,436	80,004,604
2019	59,815,796	16,068,442	75,884,238	62,213,917	16,564,248	78,778,165	64,712,909	17,074,569	81,787,477
2020	60,516,278	16,259,319	76,775,597	63,398,436	16,885,246	80,283,682	66,430,280	17,535,490	83,965,770
2021	60,665,806	16,304,024	76,969,830	64,012,069	17,056,110	81,068,179	67,564,809	17,844,560	85,409,369
2022	61,085,841	16,420,431	77,506,272	64,912,727	17,302,449	82,215,176	69,012,680	18,235,412	87,248,092
2023	61,501,868	16,535,714	78,037,582	65,812,683	17,548,563	83,361,247	70,472,246	18,629,349	89,101,595
2024	62,196,972	16,725,017	78,921,989	67,017,606	17,874,949	84,892,554	72,273,788	19,112,627	91,386,415
2025	62,323,627	16,763,395	79,087,022	67,613,219	18,040,878	85,654,098	73,430,192	19,427,520	92,857,712
2026	62,728,865	16,875,660	79,604,525	68,512,336	18,286,683	86,799,019	74,925,991	19,831,060	94,757,051
2027	63,130,178	16,986,839	80,117,017	69,410,006	18,532,091	87,942,098	76,431,651	20,237,241	96,668,892
2028	63,816,527	17,173,699	80,990,226	70,625,182	18,861,209	89,486,391	78,299,894	20,738,323	99,038,217
2029	63,920,216	17,205,726	81,125,942	71,198,445	19,021,028	90,219,473	79,467,807	21,056,254	100,524,061
2030	64,308,985	17,313,441	81,622,426	72,088,849	19,264,449	91,353,298	80,997,303	21,468,802	102,466,105
2031	64,694,995	17,420,377	82,115,372	72,979,569	19,507,922	92,487,490	82,538,959	21,884,564	104,423,523
2032	65,373,146	17,604,950	82,978,095	74,203,248	19,839,299	94,042,547	84,469,130	22,402,170	106,871,300
2033	65,456,455	17,631,360	83,087,815	74,756,193	19,993,606	94,749,799	85,648,621	22,723,229	108,371,850
2034	65,832,625	17,735,556	83,568,181	75,643,339	20,236,055	95,879,394	87,218,399	23,146,455	110,364,853

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	1.23%	1.22%	1.98%	2.02%	1.98%	2.74%	2.80%	2.76%
2017	0.29%	0.32%	0.29%	1.04%	1.09%	1.05%	1.79%	1.86%	1.81%
2018	0.73%	0.76%	0.74%	1.48%	1.52%	1.49%	2.24%	2.29%	2.25%
2019	0.72%	0.75%	0.73%	1.46%	1.50%	1.47%	2.22%	2.27%	2.23%
2020	1.17%	1.19%	1.17%	1.90%	1.94%	1.91%	2.65%	2.70%	2.66%
2021	0.25%	0.27%	0.25%	0.97%	1.01%	0.98%	1.71%	1.76%	1.72%
2022	0.69%	0.71%	0.70%	1.41%	1.44%	1.41%	2.14%	2.19%	2.15%
2023	0.68%	0.70%	0.69%	1.39%	1.42%	1.39%	2.11%	2.16%	2.12%
2024	1.13%	1.14%	1.13%	1.83%	1.86%	1.84%	2.56%	2.59%	2.56%
2025	0.20%	0.23%	0.21%	0.89%	0.93%	0.90%	1.60%	1.65%	1.61%
2026	0.65%	0.67%	0.65%	1.33%	1.36%	1.34%	2.04%	2.08%	2.05%
2027	0.64%	0.66%	0.64%	1.31%	1.34%	1.32%	2.01%	2.05%	2.02%
2028	1.09%	1.10%	1.09%	1.75%	1.78%	1.76%	2.44%	2.48%	2.45%
2029	0.16%	0.19%	0.17%	0.81%	0.85%	0.82%	1.49%	1.53%	1.50%
2030	0.61%	0.63%	0.61%	1.25%	1.28%	1.26%	1.92%	1.96%	1.93%
2031	0.60%	0.62%	0.60%	1.24%	1.26%	1.24%	1.90%	1.94%	1.91%
2032	1.05%	1.06%	1.05%	1.68%	1.70%	1.68%	2.34%	2.37%	2.34%
2033	0.13%	0.15%	0.13%	0.75%	0.78%	0.75%	1.40%	1.43%	1.40%
2034	0.57%	0.59%	0.58%	1.19%	1.21%	1.19%	1.83%	1.86%	1.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	42,704	868,270	910,974	42,704	875,147	917,850	42,704	882,024	924,727
2016	43,230	874,572	917,802	43,565	888,082	931,647	43,899	901,731	945,630
2017	43,368	881,220	924,588	44,038	901,455	945,493	44,715	922,102	966,816
2018	43,696	887,641	931,337	44,709	914,689	959,398	45,741	942,557	988,298
2019	44,023	894,020	938,043	45,382	927,965	973,346	46,780	963,270	1,010,050
2020	44,546	900,140	944,686	46,261	941,032	987,293	48,042	983,959	1,032,001
2021	44,669	906,627	951,296	46,729	954,565	1,001,294	48,889	1,005,350	1,054,239
2022	44,987	912,858	957,846	47,404	967,889	1,015,293	49,960	1,026,712	1,076,673
2023	45,303	919,030	964,333	48,078	981,203	1,029,281	51,039	1,048,247	1,099,286
2024	45,822	924,956	970,778	48,972	994,323	1,043,295	52,363	1,069,772	1,122,136
2025	45,927	931,222	977,149	49,427	1,007,841	1,057,268	53,226	1,091,886	1,145,112
2026	46,235	937,235	983,470	50,101	1,021,143	1,071,244	54,332	1,113,952	1,168,284
2027	46,539	943,190	989,730	50,773	1,034,424	1,085,197	55,444	1,136,163	1,191,608
2028	47,051	948,876	995,927	51,675	1,047,447	1,099,121	56,817	1,158,254	1,215,072
2029	47,139	954,915	1,002,054	52,112	1,060,884	1,112,996	57,688	1,180,949	1,238,637
2030	47,434	960,685	1,008,119	52,779	1,074,057	1,126,837	58,819	1,203,508	1,262,327
2031	47,727	966,414	1,014,141	53,446	1,087,236	1,140,682	59,958	1,226,246	1,286,204
2032	48,233	971,871	1,020,104	54,354	1,100,137	1,154,491	61,376	1,248,822	1,310,198
2033	48,305	977,717	1,026,022	54,777	1,113,521	1,168,298	62,255	1,272,109	1,334,365
2034	48,591	983,301	1,031,892	55,441	1,126,647	1,182,088	63,415	1,295,259	1,358,674

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.23%	0.73%	0.75%	2.02%	1.48%	1.50%	2.80%	2.23%	2.26%
2017	0.32%	0.76%	0.74%	1.09%	1.51%	1.49%	1.86%	2.26%	2.24%
2018	0.76%	0.73%	0.73%	1.52%	1.47%	1.47%	2.29%	2.22%	2.22%
2019	0.75%	0.72%	0.72%	1.50%	1.45%	1.45%	2.27%	2.20%	2.20%
2020	1.19%	0.68%	0.71%	1.94%	1.41%	1.43%	2.70%	2.15%	2.17%
2021	0.27%	0.72%	0.70%	1.01%	1.44%	1.42%	1.76%	2.17%	2.15%
2022	0.71%	0.69%	0.69%	1.44%	1.40%	1.40%	2.19%	2.12%	2.13%
2023	0.70%	0.68%	0.68%	1.42%	1.38%	1.38%	2.16%	2.10%	2.10%
2024	1.14%	0.64%	0.67%	1.86%	1.34%	1.36%	2.59%	2.05%	2.08%
2025	0.23%	0.68%	0.66%	0.93%	1.36%	1.34%	1.65%	2.07%	2.05%
2026	0.67%	0.65%	0.65%	1.36%	1.32%	1.32%	2.08%	2.02%	2.02%
2027	0.66%	0.64%	0.64%	1.34%	1.30%	1.30%	2.05%	1.99%	2.00%
2028	1.10%	0.60%	0.63%	1.78%	1.26%	1.28%	2.48%	1.94%	1.97%
2029	0.19%	0.64%	0.62%	0.85%	1.28%	1.26%	1.53%	1.96%	1.94%
2030	0.63%	0.60%	0.61%	1.28%	1.24%	1.24%	1.96%	1.91%	1.91%
2031	0.62%	0.60%	0.60%	1.26%	1.23%	1.23%	1.94%	1.89%	1.89%
2032	1.06%	0.56%	0.59%	1.70%	1.19%	1.21%	2.37%	1.84%	1.87%
2033	0.15%	0.60%	0.58%	0.78%	1.22%	1.20%	1.43%	1.86%	1.84%
2034	0.59%	0.57%	0.57%	1.21%	1.18%	1.18%	1.86%	1.82%	1.82%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	39,107,572	30,225,075	69,332,646	39,442,028	30,439,781	69,881,808	39,776,484	30,654,487	70,430,970
2016	39,623,817	30,573,908	70,197,726	40,300,030	31,008,136	71,308,166	40,983,317	31,446,645	72,429,962
2017	39,768,355	30,650,636	70,418,992	40,784,526	31,303,582	72,088,108	41,821,857	31,969,342	73,791,199
2018	40,095,328	30,861,843	70,957,171	41,459,036	31,738,463	73,197,499	42,865,139	32,640,768	75,505,907
2019	40,419,832	31,071,841	71,491,672	42,135,099	32,174,878	74,309,976	43,921,138	33,320,806	77,241,944
2020	40,931,606	31,419,089	72,350,695	43,010,854	32,756,275	75,767,129	45,196,823	34,158,144	79,354,967
2021	41,060,313	31,487,143	72,547,456	43,488,856	33,049,700	76,538,556	46,066,303	34,702,554	80,768,857
2022	41,376,446	31,692,553	73,068,999	44,166,500	33,488,112	77,654,611	47,155,201	35,404,165	82,559,365
2023	41,689,425	31,896,076	73,585,501	44,843,541	33,926,232	78,769,773	48,253,089	36,111,363	84,364,453
2024	42,196,335	32,241,073	74,437,408	45,733,832	34,517,924	80,251,756	49,592,108	36,989,407	86,581,515
2025	42,307,064	32,298,394	74,605,458	46,197,502	34,803,127	81,000,629	50,478,061	37,544,659	88,022,720
2026	42,611,455	32,496,887	75,108,342	46,873,514	35,241,072	82,114,586	51,603,486	38,269,328	89,872,814
2027	42,912,762	32,693,533	75,606,295	47,548,343	35,678,378	83,226,722	52,736,469	38,998,735	91,735,204
2028	43,412,788	33,034,414	76,447,201	48,446,478	36,275,039	84,721,517	54,127,057	39,908,452	94,035,509
2029	43,505,737	33,080,809	76,586,546	48,892,954	36,549,688	85,442,641	55,022,167	40,469,252	95,491,420
2030	43,797,431	33,271,455	77,068,886	49,562,434	36,983,507	86,545,941	56,174,078	41,209,874	97,383,951
2031	44,086,904	33,460,815	77,547,719	50,231,998	37,417,543	87,649,541	57,335,167	41,956,355	99,291,522
2032	44,580,548	33,797,803	78,378,351	51,136,735	38,018,268	89,155,003	58,773,796	42,895,382	101,669,178
2033	44,657,719	33,834,517	78,492,236	51,567,541	38,283,374	89,850,915	59,677,993	43,461,862	103,139,855
2034	44,939,507	34,019,221	78,958,727	52,234,242	38,715,803	90,950,045	60,860,730	44,221,798	105,082,528

Annual Change

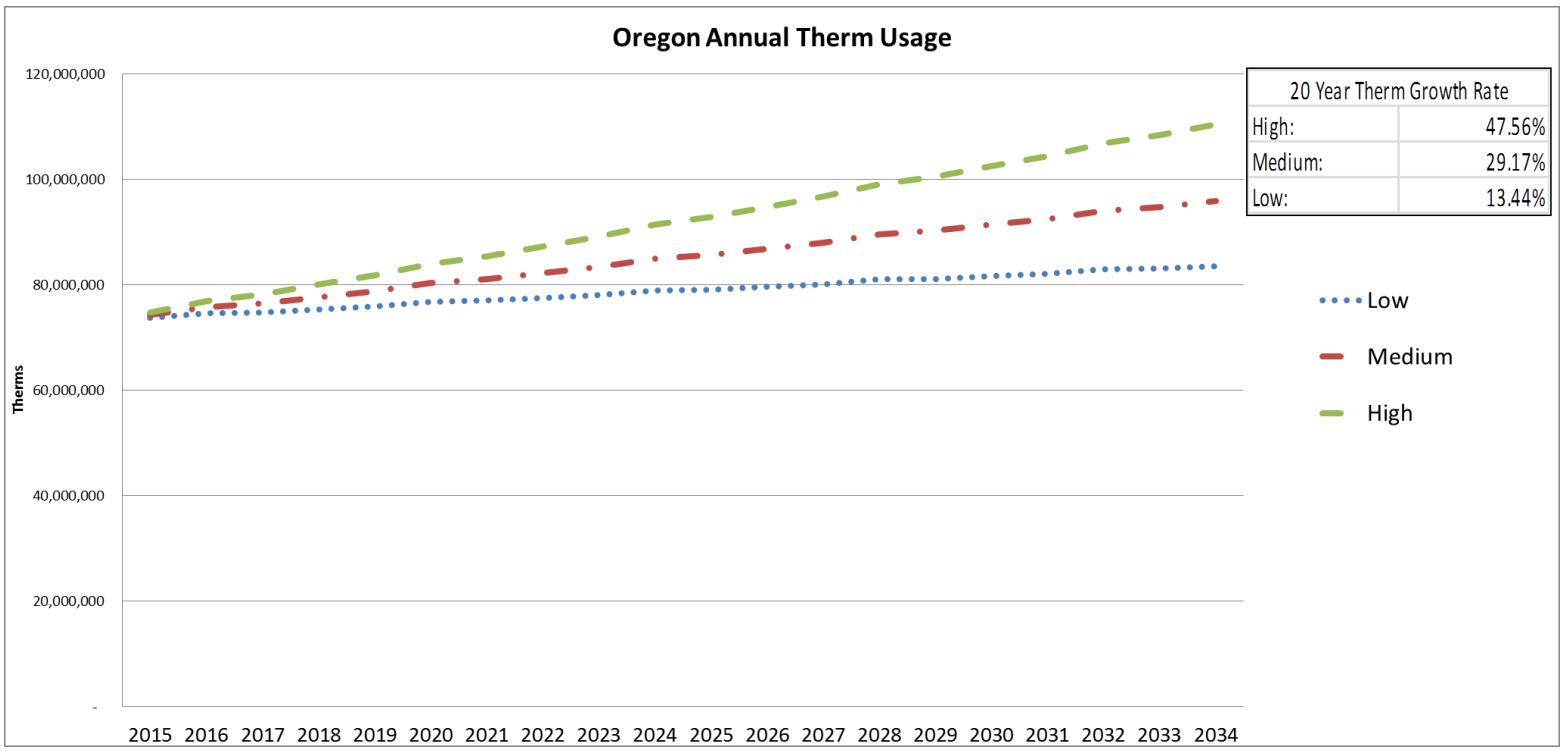
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.15%	1.25%	2.18%	1.87%	2.04%	3.03%	2.58%	2.84%
2017	0.36%	0.25%	0.32%	1.20%	0.95%	1.09%	2.05%	1.66%	1.88%
2018	0.82%	0.69%	0.76%	1.65%	1.39%	1.54%	2.49%	2.10%	2.32%
2019	0.81%	0.68%	0.75%	1.63%	1.38%	1.52%	2.46%	2.08%	2.30%
2020	1.27%	1.12%	1.20%	2.08%	1.81%	1.96%	2.90%	2.51%	2.74%
2021	0.31%	0.22%	0.27%	1.11%	0.90%	1.02%	1.92%	1.59%	1.78%
2022	0.77%	0.65%	0.72%	1.56%	1.33%	1.46%	2.36%	2.02%	2.22%
2023	0.76%	0.64%	0.71%	1.53%	1.31%	1.44%	2.33%	2.00%	2.19%
2024	1.22%	1.08%	1.16%	1.99%	1.74%	1.88%	2.77%	2.43%	2.63%
2025	0.26%	0.18%	0.23%	1.01%	0.83%	0.93%	1.79%	1.50%	1.66%
2026	0.72%	0.61%	0.67%	1.46%	1.26%	1.38%	2.23%	1.93%	2.10%
2027	0.71%	0.61%	0.66%	1.44%	1.24%	1.35%	2.20%	1.91%	2.07%
2028	1.17%	1.04%	1.11%	1.89%	1.67%	1.80%	2.64%	2.33%	2.51%
2029	0.21%	0.14%	0.18%	0.92%	0.76%	0.85%	1.65%	1.41%	1.55%
2030	0.67%	0.58%	0.63%	1.37%	1.19%	1.29%	2.09%	1.83%	1.98%
2031	0.66%	0.57%	0.62%	1.35%	1.17%	1.28%	2.07%	1.81%	1.96%
2032	1.12%	1.01%	1.07%	1.80%	1.61%	1.72%	2.51%	2.24%	2.39%
2033	0.17%	0.11%	0.15%	0.84%	0.70%	0.78%	1.54%	1.32%	1.45%
2034	0.63%	0.55%	0.59%	1.29%	1.13%	1.22%	1.98%	1.75%	1.88%

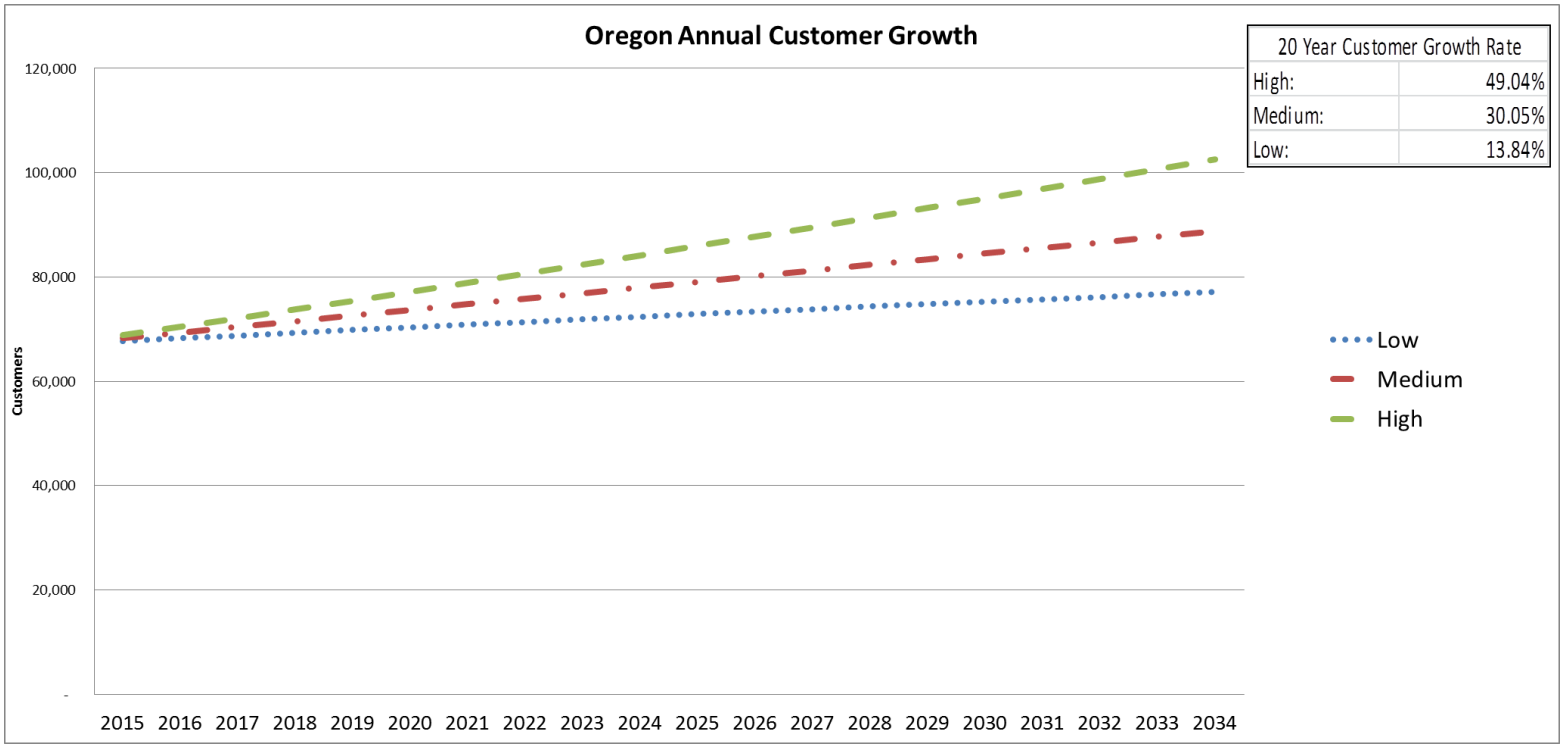
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	57,942	9,795	67,737	58,405	9,867	68,273	58,868	9,939	68,808
2016	58,402	9,867	68,268	59,334	10,012	69,345	60,275	10,158	70,433
2017	58,858	9,938	68,796	60,265	10,157	70,422	61,701	10,380	72,081
2018	59,311	10,009	69,320	61,200	10,302	71,503	63,147	10,605	73,751
2019	59,762	10,079	69,841	62,138	10,448	72,586	64,610	10,833	75,443
2020	60,208	10,148	70,356	63,075	10,595	73,670	66,087	11,063	77,149
2021	60,651	10,218	70,869	64,016	10,741	74,757	67,582	11,295	78,878
2022	61,091	10,286	71,377	64,956	10,888	75,844	69,091	11,530	80,622
2023	61,526	10,354	71,880	65,896	11,034	76,930	70,613	11,767	82,380
2024	61,958	10,422	72,379	66,837	11,181	78,018	72,150	12,007	84,156
2025	62,384	10,489	72,873	67,775	11,328	79,103	73,695	12,247	85,943
2026	62,808	10,555	73,363	68,713	11,474	80,187	75,254	12,490	87,744
2027	63,227	10,621	73,848	69,650	11,620	81,270	76,824	12,734	89,558
2028	63,642	10,686	74,328	70,585	11,766	82,351	78,403	12,980	91,383
2029	64,052	10,750	74,802	71,516	11,912	83,428	79,989	13,227	93,216
2030	64,458	10,814	75,272	72,445	12,057	84,502	81,583	13,475	95,058
2031	64,861	10,877	75,738	73,374	12,202	85,576	83,190	13,725	96,916
2032	65,260	10,939	76,199	74,301	12,347	86,648	84,806	13,976	98,782
2033	65,656	11,001	76,657	75,228	12,491	87,720	86,433	14,230	100,662
2034	66,048	11,063	77,111	76,154	12,636	88,790	88,069	14,484	102,554

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.79%	0.73%	0.78%	1.59%	1.46%	1.57%	2.39%	2.20%	2.36%
2017	0.78%	0.72%	0.77%	1.57%	1.45%	1.55%	2.37%	2.18%	2.34%
2018	0.77%	0.71%	0.76%	1.55%	1.43%	1.53%	2.34%	2.17%	2.32%
2019	0.76%	0.70%	0.75%	1.53%	1.42%	1.52%	2.32%	2.15%	2.29%
2020	0.75%	0.69%	0.74%	1.51%	1.40%	1.49%	2.29%	2.12%	2.26%
2021	0.74%	0.68%	0.73%	1.49%	1.38%	1.48%	2.26%	2.11%	2.24%
2022	0.72%	0.67%	0.72%	1.47%	1.37%	1.45%	2.23%	2.08%	2.21%
2023	0.71%	0.66%	0.70%	1.45%	1.35%	1.43%	2.20%	2.05%	2.18%
2024	0.70%	0.65%	0.69%	1.43%	1.33%	1.41%	2.18%	2.03%	2.16%
2025	0.69%	0.64%	0.68%	1.40%	1.31%	1.39%	2.14%	2.00%	2.12%
2026	0.68%	0.63%	0.67%	1.38%	1.29%	1.37%	2.12%	1.98%	2.10%
2027	0.67%	0.62%	0.66%	1.36%	1.27%	1.35%	2.09%	1.96%	2.07%
2028	0.66%	0.61%	0.65%	1.34%	1.26%	1.33%	2.06%	1.93%	2.04%
2029	0.64%	0.60%	0.64%	1.32%	1.24%	1.31%	2.02%	1.90%	2.01%
2030	0.63%	0.59%	0.63%	1.30%	1.22%	1.29%	1.99%	1.88%	1.98%
2031	0.63%	0.58%	0.62%	1.28%	1.20%	1.27%	1.97%	1.86%	1.95%
2032	0.62%	0.57%	0.61%	1.26%	1.19%	1.25%	1.94%	1.83%	1.93%
2033	0.61%	0.57%	0.60%	1.25%	1.17%	1.24%	1.92%	1.81%	1.90%
2034	0.60%	0.56%	0.59%	1.23%	1.16%	1.22%	1.89%	1.79%	1.88%


Oregon Annual Therm Usage
Therms
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 47.56%
Medium: 29.17%
Low: 13.44%
Low
Medium
High


Oregon Annual Customer Growth
Customers
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 49.04%
Medium: 30.05%
Low: 13.84%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Washington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	168,780,587	57,524,066	226,304,652	170,050,003	57,524,066	227,574,069	171,319,420	57,524,066	228,843,485
2016	170,487,797	58,091,223	228,579,019	172,738,358	58,407,456	231,145,814	175,007,960	58,723,689	233,731,649
2017	170,666,415	58,145,353	228,811,769	173,890,877	58,779,111	232,669,988	177,167,927	59,417,438	236,585,365
2018	171,610,587	58,456,699	230,067,285	175,832,410	59,413,632	235,246,042	180,155,379	60,384,350	240,539,729
2019	172,553,983	58,767,984	231,321,966	177,784,872	60,051,845	237,836,717	183,180,547	61,363,413	244,543,960
2020	174,274,429	59,340,058	233,614,486	180,551,109	60,960,733	241,511,842	187,072,392	62,627,965	249,700,357
2021	174,432,525	59,388,133	233,820,658	181,711,316	61,335,284	243,046,600	189,327,798	63,352,250	252,680,047
2022	175,366,918	59,696,733	235,063,651	183,683,657	61,979,989	245,663,645	192,447,529	64,361,307	256,808,836
2023	176,295,585	60,003,484	236,299,069	185,657,141	62,625,035	248,282,176	195,590,497	65,377,675	260,968,172
2024	178,020,577	60,577,399	238,597,976	188,483,683	63,553,549	252,037,232	199,662,077	66,699,452	266,361,529
2025	178,140,327	60,613,065	238,753,392	189,614,953	63,918,663	253,533,616	201,956,907	67,435,883	269,392,790
2026	179,054,625	60,915,218	239,969,842	191,596,013	64,566,113	256,162,126	205,175,499	68,476,118	273,651,617
2027	179,962,284	61,215,217	241,177,501	193,575,289	65,212,950	258,788,238	208,412,287	69,522,036	277,934,323
2028	181,677,857	61,785,985	243,463,842	196,433,365	66,151,360	262,584,725	212,620,261	70,886,714	283,506,975
2029	181,755,328	61,807,784	243,563,112	197,523,872	66,503,089	264,026,961	214,933,036	71,628,342	286,561,378
2030	182,640,155	62,100,180	244,740,335	199,491,388	67,145,834	266,637,222	218,213,673	72,687,697	290,901,370
2031	183,521,837	62,391,597	245,913,434	201,463,270	67,789,991	269,253,261	221,521,657	73,755,711	295,277,368
2032	185,226,615	62,958,764	248,185,379	204,346,786	68,736,371	273,083,157	225,855,162	75,159,900	301,015,062
2033	185,266,501	62,968,279	248,234,780	205,401,092	69,076,238	274,477,329	228,189,120	75,907,813	304,096,933
2034	186,131,670	63,254,268	249,385,938	207,371,367	69,719,752	277,091,119	231,555,462	76,994,142	308,549,604

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.01%	0.99%	1.01%	1.58%	1.54%	1.57%	2.15%	2.09%	2.14%
2017	0.10%	0.09%	0.10%	0.67%	0.64%	0.66%	1.23%	1.18%	1.22%
2018	0.55%	0.54%	0.55%	1.12%	1.08%	1.11%	1.69%	1.63%	1.67%
2019	0.55%	0.53%	0.55%	1.11%	1.07%	1.10%	1.68%	1.62%	1.66%
2020	1.00%	0.97%	0.99%	1.56%	1.51%	1.55%	2.12%	2.06%	2.11%
2021	0.09%	0.08%	0.09%	0.64%	0.61%	0.64%	1.21%	1.16%	1.19%
2022	0.54%	0.52%	0.53%	1.09%	1.05%	1.08%	1.65%	1.59%	1.63%
2023	0.53%	0.51%	0.53%	1.07%	1.04%	1.07%	1.63%	1.58%	1.62%
2024	0.98%	0.96%	0.97%	1.52%	1.48%	1.51%	2.08%	2.02%	2.07%
2025	0.07%	0.06%	0.07%	0.60%	0.57%	0.59%	1.15%	1.10%	1.14%
2026	0.51%	0.50%	0.51%	1.04%	1.01%	1.04%	1.59%	1.54%	1.58%
2027	0.51%	0.49%	0.50%	1.03%	1.00%	1.03%	1.58%	1.53%	1.57%
2028	0.95%	0.93%	0.95%	1.48%	1.44%	1.47%	2.02%	1.96%	2.01%
2029	0.04%	0.04%	0.04%	0.56%	0.53%	0.55%	1.09%	1.05%	1.08%
2030	0.49%	0.47%	0.48%	1.00%	0.97%	0.99%	1.53%	1.48%	1.51%
2031	0.48%	0.47%	0.48%	0.99%	0.96%	0.98%	1.52%	1.47%	1.50%
2032	0.93%	0.91%	0.92%	1.43%	1.40%	1.42%	1.96%	1.90%	1.94%
2033	0.02%	0.02%	0.02%	0.52%	0.49%	0.51%	1.03%	1.00%	1.02%
2034	0.47%	0.45%	0.46%	0.96%	0.93%	0.95%	1.48%	1.43%	1.46%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	157,600	2,462,576	2,620,176	157,600	2,477,120	2,634,720	157,600	2,491,664	2,649,264
2016	159,154	2,475,353	2,634,507	160,020	2,503,762	2,663,783	160,887	2,532,389	2,693,275
2017	159,302	2,489,548	2,648,850	161,039	2,532,011	2,693,050	162,788	2,575,117	2,737,904
2018	160,155	2,503,060	2,663,215	162,777	2,559,764	2,722,541	165,437	2,617,746	2,783,183
2019	161,008	2,516,566	2,677,574	164,526	2,587,676	2,752,202	168,119	2,660,913	2,829,032
2020	162,576	2,529,293	2,691,869	167,016	2,614,913	2,781,929	171,583	2,703,724	2,875,307
2021	162,707	2,543,469	2,706,176	168,042	2,643,813	2,811,854	173,568	2,748,629	2,922,197
2022	163,553	2,556,854	2,720,407	169,808	2,672,013	2,841,821	176,332	2,793,143	2,969,475
2023	164,393	2,570,158	2,734,551	171,575	2,700,229	2,871,805	179,117	2,837,986	3,017,102
2024	165,965	2,582,708	2,748,673	174,119	2,727,798	2,901,917	182,738	2,882,506	3,065,245
2025	166,063	2,596,593	2,762,656	175,120	2,756,821	2,931,940	184,756	2,928,817	3,113,572
2026	166,891	2,609,695	2,776,586	176,893	2,785,147	2,962,040	187,606	2,974,734	3,162,340
2027	167,713	2,622,703	2,790,416	178,666	2,813,447	2,992,113	190,471	3,020,908	3,211,380
2028	169,277	2,634,870	2,804,147	181,237	2,840,926	3,022,162	194,210	3,066,490	3,260,700
2029	169,336	2,648,397	2,817,734	182,200	2,869,902	3,052,102	196,242	3,113,922	3,310,164
2030	170,137	2,661,076	2,831,214	183,961	2,898,030	3,081,991	199,144	3,160,714	3,359,858
2031	170,936	2,673,712	2,844,648	185,726	2,926,222	3,111,948	202,070	3,207,894	3,409,964
2032	172,490	2,685,483	2,857,973	188,319	2,953,526	3,141,845	205,918	3,254,364	3,460,281
2033	172,516	2,698,715	2,871,231	189,250	2,982,519	3,171,769	207,967	3,302,983	3,510,949
2034	173,299	2,711,114	2,884,414	191,013	3,010,687	3,201,700	210,943	3,350,991	3,561,934

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.52%	0.55%	1.54%	1.08%	1.10%	2.09%	1.63%	1.66%
2017	0.09%	0.57%	0.54%	0.64%	1.13%	1.10%	1.18%	1.69%	1.66%
2018	0.54%	0.54%	0.54%	1.08%	1.10%	1.10%	1.63%	1.66%	1.65%
2019	0.53%	0.54%	0.54%	1.07%	1.09%	1.09%	1.62%	1.65%	1.65%
2020	0.97%	0.51%	0.53%	1.51%	1.05%	1.08%	2.06%	1.61%	1.64%
2021	0.08%	0.56%	0.53%	0.61%	1.11%	1.08%	1.16%	1.66%	1.63%
2022	0.52%	0.53%	0.53%	1.05%	1.07%	1.07%	1.59%	1.62%	1.62%
2023	0.51%	0.52%	0.52%	1.04%	1.06%	1.06%	1.58%	1.61%	1.60%
2024	0.96%	0.49%	0.52%	1.48%	1.02%	1.05%	2.02%	1.57%	1.60%
2025	0.06%	0.54%	0.51%	0.57%	1.06%	1.03%	1.10%	1.61%	1.58%
2026	0.50%	0.50%	0.50%	1.01%	1.03%	1.03%	1.54%	1.57%	1.57%
2027	0.49%	0.50%	0.50%	1.00%	1.02%	1.02%	1.53%	1.55%	1.55%
2028	0.93%	0.46%	0.49%	1.44%	0.98%	1.00%	1.96%	1.51%	1.54%
2029	0.04%	0.51%	0.48%	0.53%	1.02%	0.99%	1.05%	1.55%	1.52%
2030	0.47%	0.48%	0.48%	0.97%	0.98%	0.98%	1.48%	1.50%	1.50%
2031	0.47%	0.47%	0.47%	0.96%	0.97%	0.97%	1.47%	1.49%	1.49%
2032	0.91%	0.44%	0.47%	1.40%	0.93%	0.96%	1.90%	1.45%	1.48%
2033	0.02%	0.49%	0.46%	0.49%	0.98%	0.95%	1.00%	1.49%	1.46%
2034	0.45%	0.46%	0.46%	0.93%	0.94%	0.94%	1.43%	1.45%	1.45%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	117,950,257	96,083,879	214,034,136	118,658,147	96,589,851	215,247,998	119,366,036	97,095,823	216,461,859
2016	119,201,146	97,004,996	216,206,142	120,632,313	98,028,475	218,660,789	122,074,290	99,059,459	221,133,749
2017	119,347,842	97,086,472	216,434,315	121,498,159	98,625,899	220,124,058	123,680,905	100,187,869	223,868,774
2018	120,046,655	97,589,239	217,635,893	122,932,124	99,656,636	222,588,759	125,882,768	101,769,395	227,652,163
2019	120,744,340	98,092,109	218,836,449	124,373,163	100,694,163	225,067,326	128,111,091	103,372,247	231,483,338
2020	122,003,143	99,021,997	221,025,140	126,401,576	102,177,334	228,578,910	130,964,971	105,447,746	236,412,717
2021	122,132,163	99,094,782	221,226,945	127,268,504	102,783,166	230,051,671	132,635,574	106,632,751	239,268,325
2022	122,821,770	99,594,177	222,415,948	128,721,609	103,833,787	232,555,396	134,929,968	108,289,236	243,219,205
2023	123,506,729	100,090,932	223,597,661	130,174,765	104,885,821	235,060,586	137,240,329	109,959,213	247,199,542
2024	124,767,334	101,024,745	225,792,079	132,244,800	106,403,980	238,648,780	140,222,580	112,134,147	252,356,728
2025	124,866,081	101,078,932	225,945,013	133,086,603	106,998,124	240,084,727	141,916,606	113,345,573	255,262,179
2026	125,539,183	101,569,229	227,108,412	134,542,877	108,056,666	242,599,543	144,278,882	115,059,461	259,338,344
2027	126,207,032	102,056,344	228,263,376	135,997,095	109,115,040	245,112,136	146,653,345	116,784,283	263,437,627
2028	127,459,492	102,986,379	230,445,871	138,087,946	110,652,590	248,740,536	149,732,114	119,035,747	268,767,861
2029	127,525,265	103,019,721	230,544,987	138,895,951	111,228,772	250,124,723	151,433,188	120,262,847	271,696,035
2030	128,175,267	103,495,673	231,670,940	140,339,279	112,283,198	252,622,477	153,836,050	122,014,951	275,851,001
2031	128,822,527	103,970,341	232,792,868	141,784,876	113,340,884	255,125,760	156,257,376	123,783,235	280,040,611
2032	130,065,896	104,895,831	234,961,727	143,891,852	114,894,860	258,786,712	159,423,719	126,106,566	285,530,286
2033	130,102,232	104,910,741	235,012,972	144,669,231	115,455,676	260,124,907	161,133,286	127,351,991	288,485,278
2034	130,736,230	105,377,681	236,113,911	146,111,032	116,515,203	262,626,235	163,592,625	129,156,353	292,748,978

Annual Change

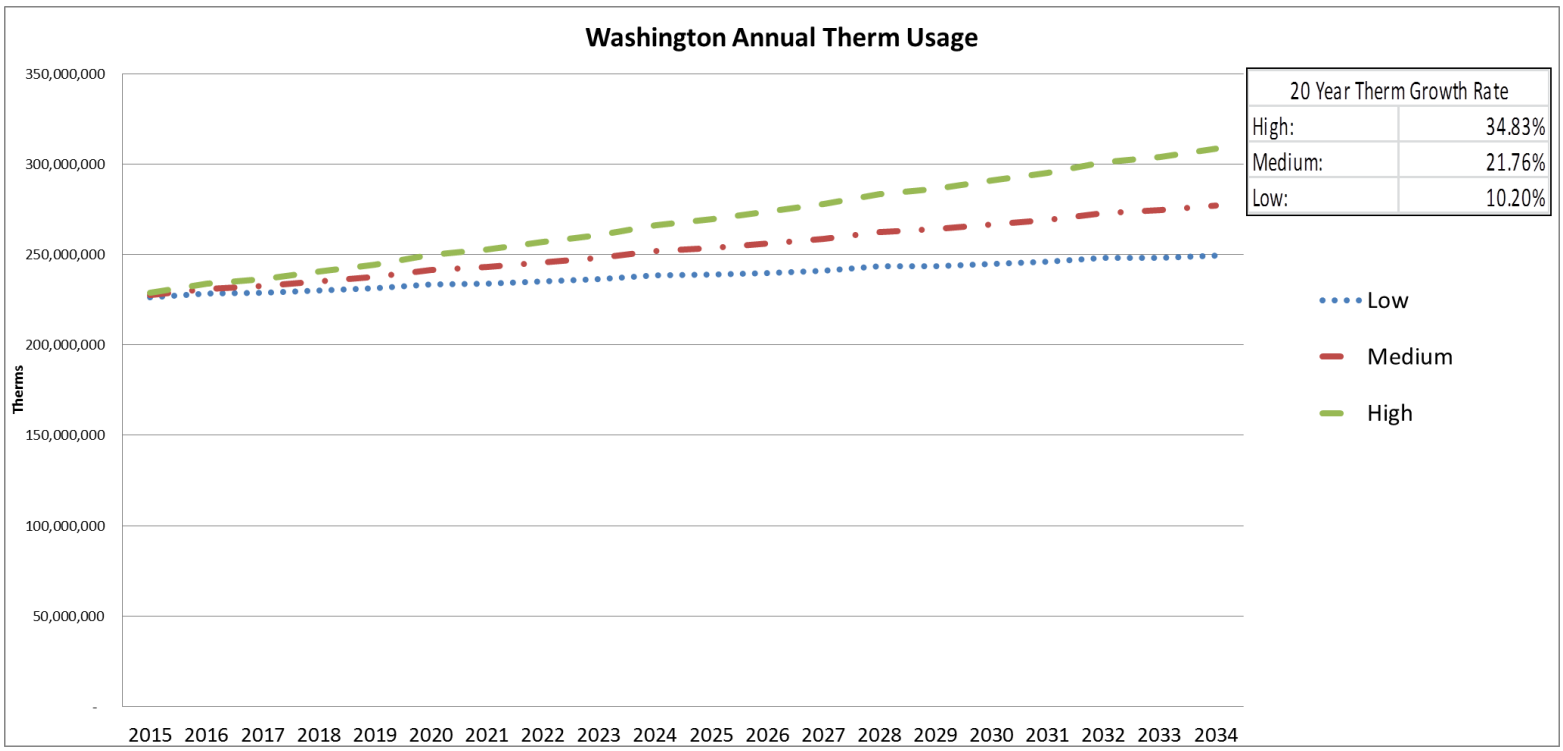
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.06%	0.96%	1.01%	1.66%	1.49%	1.59%	2.27%	2.02%	2.16%
2017	0.12%	0.08%	0.11%	0.72%	0.61%	0.67%	1.32%	1.14%	1.24%
2018	0.59%	0.52%	0.56%	1.18%	1.05%	1.12%	1.78%	1.58%	1.69%
2019	0.58%	0.52%	0.55%	1.17%	1.04%	1.11%	1.77%	1.57%	1.68%
2020	1.04%	0.95%	1.00%	1.63%	1.47%	1.56%	2.23%	2.01%	2.13%
2021	0.11%	0.07%	0.09%	0.69%	0.59%	0.64%	1.28%	1.12%	1.21%
2022	0.56%	0.50%	0.54%	1.14%	1.02%	1.09%	1.73%	1.55%	1.65%
2023	0.56%	0.50%	0.53%	1.13%	1.01%	1.08%	1.71%	1.54%	1.64%
2024	1.02%	0.93%	0.98%	1.59%	1.45%	1.53%	2.17%	1.98%	2.09%
2025	0.08%	0.05%	0.07%	0.64%	0.56%	0.60%	1.21%	1.08%	1.15%
2026	0.54%	0.49%	0.51%	1.09%	0.99%	1.05%	1.66%	1.51%	1.60%
2027	0.53%	0.48%	0.51%	1.08%	0.98%	1.04%	1.65%	1.50%	1.58%
2028	0.99%	0.91%	0.96%	1.54%	1.41%	1.48%	2.10%	1.93%	2.02%
2029	0.05%	0.03%	0.04%	0.59%	0.52%	0.56%	1.14%	1.03%	1.09%
2030	0.51%	0.46%	0.49%	1.04%	0.95%	1.00%	1.59%	1.46%	1.53%
2031	0.50%	0.46%	0.48%	1.03%	0.94%	0.99%	1.57%	1.45%	1.52%
2032	0.97%	0.89%	0.93%	1.49%	1.37%	1.43%	2.03%	1.88%	1.96%
2033	0.03%	0.01%	0.02%	0.54%	0.49%	0.52%	1.07%	0.99%	1.03%
2034	0.49%	0.45%	0.47%	1.00%	0.92%	0.96%	1.53%	1.42%	1.48%

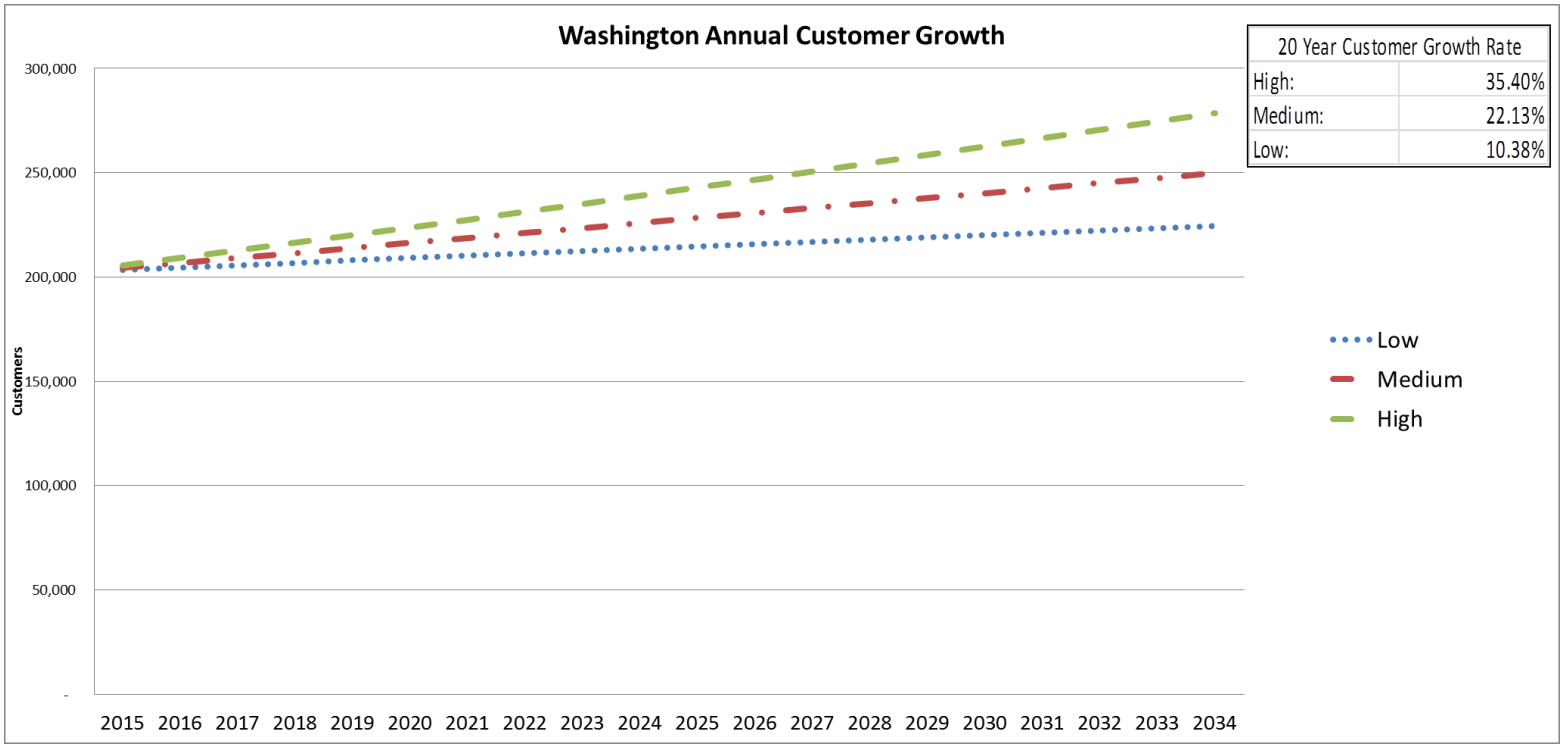
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	177,821	25,518	203,340	178,852	25,654	204,506	179,883	25,790	205,673
2016	178,838	25,653	204,491	180,912	25,926	206,838	183,001	26,202	209,203
2017	179,854	25,787	205,641	182,985	26,200	209,185	186,162	26,619	212,780
2018	180,872	25,922	206,793	185,072	26,476	211,548	189,366	27,042	216,408
2019	181,888	26,056	207,944	187,170	26,753	213,924	192,609	27,471	220,079
2020	182,899	26,190	209,089	189,272	27,031	216,303	195,880	27,903	223,783
2021	183,910	26,324	210,234	191,386	27,311	218,697	199,193	28,341	227,533
2022	184,915	26,457	211,372	193,503	27,591	221,093	202,531	28,782	231,313
2023	185,913	26,589	212,503	195,619	27,871	223,490	205,892	29,226	235,118
2024	186,910	26,721	213,631	197,743	28,152	225,895	209,287	29,675	238,962
2025	187,896	26,852	214,748	199,859	28,432	228,292	212,693	30,125	242,819
2026	188,877	26,982	215,860	201,980	28,713	230,693	216,129	30,579	246,708
2027	189,852	27,111	216,963	204,098	28,993	233,091	219,581	31,035	250,617
2028	190,818	27,240	218,058	206,213	29,273	235,486	223,051	31,494	254,545
2029	191,774	27,366	219,141	208,319	29,552	237,871	226,529	31,953	258,482
2030	192,723	27,492	220,215	210,420	29,830	240,250	230,021	32,414	262,435
2031	193,667	27,617	221,284	212,525	30,109	242,634	233,539	32,879	266,419
2032	194,603	27,742	222,345	214,624	30,386	245,011	237,070	33,345	270,415
2033	195,534	27,865	223,399	216,724	30,664	247,389	240,623	33,814	274,438
2034	196,459	27,988	224,447	218,823	30,942	249,766	244,195	34,286	278,482

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.53%	0.57%	1.15%	1.06%	1.14%	1.73%	1.60%	1.72%
2017	0.57%	0.52%	0.56%	1.15%	1.06%	1.13%	1.73%	1.59%	1.71%
2018	0.57%	0.52%	0.56%	1.14%	1.05%	1.13%	1.72%	1.59%	1.70%
2019	0.56%	0.52%	0.56%	1.13%	1.05%	1.12%	1.71%	1.58%	1.70%
2020	0.56%	0.51%	0.55%	1.12%	1.04%	1.11%	1.70%	1.57%	1.68%
2021	0.55%	0.51%	0.55%	1.12%	1.03%	1.11%	1.69%	1.57%	1.68%
2022	0.55%	0.51%	0.54%	1.11%	1.03%	1.10%	1.68%	1.56%	1.66%
2023	0.54%	0.50%	0.53%	1.09%	1.01%	1.08%	1.66%	1.54%	1.65%
2024	0.54%	0.50%	0.53%	1.09%	1.01%	1.08%	1.65%	1.54%	1.63%
2025	0.53%	0.49%	0.52%	1.07%	1.00%	1.06%	1.63%	1.52%	1.61%
2026	0.52%	0.48%	0.52%	1.06%	0.99%	1.05%	1.62%	1.51%	1.60%
2027	0.52%	0.48%	0.51%	1.05%	0.98%	1.04%	1.60%	1.49%	1.58%
2028	0.51%	0.47%	0.50%	1.04%	0.97%	1.03%	1.58%	1.48%	1.57%
2029	0.50%	0.47%	0.50%	1.02%	0.95%	1.01%	1.56%	1.46%	1.55%
2030	0.49%	0.46%	0.49%	1.01%	0.94%	1.00%	1.54%	1.44%	1.53%
2031	0.49%	0.46%	0.49%	1.00%	0.93%	0.99%	1.53%	1.43%	1.52%
2032	0.48%	0.45%	0.48%	0.99%	0.92%	0.98%	1.51%	1.42%	1.50%
2033	0.48%	0.45%	0.47%	0.98%	0.91%	0.97%	1.50%	1.41%	1.49%
2034	0.47%	0.44%	0.47%	0.97%	0.91%	0.96%	1.48%	1.39%	1.47%


Washington Annual Therm Usage
Therms
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 34.83%
Medium: 21.76%
Low: 10.20%
Low
Medium
High


Washington Annual Customer Growth
Customers
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 35.40%
Medium: 22.13%
Low: 10.38%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

System

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	226,859,630	73,110,918	299,970,548	228,692,836	73,110,918	301,803,755	230,526,043	73,110,918	303,636,961
2016	229,271,688	73,870,268	303,141,955	232,540,230	74,308,576	306,848,805	235,839,339	74,746,884	310,586,223
2017	229,619,026	73,974,496	303,593,522	234,312,552	74,852,954	309,165,506	239,090,742	75,738,389	314,829,131
2018	230,996,201	74,405,886	305,402,087	237,148,869	75,732,322	312,881,191	243,464,547	77,079,786	320,544,333
2019	232,369,778	74,836,426	307,206,204	239,998,789	76,616,093	316,614,882	247,893,456	78,437,981	326,331,437
2020	234,790,707	75,599,376	310,390,084	243,949,545	77,845,979	321,795,524	253,502,672	80,163,455	333,666,127
2021	235,098,331	75,692,157	310,790,488	245,723,385	78,391,394	324,114,779	256,892,607	81,196,810	338,089,416
2022	236,452,759	76,117,164	312,569,923	248,596,383	79,282,438	327,878,822	261,460,209	82,596,719	344,056,928
2023	237,797,454	76,539,198	314,336,651	251,469,824	80,173,599	331,643,423	266,062,743	84,007,024	350,069,767
2024	240,217,549	77,302,417	317,519,965	255,501,289	81,428,497	336,929,787	271,935,865	85,812,079	357,747,944
2025	240,463,954	77,376,460	317,840,415	257,228,172	81,959,541	339,187,714	275,387,099	86,863,403	362,250,502
2026	241,783,490	77,790,877	319,574,367	260,108,349	82,852,796	342,961,145	280,101,490	88,307,178	368,408,668
2027	243,092,463	78,202,056	321,294,518	262,985,295	83,745,041	346,730,336	284,843,938	89,759,277	374,603,215
2028	245,494,384	78,959,684	324,454,068	267,058,548	85,012,569	352,071,116	290,920,155	91,625,036	382,545,191
2029	245,675,544	79,013,510	324,689,054	268,722,316	85,524,118	354,246,434	294,400,843	92,684,596	387,085,439
2030	246,949,140	79,413,621	326,362,761	271,580,238	86,410,282	357,990,520	299,210,975	94,156,499	393,367,474
2031	248,216,832	79,811,974	328,028,806	274,442,838	87,297,913	361,740,751	304,060,616	95,640,275	399,700,891
2032	250,599,760	80,563,714	331,163,474	278,550,033	88,575,670	367,125,704	310,324,292	97,562,069	407,886,362
2033	250,722,956	80,599,639	331,322,596	280,157,285	89,069,844	369,227,129	313,837,742	98,631,042	412,468,783
2034	251,964,295	80,989,824	332,954,119	283,014,705	89,955,808	372,970,513	318,773,861	100,140,597	418,914,457

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.06%	1.04%	1.06%	1.68%	1.64%	1.67%	2.30%	2.24%	2.29%
2017	0.15%	0.14%	0.15%	0.76%	0.73%	0.75%	1.38%	1.33%	1.37%
2018	0.60%	0.58%	0.60%	1.21%	1.17%	1.20%	1.83%	1.77%	1.82%
2019	0.59%	0.58%	0.59%	1.20%	1.17%	1.19%	1.82%	1.76%	1.81%
2020	1.04%	1.02%	1.04%	1.65%	1.61%	1.64%	2.26%	2.20%	2.25%
2021	0.13%	0.12%	0.13%	0.73%	0.70%	0.72%	1.34%	1.29%	1.33%
2022	0.58%	0.56%	0.57%	1.17%	1.14%	1.16%	1.78%	1.72%	1.77%
2023	0.57%	0.55%	0.57%	1.16%	1.12%	1.15%	1.76%	1.71%	1.75%
2024	1.02%	1.00%	1.01%	1.60%	1.57%	1.59%	2.21%	2.15%	2.19%
2025	0.10%	0.10%	0.10%	0.68%	0.65%	0.67%	1.27%	1.23%	1.26%
2026	0.55%	0.54%	0.55%	1.12%	1.09%	1.11%	1.71%	1.66%	1.70%
2027	0.54%	0.53%	0.54%	1.11%	1.08%	1.10%	1.69%	1.64%	1.68%
2028	0.99%	0.97%	0.98%	1.55%	1.51%	1.54%	2.13%	2.08%	2.12%
2029	0.07%	0.07%	0.07%	0.62%	0.60%	0.62%	1.20%	1.16%	1.19%
2030	0.52%	0.51%	0.52%	1.06%	1.04%	1.06%	1.63%	1.59%	1.62%
2031	0.51%	0.50%	0.51%	1.05%	1.03%	1.05%	1.62%	1.58%	1.61%
2032	0.96%	0.94%	0.96%	1.50%	1.46%	1.49%	2.06%	2.01%	2.05%
2033	0.05%	0.04%	0.05%	0.58%	0.56%	0.57%	1.13%	1.10%	1.12%
2034	0.50%	0.48%	0.49%	1.02%	0.99%	1.01%	1.57%	1.53%	1.56%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak	Daily Baseload	Peak	Total Core Peak
2015	200,304	3,330,846	3,531,150	200,304	3,352,267	3,552,570	200,304	3,373,687	3,573,991
2016	202,384	3,349,925	3,552,309	203,585	3,391,844	3,595,429	204,786	3,434,120	3,638,906
2017	202,670	3,370,768	3,573,438	205,077	3,433,466	3,638,543	207,502	3,497,218	3,704,721
2018	203,852	3,390,700	3,594,552	207,486	3,474,454	3,681,940	211,177	3,560,303	3,771,481
2019	205,031	3,410,586	3,615,617	209,907	3,515,641	3,725,548	214,899	3,624,183	3,839,082
2020	207,122	3,429,433	3,636,555	213,277	3,555,945	3,769,222	219,626	3,687,682	3,907,308
2021	207,376	3,450,096	3,657,472	214,771	3,598,377	3,813,148	222,457	3,753,978	3,976,435
2022	208,540	3,469,712	3,678,252	217,212	3,639,902	3,857,114	226,292	3,819,855	4,046,147
2023	209,696	3,489,188	3,698,884	219,654	3,681,432	3,901,086	230,156	3,886,232	4,116,389
2024	211,787	3,507,664	3,719,451	223,092	3,722,121	3,945,213	235,102	3,952,279	4,187,380
2025	211,990	3,527,815	3,739,805	224,547	3,764,662	3,989,209	237,982	4,020,703	4,258,685
2026	213,126	3,546,930	3,760,056	226,994	3,806,290	4,033,284	241,937	4,088,686	4,330,624
2027	214,252	3,565,893	3,780,145	229,438	3,847,871	4,077,310	245,916	4,157,072	4,402,988
2028	216,328	3,583,745	3,800,073	232,911	3,888,373	4,121,284	251,027	4,224,744	4,475,772
2029	216,475	3,603,312	3,819,788	234,313	3,930,785	4,165,098	253,930	4,294,871	4,548,801
2030	217,572	3,621,761	3,839,333	236,740	3,972,087	4,208,828	257,963	4,364,222	4,622,185
2031	218,663	3,640,126	3,858,789	239,172	4,013,457	4,252,630	262,028	4,434,141	4,696,169
2032	220,723	3,657,354	3,878,076	242,673	4,053,663	4,296,336	267,293	4,503,186	4,770,479
2033	220,821	3,676,432	3,897,253	244,027	4,096,040	4,340,067	270,222	4,575,092	4,845,314
2034	221,890	3,694,416	3,916,305	246,454	4,137,334	4,383,788	274,358	4,646,250	4,920,608

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.57%	0.60%	1.64%	1.18%	1.21%	2.24%	1.79%	1.82%
2017	0.14%	0.62%	0.59%	0.73%	1.23%	1.20%	1.33%	1.84%	1.81%
2018	0.58%	0.59%	0.59%	1.17%	1.19%	1.19%	1.77%	1.80%	1.80%
2019	0.58%	0.59%	0.59%	1.17%	1.19%	1.18%	1.76%	1.79%	1.79%
2020	1.02%	0.55%	0.58%	1.61%	1.15%	1.17%	2.20%	1.75%	1.78%
2021	0.12%	0.60%	0.58%	0.70%	1.19%	1.17%	1.29%	1.80%	1.77%
2022	0.56%	0.57%	0.57%	1.14%	1.15%	1.15%	1.72%	1.75%	1.75%
2023	0.55%	0.56%	0.56%	1.12%	1.14%	1.14%	1.71%	1.74%	1.74%
2024	1.00%	0.53%	0.56%	1.57%	1.11%	1.13%	2.15%	1.70%	1.72%
2025	0.10%	0.57%	0.55%	0.65%	1.14%	1.12%	1.23%	1.73%	1.70%
2026	0.54%	0.54%	0.54%	1.09%	1.11%	1.10%	1.66%	1.69%	1.69%
2027	0.53%	0.53%	0.53%	1.08%	1.09%	1.09%	1.64%	1.67%	1.67%
2028	0.97%	0.50%	0.53%	1.51%	1.05%	1.08%	2.08%	1.63%	1.65%
2029	0.07%	0.55%	0.52%	0.60%	1.09%	1.06%	1.16%	1.66%	1.63%
2030	0.51%	0.51%	0.51%	1.04%	1.05%	1.05%	1.59%	1.61%	1.61%
2031	0.50%	0.51%	0.51%	1.03%	1.04%	1.04%	1.58%	1.60%	1.60%
2032	0.94%	0.47%	0.50%	1.46%	1.00%	1.03%	2.01%	1.56%	1.58%
2033	0.04%	0.52%	0.49%	0.56%	1.05%	1.02%	1.10%	1.60%	1.57%
2034	0.48%	0.49%	0.49%	0.99%	1.01%	1.01%	1.53%	1.56%	1.55%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	157,057,829	126,308,954	283,366,783	158,100,174	127,029,632	285,129,806	159,142,520	127,750,310	286,892,829
2016	158,824,963	127,578,905	286,403,868	160,932,343	129,036,611	289,968,954	163,057,607	130,506,104	293,563,711
2017	159,116,198	127,737,109	286,853,306	162,282,685	129,929,481	292,212,166	165,502,761	132,157,211	297,659,972
2018	160,141,983	128,451,081	288,593,064	164,391,160	131,395,099	295,786,258	168,747,907	134,410,164	303,158,071
2019	161,164,171	129,163,950	290,328,121	166,508,262	132,869,040	299,377,302	172,032,229	136,693,053	308,725,282
2020	162,934,749	130,441,086	293,375,835	169,412,430	134,933,608	304,346,038	176,161,793	139,605,890	315,767,684
2021	163,192,477	130,581,925	293,774,402	170,757,360	135,832,867	306,590,227	178,701,877	141,335,305	320,037,182
2022	164,198,216	131,286,730	295,484,946	172,888,109	137,321,898	310,210,007	182,085,169	143,693,401	325,778,570
2023	165,196,154	131,987,008	297,183,162	175,018,306	138,812,053	313,830,359	185,493,418	146,070,576	331,563,995
2024	166,963,669	133,265,818	300,229,487	177,978,633	140,921,904	318,900,536	189,814,688	149,123,554	338,938,242
2025	167,173,145	133,377,326	300,550,471	179,284,105	141,801,251	321,085,356	192,394,667	150,890,231	343,284,898
2026	168,150,638	134,066,117	302,216,754	181,416,390	143,297,738	324,714,128	195,882,368	153,328,790	349,211,158
2027	169,119,794	134,749,877	303,869,671	183,545,439	144,793,418	328,338,857	199,389,814	155,783,018	355,172,831
2028	170,872,280	136,020,792	306,893,072	186,534,424	146,927,629	333,462,053	203,859,171	158,944,198	362,803,370
2029	171,031,002	136,100,530	307,131,533	187,788,905	147,778,460	335,567,365	206,455,356	160,732,099	367,187,455
2030	171,972,698	136,767,128	308,739,826	189,901,713	149,266,705	339,168,418	210,010,128	163,224,825	373,234,952
2031	172,909,431	137,431,156	310,340,586	192,016,875	150,758,427	342,775,301	213,592,543	165,739,590	379,332,133
2032	174,646,444	138,693,634	313,340,077	195,028,587	152,913,128	347,941,715	218,197,516	169,001,948	387,199,464
2033	174,759,951	138,745,257	313,505,208	196,236,772	153,739,050	349,975,822	220,811,280	170,813,854	391,625,133
2034	175,675,737	139,396,902	315,072,639	198,345,274	155,231,006	353,576,280	224,453,355	173,378,152	397,831,507

Annual Change

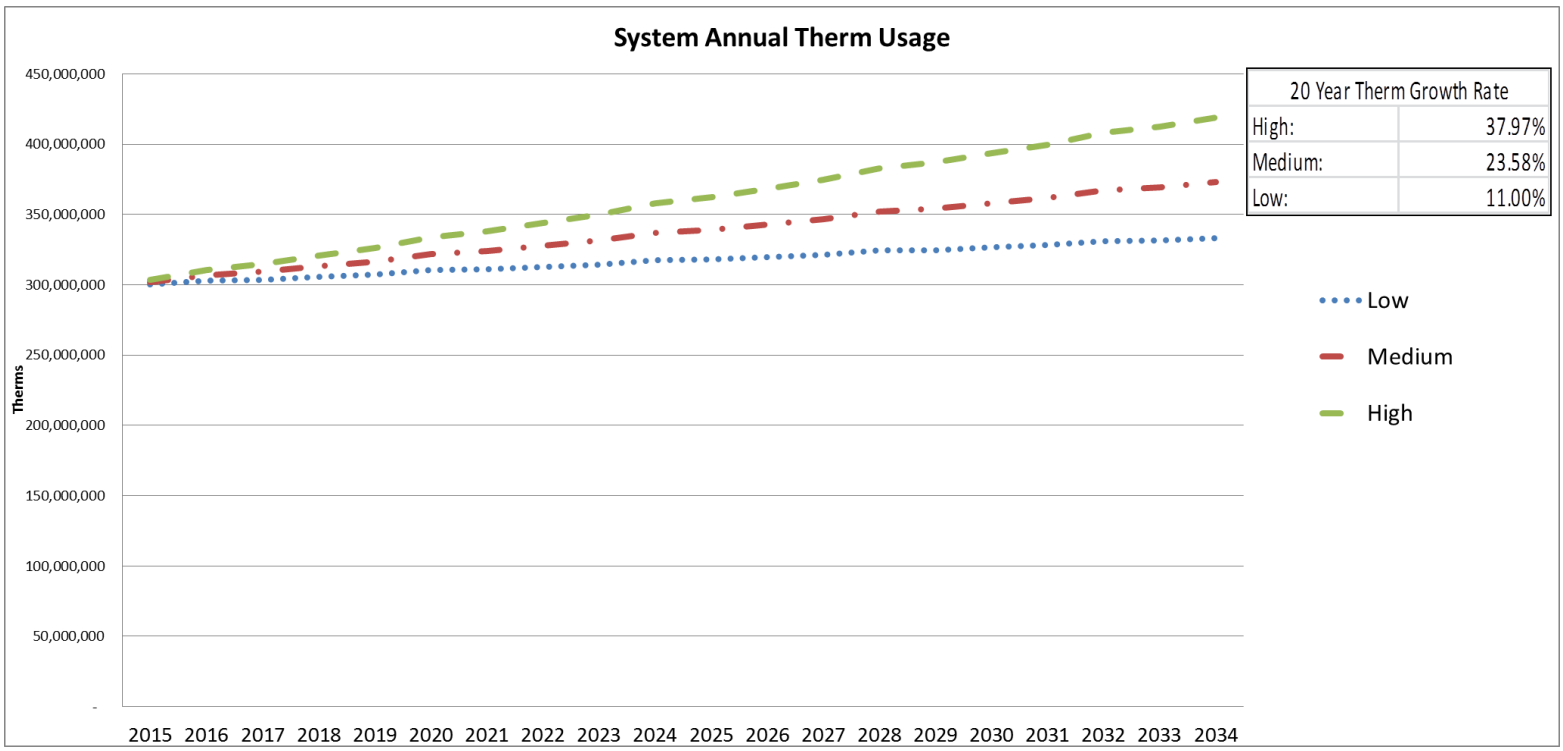
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.13%	1.01%	1.07%	1.79%	1.58%	1.70%	2.46%	2.16%	2.33%
2017	0.18%	0.12%	0.16%	0.84%	0.69%	0.77%	1.50%	1.27%	1.40%
2018	0.64%	0.56%	0.61%	1.30%	1.13%	1.22%	1.96%	1.70%	1.85%
2019	0.64%	0.55%	0.60%	1.29%	1.12%	1.21%	1.95%	1.70%	1.84%
2020	1.10%	0.99%	1.05%	1.74%	1.55%	1.66%	2.40%	2.13%	2.28%
2021	0.16%	0.11%	0.14%	0.79%	0.67%	0.74%	1.44%	1.24%	1.35%
2022	0.62%	0.54%	0.58%	1.25%	1.10%	1.18%	1.89%	1.67%	1.79%
2023	0.61%	0.53%	0.57%	1.23%	1.09%	1.17%	1.87%	1.65%	1.78%
2024	1.07%	0.97%	1.03%	1.69%	1.52%	1.62%	2.33%	2.09%	2.22%
2025	0.13%	0.08%	0.11%	0.73%	0.62%	0.69%	1.36%	1.18%	1.28%
2026	0.58%	0.52%	0.55%	1.19%	1.06%	1.13%	1.81%	1.62%	1.73%
2027	0.58%	0.51%	0.55%	1.17%	1.04%	1.12%	1.79%	1.60%	1.71%
2028	1.04%	0.94%	0.99%	1.63%	1.47%	1.56%	2.24%	2.03%	2.15%
2029	0.09%	0.06%	0.08%	0.67%	0.58%	0.63%	1.27%	1.12%	1.21%
2030	0.55%	0.49%	0.52%	1.13%	1.01%	1.07%	1.72%	1.55%	1.65%
2031	0.54%	0.49%	0.52%	1.11%	1.00%	1.06%	1.71%	1.54%	1.63%
2032	1.00%	0.92%	0.97%	1.57%	1.43%	1.51%	2.16%	1.97%	2.07%
2033	0.06%	0.04%	0.05%	0.62%	0.54%	0.58%	1.20%	1.07%	1.14%
2034	0.52%	0.47%	0.50%	1.07%	0.97%	1.03%	1.65%	1.50%	1.58%

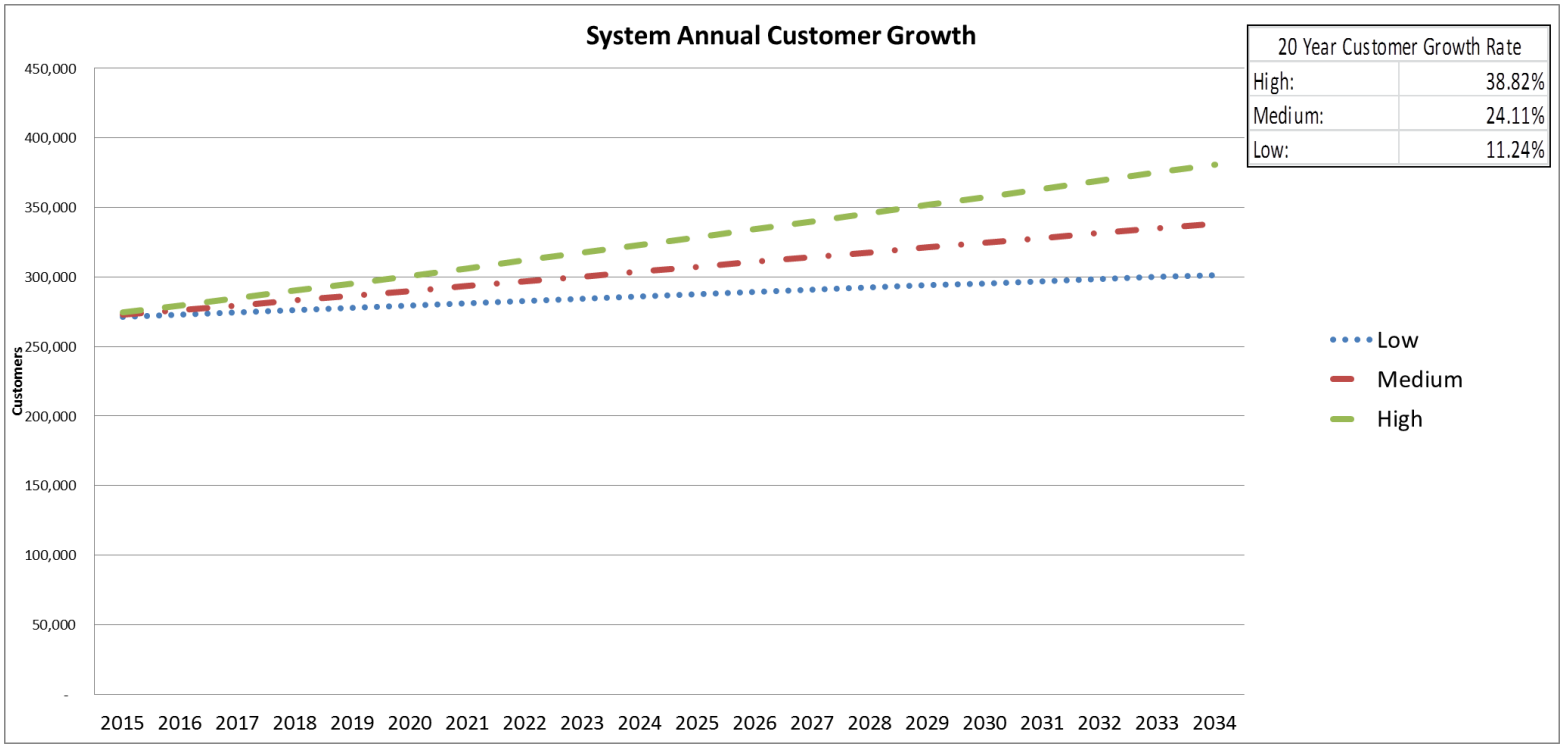
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	235,763	35,314	271,077	237,257	35,522	272,779	238,751	35,729	274,480
2016	237,239	35,520	272,759	240,246	35,938	276,183	243,277	36,360	279,636
2017	238,712	35,725	274,437	243,250	36,357	279,607	247,863	36,999	284,862
2018	240,183	35,930	276,113	246,273	36,778	283,051	252,513	37,647	290,159
2019	241,650	36,135	277,785	249,308	37,202	286,510	257,219	38,303	295,522
2020	243,107	36,338	279,445	252,347	37,626	289,973	261,967	38,965	300,932
2021	244,561	36,542	281,103	255,402	38,052	293,454	266,775	39,636	306,411
2022	246,006	36,743	282,749	258,459	38,479	296,937	271,622	40,312	311,934
2023	247,439	36,944	284,383	261,514	38,905	300,420	276,504	40,993	317,498
2024	248,867	37,143	286,010	264,579	39,333	303,913	281,437	41,682	323,118
2025	250,280	37,341	287,621	267,634	39,760	307,394	286,389	42,372	328,761
2026	251,685	37,537	289,222	270,693	40,187	310,880	291,383	43,069	334,452
2027	253,079	37,732	290,811	273,748	40,614	314,361	296,405	43,770	340,175
2028	254,460	37,925	292,385	276,797	41,040	317,837	301,454	44,474	345,928
2029	255,827	38,116	293,943	279,835	41,464	321,299	306,518	45,180	351,698
2030	257,181	38,306	295,486	282,865	41,887	324,752	311,604	45,889	357,494
2031	258,528	38,494	297,022	285,900	42,311	328,210	316,730	46,604	363,334
2032	259,863	38,681	298,544	288,926	42,733	331,659	321,876	47,322	369,198
2033	261,190	38,867	300,057	291,952	43,156	335,108	327,056	48,044	375,100
2034	262,508	39,051	301,559	294,977	43,578	338,555	332,265	48,770	381,035

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.58%	0.62%	1.26%	1.17%	1.25%	1.90%	1.76%	1.88%
2017	0.62%	0.58%	0.62%	1.25%	1.17%	1.24%	1.89%	1.76%	1.87%
2018	0.62%	0.57%	0.61%	1.24%	1.16%	1.23%	1.88%	1.75%	1.86%
2019	0.61%	0.57%	0.61%	1.23%	1.15%	1.22%	1.86%	1.74%	1.85%
2020	0.60%	0.56%	0.60%	1.22%	1.14%	1.21%	1.85%	1.73%	1.83%
2021	0.60%	0.56%	0.59%	1.21%	1.13%	1.20%	1.84%	1.72%	1.82%
2022	0.59%	0.55%	0.59%	1.20%	1.12%	1.19%	1.82%	1.71%	1.80%
2023	0.58%	0.55%	0.58%	1.18%	1.11%	1.17%	1.80%	1.69%	1.78%
2024	0.58%	0.54%	0.57%	1.17%	1.10%	1.16%	1.78%	1.68%	1.77%
2025	0.57%	0.53%	0.56%	1.15%	1.08%	1.15%	1.76%	1.66%	1.75%
2026	0.56%	0.53%	0.56%	1.14%	1.07%	1.13%	1.74%	1.64%	1.73%
2027	0.55%	0.52%	0.55%	1.13%	1.06%	1.12%	1.72%	1.63%	1.71%
2028	0.55%	0.51%	0.54%	1.11%	1.05%	1.11%	1.70%	1.61%	1.69%
2029	0.54%	0.50%	0.53%	1.10%	1.03%	1.09%	1.68%	1.59%	1.67%
2030	0.53%	0.50%	0.53%	1.08%	1.02%	1.07%	1.66%	1.57%	1.65%
2031	0.52%	0.49%	0.52%	1.07%	1.01%	1.06%	1.64%	1.56%	1.63%
2032	0.52%	0.49%	0.51%	1.06%	1.00%	1.05%	1.62%	1.54%	1.61%
2033	0.51%	0.48%	0.51%	1.05%	0.99%	1.04%	1.61%	1.53%	1.60%
2034	0.50%	0.47%	0.50%	1.04%	0.98%	1.03%	1.59%	1.51%	1.58%


System Annual Therm Usage
Therms
450,000,000
400,000,000
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Therm Growth Rate
High: 37.97%
Medium: 23.58%
Low: 11.00%


System Annual Customer Growth
Customers
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High
20 Year Customer Growth Rate
High: 38.82%
Medium: 24.11%
Low: 11.24%

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Athena

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	271,090	157,028	428,117	272,372	157,028	429,400	273,654	157,028	430,682
2016	273,282	158,298	431,580	275,401	158,774	434,175	277,528	159,250	436,778
2017	272,735	157,981	430,716	275,684	158,937	434,621	278,653	159,896	438,550
2018	273,569	158,464	432,033	277,369	159,909	437,278	281,208	161,362	442,570
2019	274,410	158,951	433,361	279,075	160,892	439,967	283,802	162,851	446,653
2020	276,640	160,243	436,883	282,200	162,694	444,893	287,852	165,174	453,026
2021	276,093	159,926	436,019	282,503	162,869	445,372	289,040	165,856	454,896
2022	276,938	160,416	437,354	284,233	163,866	448,099	291,694	167,379	459,074
2023	277,779	160,903	438,682	285,959	164,861	450,820	294,352	168,904	463,256
2024	280,031	162,207	442,238	289,150	166,701	455,850	298,534	171,304	469,838
2025	279,458	161,875	441,334	289,422	166,857	456,279	299,706	171,977	471,683
2026	280,292	162,358	442,650	291,148	167,852	459,000	302,387	173,515	475,903
2027	281,123	162,839	443,962	292,874	168,848	461,722	305,077	175,058	480,135
2028	283,373	164,143	447,516	296,083	170,697	466,780	309,319	177,493	486,811
2029	282,764	163,790	446,554	296,299	170,822	467,121	310,436	178,134	488,569
2030	283,575	164,260	447,834	297,998	171,802	469,799	313,106	179,666	492,771
2031	284,385	164,729	449,114	299,700	172,783	472,483	315,788	181,205	496,993
2032	286,632	166,031	452,663	302,922	174,641	477,563	320,083	183,669	503,753
2033	285,993	165,660	451,653	303,094	174,740	477,834	321,160	184,288	505,448
2034	286,791	166,123	452,914	304,786	175,715	480,501	323,850	185,831	509,680

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.81%	0.81%	1.11%	1.11%	1.11%	1.42%	1.42%	1.42%
2017	-0.20%	-0.20%	-0.20%	0.10%	0.10%	0.10%	0.41%	0.41%	0.41%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.81%	0.81%	1.12%	1.12%	1.12%	1.43%	1.43%	1.43%
2021	-0.20%	-0.20%	-0.20%	0.11%	0.11%	0.11%	0.41%	0.41%	0.41%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.81%	0.81%	1.12%	1.12%	1.12%	1.42%	1.42%	1.42%
2025	-0.20%	-0.20%	-0.20%	0.09%	0.09%	0.09%	0.39%	0.39%	0.39%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.39%	1.39%	1.39%
2029	-0.21%	-0.21%	-0.21%	0.07%	0.07%	0.07%	0.36%	0.36%	0.36%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.79%	0.79%	1.08%	1.08%	1.08%	1.36%	1.36%	1.36%
2033	-0.22%	-0.22%	-0.22%	0.06%	0.06%	0.06%	0.34%	0.34%	0.34%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	430	5,476	5,906	430	5,493	5,924	430	5,511	5,941
2016	434	5,490	5,924	435	5,524	5,959	436	5,559	5,995
2017	433	5,509	5,942	435	5,560	5,996	438	5,612	6,050
2018	434	5,526	5,960	438	5,594	6,032	442	5,663	6,105
2019	435	5,543	5,978	441	5,629	6,069	446	5,715	6,162
2020	439	5,557	5,996	446	5,661	6,106	453	5,765	6,218
2021	438	5,577	6,015	446	5,698	6,144	454	5,821	6,275
2022	439	5,594	6,033	449	5,733	6,181	459	5,874	6,333
2023	441	5,611	6,052	452	5,767	6,219	463	5,928	6,391
2024	444	5,626	6,070	457	5,800	6,257	469	5,979	6,449
2025	443	5,645	6,088	457	5,837	6,294	471	6,036	6,507
2026	445	5,661	6,106	460	5,872	6,332	475	6,090	6,565
2027	446	5,678	6,124	463	5,907	6,369	480	6,144	6,623
2028	450	5,693	6,142	468	5,939	6,407	486	6,195	6,682
2029	449	5,711	6,160	468	5,976	6,444	488	6,252	6,740
2030	450	5,728	6,178	471	6,010	6,481	492	6,305	6,798
2031	451	5,744	6,195	473	6,044	6,518	496	6,360	6,856
2032	455	5,758	6,213	478	6,076	6,555	503	6,411	6,914
2033	454	5,777	6,231	479	6,113	6,592	505	6,468	6,973
2034	455	5,793	6,248	481	6,147	6,628	509	6,522	7,031

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.26%	0.30%	1.11%	0.56%	0.60%	1.42%	0.87%	0.91%
2017	-0.20%	0.34%	0.30%	0.10%	0.65%	0.61%	0.41%	0.95%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.27%	0.31%	1.12%	0.57%	0.61%	1.43%	0.88%	0.92%
2021	-0.20%	0.35%	0.31%	0.11%	0.65%	0.61%	0.41%	0.96%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.26%	0.30%	1.12%	0.57%	0.61%	1.42%	0.87%	0.91%
2025	-0.20%	0.34%	0.30%	0.09%	0.64%	0.60%	0.39%	0.94%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.25%	0.29%	1.10%	0.55%	0.59%	1.39%	0.84%	0.88%
2029	-0.21%	0.33%	0.29%	0.07%	0.62%	0.58%	0.36%	0.91%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.24%	0.28%	1.08%	0.53%	0.57%	1.36%	0.81%	0.85%
2033	-0.22%	0.32%	0.28%	0.06%	0.60%	0.56%	0.34%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	289,869	138,249	428,117	290,737	138,663	429,400	291,605	139,077	430,682
2016	292,188	139,392	431,580	293,945	140,230	434,175	295,707	141,071	436,778
2017	291,628	139,088	430,716	294,272	140,349	434,621	296,932	141,618	438,550
2018	292,520	139,513	432,033	296,071	141,207	437,278	299,654	142,916	442,570
2019	293,419	139,942	433,361	297,892	142,075	439,967	302,418	144,234	446,653
2020	295,778	141,105	436,883	301,201	143,692	444,893	306,707	146,319	453,026
2021	295,219	140,800	436,019	301,551	143,821	445,372	308,000	146,896	454,896
2022	296,122	141,231	437,354	303,397	144,701	448,099	310,828	148,245	459,074
2023	297,021	141,660	438,682	305,240	145,580	450,820	313,660	149,596	463,256
2024	299,404	142,834	442,238	308,619	147,231	455,850	318,090	151,749	469,838
2025	298,817	142,517	441,334	308,936	147,343	456,279	319,366	152,317	471,683
2026	299,708	142,942	442,650	310,779	148,222	459,000	322,223	153,680	475,903
2027	300,597	143,365	443,962	312,621	149,100	461,722	325,088	155,046	480,135
2028	302,977	144,539	447,516	316,019	150,761	466,780	329,581	157,231	486,811
2029	302,352	144,203	446,554	316,277	150,844	467,121	330,799	157,770	488,569
2030	303,219	144,616	447,834	318,090	151,709	469,799	333,644	159,127	492,771
2031	304,085	145,029	449,114	319,907	152,576	472,483	336,503	160,490	496,993
2032	306,462	146,202	452,663	323,319	154,244	477,563	341,050	162,703	503,753
2033	305,804	145,849	451,653	323,530	154,303	477,834	342,227	163,221	505,448
2034	306,658	146,256	452,914	325,336	155,165	480,501	345,093	164,587	509,680

Annual Change

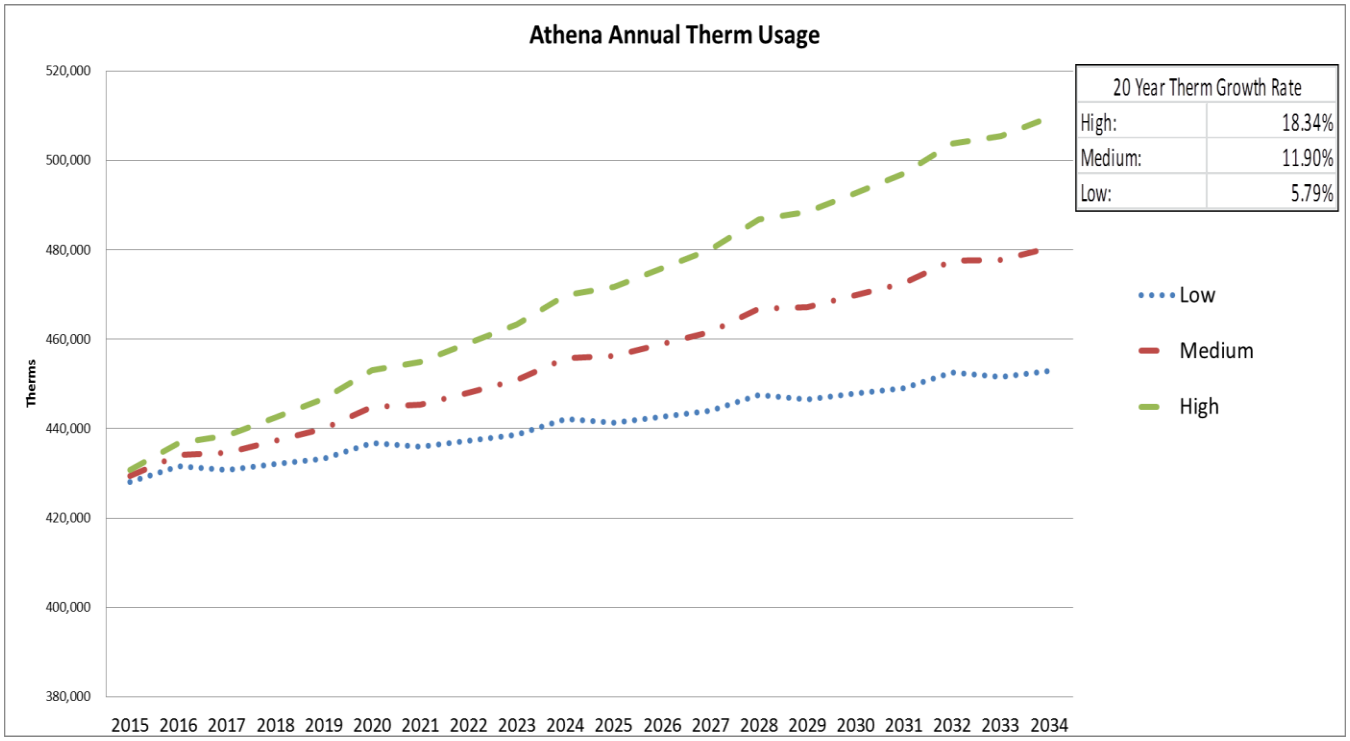
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.83%	0.81%	1.10%	1.13%	1.11%	1.41%	1.43%	1.42%
2017	-0.19%	-0.22%	-0.20%	0.11%	0.08%	0.10%	0.41%	0.39%	0.41%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.83%	0.81%	1.11%	1.14%	1.12%	1.42%	1.45%	1.43%
2021	-0.19%	-0.22%	-0.20%	0.12%	0.09%	0.11%	0.42%	0.39%	0.41%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.83%	0.81%	1.11%	1.13%	1.12%	1.41%	1.44%	1.42%
2025	-0.20%	-0.22%	-0.20%	0.10%	0.08%	0.09%	0.40%	0.37%	0.39%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.82%	0.80%	1.09%	1.11%	1.10%	1.38%	1.41%	1.39%
2029	-0.21%	-0.23%	-0.21%	0.08%	0.06%	0.07%	0.37%	0.34%	0.36%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.81%	0.79%	1.07%	1.09%	1.08%	1.35%	1.38%	1.36%
2033	-0.21%	-0.24%	-0.22%	0.07%	0.04%	0.06%	0.35%	0.32%	0.34%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

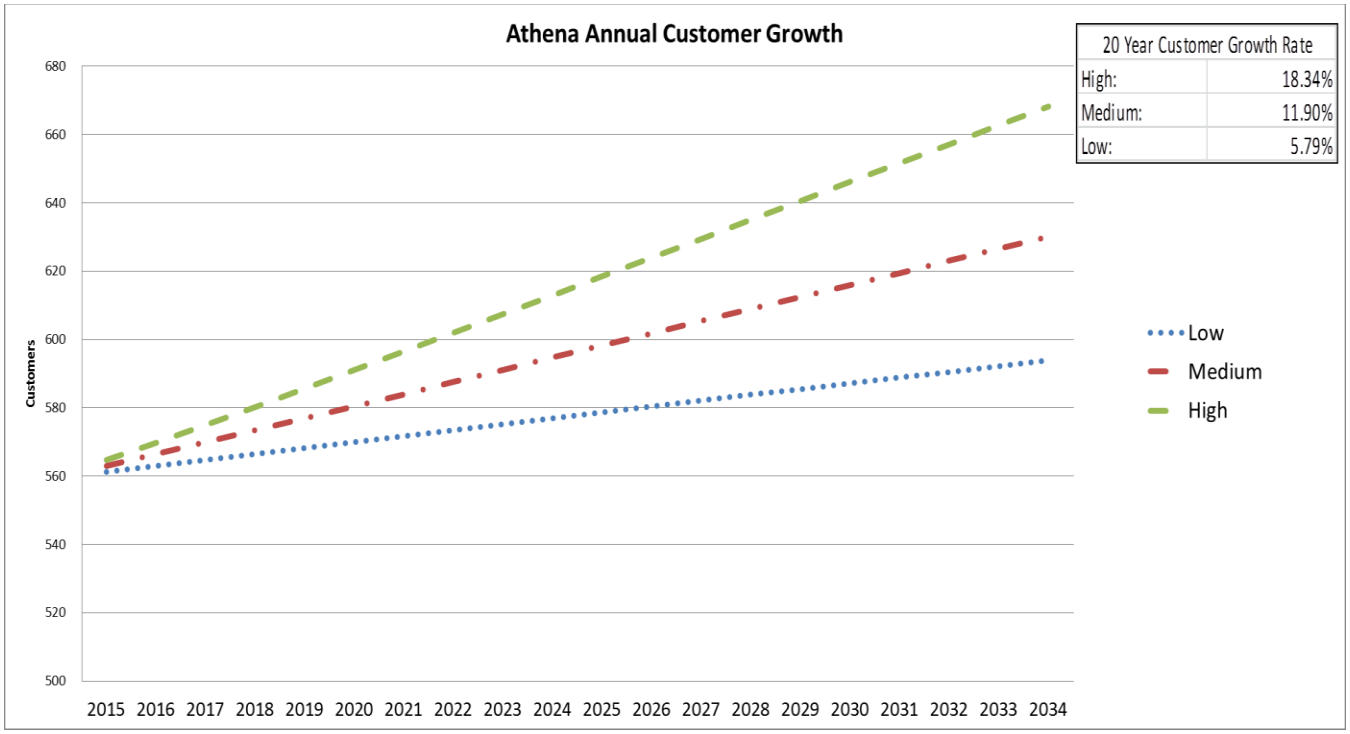
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	498	63	561	499	64	563	501	64	565
2016	499	64	563	502	64	566	505	64	570
2017	501	64	565	505	64	570	510	65	575
2018	502	64	566	509	65	573	515	66	580
2019	504	64	568	512	65	577	519	66	586
2020	506	64	570	515	66	580	524	67	591
2021	507	65	572	518	66	584	529	67	596
2022	509	65	573	521	66	588	534	68	602
2023	510	65	575	524	67	591	539	69	607
2024	512	65	577	527	67	595	544	69	613
2025	513	65	579	531	68	598	549	70	618
2026	515	66	580	534	68	602	553	71	624
2027	516	66	582	537	68	605	558	71	630
2028	518	66	584	540	69	609	563	72	635
2029	519	66	586	543	69	612	568	72	641
2030	521	66	587	546	70	616	573	73	646
2031	522	67	589	550	70	620	578	74	652
2032	524	67	591	553	70	623	583	74	657
2033	525	67	592	556	71	627	588	75	663
2034	527	67	594	559	71	630	593	76	668

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Athena Annual Therm Usage
Therms
520,000
500,000
480,000
460,000
440,000
420,000
400,000
380,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Athena Annual Customer Growth
Customers
680
660
640
620
600
580
560
540
520
500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Baker

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,991,968	547,160	3,539,128	2,994,062	547,160	3,541,222	2,996,156	547,160	3,543,316
2016	3,008,320	550,151	3,558,471	3,012,299	550,493	3,562,791	3,016,279	550,835	3,567,114
2017	2,995,691	547,841	3,543,532	3,001,516	548,522	3,550,039	3,007,349	549,204	3,556,553
2018	2,997,830	548,232	3,546,062	3,005,802	549,306	3,555,107	3,013,790	550,380	3,564,170
2019	2,999,967	548,623	3,548,590	3,010,087	550,089	3,560,176	3,020,235	551,557	3,571,792
2020	3,016,633	551,671	3,568,303	3,028,962	553,538	3,582,501	3,041,334	555,411	3,596,745
2021	3,004,329	549,421	3,553,750	3,018,844	551,689	3,570,533	3,033,420	553,965	3,587,385
2022	3,006,554	549,828	3,556,382	3,023,316	552,506	3,575,822	3,040,159	555,196	3,595,355
2023	3,008,778	550,234	3,559,012	3,027,787	553,323	3,581,111	3,046,904	556,428	3,603,332
2024	3,025,665	553,323	3,578,988	3,047,122	556,857	3,603,979	3,068,716	560,411	3,629,126
2025	3,013,312	551,063	3,564,375	3,036,916	554,992	3,591,908	3,060,689	558,945	3,619,634
2026	3,015,530	551,469	3,566,999	3,041,388	555,809	3,597,197	3,067,449	560,180	3,627,629
2027	3,017,747	551,874	3,569,621	3,045,860	556,626	3,602,486	3,074,214	561,415	3,635,629
2028	3,034,486	554,936	3,589,422	3,064,908	560,107	3,625,015	3,095,613	565,323	3,660,935
2029	3,021,991	552,651	3,574,642	3,054,431	558,192	3,612,623	3,087,194	563,786	3,650,980
2030	3,024,019	553,022	3,577,041	3,058,530	558,942	3,617,471	3,093,410	564,921	3,658,330
2031	3,026,046	553,392	3,579,438	3,062,629	559,691	3,622,320	3,099,629	566,056	3,665,685
2032	3,042,727	556,443	3,599,170	3,081,572	563,152	3,644,724	3,120,885	569,938	3,690,823
2033	3,030,095	554,133	3,584,227	3,070,828	561,189	3,632,017	3,112,080	568,330	3,680,410
2034	3,032,117	554,502	3,586,620	3,074,928	561,938	3,636,866	3,118,311	569,468	3,687,780

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.55%	0.55%	0.55%	0.61%	0.61%	0.61%	0.67%	0.67%	0.67%
2017	-0.42%	-0.42%	-0.42%	-0.36%	-0.36%	-0.36%	-0.30%	-0.30%	-0.30%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.56%	0.56%	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%
2021	-0.41%	-0.41%	-0.41%	-0.33%	-0.33%	-0.33%	-0.26%	-0.26%	-0.26%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.56%	0.56%	0.56%	0.64%	0.64%	0.64%	0.72%	0.72%	0.72%
2025	-0.41%	-0.41%	-0.41%	-0.33%	-0.33%	-0.33%	-0.26%	-0.26%	-0.26%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.55%	0.55%	0.55%	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%
2029	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%	-0.27%	-0.27%	-0.27%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.55%	0.55%	0.55%	0.62%	0.62%	0.62%	0.69%	0.69%	0.69%
2033	-0.42%	-0.42%	-0.42%	-0.35%	-0.35%	-0.35%	-0.28%	-0.28%	-0.28%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,499	40,305	41,804	1,499	40,330	41,829	1,499	40,355	41,854
2016	1,507	40,323	41,830	1,508	40,373	41,881	1,509	40,423	41,932
2017	1,501	40,355	41,856	1,503	40,430	41,933	1,505	40,505	42,010
2018	1,502	40,384	41,886	1,505	40,488	41,993	1,508	40,592	42,100
2019	1,503	40,413	41,916	1,507	40,546	42,053	1,511	40,679	42,190
2020	1,511	40,434	41,946	1,517	40,596	42,113	1,522	40,759	42,280
2021	1,505	40,472	41,977	1,511	40,664	42,175	1,518	40,857	42,374
2022	1,506	40,502	42,008	1,514	40,724	42,238	1,521	40,947	42,468
2023	1,507	40,532	42,039	1,516	40,784	42,300	1,524	41,038	42,563
2024	1,516	40,556	42,072	1,526	40,840	42,365	1,535	41,126	42,661
2025	1,510	40,593	42,103	1,521	40,907	42,428	1,531	41,224	42,755
2026	1,511	40,623	42,134	1,523	40,967	42,490	1,535	41,315	42,850
2027	1,512	40,653	42,164	1,525	41,028	42,553	1,538	41,406	42,944
2028	1,520	40,674	42,194	1,535	41,078	42,613	1,549	41,486	43,035
2029	1,514	40,710	42,224	1,529	41,143	42,672	1,545	41,581	43,126
2030	1,515	40,737	42,252	1,531	41,198	42,730	1,548	41,665	43,212
2031	1,516	40,764	42,280	1,533	41,254	42,787	1,551	41,748	43,299
2032	1,525	40,784	42,309	1,543	41,301	42,844	1,561	41,825	43,386
2033	1,518	40,819	42,337	1,538	41,364	42,902	1,557	41,916	43,473
2034	1,519	40,846	42,365	1,540	41,419	42,959	1,560	42,000	43,560

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.55%	0.04%	0.06%	0.61%	0.11%	0.12%	0.67%	0.17%	0.19%
2017	-0.42%	0.08%	0.06%	-0.36%	0.14%	0.12%	-0.30%	0.20%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.05%	0.07%	0.63%	0.12%	0.14%	0.70%	0.20%	0.21%
2021	-0.41%	0.09%	0.07%	-0.33%	0.17%	0.15%	-0.26%	0.24%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.56%	0.06%	0.08%	0.64%	0.14%	0.15%	0.72%	0.21%	0.23%
2025	-0.41%	0.09%	0.07%	-0.33%	0.17%	0.15%	-0.26%	0.24%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.55%	0.05%	0.07%	0.63%	0.12%	0.14%	0.70%	0.19%	0.21%
2029	-0.41%	0.09%	0.07%	-0.34%	0.16%	0.14%	-0.27%	0.23%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.55%	0.05%	0.07%	0.62%	0.12%	0.13%	0.69%	0.18%	0.20%
2033	-0.42%	0.08%	0.07%	-0.35%	0.15%	0.13%	-0.28%	0.22%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,013,331	1,525,797	3,539,128	2,014,522	1,526,700	3,541,222	2,015,714	1,527,602	3,543,316
2016	2,024,508	1,533,963	3,558,471	2,026,966	1,535,826	3,562,791	2,029,425	1,537,689	3,567,114
2017	2,015,837	1,527,696	3,543,532	2,019,538	1,530,501	3,550,039	2,023,244	1,533,309	3,556,553
2018	2,017,276	1,528,786	3,546,062	2,022,422	1,532,686	3,555,107	2,027,577	1,536,593	3,564,170
2019	2,018,714	1,529,876	3,548,590	2,025,305	1,534,871	3,560,176	2,031,913	1,539,879	3,571,792
2020	2,030,102	1,538,202	3,568,303	2,038,179	1,544,322	3,582,501	2,046,283	1,550,462	3,596,745
2021	2,021,649	1,532,101	3,553,750	2,031,197	1,539,336	3,570,533	2,040,783	1,546,601	3,587,385
2022	2,023,146	1,533,235	3,556,382	2,034,206	1,541,616	3,575,822	2,045,318	1,550,038	3,595,355
2023	2,024,643	1,534,369	3,559,012	2,037,214	1,543,896	3,581,111	2,049,855	1,553,476	3,603,332
2024	2,036,180	1,542,808	3,578,988	2,050,398	1,553,581	3,603,979	2,064,705	1,564,421	3,629,126
2025	2,027,694	1,536,681	3,564,375	2,043,357	1,548,551	3,591,908	2,059,129	1,560,505	3,619,634
2026	2,029,186	1,537,813	3,566,999	2,046,365	1,550,832	3,597,197	2,063,677	1,563,951	3,627,629
2027	2,030,678	1,538,943	3,569,621	2,049,374	1,553,112	3,602,486	2,068,228	1,567,400	3,635,629
2028	2,042,116	1,547,305	3,589,422	2,062,366	1,562,649	3,625,015	2,082,802	1,578,133	3,660,935
2029	2,033,534	1,541,108	3,574,642	2,055,141	1,557,482	3,612,623	2,076,961	1,574,019	3,650,980
2030	2,034,899	1,542,142	3,577,041	2,057,899	1,559,572	3,617,471	2,081,143	1,577,187	3,658,330
2031	2,036,263	1,543,175	3,579,438	2,060,657	1,561,663	3,622,320	2,085,327	1,580,358	3,665,685
2032	2,047,662	1,551,507	3,599,170	2,073,579	1,571,145	3,644,724	2,099,806	1,591,017	3,690,823
2033	2,038,987	1,545,240	3,584,227	2,066,174	1,565,843	3,632,017	2,093,703	1,586,707	3,680,410
2034	2,040,348	1,546,272	3,586,620	2,068,932	1,567,934	3,636,866	2,097,896	1,589,884	3,687,780

Annual Change

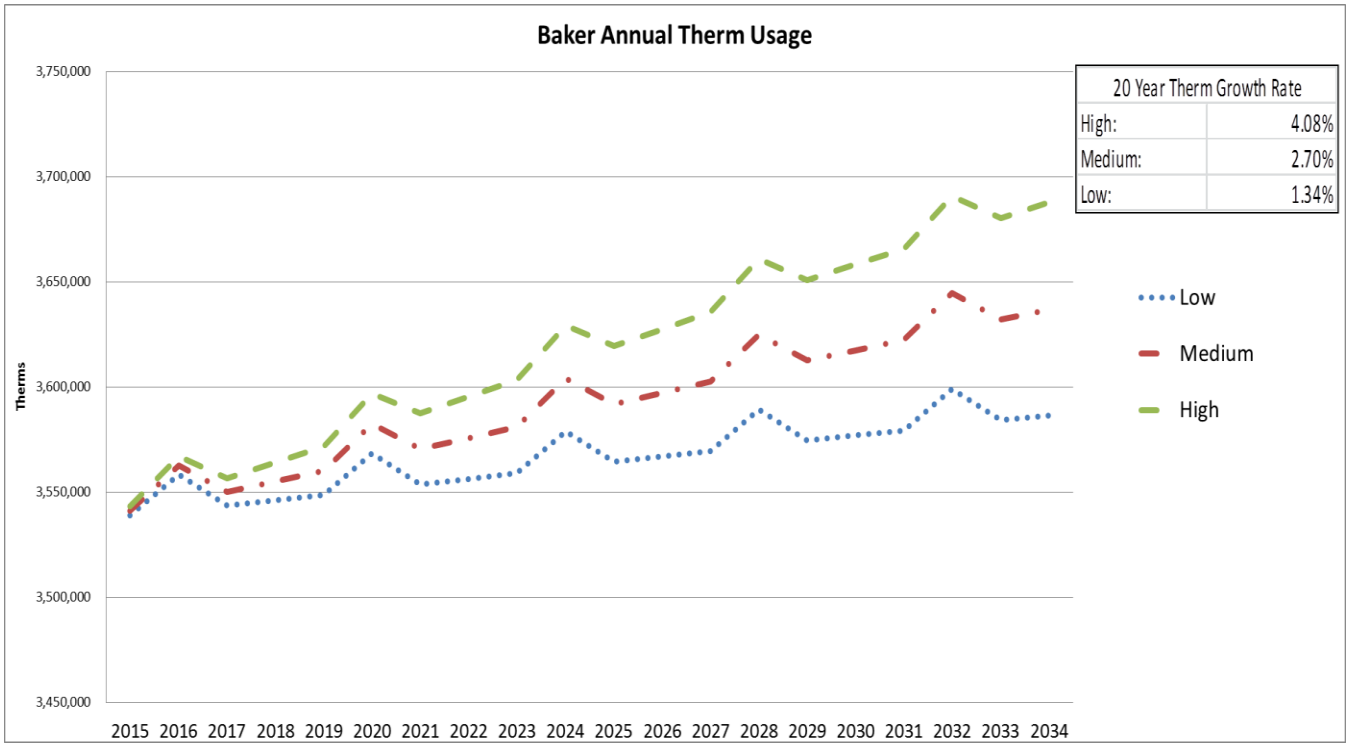
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.54%	0.55%	0.62%	0.60%	0.61%	0.68%	0.66%	0.67%
2017	-0.43%	-0.41%	-0.42%	-0.37%	-0.35%	-0.36%	-0.30%	-0.28%	-0.30%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.56%	0.54%	0.56%	0.64%	0.62%	0.63%	0.71%	0.69%	0.70%
2021	-0.42%	-0.40%	-0.41%	-0.34%	-0.32%	-0.33%	-0.27%	-0.25%	-0.26%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.57%	0.55%	0.56%	0.65%	0.63%	0.64%	0.72%	0.70%	0.72%
2025	-0.42%	-0.40%	-0.41%	-0.34%	-0.32%	-0.33%	-0.27%	-0.25%	-0.26%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.56%	0.54%	0.55%	0.63%	0.61%	0.63%	0.70%	0.68%	0.70%
2029	-0.42%	-0.40%	-0.41%	-0.35%	-0.33%	-0.34%	-0.28%	-0.26%	-0.27%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.56%	0.54%	0.55%	0.63%	0.61%	0.62%	0.69%	0.67%	0.69%
2033	-0.42%	-0.40%	-0.42%	-0.36%	-0.34%	-0.35%	-0.29%	-0.27%	-0.28%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

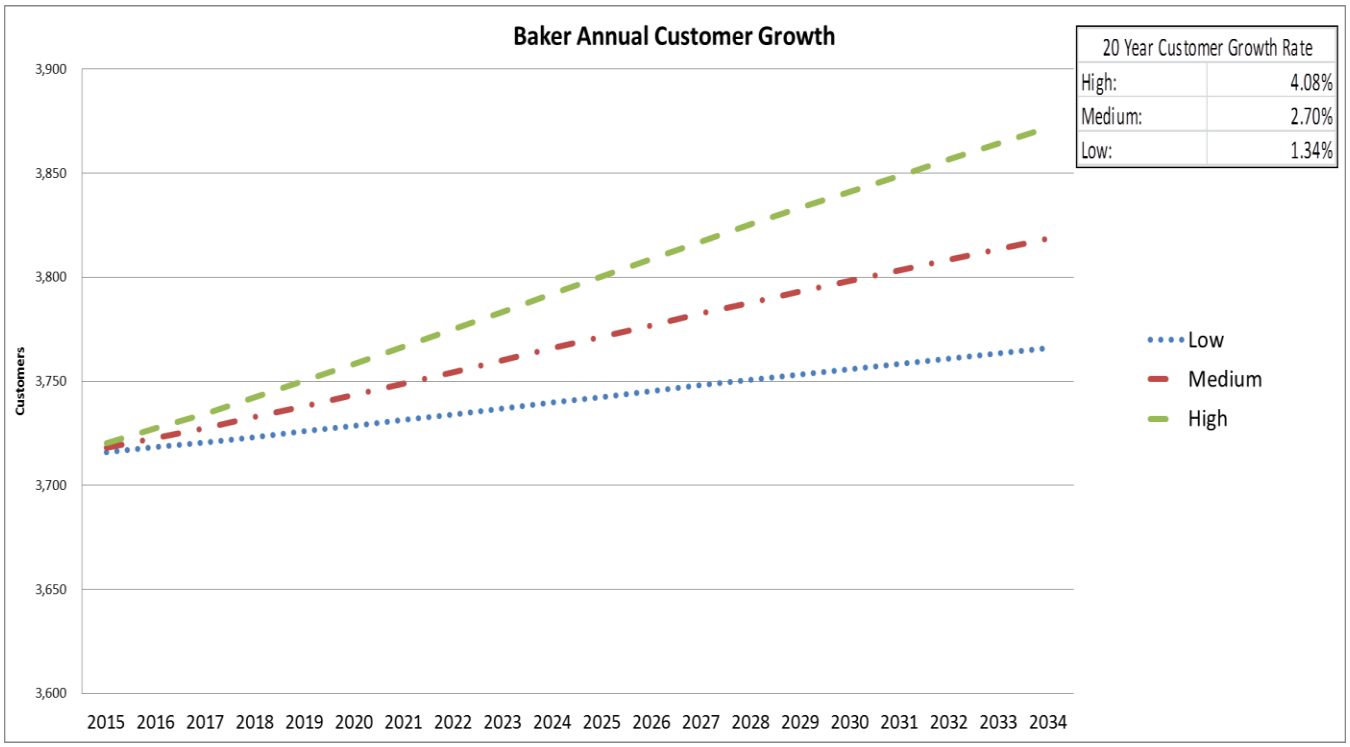
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,221	495	3,716	3,223	495	3,718	3,225	496	3,720
2016	3,223	495	3,718	3,227	496	3,723	3,231	497	3,727
2017	3,225	496	3,721	3,231	497	3,727	3,237	497	3,734
2018	3,227	496	3,723	3,236	497	3,733	3,244	499	3,742
2019	3,230	496	3,726	3,240	498	3,738	3,251	500	3,750
2020	3,232	497	3,729	3,245	499	3,743	3,258	501	3,758
2021	3,234	497	3,731	3,250	499	3,749	3,265	502	3,767
2022	3,237	497	3,734	3,254	500	3,755	3,272	503	3,775
2023	3,239	498	3,737	3,259	501	3,760	3,279	504	3,783
2024	3,242	498	3,740	3,264	502	3,766	3,287	505	3,792
2025	3,244	499	3,743	3,269	502	3,771	3,294	506	3,801
2026	3,246	499	3,745	3,274	503	3,777	3,302	507	3,809
2027	3,249	499	3,748	3,279	504	3,783	3,309	509	3,817
2028	3,251	500	3,751	3,283	505	3,788	3,316	510	3,825
2029	3,253	500	3,753	3,288	505	3,793	3,323	511	3,833
2030	3,255	500	3,756	3,292	506	3,798	3,329	512	3,841
2031	3,258	501	3,758	3,297	507	3,803	3,336	513	3,849
2032	3,260	501	3,761	3,301	507	3,808	3,343	514	3,857
2033	3,262	501	3,763	3,306	508	3,814	3,350	515	3,864
2034	3,264	502	3,766	3,310	509	3,819	3,356	516	3,872

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2017	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2021	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.08%	0.08%	0.08%	0.15%	0.15%	0.15%	0.23%	0.23%	0.23%
2025	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2029	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2033	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%


Baker Annual Therm Usage
Therms
3,750,000
3,700,000
3,650,000
3,600,000
3,550,000
3,500,000
3,450,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High


Baker Annual Customer Growth
Customers
3,900
3,850
3,800
3,750
3,700
3,650
3,600
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Umatilla

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,476,208	457,790	1,933,998	1,481,931	457,790	1,939,721	1,487,654	457,790	1,945,444
2016	1,487,082	461,163	1,948,245	1,497,288	462,534	1,959,822	1,507,528	463,906	1,971,434
2017	1,485,068	460,538	1,945,606	1,499,746	463,294	1,963,040	1,514,520	466,058	1,980,578
2018	1,489,559	461,930	1,951,489	1,508,816	466,096	1,974,912	1,528,260	470,286	1,998,545
2019	1,494,084	463,334	1,957,418	1,517,984	468,928	1,986,912	1,542,189	474,572	2,016,761
2020	1,505,153	466,766	1,971,919	1,533,842	473,826	2,007,669	1,562,985	480,972	2,043,957
2021	1,503,150	466,145	1,969,295	1,536,434	474,627	2,011,061	1,570,347	483,237	2,053,584
2022	1,507,706	467,558	1,975,265	1,545,749	477,504	2,023,253	1,584,627	487,631	2,072,259
2023	1,512,233	468,962	1,981,195	1,555,030	480,372	2,035,402	1,598,900	492,024	2,090,924
2024	1,523,406	472,427	1,995,833	1,571,214	485,371	2,056,585	1,620,366	498,629	2,118,996
2025	1,521,278	471,767	1,993,044	1,573,659	486,126	2,059,786	1,627,674	500,878	2,128,553
2026	1,525,772	473,161	1,998,933	1,582,957	488,999	2,071,956	1,642,100	505,317	2,147,418
2027	1,530,245	474,548	2,004,793	1,592,239	491,866	2,084,105	1,656,543	509,762	2,166,305
2028	1,541,396	478,006	2,019,402	1,608,487	496,885	2,105,372	1,678,280	516,451	2,194,731
2029	1,539,090	477,291	2,016,381	1,610,673	497,560	2,108,233	1,685,352	518,627	2,203,979
2030	1,543,455	478,644	2,022,099	1,619,808	500,382	2,120,191	1,699,690	523,039	2,222,729
2031	1,547,815	479,996	2,027,812	1,628,960	503,210	2,132,169	1,714,094	527,472	2,241,566
2032	1,558,938	483,446	2,042,384	1,645,254	508,243	2,153,497	1,736,067	534,233	2,270,301
2033	1,556,476	482,682	2,039,158	1,647,214	508,849	2,156,063	1,742,947	536,351	2,279,298
2034	1,560,776	484,016	2,044,792	1,656,317	511,661	2,167,978	1,757,395	540,797	2,298,192

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2017	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.46%	0.46%	0.46%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.35%	1.35%	1.35%
2021	-0.13%	-0.13%	-0.13%	0.17%	0.17%	0.17%	0.47%	0.47%	0.47%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.74%	0.74%	0.74%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2025	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.45%	0.45%	0.45%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.73%	0.73%	0.73%	1.02%	1.02%	1.02%	1.31%	1.31%	1.31%
2029	-0.15%	-0.15%	-0.15%	0.14%	0.14%	0.14%	0.42%	0.42%	0.42%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.72%	0.72%	0.72%	1.00%	1.00%	1.00%	1.28%	1.28%	1.28%
2033	-0.16%	-0.16%	-0.16%	0.12%	0.12%	0.12%	0.40%	0.40%	0.40%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,254	16,253	17,508	1,254	16,305	17,559	1,254	16,357	17,611
2016	1,263	16,296	17,560	1,267	16,397	17,664	1,271	16,498	17,769
2017	1,262	16,351	17,613	1,269	16,501	17,771	1,277	16,652	17,929
2018	1,266	16,400	17,666	1,277	16,601	17,878	1,288	16,803	18,092
2019	1,269	16,450	17,720	1,285	16,702	17,987	1,300	16,957	18,257
2020	1,279	16,494	17,773	1,298	16,797	18,095	1,318	17,105	18,423
2021	1,277	16,550	17,827	1,300	16,905	18,205	1,324	17,266	18,590
2022	1,281	16,600	17,881	1,308	17,007	18,316	1,336	17,423	18,759
2023	1,285	16,650	17,935	1,316	17,110	18,426	1,348	17,580	18,928
2024	1,294	16,694	17,989	1,330	17,207	18,536	1,366	17,733	19,099
2025	1,293	16,750	18,042	1,332	17,314	18,646	1,372	17,897	19,269
2026	1,296	16,799	18,095	1,340	17,417	18,756	1,384	18,055	19,440
2027	1,300	16,848	18,148	1,348	17,519	18,866	1,397	18,214	19,611
2028	1,310	16,892	18,201	1,361	17,615	18,976	1,415	18,367	19,781
2029	1,308	16,946	18,253	1,363	17,722	19,085	1,421	18,531	19,952
2030	1,311	16,994	18,305	1,371	17,822	19,193	1,433	18,688	20,121
2031	1,315	17,042	18,357	1,379	17,923	19,302	1,445	18,847	20,292
2032	1,325	17,084	18,408	1,392	18,017	19,410	1,464	18,999	20,463
2033	1,322	17,137	18,460	1,394	18,124	19,518	1,469	19,164	20,633
2034	1,326	17,185	18,511	1,402	18,224	19,626	1,482	19,323	20,805

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.26%	0.30%	1.04%	0.56%	0.60%	1.34%	0.86%	0.90%
2017	-0.14%	0.33%	0.30%	0.16%	0.64%	0.60%	0.46%	0.94%	0.90%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.74%	0.27%	0.30%	1.04%	0.57%	0.61%	1.35%	0.87%	0.91%
2021	-0.13%	0.34%	0.30%	0.17%	0.64%	0.61%	0.47%	0.94%	0.91%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.74%	0.27%	0.30%	1.04%	0.57%	0.60%	1.34%	0.87%	0.90%
2025	-0.14%	0.33%	0.30%	0.16%	0.63%	0.59%	0.45%	0.92%	0.89%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.73%	0.26%	0.29%	1.02%	0.55%	0.58%	1.31%	0.84%	0.87%
2029	-0.15%	0.32%	0.29%	0.14%	0.61%	0.57%	0.42%	0.89%	0.86%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.72%	0.25%	0.28%	1.00%	0.53%	0.56%	1.28%	0.81%	0.84%
2033	-0.16%	0.31%	0.28%	0.12%	0.59%	0.56%	0.40%	0.87%	0.84%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	428,445	1,505,553	1,933,998	429,713	1,510,008	1,939,721	430,981	1,514,464	1,945,444
2016	431,952	1,516,293	1,948,245	434,519	1,525,304	1,959,822	437,093	1,534,341	1,971,434
2017	431,016	1,514,589	1,945,606	434,879	1,528,161	1,963,040	438,764	1,541,814	1,980,578
2018	432,320	1,519,169	1,951,489	437,509	1,537,403	1,974,912	442,744	1,555,801	1,998,545
2019	433,633	1,523,785	1,957,418	440,167	1,546,745	1,986,912	446,779	1,569,981	2,016,761
2020	437,201	1,534,719	1,971,919	445,127	1,562,542	2,007,669	453,172	1,590,784	2,043,957
2021	436,264	1,533,031	1,969,295	445,517	1,565,544	2,011,061	454,937	1,598,647	2,053,584
2022	437,587	1,537,678	1,975,265	448,218	1,575,035	2,023,253	459,074	1,613,184	2,072,259
2023	438,901	1,542,295	1,981,195	450,909	1,584,493	2,035,402	463,209	1,627,715	2,090,924
2024	442,503	1,553,330	1,995,833	455,972	1,600,613	2,056,585	469,809	1,649,186	2,118,996
2025	441,526	1,551,519	1,993,044	456,311	1,603,475	2,059,786	471,545	1,657,007	2,128,553
2026	442,830	1,556,103	1,998,933	459,007	1,612,949	2,071,956	475,724	1,671,693	2,147,418
2027	444,128	1,560,665	2,004,793	461,699	1,622,407	2,084,105	479,909	1,686,397	2,166,305
2028	447,728	1,571,674	2,019,402	466,789	1,638,583	2,105,372	486,601	1,708,130	2,194,731
2029	446,695	1,569,686	2,016,381	467,044	1,641,189	2,108,233	488,254	1,715,724	2,203,979
2030	447,962	1,574,137	2,022,099	469,693	1,650,498	2,120,191	492,408	1,730,321	2,222,729
2031	449,228	1,578,584	2,027,812	472,346	1,659,823	2,132,169	496,581	1,744,985	2,241,566
2032	452,824	1,589,560	2,042,384	477,459	1,676,038	2,153,497	503,356	1,766,945	2,270,301
2033	451,741	1,587,417	2,039,158	477,640	1,678,423	2,156,063	504,940	1,774,358	2,279,298
2034	452,989	1,591,803	2,044,792	480,279	1,687,699	2,167,978	509,126	1,789,066	2,298,192

Annual Change

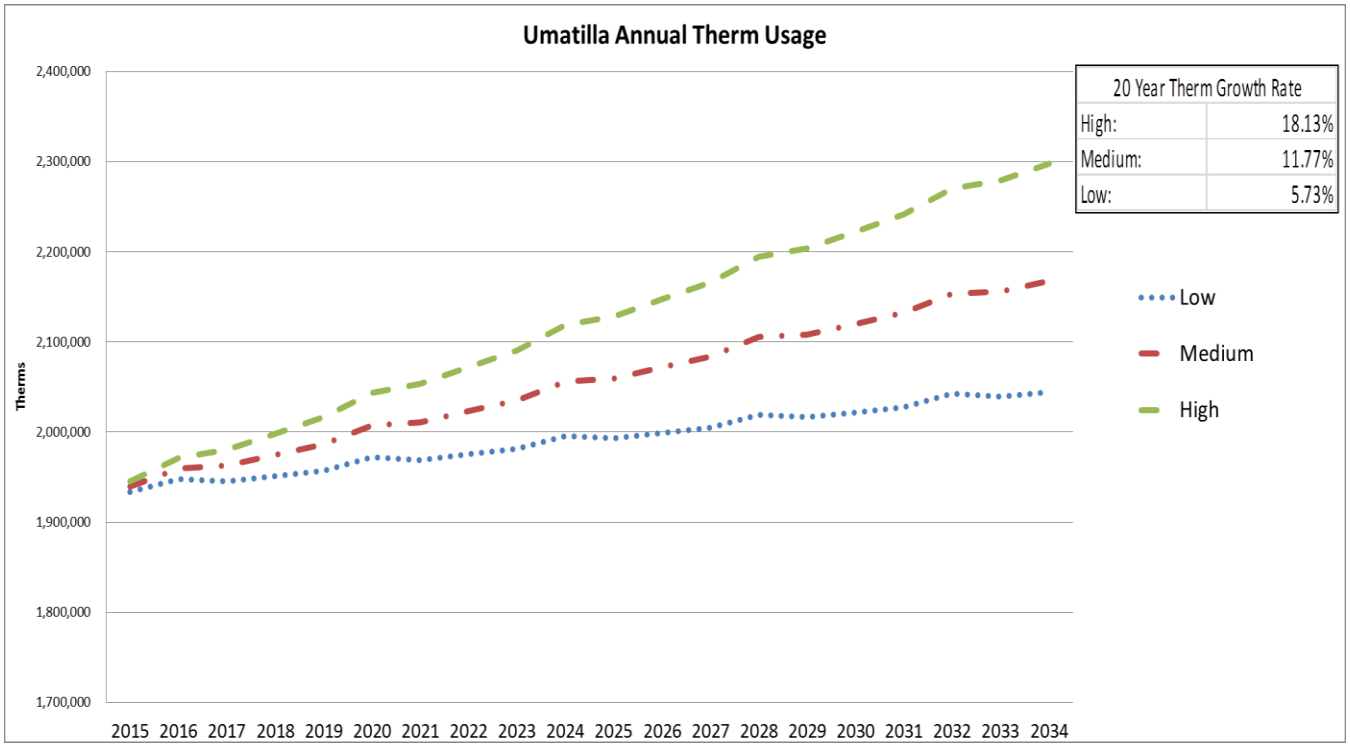
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.71%	0.74%	1.12%	1.01%	1.04%	1.42%	1.31%	1.34%
2017	-0.22%	-0.11%	-0.14%	0.08%	0.19%	0.16%	0.38%	0.49%	0.46%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.82%	0.72%	0.74%	1.13%	1.02%	1.04%	1.43%	1.33%	1.35%
2021	-0.21%	-0.11%	-0.13%	0.09%	0.19%	0.17%	0.39%	0.49%	0.47%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.82%	0.72%	0.74%	1.12%	1.02%	1.04%	1.42%	1.32%	1.34%
2025	-0.22%	-0.12%	-0.14%	0.07%	0.18%	0.16%	0.37%	0.47%	0.45%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.81%	0.71%	0.73%	1.10%	1.00%	1.02%	1.39%	1.29%	1.31%
2029	-0.23%	-0.13%	-0.15%	0.05%	0.16%	0.14%	0.34%	0.44%	0.42%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.80%	0.70%	0.72%	1.08%	0.98%	1.00%	1.36%	1.26%	1.28%
2033	-0.24%	-0.13%	-0.16%	0.04%	0.14%	0.12%	0.31%	0.42%	0.40%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%

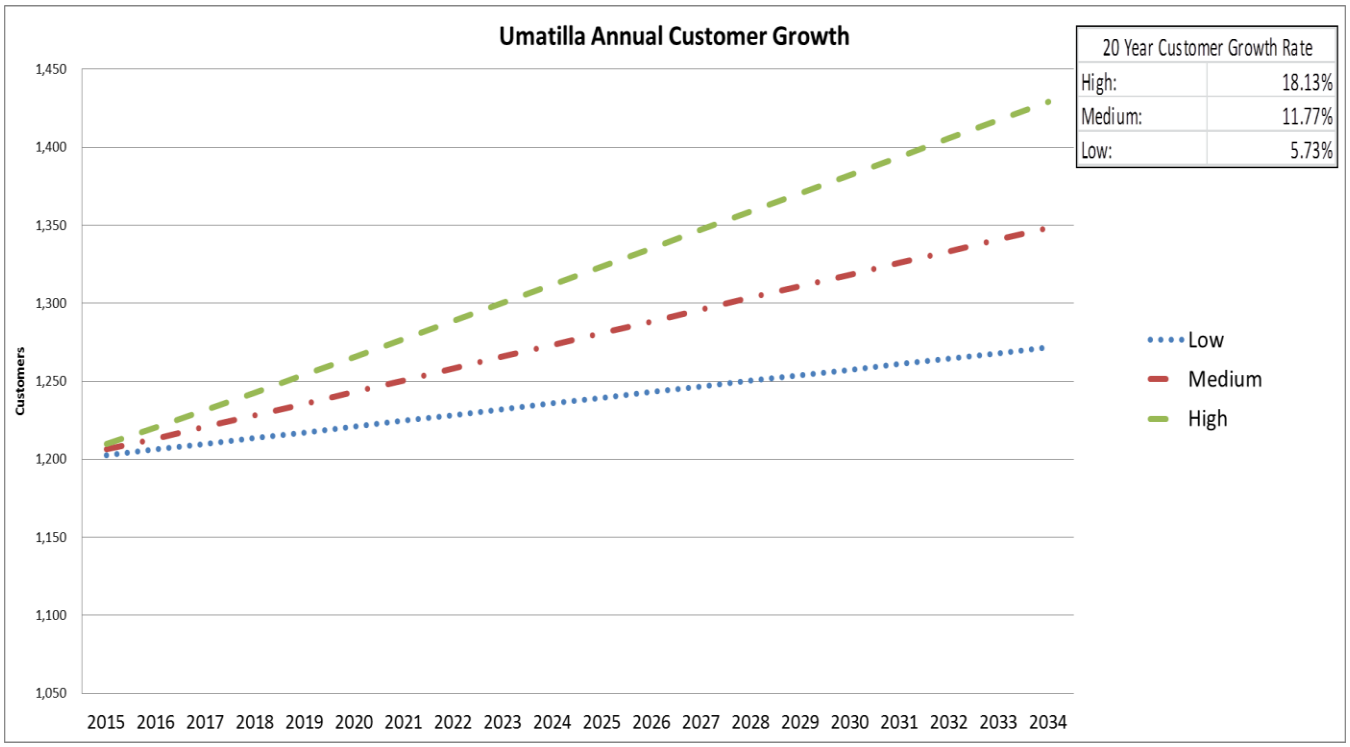
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,032	171	1,203	1,035	171	1,206	1,038	172	1,210
2016	1,035	171	1,206	1,041	172	1,213	1,047	173	1,221
2017	1,038	172	1,210	1,047	173	1,221	1,057	175	1,232
2018	1,041	172	1,214	1,054	174	1,228	1,066	176	1,243
2019	1,044	173	1,217	1,060	175	1,236	1,076	178	1,254
2020	1,048	173	1,221	1,067	176	1,243	1,086	180	1,266
2021	1,051	174	1,225	1,073	178	1,251	1,096	181	1,277
2022	1,054	174	1,228	1,080	179	1,258	1,106	183	1,289
2023	1,057	175	1,232	1,086	180	1,266	1,116	185	1,300
2024	1,060	175	1,236	1,093	181	1,273	1,126	186	1,312
2025	1,063	176	1,239	1,099	182	1,281	1,136	188	1,324
2026	1,067	176	1,243	1,106	183	1,289	1,146	190	1,335
2027	1,070	177	1,247	1,112	184	1,296	1,156	191	1,347
2028	1,073	178	1,250	1,119	185	1,304	1,166	193	1,359
2029	1,076	178	1,254	1,125	186	1,311	1,176	195	1,371
2030	1,079	179	1,258	1,131	187	1,319	1,186	196	1,382
2031	1,082	179	1,261	1,138	188	1,326	1,196	198	1,394
2032	1,085	180	1,265	1,144	189	1,333	1,206	200	1,406
2033	1,088	180	1,268	1,150	190	1,341	1,216	201	1,417
2034	1,091	181	1,272	1,157	191	1,348	1,226	203	1,429

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2017	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2018	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2024	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2025	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2026	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2027	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2028	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2029	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2030	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2031	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2032	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%


Umatilla Annual Therm Usage
20 Year Therm Growth Rate
High: 18.13%
Medium: 11.77%
Low: 5.73%
Therms
2,400,000
2,300,000
2,200,000
2,100,000
2,000,000
1,900,000
1,800,000
1,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Umatilla Annual Customer Growth
20 Year Customer Growth Rate
High: 18.13%
Medium: 11.77%
Low: 5.73%
Customers
1,450
1,400
1,350
1,300
1,250
1,200
1,150
1,100
1,050
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Chemult

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	29,496	20,165	49,661	29,646	20,165	49,811	29,796	20,165	49,961
2016	29,585	20,226	49,812	29,826	20,287	50,113	30,067	20,349	50,416
2017	29,675	20,288	49,963	30,007	20,411	50,417	30,341	20,534	50,875
2018	29,765	20,349	50,115	30,189	20,535	50,724	30,618	20,721	51,339
2019	29,856	20,411	50,267	30,373	20,660	51,033	30,897	20,910	51,808
2020	29,946	20,473	50,419	30,557	20,785	51,341	31,178	21,100	52,277
2021	30,037	20,535	50,571	30,741	20,910	51,651	31,460	21,291	52,751
2022	30,127	20,596	50,723	30,926	21,035	51,961	31,743	21,483	53,225
2023	30,216	20,658	50,874	31,109	21,161	52,270	32,026	21,674	53,700
2024	30,306	20,719	51,024	31,294	21,286	52,579	32,310	21,867	54,177
2025	30,394	20,779	51,173	31,476	21,410	52,886	32,593	22,058	54,651
2026	30,482	20,839	51,322	31,659	21,534	53,193	32,877	22,250	55,127
2027	30,570	20,899	51,469	31,841	21,658	53,499	33,160	22,442	55,602
2028	30,656	20,959	51,615	32,021	21,781	53,802	33,442	22,633	56,075
2029	30,742	21,017	51,759	32,200	21,902	54,103	33,722	22,822	56,545
2030	30,827	21,075	51,902	32,378	22,024	54,402	34,002	23,012	57,014
2031	30,911	21,133	52,044	32,556	22,144	54,700	34,282	23,201	57,482
2032	30,995	21,190	52,186	32,732	22,264	54,997	34,561	23,389	57,950
2033	31,079	21,247	52,326	32,908	22,384	55,292	34,839	23,578	58,417
2034	31,161	21,304	52,465	33,083	22,503	55,586	35,117	23,766	58,883

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	55	576	631	55	578	633	55	579	635
2016	55	577	633	56	581	637	56	585	640
2017	56	579	635	56	585	641	56	590	646
2018	56	581	637	56	588	644	57	595	652
2019	56	583	639	57	592	648	57	601	658
2020	56	584	641	57	595	652	58	606	664
2021	56	586	642	57	599	656	58	612	670
2022	56	588	644	58	602	660	59	617	676
2023	57	590	646	58	606	664	59	623	682
2024	57	591	648	58	610	668	60	628	688
2025	57	593	650	59	613	672	60	634	694
2026	57	595	652	59	617	676	61	639	700
2027	57	597	654	59	620	680	61	645	706
2028	57	598	656	60	624	684	62	650	712
2029	58	600	658	60	627	687	63	656	718
2030	58	602	659	60	631	691	63	661	724
2031	58	603	661	61	634	695	64	667	730
2032	58	605	663	61	638	699	64	672	736
2033	58	607	665	61	641	702	65	678	742
2034	58	608	667	62	645	706	65	683	748

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,386	39,275	49,661	10,417	39,394	49,811	10,448	39,513	49,961
2016	10,417	39,394	49,812	10,480	39,633	50,113	10,543	39,873	50,416
2017	10,449	39,514	49,963	10,544	39,874	50,417	10,639	40,235	50,875
2018	10,480	39,634	50,115	10,608	40,116	50,724	10,737	40,603	51,339
2019	10,512	39,755	50,267	10,672	40,360	51,033	10,834	40,973	51,808
2020	10,544	39,875	50,419	10,737	40,604	51,341	10,933	41,345	52,277
2021	10,576	39,995	50,571	10,802	40,850	51,651	11,032	41,719	52,751
2022	10,608	40,115	50,723	10,867	41,094	51,961	11,131	42,094	53,225
2023	10,639	40,235	50,874	10,931	41,339	52,270	11,230	42,470	53,700
2024	10,671	40,354	51,024	10,996	41,584	52,579	11,330	42,847	54,177
2025	10,702	40,471	51,173	11,060	41,826	52,886	11,429	43,222	54,651
2026	10,733	40,589	51,322	11,124	42,069	53,193	11,529	43,598	55,127
2027	10,764	40,705	51,469	11,188	42,310	53,499	11,628	43,974	55,602
2028	10,794	40,821	51,615	11,252	42,550	53,802	11,727	44,348	56,075
2029	10,824	40,935	51,759	11,314	42,788	54,103	11,825	44,720	56,545
2030	10,854	41,048	51,902	11,377	43,025	54,402	11,923	45,091	57,014
2031	10,884	41,160	52,044	11,439	43,261	54,700	12,021	45,461	57,482
2032	10,914	41,272	52,186	11,501	43,495	54,997	12,119	45,831	57,950
2033	10,943	41,383	52,326	11,563	43,729	55,292	12,217	46,200	58,417
2034	10,972	41,493	52,465	11,625	43,961	55,586	12,314	46,569	58,883

Annual Change

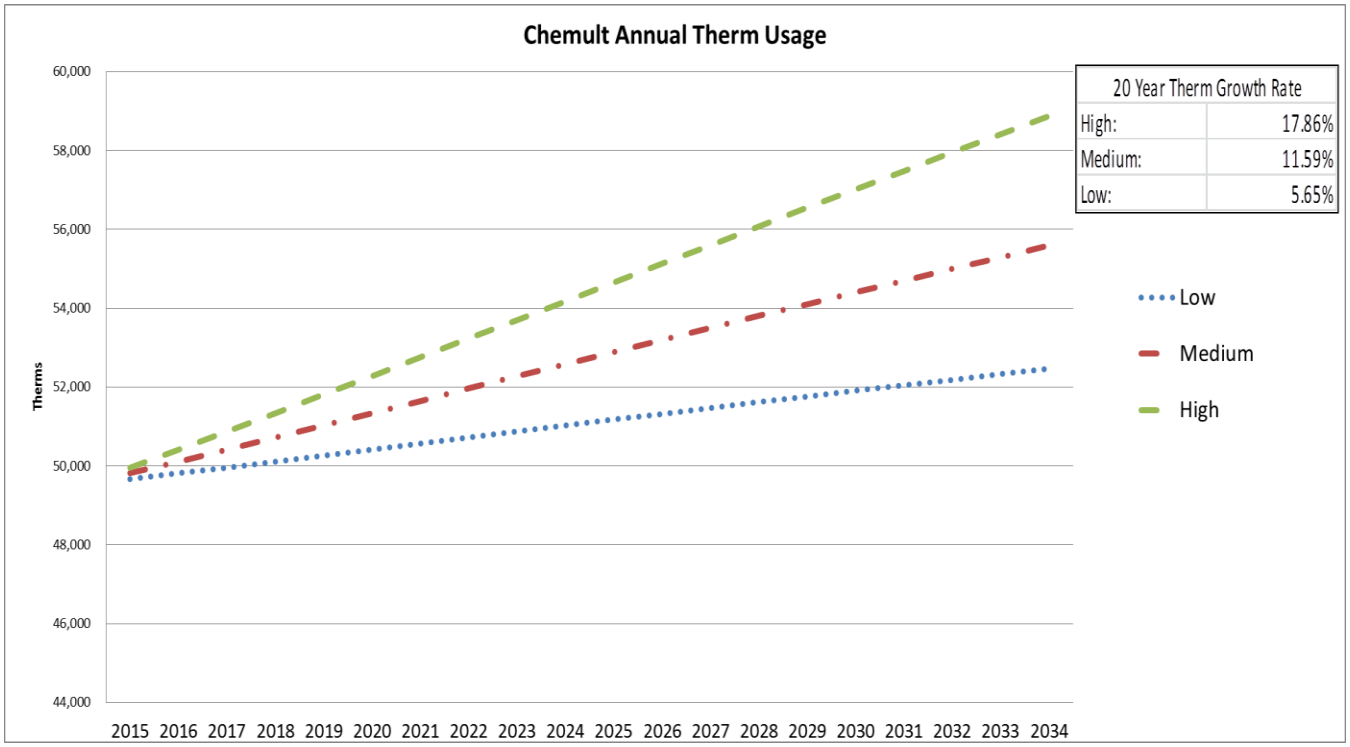
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%

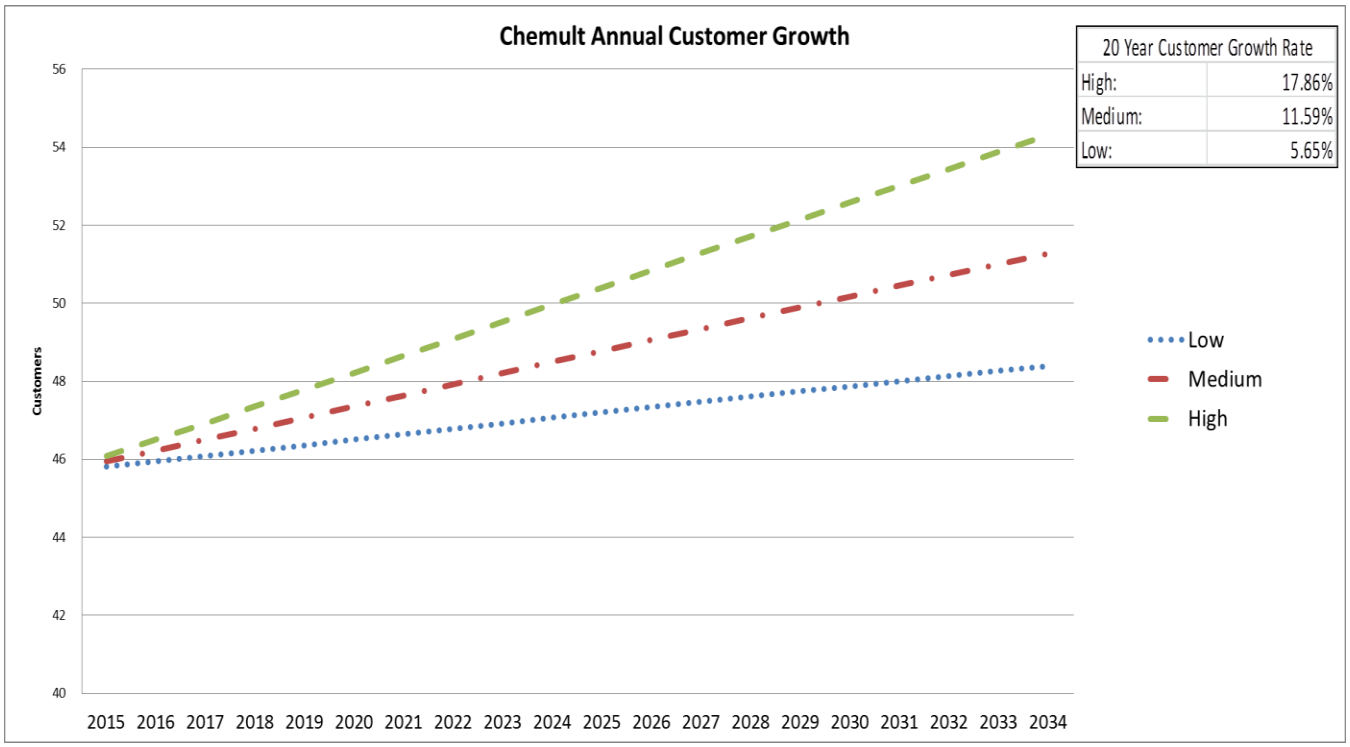
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25	21	46	25	21	46	25	21	46
2016	25	21	46	25	21	46	25	21	47
2017	25	21	46	25	21	47	26	21	47
2018	25	21	46	26	21	47	26	22	47
2019	25	21	46	26	21	47	26	22	48
2020	25	21	47	26	22	47	26	22	48
2021	25	21	47	26	22	48	27	22	49
2022	26	21	47	26	22	48	27	22	49
2023	26	21	47	26	22	48	27	23	50
2024	26	21	47	26	22	48	27	23	50
2025	26	21	47	27	22	49	28	23	50
2026	26	22	47	27	22	49	28	23	51
2027	26	22	47	27	22	49	28	23	51
2028	26	22	48	27	23	50	28	24	52
2029	26	22	48	27	23	50	28	24	52
2030	26	22	48	27	23	50	29	24	53
2031	26	22	48	28	23	50	29	24	53
2032	26	22	48	28	23	51	29	24	53
2033	26	22	48	28	23	51	29	24	54
2034	26	22	48	28	23	51	30	25	54

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2021	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2022	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2023	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2024	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2025	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2026	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2027	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2028	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2029	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2030	0.28%	0.28%	0.28%	0.55%	0.55%	0.55%	0.83%	0.83%	0.83%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%


Chemult Annual Therm Usage
Therms
60,000
58,000
56,000
54,000
52,000
50,000
48,000
46,000
44,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 17.86%
Medium: 11.59%
Low: 5.65%
Low
Medium
High


Chemult Annual Customer Growth
Customers
56
54
52
50
48
46
44
42
40
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 17.86%
Medium: 11.59%
Low: 5.65%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Gilchrist

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	178,766	35,699	214,465	179,404	35,699	215,103	180,042	35,699	215,741
2016	180,133	35,972	216,105	181,316	36,080	217,395	182,502	36,187	218,689
2017	179,842	35,914	215,756	181,566	36,130	217,696	183,302	36,346	219,648
2018	180,388	36,023	216,411	182,670	36,349	219,019	184,973	36,677	221,650
2019	180,938	36,133	217,071	183,784	36,571	220,355	186,665	37,013	223,678
2020	182,331	36,411	218,742	185,761	36,964	222,725	189,244	37,524	226,768
2021	182,043	36,354	218,397	186,033	37,018	223,051	190,097	37,693	227,790
2022	182,596	36,464	219,060	187,162	37,243	224,405	191,828	38,036	229,864
2023	183,148	36,575	219,723	188,295	37,468	225,763	193,569	38,381	231,950
2024	184,554	36,855	221,409	190,311	37,870	228,180	196,229	38,909	235,137
2025	184,249	36,794	221,044	190,562	37,920	228,481	197,070	39,076	236,145
2026	184,798	36,904	221,702	191,696	38,145	229,842	198,830	39,425	238,255
2027	185,344	37,013	222,357	192,829	38,371	231,199	200,592	39,774	240,366
2028	186,747	37,293	224,041	194,855	38,774	233,629	203,289	40,309	243,598
2029	186,422	37,228	223,650	195,075	38,818	233,893	204,102	40,470	244,572
2030	186,955	37,335	224,290	196,191	39,040	235,231	205,854	40,817	246,672
2031	187,487	37,441	224,928	197,308	39,262	236,570	207,611	41,166	248,777
2032	188,888	37,721	226,609	199,342	39,667	239,009	210,341	41,707	252,048
2033	188,544	37,652	226,196	199,536	39,705	239,241	211,133	41,864	252,997
2034	189,069	37,757	226,826	200,647	39,927	240,574	212,897	42,214	255,110

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.76%	0.76%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2017	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2021	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.45%	0.45%	0.45%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.77%	0.77%	0.77%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2025	-0.16%	-0.16%	-0.16%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.76%	0.76%	1.05%	1.05%	1.05%	1.34%	1.34%	1.34%
2029	-0.17%	-0.17%	-0.17%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.75%	0.75%	0.75%	1.03%	1.03%	1.03%	1.31%	1.31%	1.31%
2033	-0.18%	-0.18%	-0.18%	0.10%	0.10%	0.10%	0.38%	0.38%	0.38%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	98	2,631	2,729	98	2,639	2,737	98	2,647	2,745
2016	99	2,638	2,737	99	2,654	2,753	99	2,670	2,769
2017	98	2,647	2,745	99	2,671	2,770	100	2,695	2,795
2018	99	2,655	2,753	100	2,687	2,787	100	2,720	2,820
2019	99	2,663	2,762	100	2,703	2,804	101	2,744	2,846
2020	100	2,670	2,770	101	2,719	2,821	103	2,769	2,872
2021	100	2,679	2,779	101	2,736	2,838	103	2,795	2,898
2022	100	2,687	2,787	102	2,753	2,855	104	2,820	2,924
2023	100	2,695	2,795	103	2,770	2,872	105	2,846	2,951
2024	101	2,703	2,804	104	2,786	2,890	107	2,871	2,978
2025	101	2,711	2,812	104	2,803	2,907	107	2,897	3,004
2026	101	2,720	2,821	105	2,820	2,924	108	2,923	3,031
2027	101	2,728	2,829	105	2,836	2,941	109	2,949	3,058
2028	102	2,735	2,837	106	2,852	2,959	110	2,974	3,085
2029	102	2,743	2,845	106	2,869	2,976	111	3,001	3,112
2030	102	2,751	2,854	107	2,886	2,993	112	3,026	3,138
2031	103	2,759	2,862	108	2,902	3,010	113	3,052	3,165
2032	103	2,766	2,870	109	2,918	3,027	114	3,078	3,192
2033	103	2,775	2,878	109	2,935	3,044	115	3,104	3,219
2034	103	2,782	2,886	109	2,951	3,061	116	3,130	3,246

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.28%	0.30%	1.07%	0.58%	0.60%	1.37%	0.88%	0.90%
2017	-0.16%	0.32%	0.30%	0.14%	0.62%	0.60%	0.44%	0.92%	0.90%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.77%	0.29%	0.30%	1.08%	0.59%	0.61%	1.38%	0.90%	0.91%
2021	-0.16%	0.32%	0.31%	0.15%	0.63%	0.61%	0.45%	0.93%	0.92%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.77%	0.28%	0.30%	1.07%	0.59%	0.60%	1.37%	0.89%	0.91%
2025	-0.16%	0.32%	0.30%	0.13%	0.61%	0.60%	0.43%	0.91%	0.89%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.27%	0.29%	1.05%	0.57%	0.58%	1.34%	0.86%	0.88%
2029	-0.17%	0.31%	0.29%	0.11%	0.59%	0.58%	0.40%	0.88%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.75%	0.26%	0.28%	1.03%	0.55%	0.56%	1.31%	0.83%	0.85%
2033	-0.18%	0.30%	0.28%	0.10%	0.58%	0.56%	0.38%	0.86%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	87,457	127,008	214,465	87,717	127,386	215,103	87,977	127,764	215,741
2016	88,118	127,987	216,105	88,644	128,752	217,395	89,172	129,518	218,689
2017	87,983	127,772	215,756	88,775	128,921	217,696	89,571	130,077	219,648
2018	88,251	128,161	216,411	89,314	129,705	219,019	90,387	131,263	221,650
2019	88,520	128,551	217,071	89,859	130,496	220,355	91,214	132,464	223,678
2020	89,193	129,549	218,742	90,817	131,908	222,725	92,466	134,302	226,768
2021	89,061	129,337	218,397	90,958	132,093	223,051	92,891	134,899	227,790
2022	89,331	129,729	219,060	91,511	132,895	224,405	93,737	136,128	229,864
2023	89,601	130,122	219,723	92,064	133,699	225,763	94,587	137,363	231,950
2024	90,280	131,128	221,409	93,041	135,139	228,180	95,878	139,259	235,137
2025	90,140	130,904	221,044	93,173	135,308	228,481	96,298	139,847	236,145
2026	90,408	131,294	221,702	93,728	136,114	229,842	97,158	141,097	238,255
2027	90,675	131,681	222,357	94,281	136,918	231,199	98,019	142,347	240,366
2028	91,354	132,687	224,041	95,263	138,366	233,629	99,328	144,270	243,598
2029	91,203	132,447	223,650	95,379	138,513	233,893	99,734	144,837	244,572
2030	91,464	132,826	224,290	95,925	139,306	235,231	100,591	146,081	246,672
2031	91,724	133,204	224,928	96,471	140,099	236,570	101,449	147,328	248,777
2032	92,401	134,208	226,609	97,457	141,552	239,009	102,773	149,274	252,048
2033	92,241	133,955	226,196	97,561	141,681	239,241	103,170	149,827	252,997
2034	92,498	134,328	226,826	98,104	142,470	240,574	104,032	151,078	255,110

Annual Change

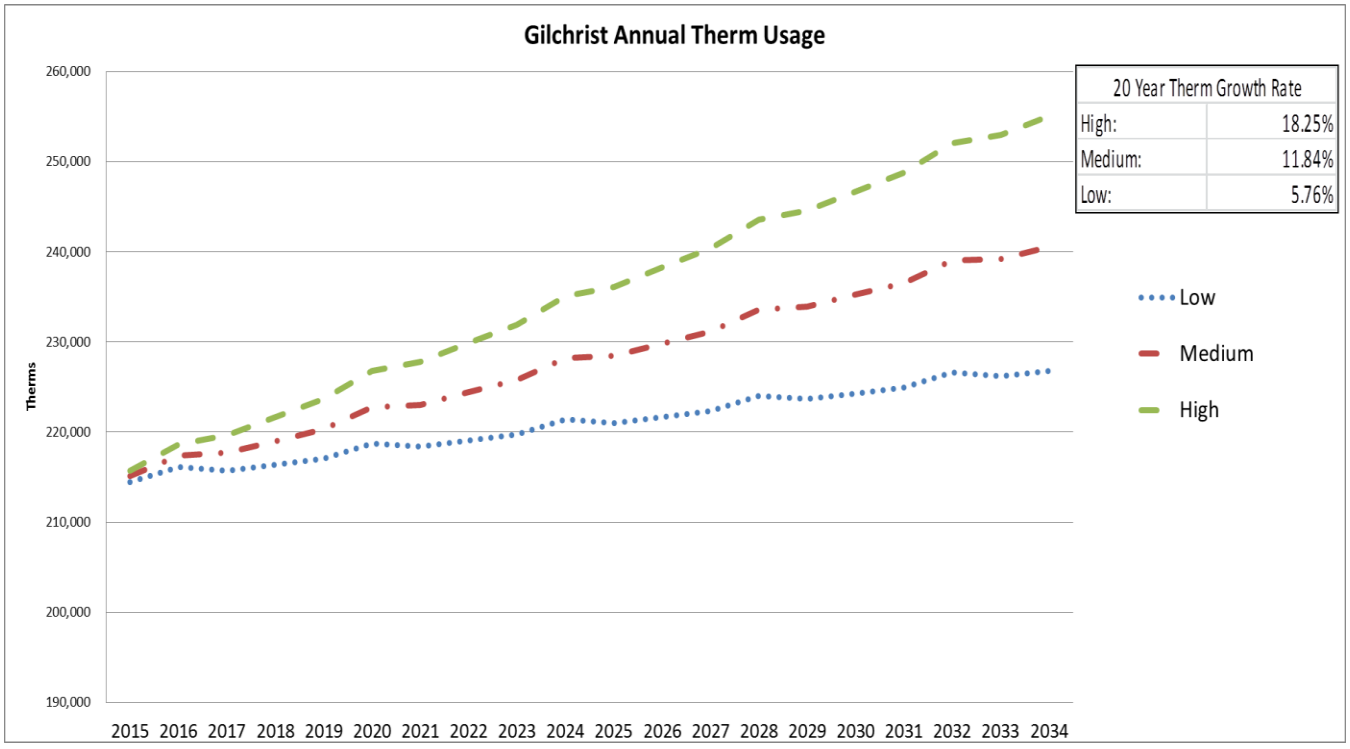
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.76%	0.77%	0.76%	1.06%	1.07%	1.07%	1.36%	1.37%	1.37%
2017	-0.15%	-0.17%	-0.16%	0.15%	0.13%	0.14%	0.45%	0.43%	0.44%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.76%	0.78%	0.77%	1.07%	1.08%	1.08%	1.37%	1.39%	1.38%
2021	-0.15%	-0.16%	-0.16%	0.16%	0.14%	0.15%	0.46%	0.44%	0.45%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.76%	0.77%	0.77%	1.06%	1.08%	1.07%	1.36%	1.38%	1.37%
2025	-0.16%	-0.17%	-0.16%	0.14%	0.13%	0.13%	0.44%	0.42%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.76%	0.76%	1.04%	1.06%	1.05%	1.34%	1.35%	1.34%
2029	-0.17%	-0.18%	-0.17%	0.12%	0.11%	0.11%	0.41%	0.39%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.74%	0.75%	0.75%	1.02%	1.04%	1.03%	1.31%	1.32%	1.31%
2033	-0.17%	-0.19%	-0.18%	0.11%	0.09%	0.10%	0.39%	0.37%	0.38%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

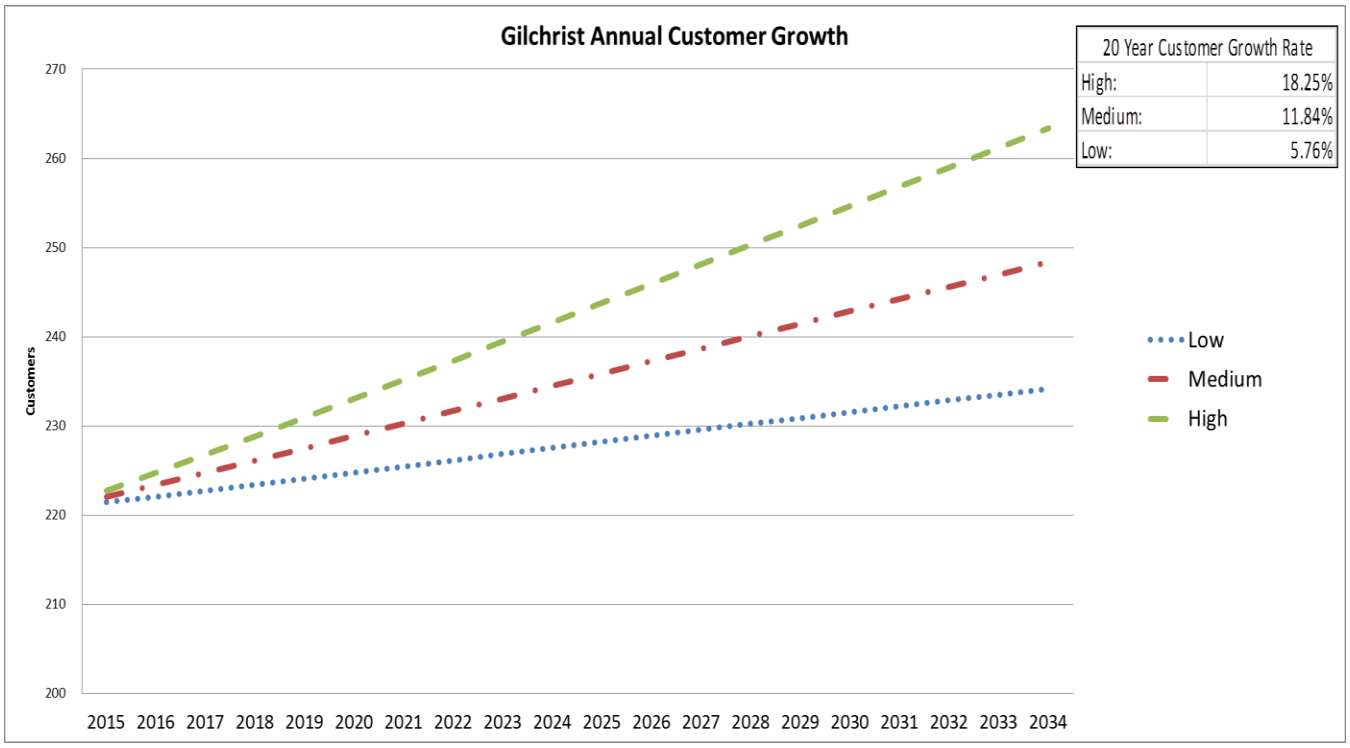
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	181	40	221	182	40	222	182	40	223
2016	182	40	222	183	41	223	184	41	225
2017	182	40	223	184	41	225	186	41	227
2018	183	41	223	185	41	226	187	42	229
2019	183	41	224	186	41	227	189	42	231
2020	184	41	225	187	42	229	191	42	233
2021	185	41	225	188	42	230	192	43	235
2022	185	41	226	190	42	232	194	43	237
2023	186	41	227	191	42	233	196	43	239
2024	186	41	228	192	43	234	198	44	242
2025	187	41	228	193	43	236	200	44	244
2026	187	42	229	194	43	237	201	45	246
2027	188	42	230	195	43	239	203	45	248
2028	188	42	230	196	44	240	205	45	250
2029	189	42	231	198	44	241	207	46	252
2030	190	42	232	199	44	243	208	46	255
2031	190	42	232	200	44	244	210	47	257
2032	191	42	233	201	45	246	212	47	259
2033	191	42	234	202	45	247	214	47	261
2034	192	43	234	203	45	248	216	48	263

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2017	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2018	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2019	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2020	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2023	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2032	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Gilchrist Annual Therm Usage
Therms
260,000
250,000
240,000
230,000
220,000
210,000
200,000
190,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.25%
Medium: 11.84%
Low: 5.76%
Low
Medium
High


Gilchrist Annual Customer Growth
Customers
270
260
250
240
230
220
210
200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.25%
Medium: 11.84%
Low: 5.76%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Hermiston

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,840,201	1,395,623	5,235,824	3,855,885	1,395,623	5,251,507	3,871,568	1,395,623	5,267,191
2016	3,869,892	1,406,413	5,276,305	3,897,388	1,410,645	5,308,033	3,924,980	1,414,876	5,339,856
2017	3,863,514	1,404,095	5,267,609	3,902,771	1,412,593	5,315,364	3,942,291	1,421,117	5,363,407
2018	3,875,322	1,408,386	5,283,708	3,926,627	1,421,227	5,347,854	3,978,436	1,434,146	5,412,582
2019	3,887,237	1,412,717	5,299,954	3,950,773	1,429,967	5,380,740	4,015,133	1,447,375	5,462,508
2020	3,917,440	1,423,693	5,341,133	3,993,599	1,445,468	5,439,067	4,070,985	1,467,508	5,538,493
2021	3,911,078	1,421,381	5,332,459	3,999,308	1,447,534	5,446,842	4,089,235	1,474,087	5,563,322
2022	3,923,050	1,425,732	5,348,783	4,023,794	1,456,397	5,480,190	4,126,789	1,487,625	5,614,414
2023	3,934,963	1,430,061	5,365,025	4,048,231	1,465,241	5,513,472	4,164,383	1,501,177	5,665,560
2024	3,965,459	1,441,144	5,406,604	4,091,954	1,481,067	5,573,020	4,222,064	1,521,969	5,744,033
2025	3,958,751	1,438,707	5,397,458	4,097,250	1,482,984	5,580,234	4,240,136	1,528,484	5,768,620
2026	3,970,557	1,442,997	5,413,554	4,121,688	1,491,829	5,613,517	4,278,070	1,542,159	5,820,229
2027	3,982,328	1,447,275	5,429,602	4,146,125	1,500,674	5,646,799	4,316,117	1,555,874	5,871,991
2028	4,012,787	1,458,344	5,471,131	4,190,064	1,516,578	5,706,642	4,374,586	1,576,951	5,951,537
2029	4,005,579	1,455,725	5,461,304	4,194,611	1,518,223	5,712,835	4,391,939	1,583,206	5,975,144
2030	4,017,062	1,459,898	5,476,960	4,218,660	1,526,928	5,745,588	4,429,709	1,596,821	6,026,531
2031	4,028,535	1,464,068	5,492,603	4,242,758	1,535,650	5,778,408	4,467,664	1,610,503	6,078,168
2032	4,058,938	1,475,117	5,534,055	4,286,859	1,551,612	5,838,471	4,526,825	1,631,829	6,158,654
2033	4,051,315	1,472,346	5,523,661	4,290,808	1,553,041	5,843,849	4,543,667	1,637,901	6,181,567
2034	4,062,622	1,476,456	5,539,078	4,314,760	1,561,711	5,876,471	4,581,712	1,651,615	6,233,327

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2017	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2021	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.45%	0.45%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.35%	1.35%	1.35%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.75%	0.75%	0.75%	1.04%	1.04%	1.04%	1.32%	1.32%	1.32%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	3,824	67,459	71,282	3,824	67,672	71,496	3,824	67,886	71,709
2016	3,853	67,644	71,497	3,865	68,063	71,927	3,876	68,482	72,359
2017	3,847	67,868	71,715	3,870	68,495	72,365	3,893	69,126	73,019
2018	3,859	68,076	71,934	3,894	68,914	72,808	3,929	69,760	73,689
2019	3,870	68,285	72,155	3,918	69,338	73,255	3,965	70,403	74,369
2020	3,901	68,475	72,376	3,960	69,743	73,703	4,021	71,030	75,050
2021	3,894	68,704	72,598	3,966	70,189	74,155	4,039	71,702	75,741
2022	3,906	68,914	72,820	3,990	70,619	74,609	4,076	72,361	76,437
2023	3,918	69,123	73,041	4,014	71,048	75,062	4,113	73,020	77,133
2024	3,948	69,315	73,263	4,058	71,460	75,518	4,170	73,666	77,836
2025	3,942	69,541	73,483	4,063	71,908	75,971	4,188	74,348	78,536
2026	3,953	69,749	73,702	4,087	72,337	76,424	4,225	75,014	79,239
2027	3,965	69,955	73,921	4,111	72,766	76,878	4,263	75,681	79,943
2028	3,995	70,142	74,138	4,155	73,174	77,329	4,320	76,327	80,647
2029	3,988	70,364	74,352	4,160	73,617	77,777	4,338	77,010	81,348
2030	4,000	70,566	74,565	4,183	74,039	78,222	4,375	77,672	82,047
2031	4,011	70,767	74,778	4,207	74,462	78,669	4,412	78,338	82,750
2032	4,041	70,949	74,990	4,251	74,864	79,115	4,471	78,983	83,454
2033	4,034	71,167	75,201	4,255	75,305	79,560	4,487	79,671	84,158
2034	4,045	71,366	75,411	4,279	75,726	80,004	4,525	80,338	84,863

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.28%	0.30%	1.08%	0.58%	0.60%	1.38%	0.88%	0.91%
2017	-0.16%	0.33%	0.30%	0.14%	0.64%	0.61%	0.44%	0.94%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.28%	0.31%	1.08%	0.58%	0.61%	1.39%	0.89%	0.92%
2021	-0.16%	0.33%	0.31%	0.14%	0.64%	0.61%	0.45%	0.95%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.28%	0.30%	1.08%	0.58%	0.61%	1.39%	0.88%	0.91%
2025	-0.17%	0.33%	0.30%	0.13%	0.63%	0.60%	0.43%	0.93%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.76%	0.27%	0.29%	1.06%	0.56%	0.59%	1.35%	0.85%	0.88%
2029	-0.18%	0.32%	0.29%	0.11%	0.61%	0.58%	0.40%	0.90%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.75%	0.26%	0.28%	1.04%	0.54%	0.57%	1.32%	0.82%	0.85%
2033	-0.19%	0.31%	0.28%	0.09%	0.59%	0.56%	0.37%	0.87%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,241,963	2,993,861	5,235,824	2,248,679	3,002,829	5,251,507	2,255,394	3,011,796	5,267,191
2016	2,259,963	3,016,342	5,276,305	2,273,553	3,034,480	5,308,033	2,287,184	3,052,672	5,339,856
2017	2,255,573	3,012,035	5,267,609	2,276,022	3,039,342	5,315,364	2,296,594	3,066,813	5,363,407
2018	2,262,467	3,021,241	5,283,708	2,289,934	3,057,920	5,347,854	2,317,651	3,094,932	5,412,582
2019	2,269,423	3,030,530	5,299,954	2,304,016	3,076,724	5,380,740	2,339,029	3,123,480	5,462,508
2020	2,287,731	3,053,402	5,341,133	2,329,678	3,109,389	5,439,067	2,372,265	3,166,229	5,538,493
2021	2,283,342	3,049,117	5,332,459	2,332,320	3,114,522	5,446,842	2,382,197	3,181,125	5,563,322
2022	2,290,332	3,058,451	5,348,783	2,346,600	3,133,590	5,480,190	2,404,074	3,210,340	5,614,414
2023	2,297,286	3,067,738	5,365,025	2,360,851	3,152,621	5,513,472	2,425,975	3,239,585	5,665,560
2024	2,315,773	3,090,830	5,406,604	2,387,053	3,185,967	5,573,020	2,460,302	3,283,731	5,744,033
2025	2,311,174	3,086,284	5,397,458	2,389,439	3,190,796	5,580,234	2,470,105	3,298,515	5,768,620
2026	2,318,067	3,095,487	5,413,554	2,403,690	3,209,827	5,613,517	2,492,204	3,328,025	5,820,229
2027	2,324,938	3,104,664	5,429,602	2,417,941	3,228,857	5,646,799	2,514,368	3,357,623	5,871,991
2028	2,343,412	3,127,719	5,471,131	2,444,286	3,262,355	5,706,642	2,549,181	3,402,356	5,951,537
2029	2,338,513	3,122,791	5,461,304	2,446,218	3,266,617	5,712,835	2,558,538	3,416,606	5,975,144
2030	2,345,217	3,131,743	5,476,960	2,460,243	3,285,346	5,745,588	2,580,541	3,445,989	6,026,531
2031	2,351,915	3,140,688	5,492,603	2,474,296	3,304,112	5,778,408	2,602,652	3,475,516	6,078,168
2032	2,370,364	3,163,692	5,534,055	2,500,752	3,337,719	5,838,471	2,637,894	3,520,760	6,158,654
2033	2,365,214	3,158,447	5,523,661	2,502,318	3,341,532	5,843,849	2,646,927	3,534,640	6,181,567
2034	2,371,816	3,167,263	5,539,078	2,516,286	3,360,185	5,876,471	2,669,091	3,564,236	6,233,327

Annual Change

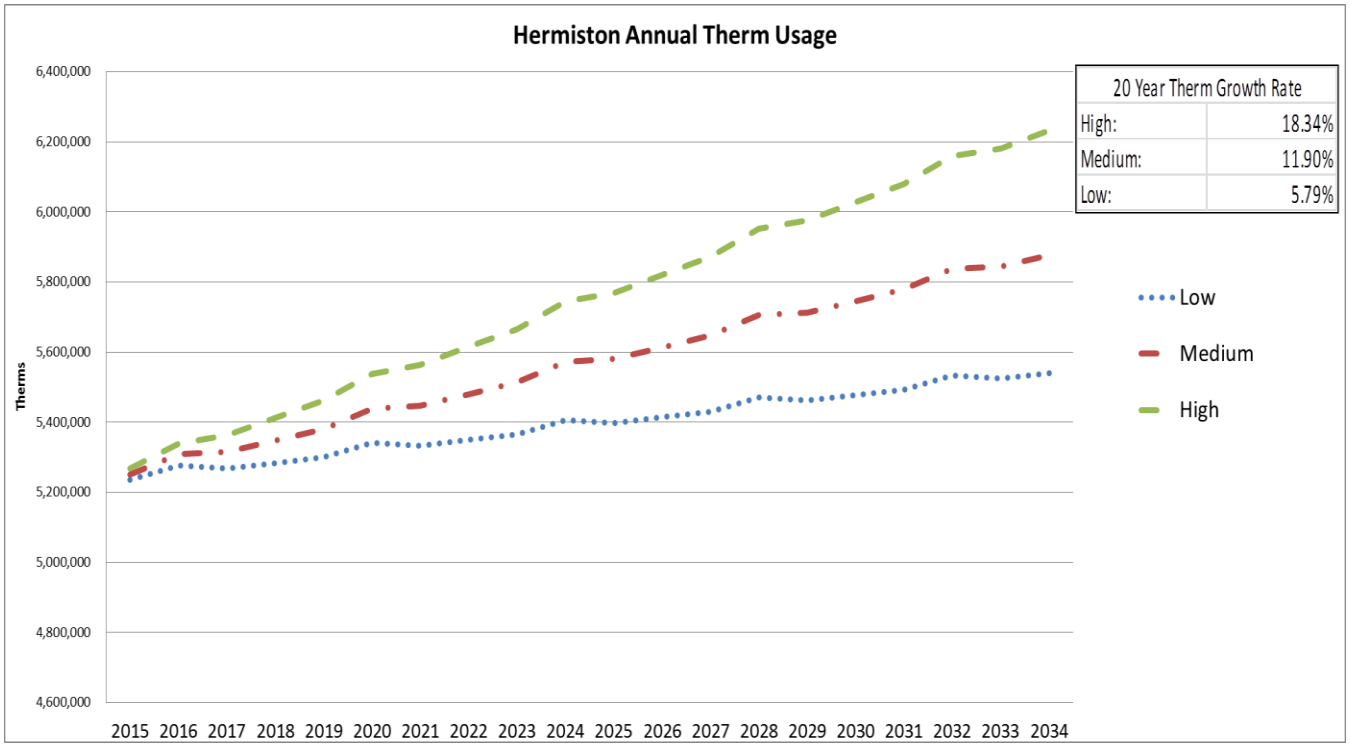
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.75%	0.77%	1.11%	1.05%	1.08%	1.41%	1.36%	1.38%
2017	-0.19%	-0.14%	-0.16%	0.11%	0.16%	0.14%	0.41%	0.46%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.75%	0.78%	1.11%	1.06%	1.08%	1.42%	1.37%	1.39%
2021	-0.19%	-0.14%	-0.16%	0.11%	0.17%	0.14%	0.42%	0.47%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.75%	0.78%	1.11%	1.06%	1.08%	1.41%	1.36%	1.39%
2025	-0.20%	-0.15%	-0.17%	0.10%	0.15%	0.13%	0.40%	0.45%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.74%	0.76%	1.09%	1.04%	1.06%	1.38%	1.33%	1.35%
2029	-0.21%	-0.16%	-0.18%	0.08%	0.13%	0.11%	0.37%	0.42%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.73%	0.75%	1.07%	1.02%	1.04%	1.35%	1.30%	1.32%
2033	-0.22%	-0.17%	-0.19%	0.06%	0.11%	0.09%	0.34%	0.39%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

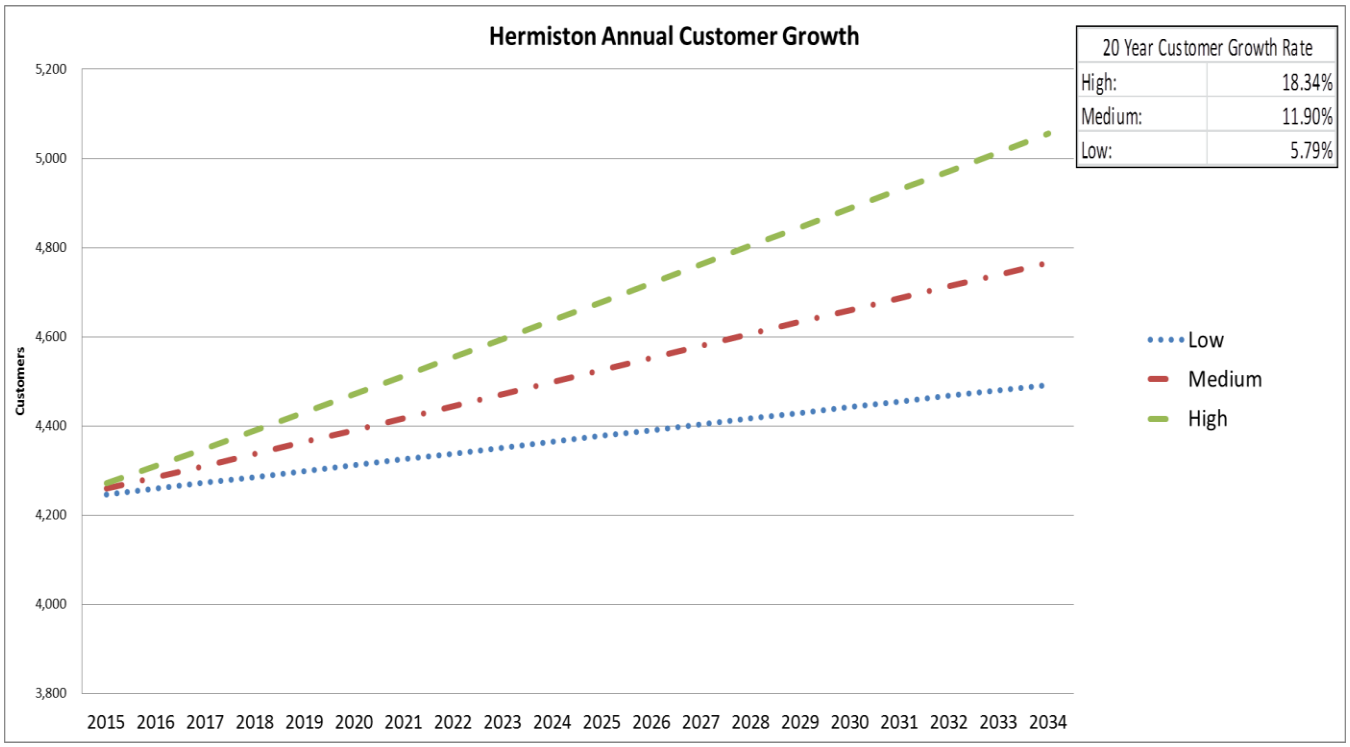
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,541	706	4,247	3,551	708	4,259	3,562	710	4,272
2016	3,551	708	4,259	3,573	712	4,285	3,594	716	4,311
2017	3,562	710	4,272	3,595	717	4,311	3,627	723	4,350
2018	3,573	712	4,285	3,617	721	4,337	3,660	730	4,390
2019	3,584	714	4,299	3,639	725	4,364	3,694	736	4,430
2020	3,595	717	4,312	3,661	730	4,391	3,728	743	4,471
2021	3,606	719	4,325	3,683	734	4,418	3,762	750	4,512
2022	3,617	721	4,338	3,706	739	4,445	3,797	757	4,554
2023	3,628	723	4,351	3,729	743	4,472	3,831	764	4,595
2024	3,639	725	4,365	3,751	748	4,499	3,866	771	4,637
2025	3,650	728	4,378	3,774	752	4,526	3,901	778	4,679
2026	3,661	730	4,391	3,796	757	4,553	3,936	785	4,721
2027	3,672	732	4,404	3,819	761	4,580	3,971	792	4,763
2028	3,683	734	4,417	3,841	766	4,607	4,006	799	4,804
2029	3,693	736	4,429	3,863	770	4,633	4,041	805	4,846
2030	3,704	738	4,442	3,886	774	4,660	4,075	812	4,888
2031	3,714	740	4,455	3,908	779	4,687	4,110	819	4,930
2032	3,725	742	4,467	3,930	783	4,713	4,145	826	4,972
2033	3,735	745	4,480	3,952	788	4,740	4,180	833	5,014
2034	3,746	747	4,493	3,974	792	4,766	4,215	840	5,056

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Hermiston Annual Therm Usage
Therms
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
5,200,000
5,000,000
4,800,000
4,600,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Hermiston Annual Customer Growth
Customers
5,200
5,000
4,800
4,600
4,400
4,200
4,000
3,800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Huntington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	93,619	(17,453)	76,165	93,664	(17,453)	76,210	93,709	(17,453)	76,255
2016	94,204	(17,562)	76,641	94,308	(17,573)	76,734	94,412	(17,584)	76,827
2017	93,735	(17,475)	76,260	93,897	(17,497)	76,400	94,059	(17,518)	76,540
2018	93,802	(17,487)	76,315	94,031	(17,522)	76,509	94,260	(17,556)	76,704
2019	93,869	(17,500)	76,369	94,165	(17,547)	76,618	94,462	(17,593)	76,868
2020	94,464	(17,611)	76,853	94,829	(17,670)	77,159	95,196	(17,730)	77,466
2021	94,005	(17,525)	76,480	94,439	(17,598)	76,841	94,874	(17,670)	77,204
2022	94,075	(17,538)	76,537	94,579	(17,624)	76,955	95,085	(17,710)	77,375
2023	94,145	(17,551)	76,593	94,719	(17,650)	77,069	95,296	(17,749)	77,547
2024	94,747	(17,664)	77,083	95,398	(17,776)	77,621	96,053	(17,890)	78,163
2025	94,286	(17,578)	76,709	95,004	(17,703)	77,301	95,727	(17,829)	77,898
2026	94,356	(17,591)	76,765	95,144	(17,729)	77,415	95,938	(17,869)	78,070
2027	94,425	(17,604)	76,822	95,284	(17,755)	77,529	96,150	(17,908)	78,242
2028	95,023	(17,715)	77,308	95,955	(17,880)	78,075	96,895	(18,047)	78,848
2029	94,558	(17,628)	76,930	95,552	(17,805)	77,747	96,556	(17,984)	78,572
2030	94,621	(17,640)	76,981	95,680	(17,829)	77,851	96,750	(18,020)	78,731
2031	94,685	(17,652)	77,033	95,809	(17,853)	77,956	96,945	(18,056)	78,889
2032	95,281	(17,763)	77,518	96,476	(17,977)	78,499	97,686	(18,194)	79,492
2033	94,812	(17,676)	77,136	96,065	(17,901)	78,164	97,334	(18,129)	79,206
2034	94,875	(17,687)	77,187	96,193	(17,925)	78,269	97,529	(18,165)	79,364

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	0.69%	0.69%	0.69%	0.75%	0.75%	0.75%
2017	-0.50%	-0.50%	-0.50%	-0.44%	-0.44%	-0.44%	-0.37%	-0.37%	-0.37%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.63%	0.63%	0.63%	0.71%	0.71%	0.71%	0.78%	0.78%	0.78%
2021	-0.49%	-0.49%	-0.49%	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.64%	0.64%	0.72%	0.72%	0.72%	0.79%	0.79%	0.79%
2025	-0.49%	-0.49%	-0.49%	-0.41%	-0.41%	-0.41%	-0.34%	-0.34%	-0.34%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%	0.77%	0.77%	0.77%
2029	-0.49%	-0.49%	-0.49%	-0.42%	-0.42%	-0.42%	-0.35%	-0.35%	-0.35%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.63%	0.63%	0.70%	0.70%	0.70%	0.76%	0.76%	0.76%
2033	-0.49%	-0.49%	-0.49%	-0.43%	-0.43%	-0.43%	-0.36%	-0.36%	-0.36%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	(48)	1,276	1,228	(48)	1,277	1,229	(48)	1,278	1,230
2016	(48)	1,277	1,229	(48)	1,279	1,230	(48)	1,280	1,232
2017	(48)	1,278	1,230	(48)	1,280	1,232	(48)	1,282	1,234
2018	(48)	1,279	1,231	(48)	1,282	1,234	(48)	1,285	1,237
2019	(48)	1,279	1,232	(48)	1,284	1,236	(48)	1,288	1,240
2020	(48)	1,281	1,232	(48)	1,286	1,237	(49)	1,291	1,242
2021	(48)	1,281	1,233	(48)	1,287	1,239	(48)	1,293	1,245
2022	(48)	1,282	1,234	(48)	1,289	1,241	(49)	1,296	1,248
2023	(48)	1,283	1,235	(48)	1,291	1,243	(49)	1,299	1,251
2024	(48)	1,284	1,236	(49)	1,293	1,245	(49)	1,302	1,253
2025	(48)	1,285	1,237	(49)	1,295	1,247	(49)	1,305	1,256
2026	(48)	1,286	1,238	(49)	1,297	1,248	(49)	1,308	1,259
2027	(48)	1,287	1,239	(49)	1,299	1,250	(49)	1,311	1,262
2028	(49)	1,288	1,240	(49)	1,301	1,252	(49)	1,314	1,264
2029	(48)	1,289	1,241	(49)	1,303	1,254	(49)	1,316	1,267
2030	(48)	1,290	1,241	(49)	1,304	1,255	(49)	1,319	1,270
2031	(48)	1,291	1,242	(49)	1,306	1,257	(49)	1,322	1,272
2032	(49)	1,292	1,243	(49)	1,308	1,259	(50)	1,325	1,275
2033	(48)	1,292	1,244	(49)	1,310	1,260	(50)	1,327	1,277
2034	(48)	1,293	1,245	(49)	1,311	1,262	(50)	1,330	1,280

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.08%	0.06%	0.69%	0.15%	0.12%	0.75%	0.21%	0.19%
2017	-0.50%	0.04%	0.06%	-0.44%	0.10%	0.12%	-0.37%	0.17%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.63%	0.09%	0.07%	0.71%	0.16%	0.14%	0.78%	0.23%	0.21%
2021	-0.49%	0.05%	0.07%	-0.41%	0.13%	0.15%	-0.34%	0.20%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.10%	0.08%	0.72%	0.17%	0.15%	0.79%	0.25%	0.23%
2025	-0.49%	0.05%	0.07%	-0.41%	0.13%	0.15%	-0.34%	0.20%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.63%	0.09%	0.07%	0.70%	0.16%	0.14%	0.77%	0.23%	0.21%
2029	-0.49%	0.05%	0.07%	-0.42%	0.12%	0.14%	-0.35%	0.19%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.09%	0.07%	0.70%	0.15%	0.13%	0.76%	0.22%	0.20%
2033	-0.49%	0.05%	0.07%	-0.43%	0.11%	0.13%	-0.36%	0.18%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	49,107	27,059	76,165	49,136	27,075	76,210	49,165	27,091	76,255
2016	49,416	27,225	76,641	49,476	27,258	76,734	49,536	27,292	76,827
2017	49,168	27,092	76,260	49,258	27,142	76,400	49,349	27,192	76,540
2018	49,203	27,112	76,315	49,329	27,181	76,509	49,454	27,250	76,704
2019	49,238	27,131	76,369	49,399	27,219	76,618	49,560	27,308	76,868
2020	49,552	27,301	76,853	49,750	27,409	77,159	49,947	27,518	77,466
2021	49,310	27,170	76,480	49,543	27,299	76,841	49,776	27,427	77,204
2022	49,346	27,190	76,537	49,616	27,339	76,955	49,887	27,488	77,375
2023	49,383	27,211	76,593	49,689	27,380	77,069	49,998	27,549	77,547
2024	49,701	27,382	77,083	50,048	27,574	77,621	50,397	27,766	78,163
2025	49,457	27,252	76,709	49,839	27,462	77,301	50,224	27,674	77,898
2026	49,494	27,272	76,765	49,913	27,503	77,415	50,335	27,735	78,070
2027	49,530	27,292	76,822	49,986	27,543	77,529	50,446	27,796	78,242
2028	49,846	27,462	77,308	50,340	27,735	78,075	50,839	28,009	78,848
2029	49,600	27,330	76,930	50,127	27,620	77,747	50,659	27,914	78,572
2030	49,633	27,348	76,981	50,194	27,658	77,851	50,761	27,970	78,731
2031	49,666	27,367	77,033	50,261	27,695	77,956	50,863	28,026	78,889
2032	49,981	27,537	77,518	50,614	27,885	78,499	51,254	28,238	79,492
2033	49,733	27,403	77,136	50,396	27,769	78,164	51,067	28,139	79,206
2034	49,766	27,422	77,187	50,463	27,806	78,269	51,169	28,195	79,364

Annual Change

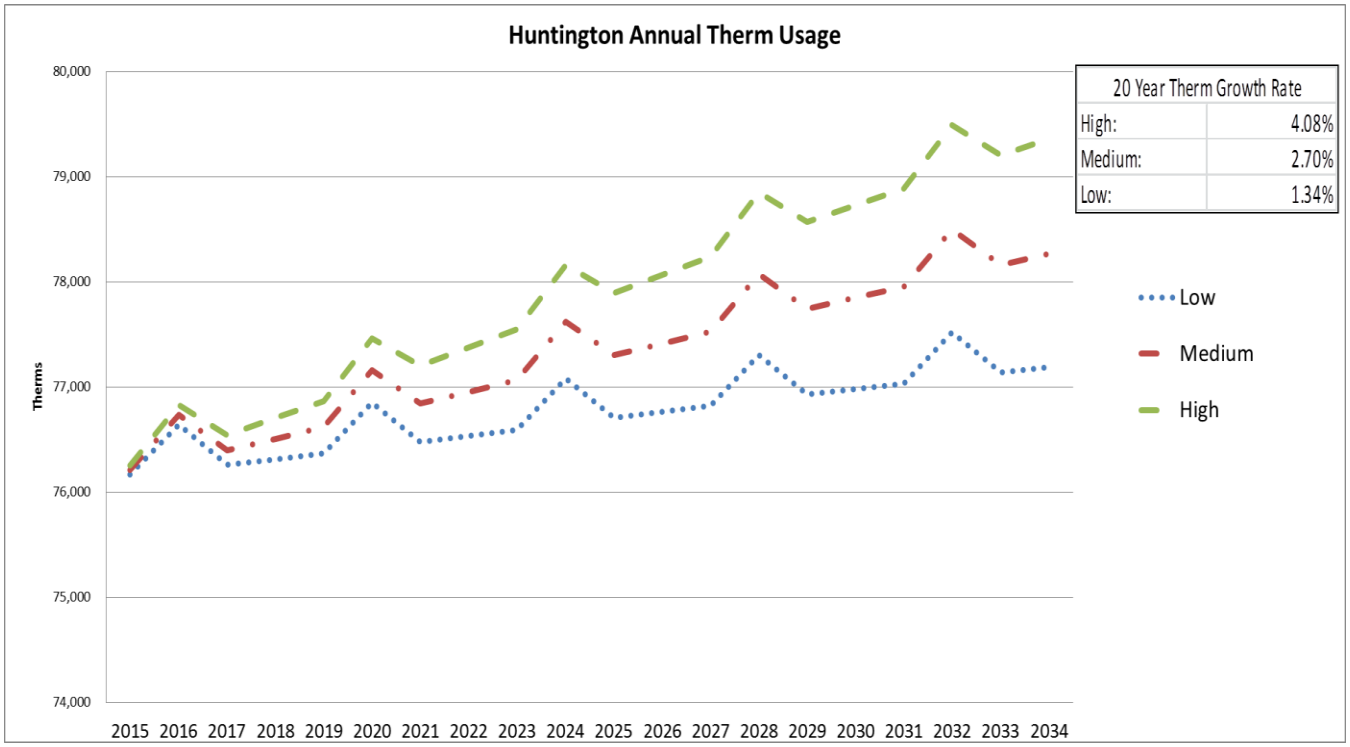
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.62%	0.62%	0.69%	0.68%	0.69%	0.75%	0.74%	0.75%
2017	-0.50%	-0.49%	-0.50%	-0.44%	-0.43%	-0.44%	-0.38%	-0.37%	-0.37%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.64%	0.63%	0.63%	0.71%	0.70%	0.71%	0.78%	0.77%	0.78%
2021	-0.49%	-0.48%	-0.49%	-0.42%	-0.40%	-0.41%	-0.34%	-0.33%	-0.34%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.64%	0.63%	0.64%	0.72%	0.71%	0.72%	0.80%	0.79%	0.79%
2025	-0.49%	-0.48%	-0.49%	-0.42%	-0.40%	-0.41%	-0.34%	-0.33%	-0.34%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.64%	0.62%	0.63%	0.71%	0.70%	0.70%	0.78%	0.77%	0.77%
2029	-0.49%	-0.48%	-0.49%	-0.42%	-0.41%	-0.42%	-0.35%	-0.34%	-0.35%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.63%	0.62%	0.63%	0.70%	0.69%	0.70%	0.77%	0.76%	0.76%
2033	-0.50%	-0.48%	-0.49%	-0.43%	-0.42%	-0.43%	-0.36%	-0.35%	-0.36%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%

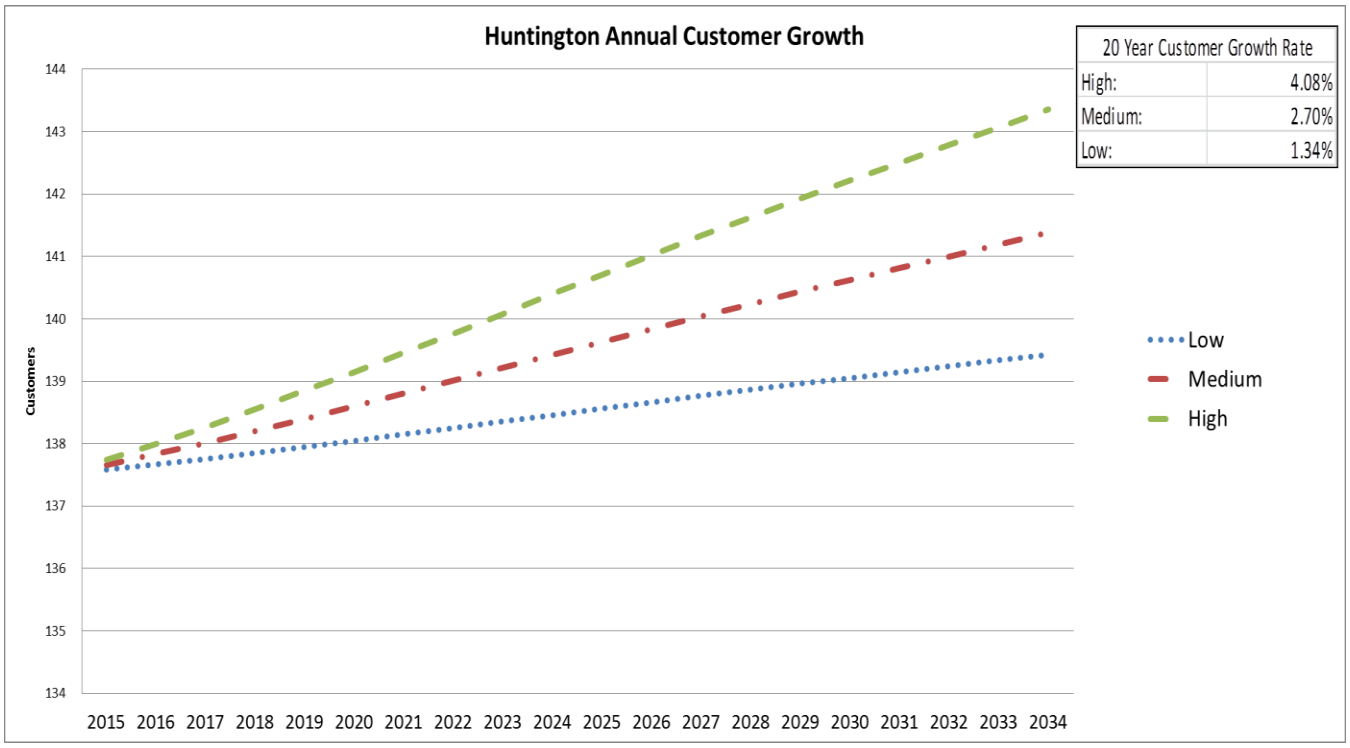
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	123	14	138	123	14	138	123	14	138
2016	123	14	138	124	14	138	124	14	138
2017	123	14	138	124	14	138	124	14	138
2018	124	14	138	124	14	138	124	14	139
2019	124	14	138	124	14	138	124	14	139
2020	124	14	138	124	14	139	125	14	139
2021	124	14	138	124	14	139	125	14	139
2022	124	14	138	125	14	139	125	14	140
2023	124	14	138	125	14	139	126	15	140
2024	124	14	138	125	14	139	126	15	140
2025	124	14	139	125	14	140	126	15	141
2026	124	14	139	125	14	140	126	15	141
2027	124	14	139	126	15	140	127	15	141
2028	124	14	139	126	15	140	127	15	142
2029	125	14	139	126	15	140	127	15	142
2030	125	14	139	126	15	141	127	15	142
2031	125	14	139	126	15	141	128	15	143
2032	125	14	139	126	15	141	128	15	143
2033	125	14	139	127	15	141	128	15	143
2034	125	14	139	127	15	141	129	15	143

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2017	0.06%	0.06%	0.06%	0.12%	0.12%	0.12%	0.19%	0.19%	0.19%
2018	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2019	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2020	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2021	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2022	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2023	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2024	0.08%	0.08%	0.08%	0.15%	0.15%	0.15%	0.23%	0.23%	0.23%
2025	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2026	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2027	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2028	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2029	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2030	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2031	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2032	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2033	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%
2034	0.07%	0.07%	0.07%	0.13%	0.13%	0.13%	0.20%	0.20%	0.20%


Huntington Annual Therm Usage
Therms
80,000
79,000
78,000
77,000
76,000
75,000
74,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High


Huntington Annual Customer Growth
Customers
144
143
142
141
140
139
138
137
136
135
134
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 4.08%
Medium: 2.70%
Low: 1.34%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

La Pine

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	359,547	101,146	460,693	364,698	101,146	465,844	369,850	101,146	470,995
2016	365,143	102,720	467,863	374,434	103,846	478,280	383,841	104,972	488,812
2017	367,486	103,379	470,865	380,891	105,637	486,528	394,616	107,919	502,534
2018	371,411	104,483	475,894	389,028	107,893	496,921	407,260	111,377	518,637
2019	375,306	105,579	480,885	397,187	110,156	507,343	420,073	114,881	534,953
2020	380,845	107,137	487,982	407,151	112,920	520,071	434,950	118,949	553,899
2021	382,999	107,743	490,742	413,554	114,695	528,249	446,168	122,017	568,185
2022	386,799	108,812	495,611	421,760	116,971	538,731	459,448	125,649	585,097
2023	390,566	109,872	500,437	429,974	119,249	549,223	472,870	129,319	602,189
2024	396,052	111,415	507,467	440,148	122,071	562,218	488,606	133,623	622,229
2025	398,007	111,965	509,972	446,436	123,815	570,250	500,154	136,781	636,935
2026	401,682	112,999	514,680	454,679	126,101	580,780	514,007	140,569	654,576
2027	405,323	114,023	519,347	462,923	128,387	591,311	527,987	144,393	672,379
2028	410,746	115,549	526,294	473,258	131,254	604,512	544,499	148,908	693,407
2029	412,510	116,045	528,555	479,410	132,960	612,370	556,317	152,140	708,457
2030	416,055	117,042	533,097	487,650	135,245	622,895	570,659	156,062	726,721
2031	419,575	118,032	537,608	495,903	137,534	633,437	585,146	160,024	745,171
2032	424,940	119,542	544,482	506,388	140,442	646,830	602,408	164,745	767,153
2033	426,534	119,990	546,524	512,420	142,115	654,534	614,499	168,052	782,551
2034	429,975	120,958	550,933	520,688	144,408	665,096	629,372	172,119	801,492

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.56%	1.56%	2.67%	2.67%	2.67%	3.78%	3.78%	3.78%
2017	0.64%	0.64%	0.64%	1.72%	1.72%	1.72%	2.81%	2.81%	2.81%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.48%	1.48%	1.48%	2.51%	2.51%	2.51%	3.54%	3.54%	3.54%
2021	0.57%	0.57%	0.57%	1.57%	1.57%	1.57%	2.58%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	1.40%	1.40%	2.37%	2.37%	2.37%	3.33%	3.33%	3.33%
2025	0.49%	0.49%	0.49%	1.43%	1.43%	1.43%	2.36%	2.36%	2.36%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.13%	3.13%	3.13%
2029	0.43%	0.43%	0.43%	1.30%	1.30%	1.30%	2.17%	2.17%	2.17%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.28%	1.28%	1.28%	2.11%	2.11%	2.11%	2.95%	2.95%	2.95%
2033	0.37%	0.37%	0.37%	1.19%	1.19%	1.19%	2.01%	2.01%	2.01%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	277	5,199	5,476	277	5,260	5,537	277	5,322	5,599
2016	281	5,255	5,537	285	5,376	5,660	288	5,497	5,785
2017	283	5,314	5,597	289	5,494	5,783	296	5,678	5,974
2018	286	5,371	5,657	296	5,611	5,907	305	5,860	6,165
2019	289	5,427	5,716	302	5,729	6,031	315	6,044	6,359
2020	294	5,481	5,775	309	5,845	6,155	326	6,229	6,555
2021	295	5,538	5,833	314	5,965	6,279	334	6,420	6,754
2022	298	5,593	5,891	320	6,083	6,404	344	6,611	6,955
2023	301	5,648	5,949	327	6,202	6,529	354	6,804	7,158
2024	305	5,700	6,006	334	6,319	6,654	366	6,998	7,364
2025	307	5,755	6,062	339	6,439	6,778	375	7,196	7,571
2026	310	5,808	6,118	345	6,558	6,904	385	7,396	7,781
2027	312	5,861	6,173	352	6,677	7,029	396	7,597	7,992
2028	317	5,912	6,228	360	6,794	7,154	408	7,798	8,206
2029	318	5,965	6,283	364	6,915	7,279	417	8,004	8,421
2030	321	6,016	6,337	371	7,034	7,404	428	8,211	8,638
2031	323	6,067	6,390	377	7,153	7,530	438	8,419	8,858
2032	328	6,116	6,444	385	7,270	7,655	451	8,627	9,079
2033	329	6,168	6,496	389	7,391	7,780	460	8,842	9,302
2034	331	6,217	6,549	396	7,510	7,906	472	9,056	9,527

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.08%	1.11%	2.67%	2.19%	2.22%	3.78%	3.30%	3.33%
2017	0.64%	1.11%	1.09%	1.72%	2.20%	2.18%	2.81%	3.29%	3.26%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.48%	1.00%	1.03%	2.51%	2.03%	2.06%	3.54%	3.06%	3.08%
2021	0.57%	1.04%	1.01%	1.57%	2.05%	2.02%	2.58%	3.06%	3.03%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	0.93%	0.96%	2.37%	1.89%	1.91%	3.33%	2.85%	2.87%
2025	0.49%	0.96%	0.94%	1.43%	1.90%	1.88%	2.36%	2.84%	2.82%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.34%	0.87%	0.89%	2.23%	1.76%	1.78%	3.13%	2.65%	2.67%
2029	0.43%	0.90%	0.87%	1.30%	1.77%	1.75%	2.17%	2.65%	2.62%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.28%	0.81%	0.83%	2.11%	1.64%	1.66%	2.95%	2.47%	2.50%
2033	0.37%	0.84%	0.82%	1.19%	1.66%	1.64%	2.01%	2.48%	2.46%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	124,922	335,771	460,693	126,319	339,525	465,844	127,716	343,280	470,995
2016	126,854	341,008	467,863	129,679	348,601	478,280	132,535	356,278	488,812
2017	127,680	343,184	470,865	131,928	354,600	486,528	136,268	366,266	502,534
2018	129,044	346,850	475,894	134,746	362,175	496,921	140,634	378,002	518,637
2019	130,397	350,487	480,885	137,572	369,771	507,343	145,059	389,894	534,953
2020	132,310	355,672	487,982	141,010	379,061	520,071	150,182	403,717	553,899
2021	133,070	357,672	490,742	143,241	385,008	528,249	154,070	414,115	568,185
2022	134,391	361,221	495,611	146,083	392,648	538,731	158,656	426,441	585,097
2023	135,699	364,738	500,437	148,928	400,295	549,223	163,291	438,899	602,189
2024	137,593	369,874	507,467	152,438	409,781	562,218	168,709	453,520	622,229
2025	138,285	371,687	509,972	154,630	415,621	570,250	172,712	464,223	636,935
2026	139,561	375,119	514,680	157,485	423,295	580,780	177,496	477,080	654,576
2027	140,827	378,520	519,347	160,341	430,970	591,311	182,323	490,056	672,379
2028	142,697	383,597	526,294	163,905	440,607	604,512	188,008	505,399	693,407
2029	143,324	385,231	528,555	166,051	446,319	612,370	192,106	516,351	708,457
2030	144,555	388,541	533,097	168,905	453,990	622,895	197,059	529,663	726,721
2031	145,779	391,829	537,608	171,764	461,674	633,437	202,062	543,109	745,171
2032	147,629	396,853	544,482	175,379	471,451	646,830	208,003	559,150	767,153
2033	148,196	398,328	546,524	177,484	477,050	654,534	212,198	570,353	782,551
2034	149,392	401,541	550,933	180,348	484,748	665,096	217,334	584,158	801,492

Annual Change

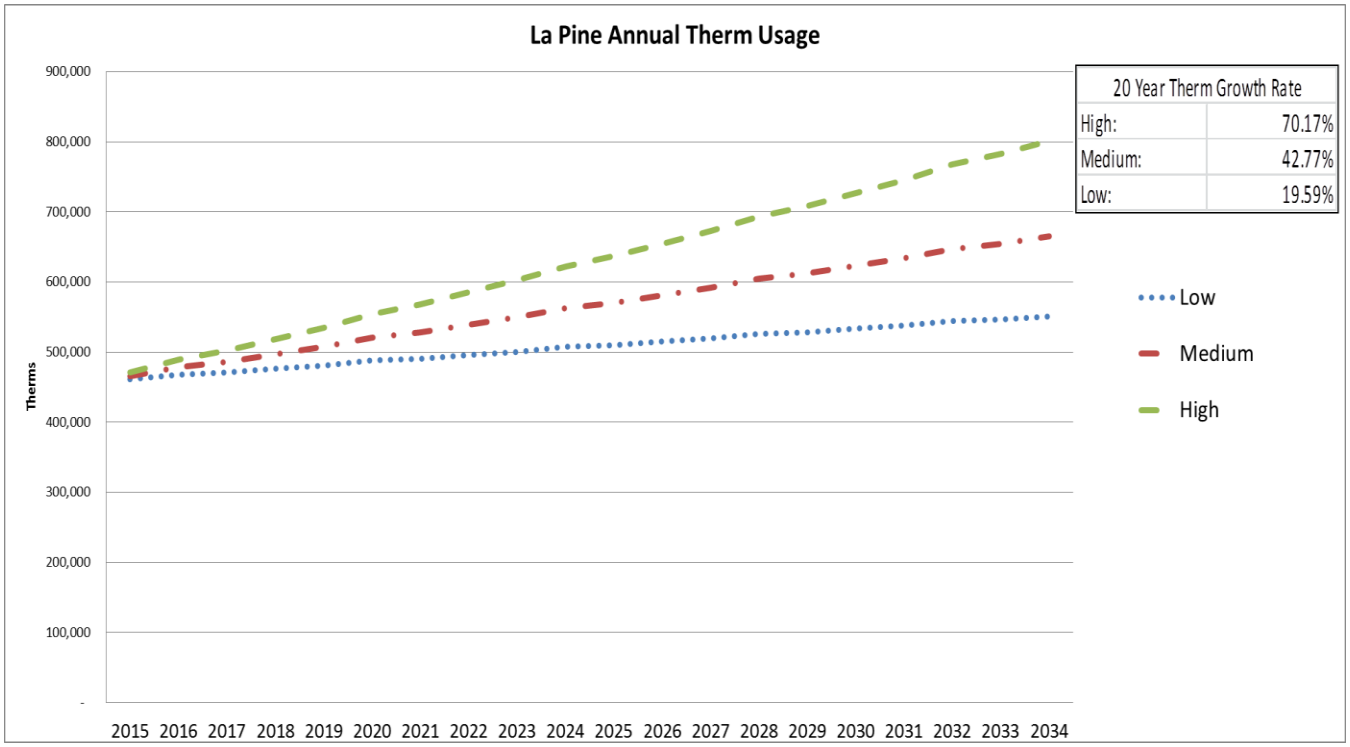
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.55%	1.56%	1.56%	2.66%	2.67%	2.67%	3.77%	3.79%	3.78%
2017	0.65%	0.64%	0.64%	1.73%	1.72%	1.72%	2.82%	2.80%	2.81%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.47%	1.48%	1.48%	2.50%	2.51%	2.51%	3.53%	3.55%	3.54%
2021	0.58%	0.56%	0.57%	1.58%	1.57%	1.57%	2.59%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	1.40%	1.41%	1.40%	2.36%	2.37%	2.37%	3.32%	3.33%	3.33%
2025	0.50%	0.49%	0.49%	1.44%	1.43%	1.43%	2.37%	2.36%	2.36%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	1.33%	1.34%	1.34%	2.22%	2.24%	2.23%	3.12%	3.13%	3.13%
2029	0.44%	0.43%	0.43%	1.31%	1.30%	1.30%	2.18%	2.17%	2.17%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	1.27%	1.28%	1.28%	2.10%	2.12%	2.11%	2.94%	2.95%	2.95%
2033	0.38%	0.37%	0.37%	1.20%	1.19%	1.19%	2.02%	2.00%	2.01%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

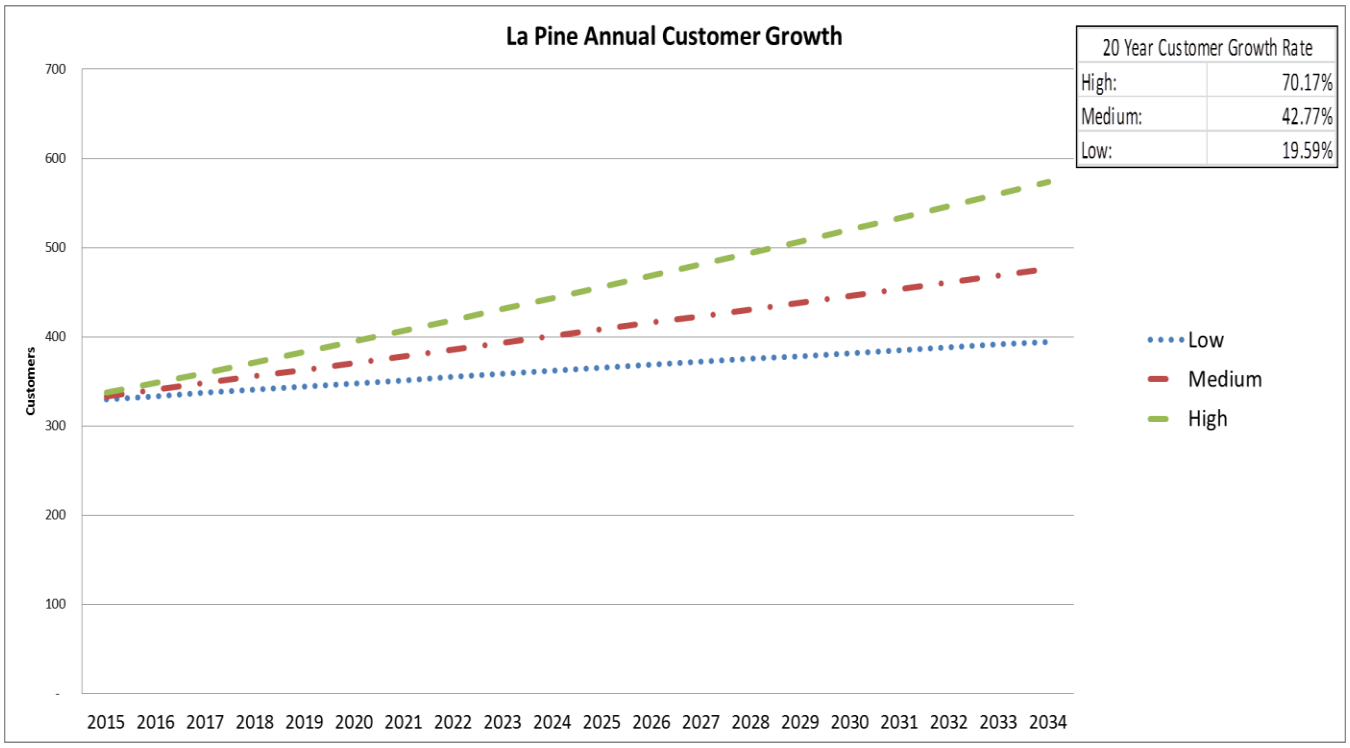
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	203	127	330	205	128	333	208	129	337
2016	205	128	333	210	131	341	215	134	348
2017	208	129	337	215	134	348	222	138	360
2018	210	131	341	219	137	356	229	143	371
2019	212	132	344	224	139	363	236	147	383
2020	214	133	348	228	142	371	243	152	395
2021	216	135	351	233	145	378	251	156	407
2022	219	136	355	238	148	386	258	161	419
2023	221	138	358	242	151	393	266	165	431
2024	223	139	362	247	154	401	273	170	443
2025	225	140	365	252	157	408	281	175	456
2026	227	141	368	256	160	416	289	180	469
2027	229	143	372	261	162	423	297	185	481
2028	231	144	375	265	165	431	304	190	494
2029	233	145	378	270	168	438	312	195	507
2030	235	146	382	275	171	446	321	200	520
2031	237	148	385	279	174	453	329	205	533
2032	239	149	388	284	177	461	337	210	547
2033	241	150	391	289	180	469	345	215	560
2034	243	151	394	293	183	476	353	220	574

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.11%	1.11%	1.11%	2.22%	2.22%	2.22%	3.33%	3.33%	3.33%
2017	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2018	1.07%	1.07%	1.07%	2.14%	2.14%	2.14%	3.20%	3.20%	3.20%
2019	1.05%	1.05%	1.05%	2.10%	2.10%	2.10%	3.15%	3.15%	3.15%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.08%	3.08%	3.08%
2021	1.01%	1.01%	1.01%	2.02%	2.02%	2.02%	3.03%	3.03%	3.03%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.95%	1.95%	1.95%	2.92%	2.92%	2.92%
2024	0.96%	0.96%	0.96%	1.91%	1.91%	1.91%	2.87%	2.87%	2.87%
2025	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%
2026	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2027	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2028	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.67%	2.67%	2.67%
2029	0.87%	0.87%	0.87%	1.75%	1.75%	1.75%	2.62%	2.62%	2.62%
2030	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2031	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2032	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2033	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%


La Pine Annual Therm Usage
Therms
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 70.17%
Medium: 42.77%
Low: 19.59%
Low
Medium
High


La Pine Annual Customer Growth
Customers
700
600
500
400
300
200
100
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 70.17%
Medium: 42.77%
Low: 19.59%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Madras

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,303,939	439,173	2,743,112	2,309,715	439,173	2,748,888	2,315,491	439,173	2,754,665
2016	2,319,698	442,177	2,761,876	2,330,627	443,149	2,773,777	2,341,582	444,122	2,785,704
2017	2,314,227	441,134	2,755,361	2,330,366	443,100	2,773,465	2,346,579	445,070	2,791,649
2018	2,319,613	442,161	2,761,774	2,341,214	445,162	2,786,376	2,362,965	448,177	2,811,142
2019	2,325,131	443,213	2,768,344	2,352,352	447,280	2,799,632	2,379,827	451,376	2,831,203
2020	2,341,514	446,336	2,787,849	2,374,618	451,514	2,826,132	2,408,111	456,740	2,864,852
2021	2,336,459	445,372	2,781,831	2,375,302	451,644	2,826,945	2,414,696	457,989	2,872,685
2022	2,342,272	446,480	2,788,753	2,387,121	453,891	2,841,012	2,432,719	461,407	2,894,126
2023	2,348,118	447,595	2,795,712	2,399,036	456,157	2,855,193	2,450,933	464,862	2,915,795
2024	2,364,982	450,809	2,815,791	2,422,396	460,599	2,882,995	2,481,062	470,577	2,951,639
2025	2,360,053	449,869	2,809,922	2,423,454	460,800	2,884,253	2,488,399	471,968	2,960,367
2026	2,366,046	451,012	2,817,058	2,435,763	463,140	2,898,903	2,507,358	475,564	2,982,922
2027	2,372,075	452,161	2,824,236	2,448,176	465,500	2,913,676	2,526,524	479,199	3,005,723
2028	2,389,141	455,414	2,844,555	2,472,076	470,045	2,942,121	2,557,677	485,108	3,042,785
2029	2,384,186	454,470	2,838,655	2,473,206	470,260	2,943,466	2,565,320	486,558	3,051,878
2030	2,390,268	455,629	2,845,897	2,485,824	472,659	2,958,483	2,584,952	490,281	3,075,234
2031	2,396,336	456,786	2,853,122	2,498,447	475,059	2,973,506	2,604,641	494,015	3,098,657
2032	2,413,550	460,067	2,873,617	2,522,782	479,686	3,002,468	2,636,671	500,090	3,136,761
2033	2,408,567	459,117	2,867,684	2,523,983	479,914	3,003,897	2,644,624	501,599	3,146,223
2034	2,414,732	460,292	2,875,024	2,536,903	482,371	3,019,274	2,664,931	505,450	3,170,381

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.68%	0.68%	0.68%	0.91%	0.91%	0.91%	1.13%	1.13%	1.13%
2017	-0.24%	-0.24%	-0.24%	-0.01%	-0.01%	-0.01%	0.21%	0.21%	0.21%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.70%	0.70%	0.70%	0.95%	0.95%	0.95%	1.19%	1.19%	1.19%
2021	-0.22%	-0.22%	-0.22%	0.03%	0.03%	0.03%	0.27%	0.27%	0.27%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.72%	0.72%	0.72%	0.97%	0.97%	0.97%	1.23%	1.23%	1.23%
2025	-0.21%	-0.21%	-0.21%	0.04%	0.04%	0.04%	0.30%	0.30%	0.30%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.72%	0.72%	0.72%	0.98%	0.98%	0.98%	1.23%	1.23%	1.23%
2029	-0.21%	-0.21%	-0.21%	0.05%	0.05%	0.05%	0.30%	0.30%	0.30%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.72%	0.72%	0.72%	0.97%	0.97%	0.97%	1.23%	1.23%	1.23%
2033	-0.21%	-0.21%	-0.21%	0.05%	0.05%	0.05%	0.30%	0.30%	0.30%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,203	34,514	35,717	1,203	34,589	35,792	1,203	34,664	35,868
2016	1,211	34,584	35,796	1,214	34,736	35,950	1,217	34,888	36,105
2017	1,209	34,668	35,877	1,214	34,898	36,112	1,219	35,130	36,349
2018	1,211	34,749	35,960	1,220	35,061	36,281	1,228	35,375	36,603
2019	1,214	34,831	36,046	1,225	35,228	36,453	1,237	35,628	36,864
2020	1,223	34,910	36,133	1,237	35,392	36,629	1,251	35,879	37,131
2021	1,220	35,001	36,221	1,237	35,571	36,809	1,255	36,150	37,404
2022	1,223	35,088	36,311	1,244	35,748	36,992	1,264	36,419	37,684
2023	1,226	35,176	36,402	1,250	35,927	37,177	1,274	36,692	37,966
2024	1,235	35,260	36,495	1,262	36,104	37,366	1,289	36,966	38,255
2025	1,233	35,355	36,587	1,262	36,293	37,555	1,293	37,253	38,546
2026	1,236	35,444	36,680	1,269	36,477	37,746	1,303	37,537	38,840
2027	1,239	35,535	36,774	1,275	36,663	37,938	1,313	37,824	39,137
2028	1,248	35,620	36,868	1,288	36,844	38,132	1,329	38,108	39,437
2029	1,245	35,716	36,961	1,288	37,038	38,326	1,333	38,405	39,738
2030	1,248	35,807	37,056	1,295	37,227	38,522	1,343	38,698	40,042
2031	1,251	35,898	37,150	1,302	37,416	38,717	1,353	38,993	40,347
2032	1,260	35,984	37,244	1,314	37,600	38,914	1,370	39,285	40,655
2033	1,258	36,081	37,339	1,315	37,798	39,113	1,374	39,592	40,966
2034	1,261	36,174	37,435	1,322	37,991	39,313	1,385	39,896	41,281

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.68%	0.20%	0.22%	0.91%	0.42%	0.44%	1.13%	0.64%	0.66%
2017	-0.24%	0.24%	0.23%	-0.01%	0.47%	0.45%	0.21%	0.69%	0.68%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.70%	0.22%	0.24%	0.95%	0.47%	0.48%	1.19%	0.71%	0.72%
2021	-0.22%	0.26%	0.25%	0.03%	0.51%	0.49%	0.27%	0.75%	0.74%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.72%	0.24%	0.25%	0.97%	0.49%	0.51%	1.23%	0.75%	0.76%
2025	-0.21%	0.27%	0.25%	0.04%	0.52%	0.51%	0.30%	0.78%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.72%	0.24%	0.26%	0.98%	0.50%	0.51%	1.23%	0.75%	0.77%
2029	-0.21%	0.27%	0.25%	0.05%	0.52%	0.51%	0.30%	0.78%	0.76%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.72%	0.24%	0.25%	0.97%	0.49%	0.51%	1.23%	0.75%	0.76%
2033	-0.21%	0.27%	0.26%	0.05%	0.53%	0.51%	0.30%	0.78%	0.77%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	621,567	2,121,545	2,743,112	622,875	2,126,013	2,748,888	624,184	2,130,480	2,754,665
2016	625,993	2,135,882	2,761,876	628,691	2,145,086	2,773,777	631,394	2,154,309	2,785,704
2017	624,342	2,131,019	2,755,361	628,444	2,145,021	2,773,465	632,565	2,159,084	2,791,649
2018	625,795	2,135,979	2,761,774	631,370	2,155,006	2,786,376	636,982	2,174,160	2,811,142
2019	627,284	2,141,060	2,768,344	634,374	2,165,259	2,799,632	641,527	2,189,676	2,831,203
2020	631,881	2,155,969	2,787,849	640,557	2,185,575	2,826,132	649,333	2,215,518	2,864,852
2021	630,340	2,151,491	2,781,831	640,563	2,186,383	2,826,945	650,927	2,221,758	2,872,685
2022	631,908	2,156,844	2,788,753	643,750	2,197,262	2,841,012	655,785	2,238,341	2,894,126
2023	633,485	2,162,227	2,795,712	646,963	2,208,230	2,855,193	660,695	2,255,100	2,915,795
2024	638,214	2,177,577	2,815,791	653,446	2,229,549	2,882,995	669,004	2,282,634	2,951,639
2025	636,705	2,173,217	2,809,922	653,548	2,230,705	2,884,253	670,795	2,289,572	2,960,367
2026	638,322	2,178,736	2,817,058	656,868	2,242,036	2,898,903	675,906	2,307,016	2,982,922
2027	639,949	2,184,287	2,824,236	660,215	2,253,461	2,913,676	681,072	2,324,651	3,005,723
2028	644,733	2,199,822	2,844,555	666,847	2,275,274	2,942,121	689,663	2,353,122	3,042,785
2029	643,216	2,195,439	2,838,655	666,965	2,276,500	2,943,466	691,530	2,360,348	3,051,878
2030	644,857	2,201,040	2,845,897	670,368	2,288,115	2,958,483	696,823	2,378,411	3,075,234
2031	646,494	2,206,628	2,853,122	673,772	2,299,734	2,973,506	702,130	2,396,527	3,098,657
2032	651,320	2,222,297	2,873,617	680,525	2,321,943	3,002,468	710,963	2,425,798	3,136,761
2033	649,794	2,217,890	2,867,684	680,658	2,323,239	3,003,897	712,908	2,433,315	3,146,223
2034	651,457	2,223,567	2,875,024	684,143	2,335,131	3,019,274	718,382	2,451,999	3,170,381

Annual Change

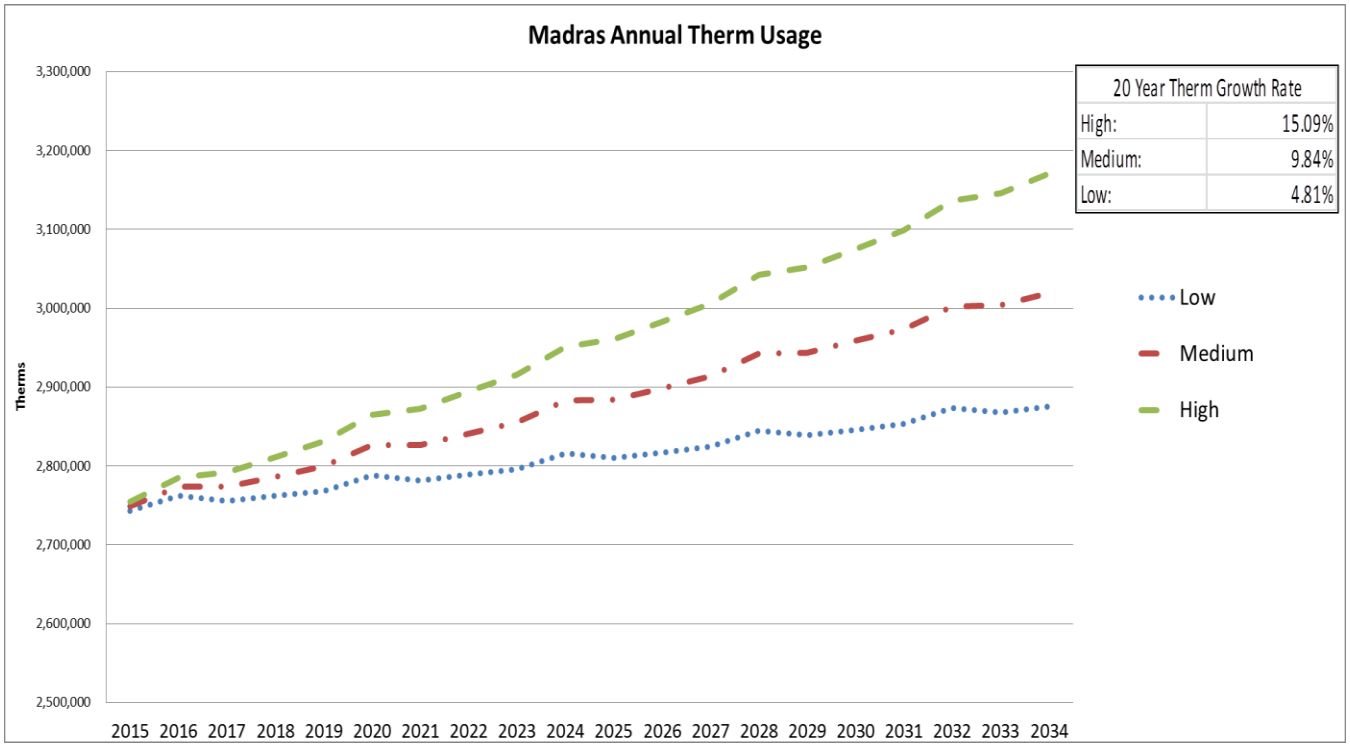
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.68%	0.68%	0.93%	0.90%	0.91%	1.16%	1.12%	1.13%
2017	-0.26%	-0.23%	-0.24%	-0.04%	0.00%	-0.01%	0.19%	0.22%	0.21%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.73%	0.70%	0.70%	0.97%	0.94%	0.95%	1.22%	1.18%	1.19%
2021	-0.24%	-0.21%	-0.22%	0.00%	0.04%	0.03%	0.25%	0.28%	0.27%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.75%	0.71%	0.72%	1.00%	0.97%	0.97%	1.26%	1.22%	1.23%
2025	-0.24%	-0.20%	-0.21%	0.02%	0.05%	0.04%	0.27%	0.30%	0.30%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.75%	0.71%	0.72%	1.00%	0.97%	0.98%	1.26%	1.22%	1.23%
2029	-0.24%	-0.20%	-0.21%	0.02%	0.05%	0.05%	0.27%	0.31%	0.30%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.75%	0.71%	0.72%	1.00%	0.97%	0.97%	1.26%	1.22%	1.23%
2033	-0.23%	-0.20%	-0.21%	0.02%	0.06%	0.05%	0.27%	0.31%	0.30%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%

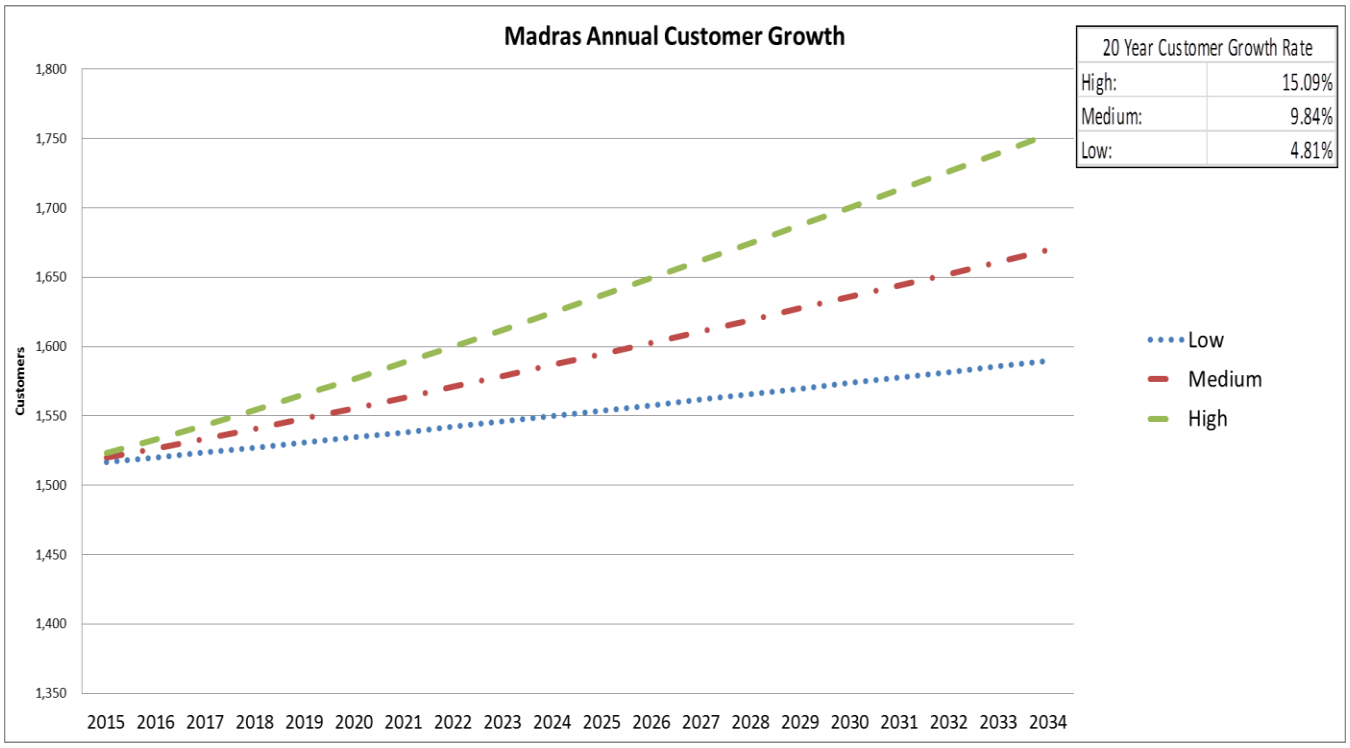
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,128	389	1,517	1,130	390	1,520	1,133	391	1,523
2016	1,130	390	1,520	1,135	391	1,527	1,140	393	1,533
2017	1,133	391	1,524	1,140	393	1,534	1,148	396	1,544
2018	1,136	392	1,527	1,146	395	1,541	1,156	399	1,554
2019	1,138	392	1,531	1,151	397	1,548	1,164	401	1,566
2020	1,141	393	1,535	1,157	399	1,556	1,173	404	1,577
2021	1,144	394	1,538	1,162	401	1,563	1,181	407	1,589
2022	1,147	395	1,542	1,168	403	1,571	1,190	410	1,600
2023	1,150	396	1,546	1,174	405	1,579	1,199	413	1,612
2024	1,153	397	1,550	1,180	407	1,587	1,208	417	1,625
2025	1,155	398	1,554	1,186	409	1,595	1,217	420	1,637
2026	1,158	399	1,558	1,192	411	1,603	1,227	423	1,649
2027	1,161	400	1,562	1,198	413	1,611	1,236	426	1,662
2028	1,164	401	1,566	1,204	415	1,619	1,245	429	1,675
2029	1,167	402	1,570	1,210	417	1,628	1,255	433	1,688
2030	1,170	403	1,574	1,217	419	1,636	1,265	436	1,701
2031	1,173	404	1,578	1,223	422	1,644	1,274	439	1,713
2032	1,176	406	1,582	1,229	424	1,653	1,284	443	1,727
2033	1,179	407	1,586	1,235	426	1,661	1,294	446	1,740
2034	1,182	408	1,590	1,242	428	1,670	1,304	449	1,753

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.66%	0.66%	0.66%
2017	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2018	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2022	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2023	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2024	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2025	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2028	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2029	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2030	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2031	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2032	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2033	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2034	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%


Madras Annual Therm Usage
Therms
3,300,000
3,200,000
3,100,000
3,000,000
2,900,000
2,800,000
2,700,000
2,600,000
2,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.09%
Medium: 9.84%
Low: 4.81%
Low
Medium
High


Madras Annual Customer Growth
Customers
1,800
1,750
1,700
1,650
1,600
1,550
1,500
1,450
1,400
1,350
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.09%
Medium: 9.84%
Low: 4.81%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Milton-Freewater

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	258,126	158,491	416,617	259,411	158,491	417,902	260,696	158,491	419,187
2016	260,152	159,735	419,887	262,256	160,229	422,485	264,367	160,723	425,090
2017	259,735	159,479	419,214	262,649	160,470	423,119	265,585	161,464	427,049
2018	260,547	159,978	420,525	264,292	161,474	425,766	268,077	162,979	431,056
2019	261,365	160,480	421,845	265,952	162,488	428,440	270,603	164,514	435,117
2020	263,421	161,742	425,163	268,877	164,275	433,152	274,426	166,839	441,265
2021	262,999	161,484	424,483	269,283	164,523	433,805	275,694	167,609	443,303
2022	263,818	161,986	425,804	270,960	165,547	436,507	278,269	169,175	447,444
2023	264,632	162,486	427,118	272,632	166,569	439,201	280,845	170,741	451,586
2024	266,703	163,758	430,462	275,610	168,388	443,998	284,782	173,134	457,916
2025	266,255	163,483	429,737	275,981	168,615	444,596	286,028	173,892	459,920
2026	267,059	163,977	431,036	277,648	169,634	447,282	288,620	175,468	464,088
2027	267,861	164,469	432,329	279,314	170,652	449,966	291,218	177,047	468,265
2028	269,927	165,737	435,665	282,302	172,477	454,780	295,202	179,469	474,671
2029	269,442	165,440	434,882	282,617	172,670	455,287	296,391	180,192	476,584
2030	270,222	165,919	436,141	284,254	173,670	457,924	298,966	181,758	480,724
2031	271,001	166,397	437,398	285,892	174,671	460,563	301,551	183,329	484,880
2032	273,061	167,662	440,723	288,886	176,500	465,386	305,574	185,775	491,349
2033	272,545	167,345	439,889	289,154	176,664	465,818	306,719	186,471	493,190
2034	273,310	167,815	441,124	290,778	177,656	468,434	309,302	188,042	497,344

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.78%	0.78%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2017	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.46%	0.46%	0.46%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.79%	0.79%	0.79%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2021	-0.16%	-0.16%	-0.16%	0.15%	0.15%	0.15%	0.46%	0.46%	0.46%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.78%	0.78%	0.78%	1.09%	1.09%	1.09%	1.40%	1.40%	1.40%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.44%	0.44%	0.44%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.77%	0.77%	0.77%	1.07%	1.07%	1.07%	1.37%	1.37%	1.37%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.76%	0.76%	0.76%	1.05%	1.05%	1.05%	1.33%	1.33%	1.33%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	434	5,042	5,476	434	5,059	5,493	434	5,076	5,510
2016	438	5,055	5,493	439	5,088	5,527	440	5,121	5,561
2017	437	5,073	5,510	440	5,122	5,561	442	5,171	5,613
2018	438	5,089	5,527	442	5,154	5,596	447	5,219	5,666
2019	440	5,105	5,545	445	5,186	5,631	451	5,268	5,719
2020	443	5,119	5,562	450	5,216	5,667	457	5,316	5,773
2021	442	5,137	5,579	451	5,251	5,702	459	5,368	5,827
2022	444	5,153	5,597	454	5,284	5,737	463	5,418	5,881
2023	445	5,169	5,614	456	5,317	5,773	468	5,468	5,936
2024	449	5,183	5,631	461	5,347	5,808	474	5,516	5,991
2025	448	5,201	5,648	462	5,382	5,844	476	5,569	6,045
2026	449	5,216	5,666	465	5,414	5,879	481	5,619	6,100
2027	451	5,232	5,683	468	5,447	5,914	485	5,670	6,155
2028	454	5,245	5,699	473	5,477	5,949	492	5,718	6,210
2029	453	5,263	5,716	473	5,511	5,984	494	5,771	6,264
2030	455	5,278	5,733	476	5,543	6,019	498	5,821	6,319
2031	456	5,293	5,749	479	5,575	6,054	502	5,871	6,373
2032	459	5,306	5,766	484	5,605	6,088	509	5,919	6,428
2033	458	5,323	5,782	484	5,639	6,123	511	5,972	6,482
2034	460	5,338	5,798	487	5,670	6,157	515	6,022	6,537

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.27%	0.31%	1.10%	0.58%	0.62%	1.41%	0.89%	0.93%
2017	-0.16%	0.35%	0.31%	0.15%	0.67%	0.62%	0.46%	0.98%	0.94%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.79%	0.27%	0.31%	1.10%	0.58%	0.62%	1.41%	0.89%	0.94%
2021	-0.16%	0.35%	0.31%	0.15%	0.67%	0.62%	0.46%	0.98%	0.94%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.78%	0.27%	0.31%	1.09%	0.58%	0.62%	1.40%	0.88%	0.92%
2025	-0.17%	0.35%	0.30%	0.13%	0.65%	0.61%	0.44%	0.95%	0.91%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.77%	0.26%	0.30%	1.07%	0.55%	0.59%	1.37%	0.85%	0.89%
2029	-0.18%	0.33%	0.29%	0.11%	0.63%	0.59%	0.40%	0.92%	0.88%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.76%	0.24%	0.29%	1.05%	0.53%	0.57%	1.33%	0.82%	0.86%
2033	-0.19%	0.32%	0.28%	0.09%	0.61%	0.57%	0.37%	0.89%	0.85%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	99,687	316,930	416,617	99,995	317,908	417,902	100,302	318,885	419,187
2016	100,529	319,358	419,887	101,151	321,333	422,485	101,775	323,315	425,090
2017	100,308	318,905	419,214	101,243	321,876	423,119	102,183	324,866	427,049
2018	100,622	319,903	420,525	101,876	323,890	425,766	103,142	327,914	431,056
2019	100,938	320,907	421,845	102,516	325,924	428,440	104,114	331,003	435,117
2020	101,793	323,371	425,163	103,705	329,447	433,152	105,648	335,618	441,265
2021	101,569	322,913	424,483	103,800	330,006	433,805	106,072	337,231	443,303
2022	101,885	323,919	425,804	104,446	332,060	436,507	107,063	340,381	447,444
2023	102,200	324,918	427,118	105,091	334,110	439,201	108,054	343,532	451,586
2024	103,061	327,400	430,462	106,302	337,696	443,998	109,634	348,282	457,916
2025	102,827	326,911	429,737	106,382	338,214	444,596	110,048	349,871	459,920
2026	103,137	327,899	431,036	107,025	340,258	447,282	111,046	353,042	464,088
2027	103,447	328,882	432,329	107,667	342,299	449,966	112,045	356,220	468,265
2028	104,307	331,358	435,665	108,883	345,896	454,780	113,646	361,026	474,671
2029	104,057	330,824	434,882	108,940	346,347	455,287	114,036	362,548	476,584
2030	104,359	331,782	436,141	109,571	348,353	457,924	115,026	365,698	480,724
2031	104,659	332,738	437,398	110,202	350,361	460,563	116,021	368,859	484,880
2032	105,518	335,205	440,723	111,423	353,963	465,386	117,639	373,710	491,349
2033	105,256	334,634	439,889	111,460	354,358	465,818	118,009	375,180	493,190
2034	105,551	335,573	441,124	112,086	356,348	468,434	119,003	378,341	497,344

Annual Change

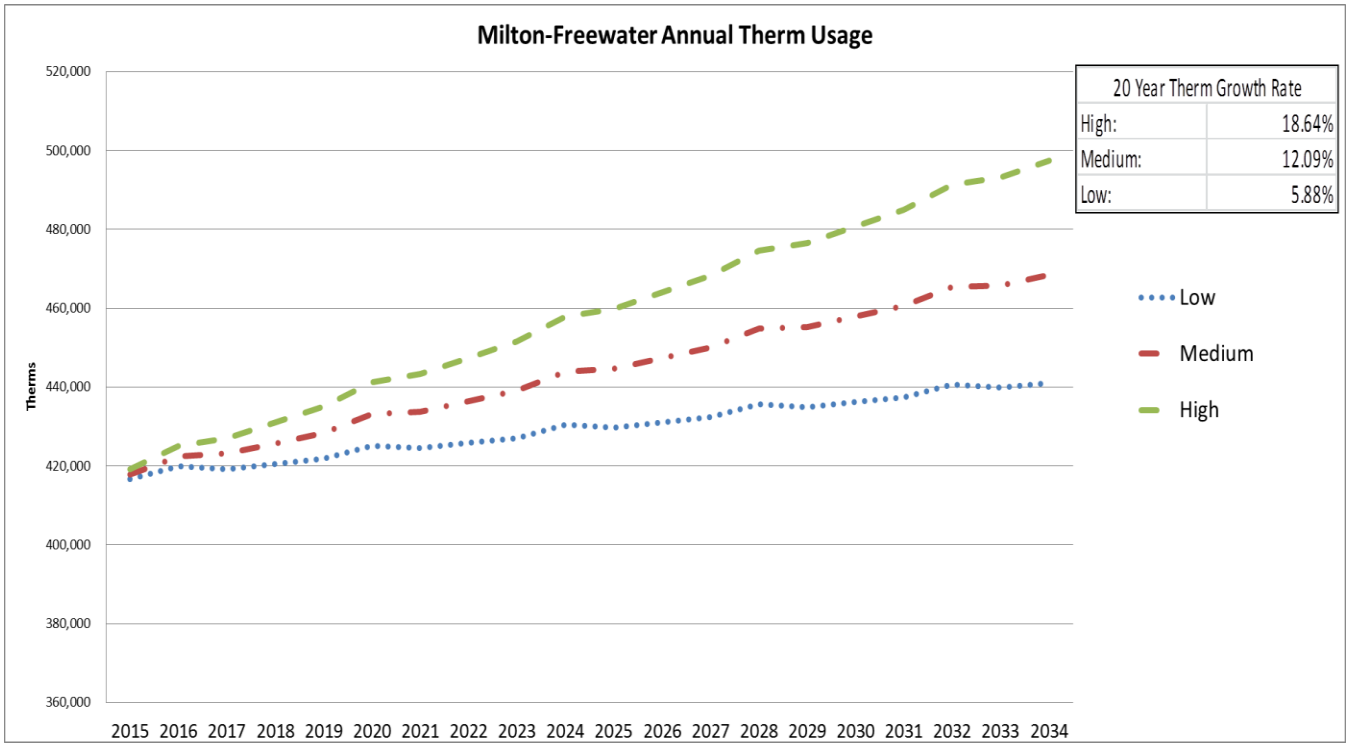
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.84%	0.77%	0.78%	1.16%	1.08%	1.10%	1.47%	1.39%	1.41%
2017	-0.22%	-0.14%	-0.16%	0.09%	0.17%	0.15%	0.40%	0.48%	0.46%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.85%	0.77%	0.79%	1.16%	1.08%	1.10%	1.47%	1.39%	1.41%
2021	-0.22%	-0.14%	-0.16%	0.09%	0.17%	0.15%	0.40%	0.48%	0.46%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.84%	0.76%	0.78%	1.15%	1.07%	1.09%	1.46%	1.38%	1.40%
2025	-0.23%	-0.15%	-0.17%	0.07%	0.15%	0.13%	0.38%	0.46%	0.44%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.83%	0.75%	0.77%	1.13%	1.05%	1.07%	1.43%	1.35%	1.37%
2029	-0.24%	-0.16%	-0.18%	0.05%	0.13%	0.11%	0.34%	0.42%	0.40%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.82%	0.74%	0.76%	1.11%	1.03%	1.05%	1.39%	1.32%	1.33%
2033	-0.25%	-0.17%	-0.19%	0.03%	0.11%	0.09%	0.31%	0.39%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

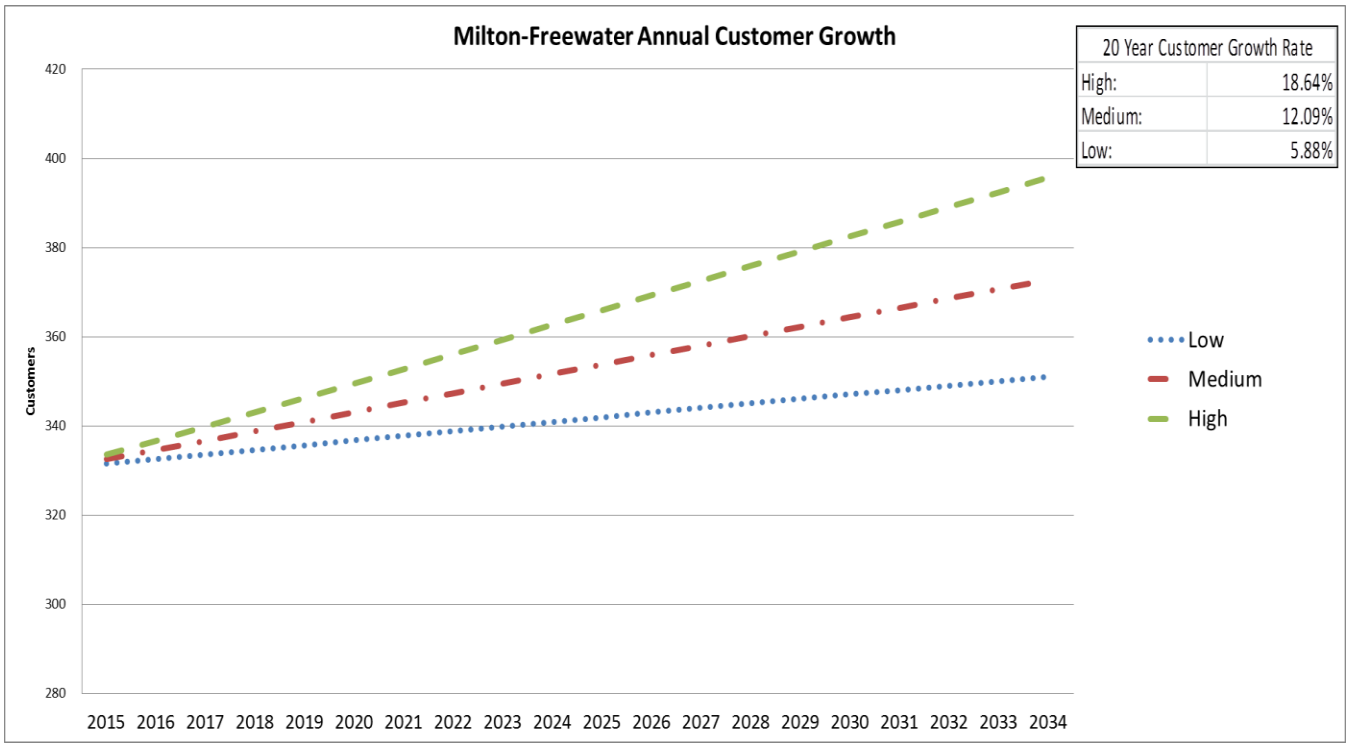
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	227	104	332	228	105	333	229	105	334
2016	228	105	333	229	105	335	231	106	337
2017	229	105	334	231	106	337	233	107	340
2018	229	105	335	232	107	339	235	108	343
2019	230	106	336	234	107	341	237	109	346
2020	231	106	337	235	108	343	240	110	349
2021	232	106	338	237	109	345	242	111	353
2022	232	107	339	238	109	347	244	112	356
2023	233	107	340	240	110	349	246	113	359
2024	234	107	341	241	111	352	249	114	363
2025	234	108	342	243	111	354	251	115	366
2026	235	108	343	244	112	356	253	116	369
2027	236	108	344	245	113	358	255	117	373
2028	237	108	345	247	113	360	258	118	376
2029	237	109	346	248	114	362	260	119	379
2030	238	109	347	250	115	364	262	120	383
2031	239	109	348	251	115	366	265	121	386
2032	239	110	349	253	116	369	267	122	389
2033	240	110	350	254	117	371	269	123	392
2034	241	110	351	256	117	373	271	124	396

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2017	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2018	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2019	0.31%	0.31%	0.31%	0.63%	0.63%	0.63%	0.94%	0.94%	0.94%
2020	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2021	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.94%	0.94%	0.94%
2022	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2023	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.93%	0.93%	0.93%
2024	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2025	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2027	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2028	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2029	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2030	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2031	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.86%	0.86%	0.86%
2032	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2033	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Milton-Freewater Annual Therm Usage
20 Year Therm Growth Rate
High: 18.64%
Medium: 12.09%
Low: 5.88%
Therms
520,000
500,000
480,000
460,000
440,000
420,000
400,000
380,000
360,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Milton-Freewater Annual Customer Growth
20 Year Customer Growth Rate
High: 18.64%
Medium: 12.09%
Low: 5.88%
Customers
420
400
380
360
340
320
300
280
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Mission Tap

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	302,758	145,234	447,992	304,100	145,234	449,334	305,442	145,234	450,676
2016	305,040	146,329	451,369	307,314	146,769	454,083	309,596	147,209	456,805
2017	304,596	146,116	450,712	307,798	147,000	454,798	311,022	147,887	458,909
2018	305,527	146,562	452,090	309,679	147,899	457,578	313,873	149,243	463,116
2019	306,467	147,013	453,480	311,584	148,808	460,392	316,769	150,620	467,388
2020	308,788	148,127	456,914	314,900	150,392	465,292	321,113	152,685	473,798
2021	308,346	147,915	456,261	315,411	150,636	466,048	322,615	153,400	476,014
2022	309,290	148,367	457,658	317,343	151,559	468,901	325,577	154,808	480,386
2023	310,229	148,818	459,047	319,270	152,479	471,749	328,543	156,219	484,762
2024	312,573	149,942	462,515	322,656	154,096	476,751	333,029	158,352	491,381
2025	312,105	149,718	461,822	323,136	154,325	477,461	334,520	159,060	493,580
2026	313,035	150,164	463,200	325,063	155,246	480,309	337,513	160,483	497,996
2027	313,963	150,609	464,573	326,990	156,166	483,157	340,514	161,911	502,425
2028	316,303	151,732	468,035	330,392	157,791	488,182	345,060	164,072	509,132
2029	315,797	151,489	467,285	330,814	157,993	488,807	346,496	164,755	511,251
2030	316,702	151,923	468,625	332,711	158,898	491,609	349,476	166,172	515,648
2031	317,606	152,357	469,963	334,612	159,806	494,418	352,470	167,596	520,066
2032	319,941	153,477	473,418	338,024	161,436	499,460	357,068	169,782	526,850
2033	319,402	153,218	472,621	338,401	161,616	500,017	358,466	170,447	528,913
2034	320,294	153,646	473,940	340,290	162,518	502,808	361,468	171,874	533,342

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.75%	0.75%	1.06%	1.06%	1.06%	1.36%	1.36%	1.36%
2017	-0.15%	-0.15%	-0.15%	0.16%	0.16%	0.16%	0.46%	0.46%	0.46%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.37%	1.37%	1.37%
2021	-0.14%	-0.14%	-0.14%	0.16%	0.16%	0.16%	0.47%	0.47%	0.47%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.76%	0.76%	0.76%	1.06%	1.06%	1.06%	1.37%	1.37%	1.37%
2025	-0.15%	-0.15%	-0.15%	0.15%	0.15%	0.15%	0.45%	0.45%	0.45%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.75%	0.75%	1.04%	1.04%	1.04%	1.34%	1.34%	1.34%
2029	-0.16%	-0.16%	-0.16%	0.13%	0.13%	0.13%	0.42%	0.42%	0.42%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.74%	0.74%	0.74%	1.02%	1.02%	1.02%	1.30%	1.30%	1.30%
2033	-0.17%	-0.17%	-0.17%	0.11%	0.11%	0.11%	0.39%	0.39%	0.39%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	398	4,890	5,288	398	4,906	5,304	398	4,921	5,319
2016	401	4,903	5,304	402	4,933	5,336	403	4,964	5,368
2017	400	4,919	5,320	403	4,965	5,368	405	5,011	5,417
2018	402	4,935	5,336	405	4,996	5,401	409	5,057	5,466
2019	403	4,950	5,352	408	5,026	5,434	413	5,104	5,517
2020	406	4,963	5,369	412	5,055	5,467	418	5,149	5,567
2021	405	4,980	5,385	413	5,088	5,501	420	5,198	5,618
2022	406	4,995	5,402	415	5,119	5,535	424	5,246	5,670
2023	408	5,010	5,418	418	5,150	5,568	428	5,294	5,722
2024	411	5,024	5,435	422	5,180	5,602	434	5,340	5,774
2025	410	5,041	5,451	423	5,213	5,636	436	5,390	5,826
2026	411	5,056	5,467	425	5,244	5,669	440	5,438	5,878
2027	413	5,071	5,483	428	5,275	5,703	444	5,487	5,930
2028	416	5,084	5,500	432	5,304	5,736	450	5,533	5,982
2029	415	5,100	5,515	433	5,337	5,769	451	5,583	6,034
2030	416	5,115	5,531	435	5,367	5,803	455	5,631	6,086
2031	417	5,130	5,547	438	5,398	5,836	459	5,679	6,138
2032	420	5,142	5,563	442	5,426	5,869	465	5,725	6,191
2033	420	5,159	5,578	443	5,459	5,902	467	5,776	6,243
2034	421	5,173	5,594	445	5,489	5,935	471	5,824	6,295

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.27%	0.30%	1.06%	0.57%	0.60%	1.36%	0.87%	0.91%
2017	-0.15%	0.34%	0.30%	0.16%	0.65%	0.61%	0.46%	0.95%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.76%	0.27%	0.31%	1.06%	0.57%	0.61%	1.37%	0.88%	0.92%
2021	-0.14%	0.34%	0.31%	0.16%	0.65%	0.61%	0.47%	0.96%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.76%	0.27%	0.30%	1.06%	0.57%	0.61%	1.37%	0.87%	0.91%
2025	-0.15%	0.34%	0.30%	0.15%	0.64%	0.60%	0.45%	0.94%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.75%	0.26%	0.29%	1.04%	0.55%	0.59%	1.34%	0.84%	0.88%
2029	-0.16%	0.33%	0.29%	0.13%	0.62%	0.58%	0.42%	0.91%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.74%	0.25%	0.28%	1.02%	0.53%	0.57%	1.30%	0.81%	0.85%
2033	-0.17%	0.32%	0.28%	0.11%	0.60%	0.56%	0.39%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	121,268	326,725	447,992	121,631	327,703	449,334	121,994	328,682	450,676
2016	122,210	329,158	451,369	122,945	331,138	454,083	123,682	333,123	456,805
2017	122,004	328,708	450,712	123,110	331,688	454,798	124,223	334,686	458,909
2018	122,377	329,713	452,090	123,863	333,716	457,578	125,362	337,755	463,116
2019	122,753	330,726	453,480	124,624	335,768	460,392	126,518	340,870	467,388
2020	123,712	333,202	456,914	125,980	339,312	465,292	128,283	345,515	473,798
2021	123,506	332,755	456,261	126,155	339,893	466,048	128,853	347,161	476,014
2022	123,884	333,773	457,658	126,928	341,974	468,901	130,036	350,349	480,386
2023	124,260	334,787	459,047	127,698	344,050	471,749	131,221	353,541	484,762
2024	125,228	337,287	462,515	129,083	347,669	476,751	133,044	358,337	491,381
2025	125,011	336,811	461,822	129,245	348,216	477,461	133,608	359,972	493,580
2026	125,384	337,815	463,200	130,016	350,293	480,309	134,803	363,193	497,996
2027	125,756	338,817	464,573	130,786	352,370	483,157	136,002	366,423	502,425
2028	126,723	341,312	468,035	132,178	356,004	488,182	137,850	371,282	509,132
2029	126,490	340,795	467,285	132,316	356,491	488,807	138,391	372,860	511,251
2030	126,853	341,772	468,625	133,075	358,535	491,609	139,581	376,066	515,648
2031	127,215	342,748	469,963	133,835	360,583	494,418	140,777	379,288	520,066
2032	128,180	345,238	473,418	135,231	364,229	499,460	142,647	384,203	526,850
2033	127,934	344,686	472,621	135,350	364,667	500,017	143,172	385,741	528,913
2034	128,292	345,648	473,940	136,106	366,702	502,808	144,371	388,971	533,342

Annual Change

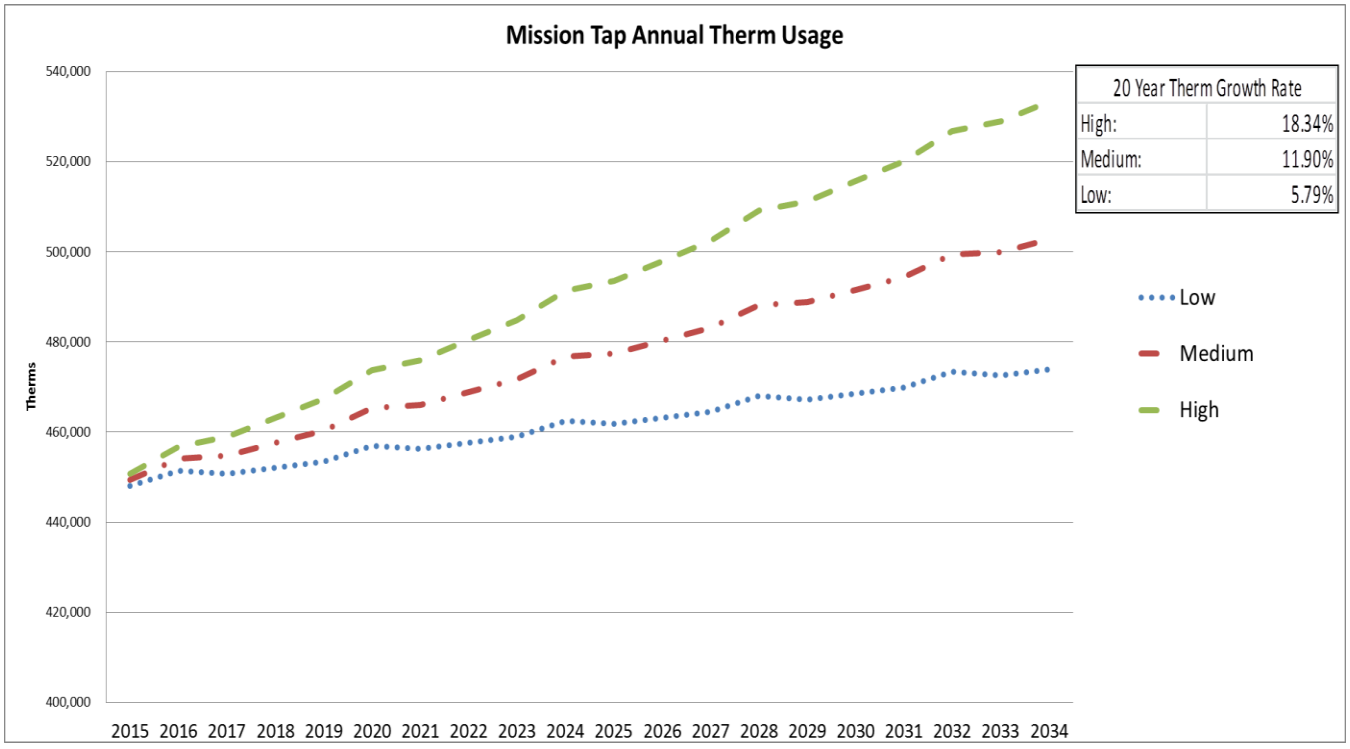
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.74%	0.75%	1.08%	1.05%	1.06%	1.38%	1.35%	1.36%
2017	-0.17%	-0.14%	-0.15%	0.13%	0.17%	0.16%	0.44%	0.47%	0.46%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.75%	0.76%	1.09%	1.06%	1.06%	1.40%	1.36%	1.37%
2021	-0.17%	-0.13%	-0.14%	0.14%	0.17%	0.16%	0.44%	0.48%	0.47%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.75%	0.76%	1.08%	1.05%	1.06%	1.39%	1.36%	1.37%
2025	-0.17%	-0.14%	-0.15%	0.13%	0.16%	0.15%	0.42%	0.46%	0.45%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.74%	0.75%	1.06%	1.03%	1.04%	1.36%	1.33%	1.34%
2029	-0.18%	-0.15%	-0.16%	0.10%	0.14%	0.13%	0.39%	0.42%	0.42%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.73%	0.74%	1.04%	1.01%	1.02%	1.33%	1.30%	1.30%
2033	-0.19%	-0.16%	-0.17%	0.09%	0.12%	0.11%	0.37%	0.40%	0.39%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

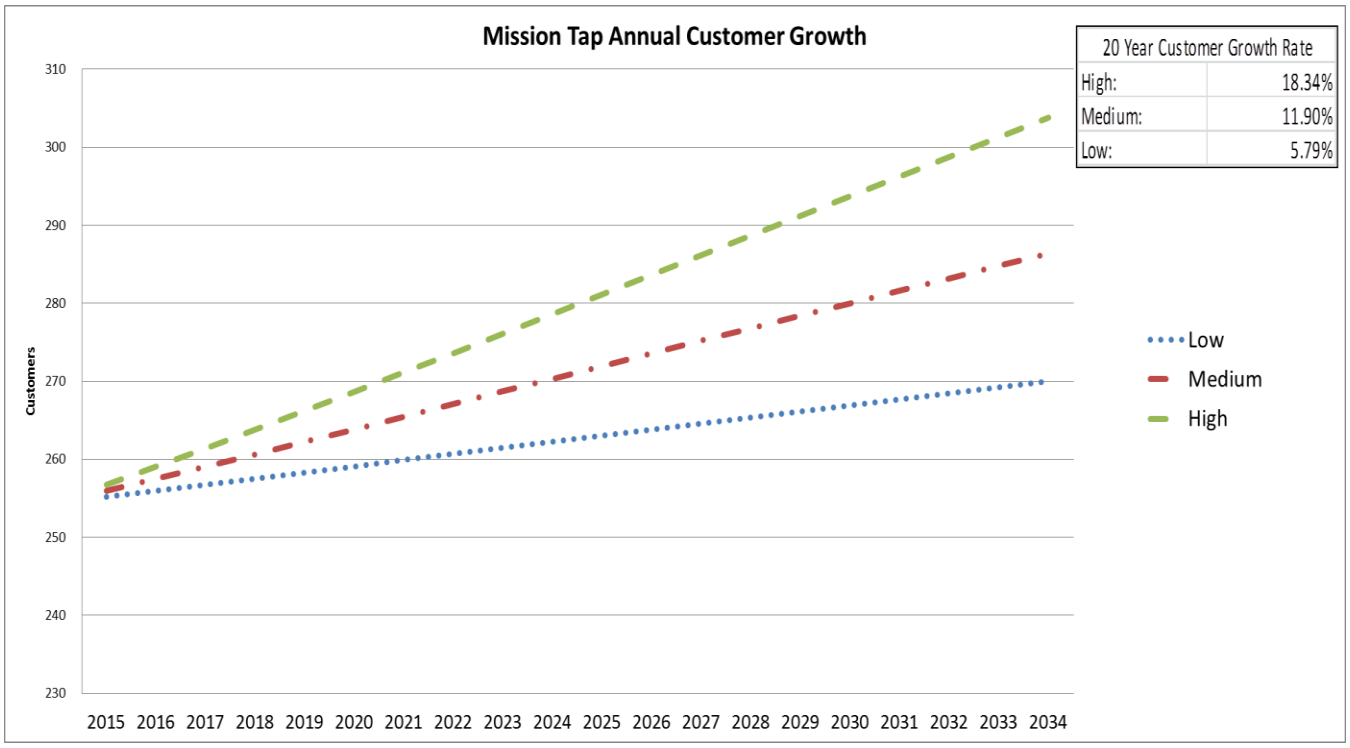
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	213	42	255	214	42	256	214	42	257
2016	214	42	256	215	43	257	216	43	259
2017	214	42	257	216	43	259	218	43	261
2018	215	43	258	218	43	261	220	44	264
2019	216	43	258	219	43	262	222	44	266
2020	216	43	259	220	44	264	224	44	269
2021	217	43	260	222	44	265	226	45	271
2022	218	43	261	223	44	267	228	45	274
2023	218	43	261	224	44	269	231	46	276
2024	219	43	262	226	45	270	233	46	279
2025	220	43	263	227	45	272	235	46	281
2026	220	44	264	228	45	274	237	47	284
2027	221	44	265	230	45	275	239	47	286
2028	222	44	265	231	46	277	241	48	289
2029	222	44	266	232	46	278	243	48	291
2030	223	44	267	234	46	280	245	48	294
2031	224	44	268	235	46	282	247	49	296
2032	224	44	268	236	47	283	249	49	299
2033	225	44	269	238	47	285	252	50	301
2034	225	45	270	239	47	286	254	50	304

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Mission Tap Annual Therm Usage
Therms
540,000
520,000
500,000
480,000
460,000
440,000
420,000
400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Mission Tap Annual Customer Growth
Customers
310
300
290
280
270
260
250
240
230
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Nyssa-Ontario

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,905,435	545,641	5,451,076	4,912,732	545,641	5,458,373	4,920,029	545,641	5,465,670
2016	4,936,023	549,043	5,485,066	4,950,180	549,800	5,499,981	4,964,358	550,557	5,514,916
2017	4,919,104	547,161	5,466,266	4,940,130	548,684	5,488,814	4,961,215	550,209	5,511,424
2018	4,926,131	547,943	5,474,075	4,954,244	550,252	5,504,496	4,982,477	552,567	5,535,043
2019	4,933,285	548,739	5,482,024	4,968,633	551,850	5,520,483	5,004,183	554,974	5,559,157
2020	4,964,369	552,196	5,516,565	5,007,158	556,129	5,563,286	5,050,253	560,083	5,610,337
2021	4,947,679	550,340	5,498,019	4,997,649	555,072	5,552,721	5,048,050	559,839	5,607,889
2022	4,954,921	551,145	5,506,067	5,012,279	556,697	5,568,977	5,070,217	562,297	5,632,514
2023	4,962,142	551,949	5,514,091	5,026,889	558,320	5,585,209	5,092,384	564,756	5,657,140
2024	4,993,511	555,438	5,548,948	5,066,072	562,672	5,628,744	5,139,582	569,990	5,709,572
2025	4,976,528	553,549	5,530,077	5,056,057	561,560	5,617,617	5,136,739	569,675	5,706,414
2026	4,983,695	554,346	5,538,041	5,070,620	563,177	5,633,797	5,158,932	572,136	5,731,068
2027	4,990,840	555,141	5,545,981	5,085,158	564,792	5,649,950	5,181,120	574,597	5,755,716
2028	5,022,052	558,612	5,580,664	5,124,108	569,118	5,693,226	5,228,087	579,805	5,807,893
2029	5,004,713	556,684	5,561,397	5,113,449	567,934	5,681,383	5,224,386	579,395	5,803,781
2030	5,011,515	557,440	5,568,955	5,127,347	569,478	5,696,825	5,245,686	581,757	5,827,443
2031	5,018,367	558,203	5,576,570	5,141,369	571,035	5,712,404	5,267,205	584,144	5,851,348
2032	5,049,424	561,657	5,611,081	5,180,079	575,334	5,755,413	5,313,922	589,325	5,903,247
2033	5,031,738	559,690	5,591,428	5,168,784	574,080	5,742,864	5,309,361	588,819	5,898,180
2034	5,038,466	560,438	5,598,905	5,182,608	575,615	5,758,223	5,330,661	591,181	5,921,842

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	0.76%	0.76%	0.76%	0.90%	0.90%	0.90%
2017	-0.34%	-0.34%	-0.34%	-0.20%	-0.20%	-0.20%	-0.06%	-0.06%	-0.06%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.63%	0.63%	0.63%	0.78%	0.78%	0.78%	0.92%	0.92%	0.92%
2021	-0.34%	-0.34%	-0.34%	-0.19%	-0.19%	-0.19%	-0.04%	-0.04%	-0.04%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.63%	0.63%	0.63%	0.78%	0.78%	0.78%	0.93%	0.93%	0.93%
2025	-0.34%	-0.34%	-0.34%	-0.20%	-0.20%	-0.20%	-0.06%	-0.06%	-0.06%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.63%	0.63%	0.63%	0.77%	0.77%	0.77%	0.91%	0.91%	0.91%
2029	-0.35%	-0.35%	-0.35%	-0.21%	-0.21%	-0.21%	-0.07%	-0.07%	-0.07%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.62%	0.62%	0.62%	0.75%	0.75%	0.75%	0.89%	0.89%	0.89%
2033	-0.35%	-0.35%	-0.35%	-0.22%	-0.22%	-0.22%	-0.09%	-0.09%	-0.09%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,495	67,096	68,591	1,495	67,188	68,683	1,495	67,279	68,774
2016	1,504	67,181	68,685	1,506	67,366	68,872	1,508	67,551	69,059
2017	1,499	67,283	68,782	1,503	67,562	69,066	1,507	67,843	69,350
2018	1,501	67,379	68,880	1,508	67,755	69,263	1,514	68,133	69,647
2019	1,503	67,477	68,980	1,512	67,952	69,464	1,520	68,430	69,951
2020	1,513	67,567	69,080	1,524	68,141	69,665	1,534	68,720	70,254
2021	1,508	67,674	69,181	1,521	68,349	69,870	1,534	69,030	70,564
2022	1,510	67,773	69,283	1,525	68,549	70,074	1,541	69,333	70,874
2023	1,512	67,871	69,384	1,530	68,749	70,278	1,547	69,636	71,184
2024	1,522	67,964	69,485	1,542	68,943	70,485	1,562	69,935	71,497
2025	1,517	68,068	69,585	1,539	69,148	70,686	1,561	70,243	71,804
2026	1,519	68,166	69,685	1,543	69,347	70,890	1,567	70,546	72,114
2027	1,521	68,264	69,785	1,547	69,546	71,093	1,574	70,850	72,424
2028	1,530	68,352	69,882	1,559	69,733	71,292	1,589	71,139	72,728
2029	1,525	68,454	69,979	1,556	69,933	71,489	1,587	71,441	73,029
2030	1,527	68,547	70,074	1,560	70,123	71,683	1,594	71,733	73,327
2031	1,529	68,640	70,170	1,564	70,314	71,879	1,600	72,027	73,627
2032	1,539	68,725	70,263	1,576	70,494	72,071	1,615	72,307	73,922
2033	1,533	68,823	70,357	1,573	70,689	72,262	1,613	72,603	74,217
2034	1,535	68,915	70,451	1,577	70,878	72,456	1,620	72,895	74,514

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.13%	0.14%	0.76%	0.27%	0.28%	0.90%	0.40%	0.41%
2017	-0.34%	0.15%	0.14%	-0.20%	0.29%	0.28%	-0.06%	0.43%	0.42%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.63%	0.13%	0.14%	0.78%	0.28%	0.29%	0.92%	0.42%	0.43%
2021	-0.34%	0.16%	0.15%	-0.19%	0.30%	0.29%	-0.04%	0.45%	0.44%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.63%	0.14%	0.15%	0.78%	0.28%	0.29%	0.93%	0.43%	0.44%
2025	-0.34%	0.15%	0.14%	-0.20%	0.30%	0.29%	-0.06%	0.44%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.63%	0.13%	0.14%	0.77%	0.27%	0.28%	0.91%	0.41%	0.42%
2029	-0.35%	0.15%	0.14%	-0.21%	0.29%	0.28%	-0.07%	0.42%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.62%	0.12%	0.13%	0.75%	0.26%	0.27%	0.89%	0.39%	0.40%
2033	-0.35%	0.14%	0.13%	-0.22%	0.28%	0.27%	-0.09%	0.41%	0.40%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,887,208	3,563,869	5,451,076	1,889,734	3,568,639	5,458,373	1,892,260	3,573,410	5,465,670
2016	1,899,817	3,585,249	5,485,066	1,904,983	3,594,998	5,499,981	1,910,156	3,604,760	5,514,916
2017	1,892,467	3,573,799	5,466,266	1,900,273	3,588,541	5,488,814	1,908,101	3,603,323	5,511,424
2018	1,895,170	3,578,905	5,474,075	1,905,702	3,598,794	5,504,496	1,916,278	3,618,766	5,535,043
2019	1,897,922	3,584,102	5,482,024	1,911,237	3,609,246	5,520,483	1,924,626	3,634,531	5,559,157
2020	1,910,727	3,605,838	5,516,565	1,926,909	3,636,377	5,563,286	1,943,206	3,667,131	5,610,337
2021	1,903,460	3,594,559	5,498,019	1,922,398	3,630,323	5,552,721	1,941,497	3,666,391	5,607,889
2022	1,906,246	3,599,821	5,506,067	1,928,026	3,640,951	5,568,977	1,950,023	3,682,491	5,632,514
2023	1,909,024	3,605,067	5,514,091	1,933,645	3,651,563	5,585,209	1,958,549	3,698,591	5,657,140
2024	1,921,943	3,627,005	5,548,948	1,949,582	3,679,163	5,628,744	1,977,577	3,731,995	5,709,572
2025	1,914,559	3,615,519	5,530,077	1,944,865	3,672,751	5,617,617	1,975,608	3,730,806	5,706,414
2026	1,917,316	3,620,725	5,538,041	1,950,467	3,683,330	5,633,797	1,984,143	3,746,925	5,731,068
2027	1,920,064	3,625,916	5,545,981	1,956,060	3,693,891	5,649,950	1,992,677	3,763,040	5,755,716
2028	1,932,928	3,647,736	5,580,664	1,971,915	3,721,310	5,693,226	2,011,632	3,796,261	5,807,893
2029	1,925,402	3,635,995	5,561,397	1,966,942	3,714,441	5,681,383	2,009,317	3,794,464	5,803,781
2030	1,928,018	3,640,937	5,568,955	1,972,288	3,724,537	5,696,825	2,017,509	3,809,934	5,827,443
2031	1,930,655	3,645,915	5,576,570	1,977,682	3,734,723	5,712,404	2,025,785	3,825,563	5,851,348
2032	1,943,464	3,667,617	5,611,081	1,993,455	3,761,959	5,755,413	2,044,659	3,858,588	5,903,247
2033	1,935,799	3,655,629	5,591,428	1,988,227	3,754,637	5,742,864	2,041,999	3,856,181	5,898,180
2034	1,938,387	3,660,518	5,598,905	1,993,544	3,764,678	5,758,223	2,050,191	3,871,651	5,921,842

Annual Change

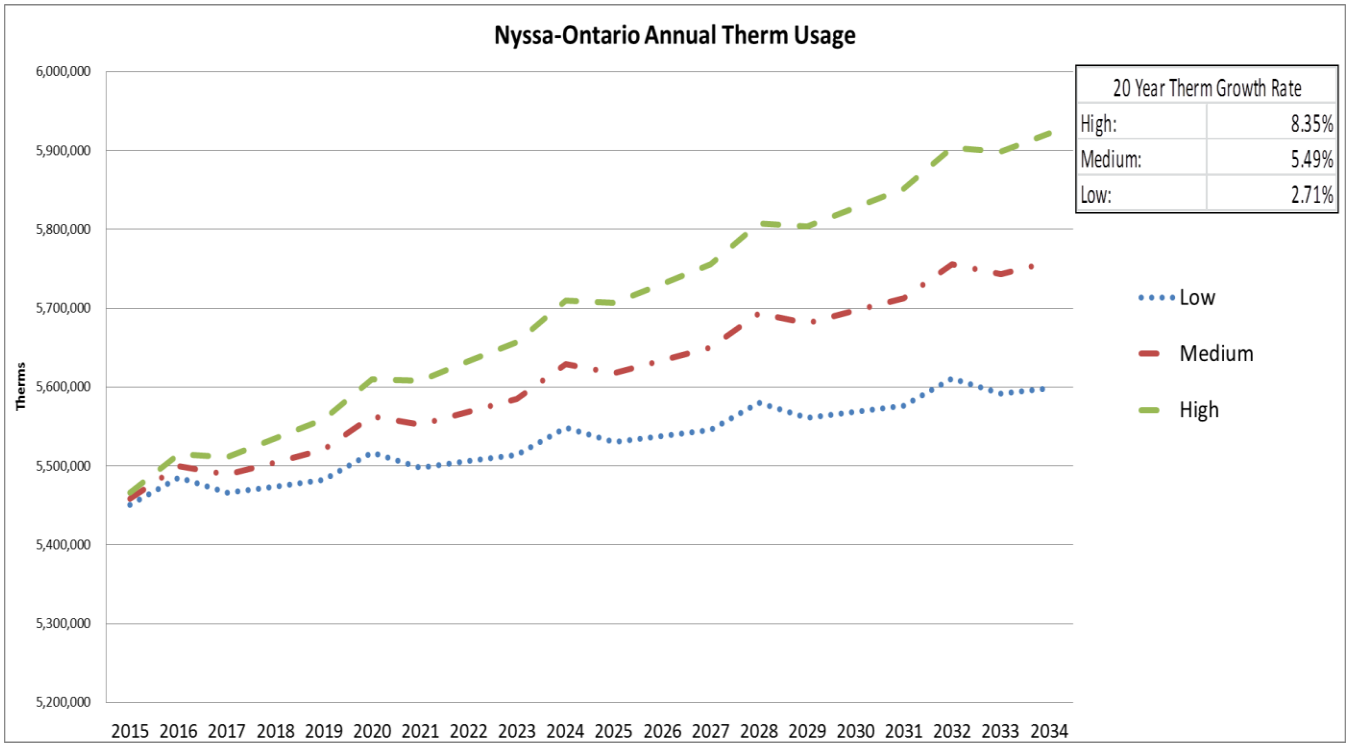
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.60%	0.62%	0.81%	0.74%	0.76%	0.95%	0.88%	0.90%
2017	-0.39%	-0.32%	-0.34%	-0.25%	-0.18%	-0.20%	-0.11%	-0.04%	-0.06%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.67%	0.61%	0.63%	0.82%	0.75%	0.78%	0.97%	0.90%	0.92%
2021	-0.38%	-0.31%	-0.34%	-0.23%	-0.17%	-0.19%	-0.09%	-0.02%	-0.04%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.68%	0.61%	0.63%	0.82%	0.76%	0.78%	0.97%	0.90%	0.93%
2025	-0.38%	-0.32%	-0.34%	-0.24%	-0.17%	-0.20%	-0.10%	-0.03%	-0.06%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.67%	0.60%	0.63%	0.81%	0.74%	0.77%	0.95%	0.88%	0.91%
2029	-0.39%	-0.32%	-0.35%	-0.25%	-0.18%	-0.21%	-0.12%	-0.05%	-0.07%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.66%	0.60%	0.62%	0.80%	0.73%	0.75%	0.93%	0.86%	0.89%
2033	-0.39%	-0.33%	-0.35%	-0.26%	-0.19%	-0.22%	-0.13%	-0.06%	-0.09%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%

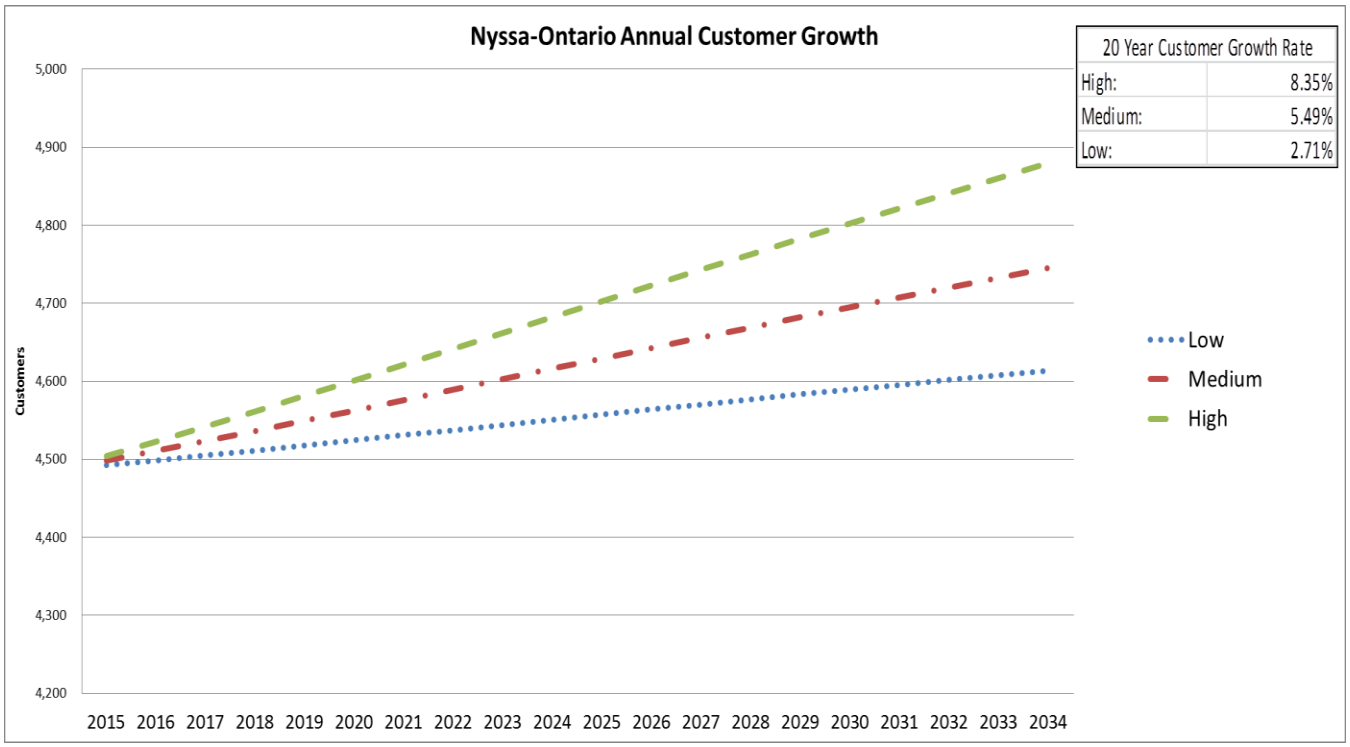
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,573	919	4,492	3,578	920	4,498	3,583	922	4,504
2016	3,578	920	4,498	3,588	923	4,511	3,598	925	4,523
2017	3,583	922	4,505	3,598	925	4,523	3,613	929	4,542
2018	3,588	923	4,511	3,608	928	4,536	3,628	933	4,561
2019	3,593	924	4,518	3,619	931	4,549	3,644	937	4,581
2020	3,599	926	4,524	3,629	933	4,563	3,660	941	4,601
2021	3,604	927	4,531	3,640	936	4,576	3,676	946	4,621
2022	3,609	928	4,538	3,650	939	4,589	3,692	950	4,642
2023	3,615	930	4,544	3,661	942	4,603	3,708	954	4,662
2024	3,620	931	4,551	3,672	944	4,616	3,725	958	4,683
2025	3,625	932	4,557	3,682	947	4,630	3,741	962	4,703
2026	3,630	934	4,564	3,693	950	4,643	3,757	966	4,723
2027	3,635	935	4,570	3,704	953	4,656	3,773	970	4,743
2028	3,640	936	4,577	3,714	955	4,669	3,789	974	4,763
2029	3,646	938	4,583	3,724	958	4,682	3,804	979	4,783
2030	3,650	939	4,589	3,734	960	4,695	3,820	983	4,802
2031	3,655	940	4,596	3,745	963	4,708	3,836	987	4,822
2032	3,660	941	4,602	3,754	966	4,720	3,851	990	4,841
2033	3,665	943	4,608	3,764	968	4,733	3,866	994	4,861
2034	3,670	944	4,614	3,775	971	4,745	3,882	998	4,880

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2017	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2018	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2019	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2020	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2021	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2022	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2023	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2024	0.15%	0.15%	0.15%	0.29%	0.29%	0.29%	0.44%	0.44%	0.44%
2025	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2032	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2033	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2034	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%


Nyssa-Ontario Annual Therm Usage
Therms
6,000,000
5,900,000
5,800,000
5,700,000
5,600,000
5,500,000
5,400,000
5,300,000
5,200,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 8.35%
Medium: 5.49%
Low: 2.71%
Low
Medium
High


Nyssa-Ontario Annual Customer Growth
Customers
5,000
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.35%
Medium: 5.49%
Low: 2.71%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pendleton

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,310,548	1,851,679	6,162,228	4,329,007	1,851,679	6,180,686	4,347,465	1,851,679	6,199,145
2016	4,343,925	1,866,017	6,209,941	4,375,652	1,871,631	6,247,283	4,407,491	1,877,246	6,284,737
2017	4,336,716	1,862,920	6,199,637	4,381,646	1,874,195	6,255,841	4,426,881	1,885,504	6,312,385
2018	4,349,970	1,868,614	6,218,584	4,408,429	1,885,651	6,294,080	4,467,469	1,902,792	6,370,261
2019	4,363,345	1,874,359	6,237,704	4,435,538	1,897,247	6,332,784	4,508,678	1,920,343	6,429,021
2020	4,397,296	1,888,944	6,286,240	4,483,669	1,917,834	6,401,504	4,571,446	1,947,078	6,518,523
2021	4,390,106	1,885,855	6,275,961	4,490,028	1,920,554	6,410,582	4,591,888	1,955,784	6,547,672
2022	4,403,545	1,891,628	6,295,173	4,517,518	1,932,313	6,449,831	4,634,058	1,973,745	6,607,804
2023	4,416,917	1,897,372	6,314,289	4,544,954	1,944,048	6,489,002	4,676,273	1,991,726	6,667,999
2024	4,451,198	1,912,098	6,363,296	4,594,093	1,965,067	6,559,160	4,741,097	2,019,336	6,760,433
2025	4,443,619	1,908,842	6,352,461	4,599,988	1,967,588	6,567,577	4,761,338	2,027,957	6,789,295
2026	4,456,870	1,914,535	6,371,405	4,627,424	1,979,324	6,606,748	4,803,935	2,046,100	6,850,035
2027	4,470,082	1,920,210	6,390,292	4,654,860	1,991,059	6,645,919	4,846,658	2,064,296	6,910,955
2028	4,504,323	1,934,919	6,439,241	4,704,243	2,012,182	6,716,425	4,912,370	2,092,285	7,004,655
2029	4,496,182	1,931,422	6,427,603	4,709,295	2,014,343	6,723,639	4,931,800	2,100,560	7,032,360
2030	4,509,071	1,936,959	6,446,029	4,736,296	2,025,892	6,762,188	4,974,214	2,118,625	7,092,839
2031	4,521,949	1,942,491	6,464,440	4,763,350	2,037,464	6,800,814	5,016,834	2,136,778	7,153,612
2032	4,556,127	1,957,173	6,513,300	4,812,916	2,058,666	6,871,582	5,083,324	2,165,097	7,248,421
2033	4,547,519	1,953,475	6,500,994	4,817,296	2,060,539	6,877,835	5,102,179	2,173,128	7,275,307
2034	4,560,212	1,958,927	6,519,139	4,844,187	2,072,041	6,916,228	5,144,901	2,191,324	7,336,225

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.77%	0.77%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2017	-0.17%	-0.17%	-0.17%	0.14%	0.14%	0.14%	0.44%	0.44%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.78%	0.78%	1.09%	1.09%	1.09%	1.39%	1.39%	1.39%
2021	-0.16%	-0.16%	-0.16%	0.14%	0.14%	0.14%	0.45%	0.45%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.78%	0.78%	1.08%	1.08%	1.08%	1.39%	1.39%	1.39%
2025	-0.17%	-0.17%	-0.17%	0.13%	0.13%	0.13%	0.43%	0.43%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.77%	0.77%	1.06%	1.06%	1.06%	1.36%	1.36%	1.36%
2029	-0.18%	-0.18%	-0.18%	0.11%	0.11%	0.11%	0.40%	0.40%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.76%	0.76%	1.04%	1.04%	1.04%	1.33%	1.33%	1.33%
2033	-0.19%	-0.19%	-0.19%	0.09%	0.09%	0.09%	0.37%	0.37%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	5,073	76,257	81,330	5,073	76,500	81,573	5,073	76,744	81,817
2016	5,112	76,463	81,575	5,128	76,938	82,066	5,143	77,415	82,558
2017	5,104	76,720	81,823	5,135	77,431	82,565	5,166	78,146	83,312
2018	5,119	76,954	82,074	5,166	77,904	83,070	5,213	78,862	84,075
2019	5,135	77,191	82,326	5,198	78,383	83,581	5,261	79,590	84,851
2020	5,175	77,402	82,577	5,254	78,837	84,092	5,334	80,294	85,629
2021	5,167	77,664	82,831	5,262	79,346	84,608	5,358	81,059	86,417
2022	5,183	77,902	83,084	5,294	79,832	85,126	5,408	81,803	87,211
2023	5,198	78,138	83,337	5,326	80,316	85,643	5,457	82,548	88,005
2024	5,239	78,351	83,590	5,384	80,779	86,163	5,532	83,274	88,807
2025	5,230	78,611	83,840	5,391	81,289	86,680	5,556	84,050	89,606
2026	5,245	78,845	84,091	5,423	81,774	87,197	5,606	84,802	90,408
2027	5,261	79,079	84,340	5,455	82,259	87,714	5,656	85,556	91,212
2028	5,301	79,286	84,587	5,513	82,716	88,228	5,732	86,282	92,015
2029	5,292	79,541	84,832	5,519	83,221	88,739	5,755	87,059	92,814
2030	5,307	79,769	85,075	5,550	83,698	89,248	5,804	87,808	93,612
2031	5,322	79,996	85,318	5,582	84,176	89,758	5,854	88,560	94,414
2032	5,362	80,198	85,560	5,640	84,626	90,267	5,932	89,285	95,217
2033	5,352	80,449	85,801	5,645	85,129	90,774	5,954	90,067	96,020
2034	5,367	80,673	86,040	5,677	85,604	91,281	6,004	90,821	96,824

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.77%	0.27%	0.30%	1.08%	0.57%	0.60%	1.38%	0.87%	0.91%
2017	-0.17%	0.34%	0.30%	0.14%	0.64%	0.61%	0.44%	0.94%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.78%	0.27%	0.31%	1.09%	0.58%	0.61%	1.39%	0.89%	0.92%
2021	-0.16%	0.34%	0.31%	0.14%	0.65%	0.61%	0.45%	0.95%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.78%	0.27%	0.30%	1.08%	0.58%	0.61%	1.39%	0.88%	0.91%
2025	-0.17%	0.33%	0.30%	0.13%	0.63%	0.60%	0.43%	0.93%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.77%	0.26%	0.29%	1.06%	0.56%	0.59%	1.36%	0.85%	0.88%
2029	-0.18%	0.32%	0.29%	0.11%	0.61%	0.58%	0.40%	0.90%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.76%	0.25%	0.28%	1.04%	0.54%	0.57%	1.33%	0.82%	0.85%
2033	-0.19%	0.31%	0.28%	0.09%	0.59%	0.56%	0.37%	0.88%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,721,885	3,440,343	6,162,228	2,730,038	3,450,648	6,180,686	2,738,192	3,460,953	6,199,145
2016	2,744,242	3,465,699	6,209,941	2,760,744	3,486,539	6,247,283	2,777,295	3,507,442	6,284,737
2017	2,738,409	3,461,228	6,199,637	2,763,235	3,492,607	6,255,841	2,788,210	3,524,175	6,312,385
2018	2,746,778	3,471,806	6,218,584	2,780,125	3,513,955	6,294,080	2,813,774	3,556,487	6,370,261
2019	2,755,223	3,482,481	6,237,704	2,797,221	3,535,564	6,332,784	2,839,729	3,589,292	6,429,021
2020	2,777,960	3,508,281	6,286,240	2,828,896	3,572,608	6,401,504	2,880,608	3,637,915	6,518,523
2021	2,772,121	3,503,839	6,275,961	2,831,585	3,578,998	6,410,582	2,892,138	3,655,534	6,547,672
2022	2,780,608	3,514,565	6,295,173	2,848,921	3,600,910	6,449,831	2,918,698	3,689,105	6,607,804
2023	2,789,051	3,525,237	6,314,289	2,866,223	3,622,779	6,489,002	2,945,287	3,722,712	6,667,999
2024	2,812,011	3,551,284	6,363,296	2,898,566	3,660,594	6,559,160	2,987,511	3,772,922	6,760,433
2025	2,805,912	3,546,549	6,352,461	2,900,930	3,666,647	6,567,577	2,998,864	3,790,431	6,789,295
2026	2,814,280	3,557,125	6,371,405	2,918,232	3,688,516	6,606,748	3,025,693	3,824,342	6,850,035
2027	2,822,622	3,567,670	6,390,292	2,935,534	3,710,385	6,645,919	3,052,601	3,858,353	6,910,955
2028	2,845,573	3,593,669	6,439,241	2,968,063	3,748,362	6,716,425	3,095,435	3,909,220	7,004,655
2029	2,839,103	3,588,501	6,427,603	2,969,863	3,753,776	6,723,639	3,106,227	3,926,133	7,032,360
2030	2,847,242	3,598,788	6,446,029	2,986,890	3,775,297	6,762,188	3,132,940	3,959,898	7,092,839
2031	2,855,374	3,609,066	6,464,440	3,003,952	3,796,862	6,800,814	3,159,784	3,993,828	7,153,612
2032	2,878,300	3,635,000	6,513,300	3,036,629	3,834,954	6,871,582	3,203,158	4,045,263	7,248,421
2033	2,871,520	3,629,474	6,500,994	3,037,972	3,839,863	6,877,835	3,213,537	4,061,769	7,275,307
2034	2,879,534	3,639,604	6,519,139	3,054,931	3,861,297	6,916,228	3,240,445	4,095,780	7,336,225

Annual Change

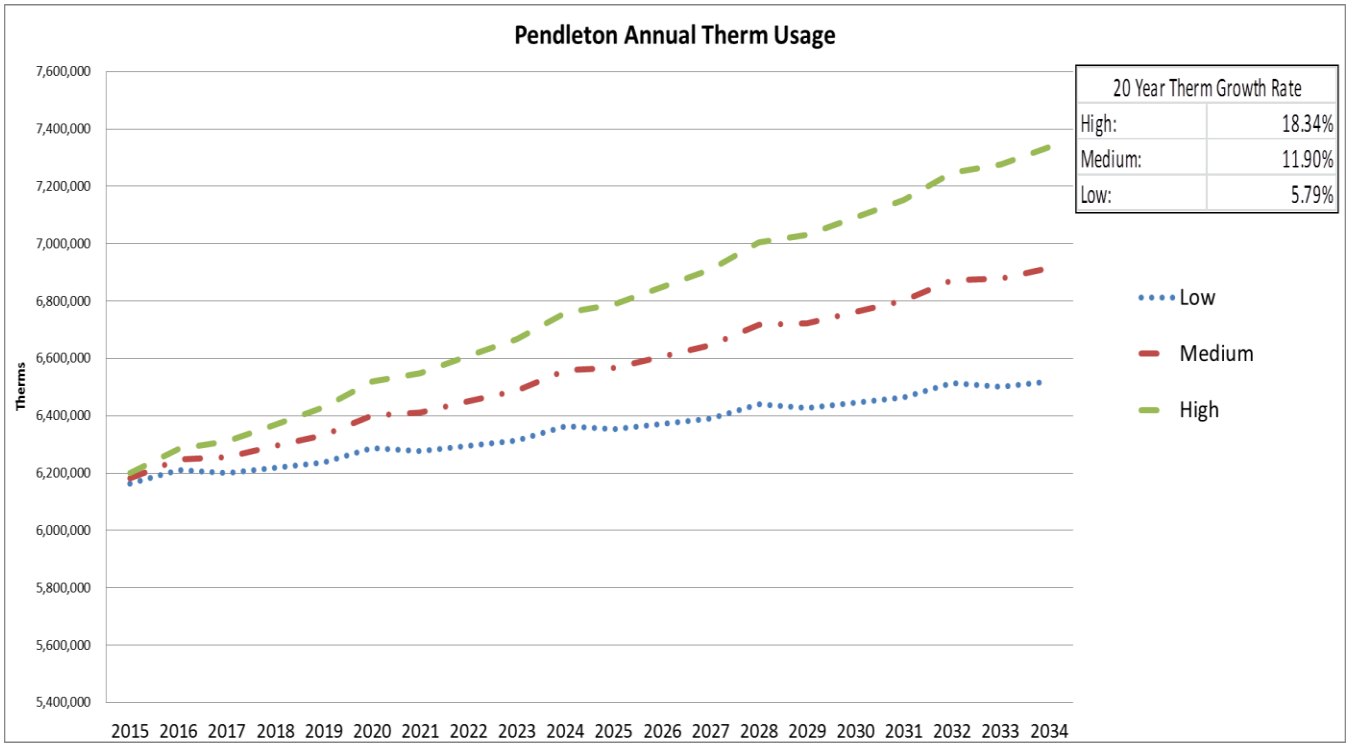
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.74%	0.77%	1.12%	1.04%	1.08%	1.43%	1.34%	1.38%
2017	-0.21%	-0.13%	-0.17%	0.09%	0.17%	0.14%	0.39%	0.48%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.83%	0.74%	0.78%	1.13%	1.05%	1.09%	1.44%	1.35%	1.39%
2021	-0.21%	-0.13%	-0.16%	0.10%	0.18%	0.14%	0.40%	0.48%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.82%	0.74%	0.78%	1.13%	1.04%	1.08%	1.43%	1.35%	1.39%
2025	-0.22%	-0.13%	-0.17%	0.08%	0.17%	0.13%	0.38%	0.46%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.81%	0.73%	0.77%	1.11%	1.02%	1.06%	1.40%	1.32%	1.36%
2029	-0.23%	-0.14%	-0.18%	0.06%	0.14%	0.11%	0.35%	0.43%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.80%	0.72%	0.76%	1.09%	1.00%	1.04%	1.37%	1.29%	1.33%
2033	-0.24%	-0.15%	-0.19%	0.04%	0.13%	0.09%	0.32%	0.41%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

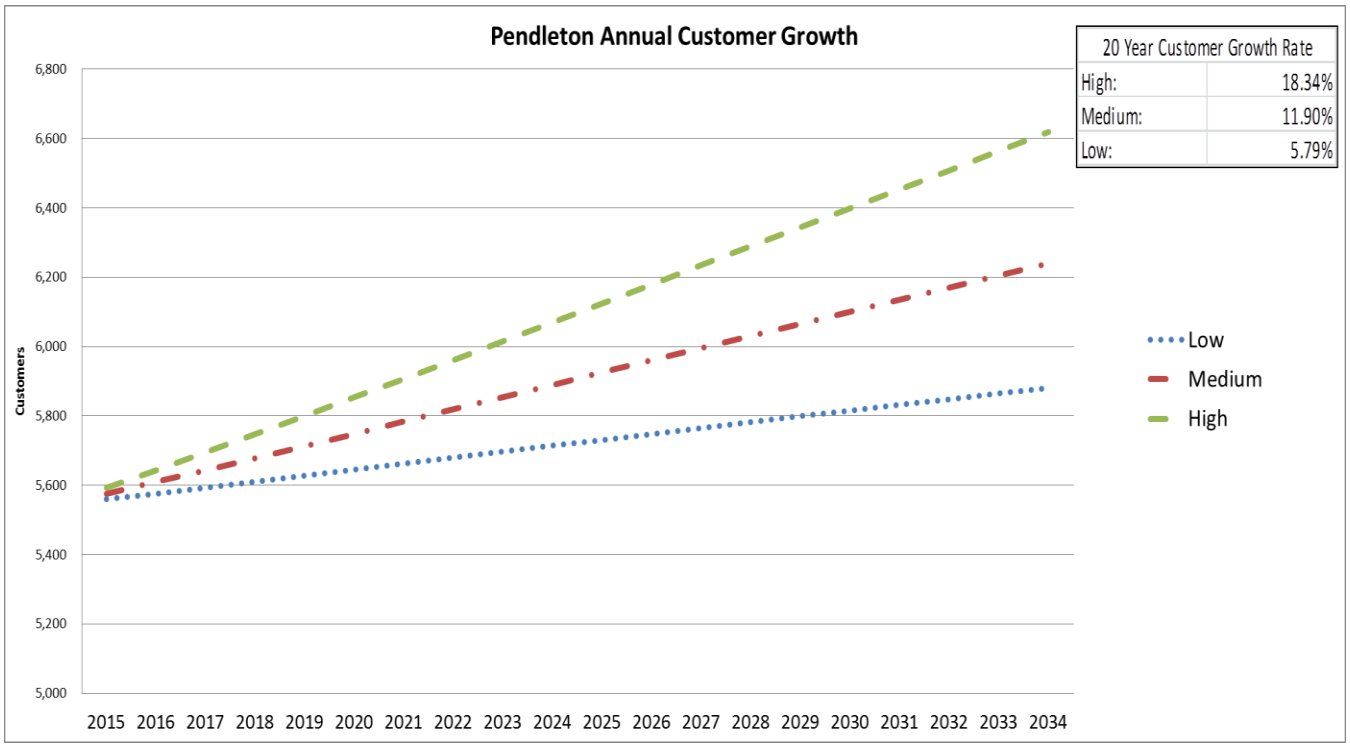
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,809	750	5,560	4,823	753	5,576	4,838	755	5,593
2016	4,824	753	5,576	4,853	757	5,610	4,882	762	5,644
2017	4,838	755	5,593	4,882	762	5,644	4,926	769	5,695
2018	4,853	757	5,610	4,912	767	5,679	4,971	776	5,747
2019	4,868	760	5,628	4,942	771	5,713	5,017	783	5,800
2020	4,883	762	5,645	4,972	776	5,748	5,063	790	5,853
2021	4,898	764	5,662	5,003	781	5,784	5,110	797	5,907
2022	4,913	767	5,680	5,034	786	5,819	5,157	805	5,962
2023	4,928	769	5,697	5,064	790	5,854	5,204	812	6,016
2024	4,943	771	5,714	5,095	795	5,890	5,251	819	6,071
2025	4,958	774	5,731	5,125	800	5,925	5,298	827	6,125
2026	4,972	776	5,748	5,156	805	5,961	5,346	834	6,180
2027	4,987	778	5,765	5,187	809	5,996	5,393	842	6,235
2028	5,002	781	5,782	5,217	814	6,031	5,441	849	6,290
2029	5,016	783	5,799	5,247	819	6,066	5,488	856	6,345
2030	5,031	785	5,816	5,277	824	6,101	5,535	864	6,399
2031	5,045	787	5,832	5,307	828	6,136	5,583	871	6,454
2032	5,059	790	5,849	5,338	833	6,170	5,630	879	6,509
2033	5,073	792	5,865	5,368	838	6,205	5,678	886	6,564
2034	5,088	794	5,882	5,398	842	6,240	5,725	893	6,619

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Pendleton Annual Therm Usage
Therms
7,600,000
7,400,000
7,200,000
7,000,000
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Pendleton Annual Customer Growth
Customers
6,800
6,600
6,400
6,200
6,000
5,800
5,600
5,400
5,200
5,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Prineville

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,477,707	367,275	2,844,983	2,484,333	367,275	2,851,608	2,490,958	367,275	2,858,234
2016	2,495,385	369,896	2,865,281	2,508,032	370,779	2,878,811	2,520,711	371,662	2,892,374
2017	2,489,785	369,066	2,858,850	2,508,581	370,860	2,879,442	2,527,473	372,659	2,900,132
2018	2,496,089	370,000	2,866,089	2,521,286	372,738	2,894,024	2,546,673	375,490	2,922,163
2019	2,502,550	370,958	2,873,508	2,534,338	374,668	2,909,006	2,566,448	378,406	2,944,854
2020	2,520,977	373,689	2,894,666	2,559,672	378,413	2,938,086	2,598,861	383,185	2,982,046
2021	2,515,822	372,925	2,888,747	2,561,254	378,647	2,939,901	2,607,387	384,442	2,991,829
2022	2,522,574	373,926	2,896,500	2,575,001	380,680	2,955,681	2,628,380	387,537	3,015,917
2023	2,529,364	374,933	2,904,297	2,588,865	382,729	2,971,594	2,649,606	390,667	3,040,273
2024	2,548,246	377,732	2,925,978	2,615,272	386,633	3,001,905	2,683,880	395,720	3,079,601
2025	2,543,173	376,980	2,920,153	2,617,171	386,914	3,004,085	2,693,121	397,083	3,090,204
2026	2,550,134	378,011	2,928,146	2,631,498	389,032	3,020,530	2,715,235	400,344	3,115,579
2027	2,557,076	379,040	2,936,117	2,645,825	391,150	3,036,975	2,737,409	403,613	3,141,022
2028	2,576,183	381,873	2,958,056	2,672,851	395,145	3,067,996	2,772,878	408,843	3,181,720
2029	2,571,016	381,107	2,952,122	2,674,711	395,420	3,070,131	2,782,298	410,232	3,192,530
2030	2,577,957	382,136	2,960,093	2,689,153	397,555	3,086,709	2,804,834	413,554	3,218,388
2031	2,584,991	383,178	2,968,169	2,703,828	399,725	3,103,553	2,827,793	416,939	3,244,732
2032	2,604,210	386,027	2,990,237	2,731,245	403,778	3,135,023	2,864,116	422,295	3,286,410
2033	2,598,946	385,247	2,984,193	2,733,061	404,047	3,137,108	2,873,714	423,710	3,297,425
2034	2,605,978	386,289	2,992,268	2,747,851	406,233	3,154,084	2,897,042	427,150	3,324,191

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.71%	0.71%	0.95%	0.95%	0.95%	1.19%	1.19%	1.19%
2017	-0.22%	-0.22%	-0.22%	0.02%	0.02%	0.02%	0.27%	0.27%	0.27%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.74%	0.74%	0.74%	1.00%	1.00%	1.00%	1.26%	1.26%	1.26%
2021	-0.20%	-0.20%	-0.20%	0.06%	0.06%	0.06%	0.33%	0.33%	0.33%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.75%	0.75%	0.75%	1.02%	1.02%	1.02%	1.29%	1.29%	1.29%
2025	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.75%	0.75%	0.75%	1.02%	1.02%	1.02%	1.30%	1.30%	1.30%
2029	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.74%	0.74%	0.74%	1.01%	1.01%	1.01%	1.28%	1.28%	1.28%
2033	-0.20%	-0.20%	-0.20%	0.07%	0.07%	0.07%	0.34%	0.34%	0.34%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,006	37,741	38,748	1,006	37,832	38,838	1,006	37,922	38,928
2016	1,013	37,827	38,840	1,016	38,008	39,024	1,018	38,189	39,208
2017	1,011	37,925	38,936	1,016	38,201	39,217	1,021	38,478	39,499
2018	1,014	38,021	39,035	1,021	38,394	39,415	1,029	38,770	39,799
2019	1,016	38,120	39,136	1,026	38,593	39,619	1,037	39,071	40,108
2020	1,024	38,215	39,239	1,037	38,790	39,827	1,050	39,373	40,423
2021	1,022	38,322	39,344	1,037	39,003	40,040	1,053	39,694	40,748
2022	1,024	38,425	39,449	1,043	39,212	40,255	1,062	40,014	41,076
2023	1,027	38,528	39,555	1,049	39,423	40,472	1,070	40,337	41,407
2024	1,035	38,628	39,663	1,059	39,633	40,692	1,084	40,661	41,745
2025	1,033	38,738	39,771	1,060	39,854	40,914	1,088	40,999	42,087
2026	1,036	38,845	39,880	1,066	40,073	41,138	1,097	41,336	42,433
2027	1,038	38,950	39,989	1,072	40,291	41,362	1,106	41,674	42,779
2028	1,046	39,052	40,098	1,083	40,506	41,588	1,120	42,010	43,130
2029	1,044	39,163	40,207	1,083	40,731	41,814	1,124	42,357	43,481
2030	1,047	39,268	40,315	1,089	40,951	42,040	1,133	42,700	43,833
2031	1,050	39,375	40,425	1,095	41,174	42,269	1,142	43,050	44,192
2032	1,058	39,476	40,534	1,106	41,390	42,497	1,157	43,392	44,549
2033	1,055	39,588	40,644	1,107	41,619	42,726	1,161	43,749	44,910
2034	1,058	39,695	40,753	1,113	41,844	42,957	1,170	44,104	45,274

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.23%	0.24%	0.95%	0.47%	0.48%	1.19%	0.71%	0.72%
2017	-0.22%	0.26%	0.25%	0.02%	0.51%	0.50%	0.27%	0.76%	0.74%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.74%	0.25%	0.26%	1.00%	0.51%	0.52%	1.26%	0.77%	0.79%
2021	-0.20%	0.28%	0.27%	0.06%	0.55%	0.54%	0.33%	0.82%	0.80%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.75%	0.26%	0.27%	1.02%	0.53%	0.54%	1.29%	0.80%	0.82%
2025	-0.20%	0.29%	0.27%	0.07%	0.56%	0.55%	0.34%	0.83%	0.82%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.75%	0.26%	0.27%	1.02%	0.53%	0.55%	1.30%	0.81%	0.82%
2029	-0.20%	0.28%	0.27%	0.07%	0.56%	0.54%	0.34%	0.83%	0.81%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.74%	0.26%	0.27%	1.01%	0.53%	0.54%	1.28%	0.80%	0.81%
2033	-0.20%	0.28%	0.27%	0.07%	0.55%	0.54%	0.34%	0.82%	0.81%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,130,226	1,714,757	2,844,983	1,132,858	1,718,750	2,851,608	1,135,490	1,722,743	2,858,234
2016	1,138,453	1,726,828	2,865,281	1,143,829	1,734,983	2,878,811	1,149,217	1,743,156	2,892,374
2017	1,135,735	1,723,115	2,858,850	1,143,915	1,735,526	2,879,442	1,152,135	1,747,997	2,900,132
2018	1,138,611	1,727,478	2,866,089	1,149,709	1,744,316	2,894,024	1,160,887	1,761,275	2,922,163
2019	1,141,558	1,731,950	2,873,508	1,155,660	1,753,346	2,909,006	1,169,902	1,774,952	2,944,854
2020	1,150,128	1,744,538	2,894,666	1,167,380	1,770,706	2,938,086	1,184,847	1,797,200	2,982,046
2021	1,147,612	1,741,135	2,888,747	1,167,934	1,771,967	2,939,901	1,188,564	1,803,266	2,991,829
2022	1,150,692	1,745,808	2,896,500	1,174,203	1,781,478	2,955,681	1,198,133	1,817,784	3,015,917
2023	1,153,790	1,750,507	2,904,297	1,180,525	1,791,069	2,971,594	1,207,809	1,832,464	3,040,273
2024	1,162,569	1,763,409	2,925,978	1,192,737	1,809,168	3,001,905	1,223,608	1,855,993	3,079,601
2025	1,160,089	1,760,064	2,920,153	1,193,432	1,810,653	3,004,085	1,227,645	1,862,559	3,090,204
2026	1,163,264	1,764,882	2,928,146	1,199,966	1,820,564	3,020,530	1,237,726	1,877,853	3,115,579
2027	1,166,431	1,769,686	2,936,117	1,206,499	1,830,476	3,036,975	1,247,834	1,893,189	3,141,022
2028	1,175,315	1,782,741	2,958,056	1,218,997	1,848,999	3,067,996	1,264,183	1,917,538	3,181,720
2029	1,172,789	1,779,333	2,952,122	1,219,671	1,850,460	3,070,131	1,268,296	1,924,234	3,192,530
2030	1,175,956	1,784,137	2,960,093	1,226,256	1,860,452	3,086,709	1,278,569	1,939,820	3,218,388
2031	1,179,164	1,789,005	2,968,169	1,232,948	1,870,605	3,103,553	1,289,034	1,955,698	3,244,732
2032	1,188,101	1,802,136	2,990,237	1,245,628	1,889,394	3,135,023	1,305,779	1,980,632	3,286,410
2033	1,185,530	1,798,663	2,984,193	1,246,278	1,890,829	3,137,108	1,309,967	1,987,457	3,297,425
2034	1,188,738	1,803,530	2,992,268	1,253,023	1,901,062	3,154,084	1,320,601	2,003,590	3,324,191

Annual Change

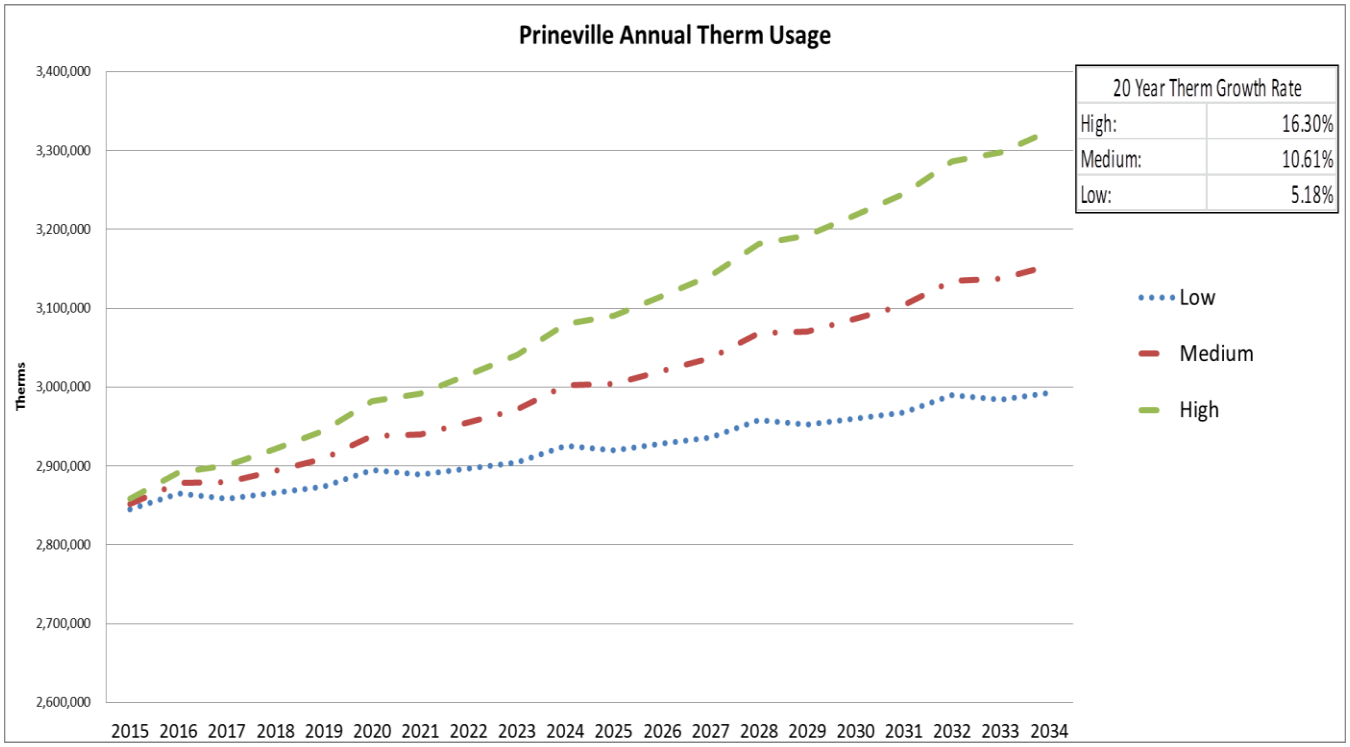
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.73%	0.70%	0.71%	0.97%	0.94%	0.95%	1.21%	1.18%	1.19%
2017	-0.24%	-0.22%	-0.22%	0.01%	0.03%	0.02%	0.25%	0.28%	0.27%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.75%	0.73%	0.74%	1.01%	0.99%	1.00%	1.28%	1.25%	1.26%
2021	-0.22%	-0.20%	-0.20%	0.05%	0.07%	0.06%	0.31%	0.34%	0.33%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.76%	0.74%	0.75%	1.03%	1.01%	1.02%	1.31%	1.28%	1.29%
2025	-0.21%	-0.19%	-0.20%	0.06%	0.08%	0.07%	0.33%	0.35%	0.34%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.76%	0.74%	0.75%	1.04%	1.01%	1.02%	1.31%	1.29%	1.30%
2029	-0.21%	-0.19%	-0.20%	0.06%	0.08%	0.07%	0.33%	0.35%	0.34%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.76%	0.73%	0.74%	1.03%	1.00%	1.01%	1.30%	1.27%	1.28%
2033	-0.22%	-0.19%	-0.20%	0.05%	0.08%	0.07%	0.32%	0.34%	0.34%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%

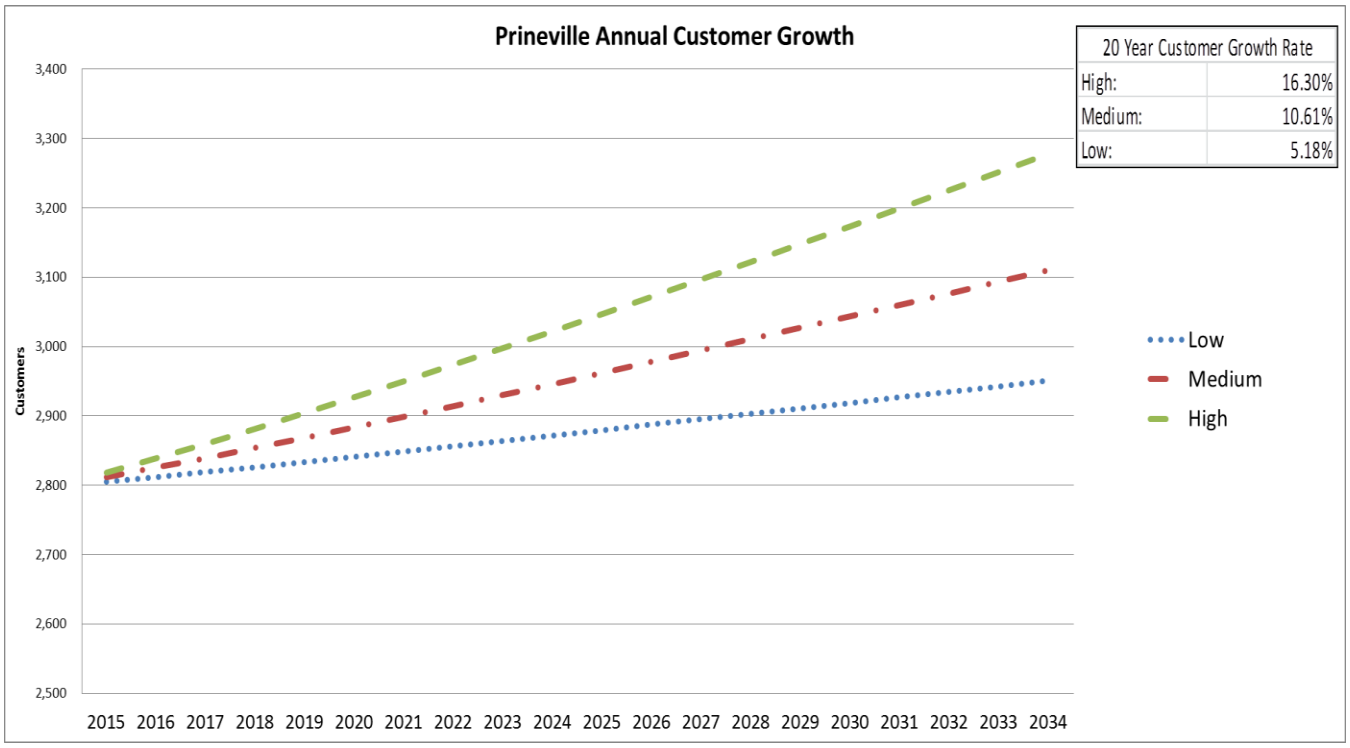
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,282	523	2,805	2,288	524	2,812	2,293	525	2,819
2016	2,288	524	2,812	2,299	527	2,825	2,309	529	2,839
2017	2,294	526	2,819	2,310	529	2,839	2,327	533	2,860
2018	2,299	527	2,826	2,322	532	2,854	2,344	537	2,882
2019	2,305	528	2,834	2,334	535	2,869	2,363	541	2,904
2020	2,311	530	2,841	2,346	538	2,884	2,381	546	2,927
2021	2,318	531	2,849	2,359	541	2,899	2,400	550	2,950
2022	2,324	533	2,856	2,371	543	2,915	2,420	554	2,974
2023	2,330	534	2,864	2,384	546	2,930	2,439	559	2,998
2024	2,336	535	2,872	2,397	549	2,946	2,459	564	3,023
2025	2,343	537	2,880	2,410	552	2,962	2,479	568	3,047
2026	2,349	538	2,887	2,423	555	2,979	2,499	573	3,072
2027	2,356	540	2,895	2,436	558	2,995	2,520	577	3,097
2028	2,362	541	2,903	2,450	561	3,011	2,541	582	3,123
2029	2,368	543	2,911	2,463	564	3,027	2,561	587	3,148
2030	2,375	544	2,919	2,476	567	3,044	2,582	592	3,174
2031	2,381	546	2,927	2,490	571	3,060	2,603	597	3,200
2032	2,388	547	2,935	2,503	574	3,077	2,624	601	3,225
2033	2,394	549	2,943	2,517	577	3,094	2,645	606	3,252
2034	2,401	550	2,951	2,530	580	3,110	2,667	611	3,278

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2020	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.79%	0.79%	0.79%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2023	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2024	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2025	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2026	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2027	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.82%	0.82%	0.82%
2028	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2029	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2030	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2031	0.27%	0.27%	0.27%	0.55%	0.55%	0.55%	0.82%	0.82%	0.82%
2032	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2033	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2034	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%


Prineville Annual Therm Usage
Therms
3,400,000
3,300,000
3,200,000
3,100,000
3,000,000
2,900,000
2,800,000
2,700,000
2,600,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 16.30%
Medium: 10.61%
Low: 5.18%
Low
Medium
High


Prineville Annual Customer Growth
Customers
3,400
3,300
3,200
3,100
3,000
2,900
2,800
2,700
2,600
2,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 16.30%
Medium: 10.61%
Low: 5.18%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Redmond

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	6,140,047	1,340,620	7,480,666	6,224,692	1,340,620	7,565,311	6,309,337	1,340,620	7,649,956
2016	6,237,216	1,361,836	7,599,052	6,393,216	1,376,915	7,770,131	6,551,120	1,391,994	7,943,114
2017	6,276,889	1,370,498	7,647,387	6,503,678	1,400,705	7,904,383	6,735,831	1,431,242	8,167,073
2018	6,344,383	1,385,234	7,729,617	6,643,543	1,430,828	8,074,371	6,953,117	1,477,411	8,430,528
2019	6,411,247	1,399,833	7,811,080	6,783,576	1,460,987	8,244,563	7,172,955	1,524,123	8,697,077
2020	6,507,023	1,420,745	7,927,768	6,955,201	1,497,950	8,453,151	7,428,751	1,578,475	9,007,226
2021	6,542,972	1,428,594	7,971,566	7,063,744	1,521,327	8,585,071	7,619,577	1,619,022	9,238,599
2022	6,607,858	1,442,762	8,050,620	7,203,845	1,551,501	8,755,346	7,846,264	1,667,189	9,513,453
2023	6,672,051	1,456,778	8,128,829	7,343,810	1,581,646	8,925,456	8,074,935	1,715,777	9,790,713
2024	6,766,496	1,477,399	8,243,895	7,518,101	1,619,183	9,137,284	8,343,918	1,772,931	10,116,849
2025	6,798,527	1,484,392	8,282,920	7,623,538	1,641,891	9,265,429	8,538,456	1,814,267	10,352,723
2026	6,860,801	1,497,989	8,358,790	7,763,199	1,671,970	9,435,169	8,773,089	1,864,122	10,637,211
2027	6,922,395	1,511,438	8,433,832	7,902,589	1,701,990	9,604,579	9,009,373	1,914,328	10,923,701
2028	7,015,308	1,531,724	8,547,032	8,078,553	1,739,888	9,818,441	9,289,665	1,973,885	11,263,551
2029	7,043,569	1,537,895	8,581,464	8,180,453	1,761,834	9,942,288	9,486,596	2,015,730	11,502,325
2030	7,103,155	1,550,905	8,654,059	8,318,860	1,791,643	10,110,504	9,727,354	2,066,886	11,794,241
2031	7,162,230	1,563,803	8,726,034	8,457,233	1,821,445	10,278,678	9,970,056	2,118,456	12,088,512
2032	7,253,732	1,583,782	8,837,514	8,634,612	1,859,647	10,494,259	10,260,899	2,180,255	12,441,154
2033	7,278,644	1,589,221	8,867,865	8,733,266	1,880,894	10,614,160	10,460,130	2,222,588	12,682,718
2034	7,336,052	1,601,756	8,937,808	8,871,028	1,910,564	10,781,592	10,707,633	2,275,178	12,982,811

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.58%	1.58%	2.71%	2.71%	2.71%	3.83%	3.83%	3.83%
2017	0.64%	0.64%	0.64%	1.73%	1.73%	1.73%	2.82%	2.82%	2.82%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.49%	1.49%	2.53%	2.53%	2.53%	3.57%	3.57%	3.57%
2021	0.55%	0.55%	0.55%	1.56%	1.56%	1.56%	2.57%	2.57%	2.57%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	1.42%	1.42%	2.37%	2.37%	2.37%	3.33%	3.33%	3.33%
2025	0.47%	0.47%	0.47%	1.40%	1.40%	1.40%	2.33%	2.33%	2.33%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.11%	3.11%	3.11%
2029	0.40%	0.40%	0.40%	1.26%	1.26%	1.26%	2.12%	2.12%	2.12%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	1.28%	1.28%	2.10%	2.10%	2.10%	2.92%	2.92%	2.92%
2033	0.34%	0.34%	0.34%	1.14%	1.14%	1.14%	1.94%	1.94%	1.94%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	3,673	91,358	95,031	3,673	92,434	96,107	3,673	93,509	97,182
2016	3,731	92,364	96,095	3,772	94,486	98,259	3,814	96,633	100,446
2017	3,755	93,394	97,149	3,838	96,576	100,414	3,921	99,830	103,751
2018	3,795	94,399	98,194	3,920	98,653	102,573	4,048	103,050	107,098
2019	3,835	95,394	99,229	4,003	100,733	104,736	4,176	106,308	110,484
2020	3,892	96,360	100,252	4,104	102,792	106,896	4,325	109,578	113,903
2021	3,914	97,354	101,267	4,168	104,893	109,061	4,436	112,928	117,363
2022	3,953	98,319	102,272	4,251	106,974	111,224	4,568	116,287	120,855
2023	3,991	99,274	103,265	4,333	109,052	113,385	4,701	119,676	124,377
2024	4,048	100,202	104,250	4,436	111,111	115,547	4,857	123,077	127,935
2025	4,067	101,156	105,223	4,498	113,206	117,704	4,971	126,546	131,517
2026	4,104	102,083	106,187	4,581	115,280	119,860	5,107	130,024	135,131
2027	4,141	102,999	107,140	4,663	117,350	122,013	5,245	133,525	138,770
2028	4,197	103,887	108,083	4,767	119,394	124,161	5,408	137,028	142,435
2029	4,213	104,802	109,015	4,827	121,476	126,303	5,523	140,598	146,121
2030	4,249	105,689	109,938	4,909	123,531	128,440	5,663	144,166	149,829
2031	4,284	106,568	110,852	4,990	125,586	130,576	5,804	147,763	153,567
2032	4,339	107,417	111,757	5,095	127,612	132,707	5,973	151,354	157,327
2033	4,354	108,300	112,654	5,153	129,685	134,838	6,089	155,027	161,116
2034	4,388	109,154	113,542	5,234	131,730	136,965	6,233	158,695	164,928

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.10%	1.12%	2.71%	2.22%	2.24%	3.83%	3.34%	3.36%
2017	0.64%	1.12%	1.10%	1.73%	2.21%	2.19%	2.82%	3.31%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.01%	1.03%	2.53%	2.04%	2.06%	3.57%	3.08%	3.09%
2021	0.55%	1.03%	1.01%	1.56%	2.04%	2.03%	2.57%	3.06%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	0.93%	0.95%	2.37%	1.89%	1.91%	3.33%	2.84%	2.86%
2025	0.47%	0.95%	0.93%	1.40%	1.89%	1.87%	2.33%	2.82%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	0.86%	0.88%	2.23%	1.74%	1.76%	3.11%	2.62%	2.64%
2029	0.40%	0.88%	0.86%	1.26%	1.74%	1.72%	2.12%	2.61%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	0.80%	0.82%	2.10%	1.61%	1.63%	2.92%	2.43%	2.45%
2033	0.34%	0.82%	0.80%	1.14%	1.62%	1.61%	1.94%	2.43%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,906,472	3,574,195	7,480,666	3,950,674	3,614,637	7,565,311	3,994,877	3,655,080	7,649,956
2016	3,968,880	3,630,172	7,599,052	4,058,232	3,711,899	7,770,131	4,148,578	3,794,535	7,943,114
2017	3,993,535	3,653,852	7,647,387	4,127,741	3,776,643	7,904,383	4,264,920	3,902,154	8,167,073
2018	4,036,476	3,693,141	7,729,617	4,216,510	3,857,861	8,074,371	4,402,498	4,028,030	8,430,528
2019	4,079,017	3,732,063	7,811,080	4,305,386	3,939,177	8,244,563	4,541,693	4,155,385	8,697,077
2020	4,140,564	3,787,205	7,927,768	4,414,964	4,038,187	8,453,151	4,704,350	4,302,877	9,007,226
2021	4,162,824	3,808,742	7,971,566	4,483,202	4,101,869	8,585,071	4,824,480	4,414,119	9,238,599
2022	4,204,107	3,846,513	8,050,620	4,572,121	4,183,225	8,755,346	4,968,012	4,545,442	9,513,453
2023	4,244,948	3,883,881	8,128,829	4,660,954	4,264,502	8,925,456	5,112,799	4,677,914	9,790,713
2024	4,305,672	3,938,223	8,243,895	4,772,277	4,365,007	9,137,284	5,283,890	4,832,959	10,116,849
2025	4,325,416	3,957,504	8,282,920	4,838,491	4,426,938	9,265,429	5,406,286	4,946,437	10,352,723
2026	4,365,036	3,993,754	8,358,790	4,927,131	4,508,038	9,435,169	5,554,848	5,082,363	10,637,211
2027	4,404,224	4,029,608	8,433,832	5,015,598	4,588,981	9,604,579	5,704,456	5,219,245	10,923,701
2028	4,463,997	4,083,036	8,547,032	5,128,036	4,690,405	9,818,441	5,882,797	5,380,754	11,263,551
2029	4,481,318	4,100,145	8,581,464	5,191,953	4,750,335	9,942,288	6,006,619	5,495,707	11,502,325
2030	4,519,228	4,134,831	8,654,059	5,279,797	4,830,707	10,110,504	6,159,059	5,635,181	11,794,241
2031	4,556,814	4,169,220	8,726,034	5,367,619	4,911,059	10,278,678	6,312,731	5,775,781	12,088,512
2032	4,615,711	4,221,803	8,837,514	5,481,006	5,013,253	10,494,259	6,497,843	5,943,312	12,441,154
2033	4,630,880	4,236,985	8,867,865	5,542,811	5,071,350	10,614,160	6,623,030	6,059,688	12,682,718
2034	4,667,404	4,270,403	8,937,808	5,630,245	5,151,347	10,781,592	6,779,742	6,203,069	12,982,811

Annual Change

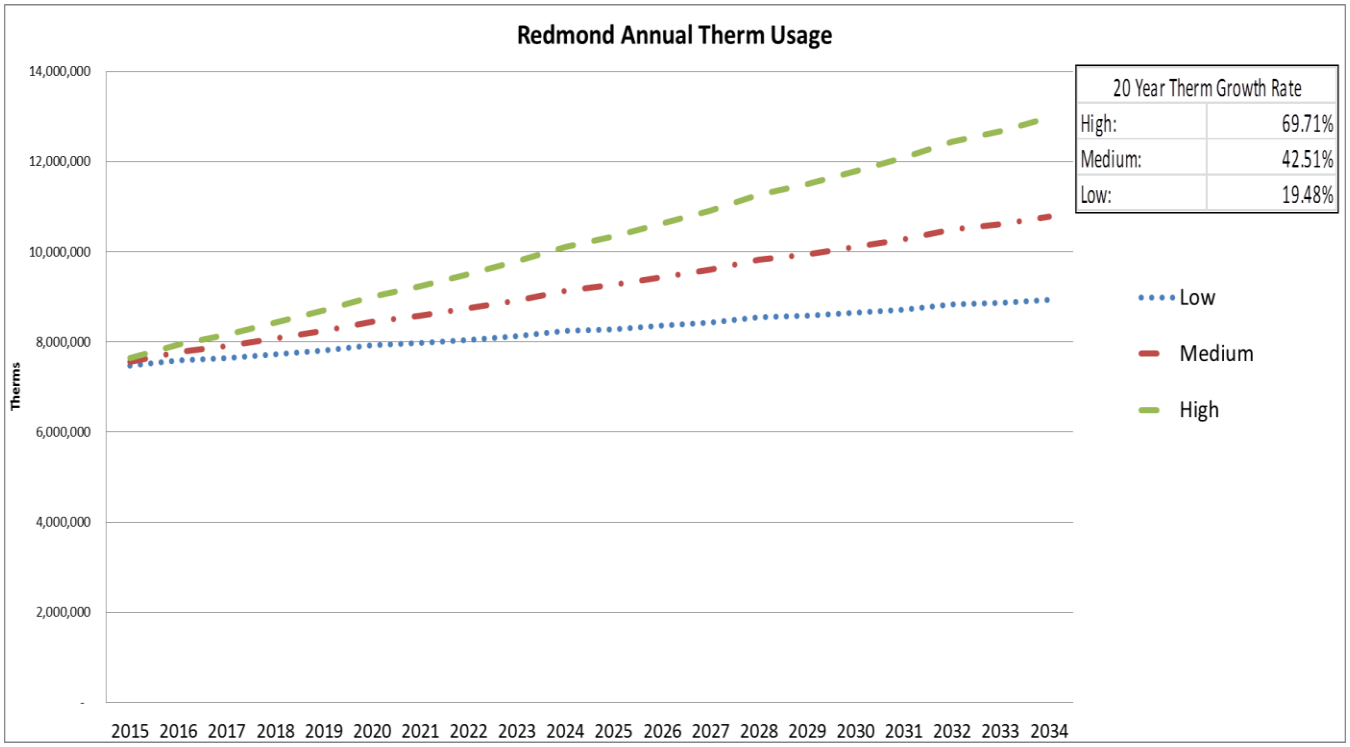
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.60%	1.57%	1.58%	2.72%	2.69%	2.71%	3.85%	3.82%	3.83%
2017	0.62%	0.65%	0.64%	1.71%	1.74%	1.73%	2.80%	2.84%	2.82%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.51%	1.48%	1.49%	2.55%	2.51%	2.53%	3.58%	3.55%	3.57%
2021	0.54%	0.57%	0.55%	1.55%	1.58%	1.56%	2.55%	2.59%	2.57%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.43%	1.40%	1.42%	2.39%	2.36%	2.37%	3.35%	3.31%	3.33%
2025	0.46%	0.49%	0.47%	1.39%	1.42%	1.40%	2.32%	2.35%	2.33%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.36%	1.33%	1.34%	2.24%	2.21%	2.23%	3.13%	3.09%	3.11%
2029	0.39%	0.42%	0.40%	1.25%	1.28%	1.26%	2.10%	2.14%	2.12%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.29%	1.26%	1.28%	2.11%	2.08%	2.10%	2.93%	2.90%	2.92%
2033	0.33%	0.36%	0.34%	1.13%	1.16%	1.14%	1.93%	1.96%	1.94%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

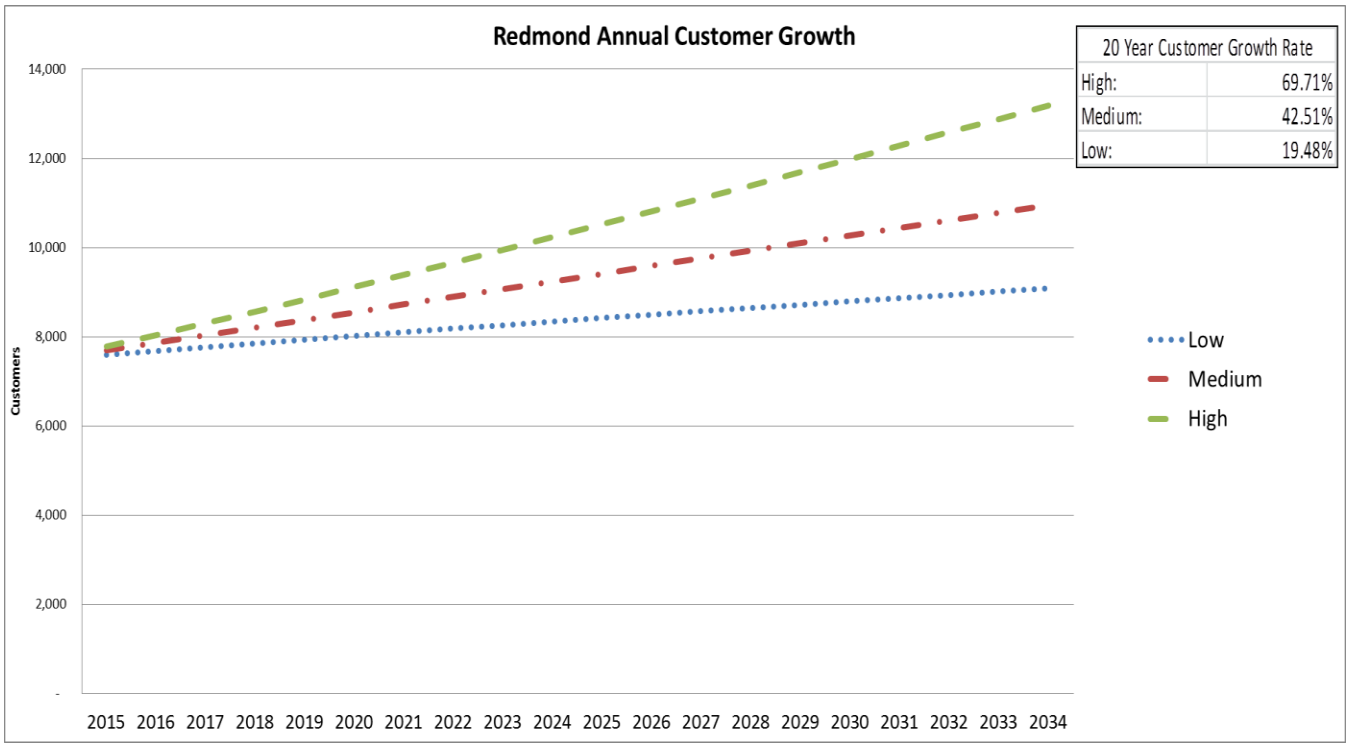
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,464	1,138	7,602	6,537	1,151	7,688	6,610	1,164	7,774
2016	6,536	1,151	7,687	6,683	1,177	7,860	6,832	1,203	8,035
2017	6,608	1,164	7,771	6,830	1,203	8,033	7,057	1,243	8,299
2018	6,679	1,176	7,855	6,977	1,229	8,205	7,284	1,283	8,567
2019	6,749	1,188	7,938	7,124	1,254	8,378	7,515	1,323	8,838
2020	6,819	1,201	8,020	7,271	1,280	8,551	7,747	1,364	9,112
2021	6,888	1,213	8,101	7,418	1,306	8,724	7,983	1,406	9,388
2022	6,956	1,225	8,181	7,565	1,332	8,897	8,220	1,448	9,668
2023	7,024	1,237	8,261	7,712	1,358	9,070	8,460	1,490	9,949
2024	7,091	1,249	8,339	7,859	1,384	9,243	8,702	1,532	10,234
2025	7,157	1,260	8,417	8,006	1,410	9,416	8,945	1,575	10,521
2026	7,222	1,272	8,494	8,153	1,436	9,588	9,191	1,618	10,810
2027	7,287	1,283	8,571	8,299	1,461	9,760	9,439	1,662	11,101
2028	7,351	1,295	8,646	8,445	1,487	9,932	9,688	1,706	11,394
2029	7,415	1,306	8,721	8,591	1,513	10,103	9,939	1,750	11,689
2030	7,478	1,317	8,794	8,736	1,538	10,274	10,191	1,795	11,985
2031	7,540	1,328	8,867	8,881	1,564	10,445	10,445	1,839	12,284
2032	7,601	1,339	8,940	9,026	1,589	10,616	10,701	1,884	12,585
2033	7,662	1,349	9,012	9,171	1,615	10,786	10,959	1,930	12,888
2034	7,723	1,360	9,083	9,316	1,640	10,956	11,218	1,975	13,193

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Redmond Annual Therm Usage
Therms
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Redmond Annual Customer Growth
Customers
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Stanfield

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	180,011	36,655	216,666	180,660	36,655	217,315	181,309	36,655	217,964
2016	181,447	36,948	218,395	182,650	37,059	219,708	183,856	37,170	221,025
2017	181,104	36,878	217,982	182,857	37,101	219,958	184,621	37,325	221,946
2018	181,657	36,990	218,648	183,975	37,328	221,302	186,314	37,667	223,981
2019	182,216	37,104	219,320	185,106	37,557	222,663	188,032	38,014	226,047
2020	183,677	37,401	221,078	187,158	37,974	225,132	190,695	38,553	229,247
2021	183,334	37,332	220,665	187,380	38,018	225,398	191,503	38,716	230,219
2022	183,895	37,446	221,341	188,527	38,251	226,778	193,261	39,071	232,333
2023	184,453	37,560	222,013	189,672	38,484	228,156	195,022	39,427	234,449
2024	185,928	37,860	223,788	191,768	38,909	230,676	197,772	39,983	237,755
2025	185,568	37,787	223,355	191,969	38,950	230,918	198,570	40,145	238,714
2026	186,122	37,899	224,021	193,114	39,182	232,296	200,346	40,504	240,850
2027	186,673	38,012	224,685	194,259	39,414	233,673	202,128	40,864	242,992
2028	188,147	38,312	226,459	196,366	39,842	236,207	204,916	41,428	246,344
2029	187,763	38,234	225,997	196,531	39,875	236,406	205,679	41,582	247,260
2030	188,302	38,343	226,645	197,657	40,104	237,761	207,447	41,939	249,387
2031	188,839	38,453	227,292	198,786	40,333	239,119	209,225	42,299	251,524
2032	190,311	38,752	229,064	200,902	40,762	241,664	212,047	42,869	254,917
2033	189,907	38,670	228,577	201,038	40,790	241,827	212,784	43,018	255,802
2034	190,437	38,778	229,215	202,160	41,017	243,177	214,566	43,379	257,944

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.40%	1.40%	1.40%
2017	-0.19%	-0.19%	-0.19%	0.11%	0.11%	0.11%	0.42%	0.42%	0.42%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.80%	0.80%	1.11%	1.11%	1.11%	1.42%	1.42%	1.42%
2021	-0.19%	-0.19%	-0.19%	0.12%	0.12%	0.12%	0.42%	0.42%	0.42%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.80%	0.80%	1.10%	1.10%	1.10%	1.41%	1.41%	1.41%
2025	-0.19%	-0.19%	-0.19%	0.10%	0.10%	0.10%	0.40%	0.40%	0.40%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.79%	0.79%	1.08%	1.08%	1.08%	1.38%	1.38%	1.38%
2029	-0.20%	-0.20%	-0.20%	0.08%	0.08%	0.08%	0.37%	0.37%	0.37%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.78%	0.78%	1.06%	1.06%	1.06%	1.35%	1.35%	1.35%
2033	-0.21%	-0.21%	-0.21%	0.07%	0.07%	0.07%	0.35%	0.35%	0.35%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	100	2,928	3,028	100	2,937	3,037	100	2,946	3,046
2016	101	2,936	3,037	102	2,954	3,055	102	2,972	3,074
2017	101	2,945	3,046	102	2,972	3,074	102	3,000	3,102
2018	101	2,954	3,056	102	2,991	3,093	103	3,027	3,130
2019	102	2,964	3,065	103	3,009	3,112	104	3,055	3,159
2020	102	2,972	3,075	104	3,027	3,131	106	3,083	3,188
2021	102	2,982	3,084	104	3,046	3,150	106	3,111	3,218
2022	103	2,991	3,093	105	3,065	3,169	107	3,140	3,247
2023	103	3,000	3,103	105	3,083	3,189	108	3,169	3,277
2024	104	3,009	3,112	107	3,101	3,208	110	3,197	3,306
2025	104	3,018	3,122	107	3,121	3,227	110	3,226	3,336
2026	104	3,027	3,131	107	3,139	3,247	111	3,255	3,366
2027	104	3,036	3,140	108	3,158	3,266	112	3,284	3,396
2028	105	3,044	3,149	109	3,176	3,285	114	3,312	3,426
2029	105	3,054	3,158	109	3,195	3,304	114	3,342	3,456
2030	105	3,063	3,168	110	3,213	3,323	115	3,370	3,485
2031	105	3,071	3,177	111	3,231	3,342	116	3,399	3,515
2032	106	3,079	3,186	112	3,249	3,361	117	3,428	3,545
2033	106	3,089	3,195	112	3,268	3,380	118	3,457	3,575
2034	106	3,097	3,203	112	3,286	3,399	119	3,486	3,605

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.28%	0.30%	1.10%	0.59%	0.60%	1.40%	0.89%	0.91%
2017	-0.19%	0.32%	0.30%	0.11%	0.63%	0.61%	0.42%	0.93%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.80%	0.29%	0.31%	1.11%	0.59%	0.61%	1.42%	0.90%	0.92%
2021	-0.19%	0.32%	0.31%	0.12%	0.63%	0.61%	0.42%	0.94%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.80%	0.29%	0.30%	1.10%	0.59%	0.61%	1.41%	0.89%	0.91%
2025	-0.19%	0.32%	0.30%	0.10%	0.62%	0.60%	0.40%	0.92%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.79%	0.28%	0.29%	1.08%	0.57%	0.59%	1.38%	0.86%	0.88%
2029	-0.20%	0.31%	0.29%	0.08%	0.60%	0.58%	0.37%	0.89%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.78%	0.27%	0.28%	1.06%	0.55%	0.57%	1.35%	0.83%	0.85%
2033	-0.21%	0.30%	0.28%	0.07%	0.58%	0.56%	0.35%	0.86%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	153,417	63,249	216,666	153,877	63,438	217,315	154,337	63,628	217,964
2016	154,659	63,736	218,395	155,589	64,119	219,708	156,522	64,503	221,025
2017	154,349	63,633	217,982	155,748	64,210	219,958	157,156	64,790	221,946
2018	154,821	63,827	218,648	156,700	64,602	221,302	158,597	65,384	223,981
2019	155,297	64,023	219,320	157,664	64,999	222,663	160,060	65,987	226,047
2020	156,560	64,519	221,078	159,430	65,702	225,132	162,345	66,903	229,247
2021	156,249	64,416	220,665	159,601	65,798	225,398	163,014	67,205	230,219
2022	156,727	64,613	221,341	160,578	66,201	226,778	164,511	67,822	232,333
2023	157,203	64,809	222,013	161,553	66,603	228,156	166,009	68,440	234,449
2024	158,479	65,309	223,788	163,357	67,320	230,676	168,369	69,385	237,755
2025	158,154	65,201	223,355	163,509	67,409	230,918	169,029	69,685	238,714
2026	158,625	65,396	224,021	164,484	67,811	232,296	170,541	70,308	240,850
2027	159,095	65,590	224,685	165,460	68,213	233,673	172,058	70,934	242,992
2028	160,370	66,089	226,459	167,273	68,934	236,207	174,452	71,892	246,344
2029	160,024	65,973	225,997	167,395	69,011	236,406	175,081	72,180	247,260
2030	160,483	66,162	226,645	168,354	69,407	237,761	176,586	72,800	249,387
2031	160,941	66,351	227,292	169,316	69,803	239,119	178,099	73,424	251,524
2032	162,215	66,849	229,064	171,138	70,526	241,664	180,523	74,394	254,917
2033	161,852	66,726	228,577	171,234	70,594	241,827	181,129	74,673	255,802
2034	162,303	66,912	229,215	172,189	70,988	243,177	182,646	75,299	257,944

Annual Change

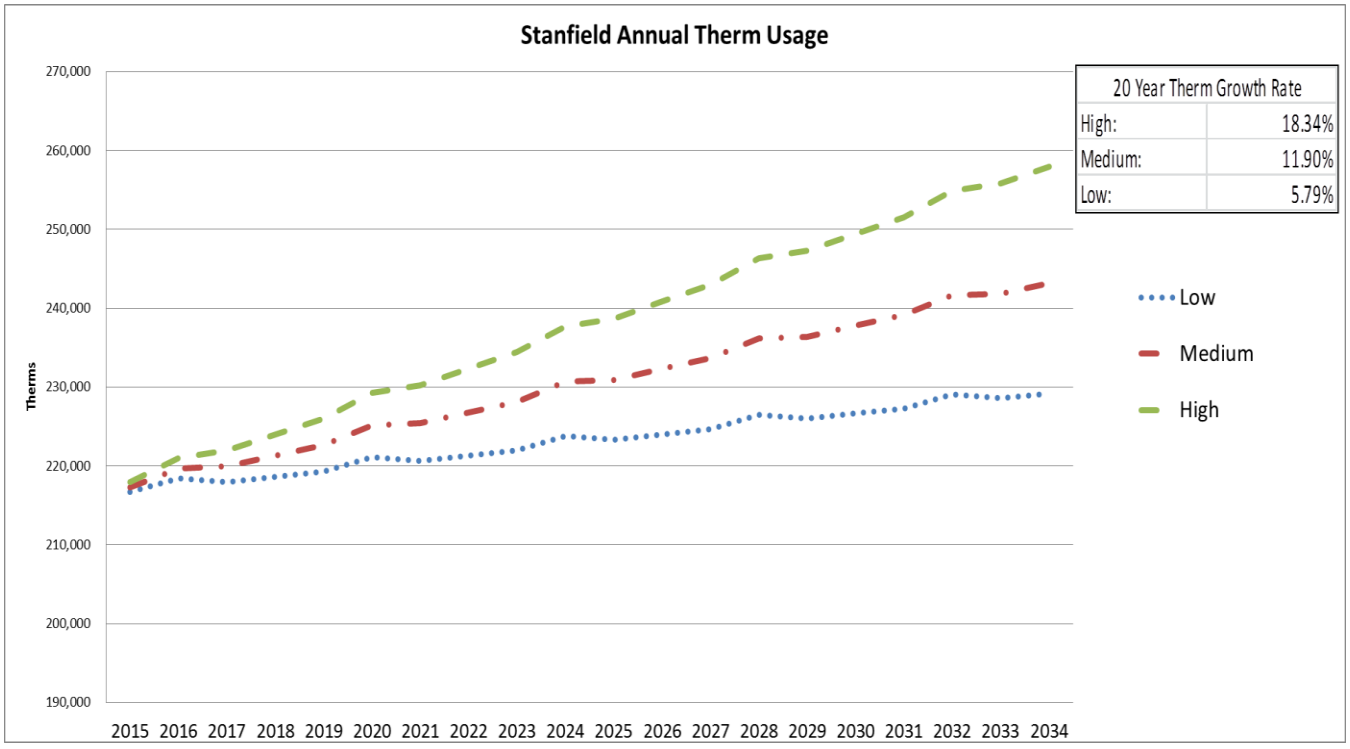
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.77%	0.80%	1.11%	1.07%	1.10%	1.42%	1.38%	1.40%
2017	-0.20%	-0.16%	-0.19%	0.10%	0.14%	0.11%	0.40%	0.44%	0.42%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.81%	0.77%	0.80%	1.12%	1.08%	1.11%	1.43%	1.39%	1.42%
2021	-0.20%	-0.16%	-0.19%	0.11%	0.15%	0.12%	0.41%	0.45%	0.42%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.77%	0.80%	1.12%	1.08%	1.10%	1.42%	1.38%	1.41%
2025	-0.21%	-0.17%	-0.19%	0.09%	0.13%	0.10%	0.39%	0.43%	0.40%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.76%	0.79%	1.10%	1.06%	1.08%	1.39%	1.35%	1.38%
2029	-0.22%	-0.18%	-0.20%	0.07%	0.11%	0.08%	0.36%	0.40%	0.37%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.75%	0.78%	1.08%	1.04%	1.06%	1.36%	1.32%	1.35%
2033	-0.22%	-0.18%	-0.21%	0.06%	0.10%	0.07%	0.34%	0.38%	0.35%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

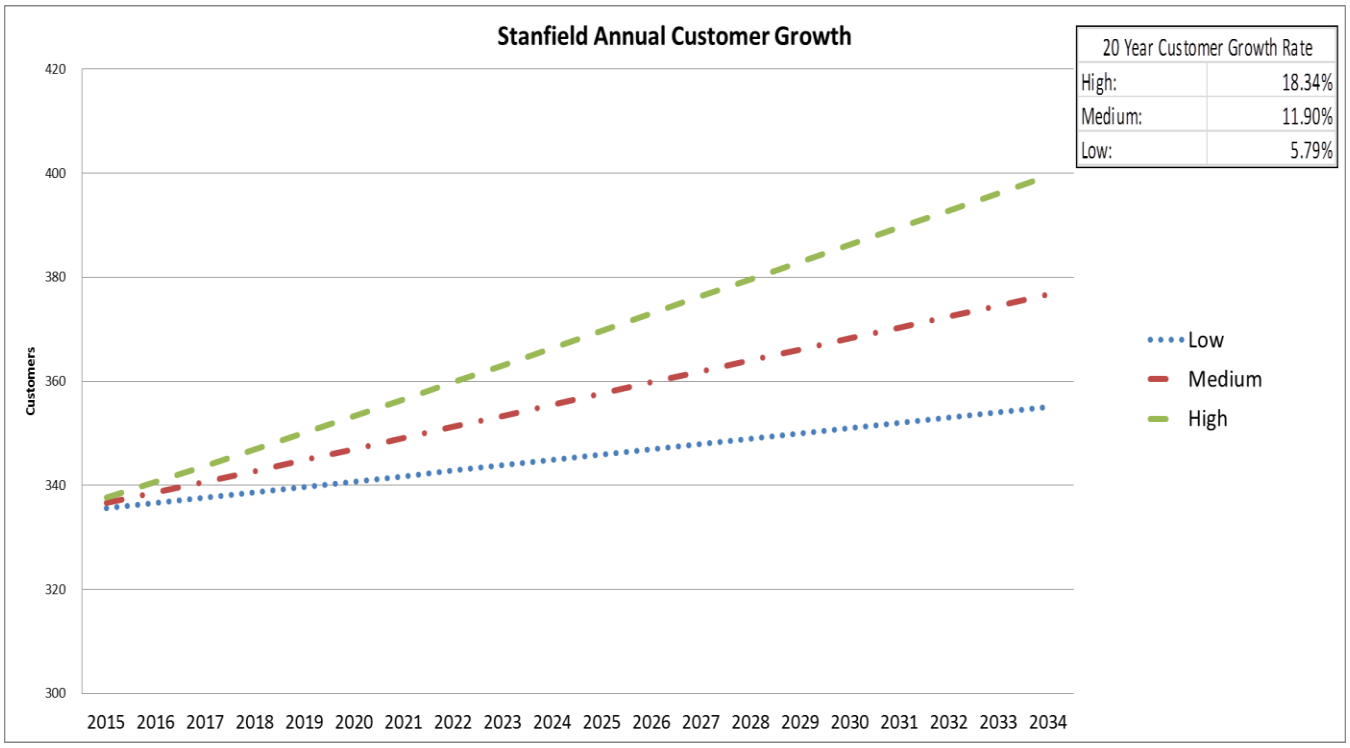
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	303	33	336	304	33	337	305	33	338
2016	304	33	337	306	33	339	307	33	341
2017	305	33	338	307	33	341	310	34	344
2018	306	33	339	309	33	343	313	34	347
2019	307	33	340	311	34	345	316	34	350
2020	307	33	341	313	34	347	319	34	353
2021	308	33	342	315	34	349	322	35	357
2022	309	33	343	317	34	351	325	35	360
2023	310	34	344	319	35	353	328	35	363
2024	311	34	345	321	35	356	331	36	366
2025	312	34	346	323	35	358	334	36	370
2026	313	34	347	325	35	360	337	36	373
2027	314	34	348	327	35	362	340	37	376
2028	315	34	349	329	36	364	343	37	380
2029	316	34	350	330	36	366	346	37	383
2030	317	34	351	332	36	368	349	38	386
2031	318	34	352	334	36	370	352	38	390
2032	319	34	353	336	36	372	355	38	393
2033	319	35	354	338	37	375	358	39	396
2034	320	35	355	340	37	377	361	39	400

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Stanfield Annual Therm Usage
Therms
270,000
260,000
250,000
240,000
230,000
220,000
210,000
200,000
190,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High


Stanfield Annual Customer Growth
Customers
420
400
380
360
340
320
300
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.34%
Medium: 11.90%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Stearns (Sunriver)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,168,327	1,252,050	4,420,378	3,218,345	1,252,050	4,470,395	3,268,362	1,252,050	4,520,412
2016	3,217,823	1,271,610	4,489,433	3,304,814	1,285,690	4,590,504	3,392,931	1,299,770	4,692,701
2017	3,238,939	1,279,955	4,518,894	3,362,589	1,308,166	4,670,755	3,489,295	1,336,686	4,825,980
2018	3,273,767	1,293,718	4,567,484	3,434,903	1,336,299	4,771,202	3,601,853	1,379,805	4,981,658
2019	3,308,269	1,307,352	4,615,621	3,507,304	1,364,466	4,871,770	3,715,733	1,423,430	5,139,163
2020	3,357,018	1,326,617	4,683,635	3,595,318	1,398,706	4,994,025	3,847,470	1,473,896	5,321,366
2021	3,376,241	1,334,213	4,710,454	3,652,159	1,420,819	5,072,978	3,947,092	1,512,060	5,459,152
2022	3,409,723	1,347,444	4,757,167	3,724,595	1,449,000	5,173,595	4,064,521	1,557,044	5,621,566
2023	3,442,847	1,360,534	4,803,381	3,796,961	1,477,153	5,274,114	4,182,977	1,602,423	5,785,400
2024	3,490,882	1,379,517	4,870,399	3,886,296	1,511,907	5,398,203	4,321,450	1,655,469	5,976,919
2025	3,508,110	1,386,325	4,894,435	3,941,589	1,533,418	5,475,006	4,423,090	1,694,406	6,117,496
2026	3,540,244	1,399,023	4,939,267	4,013,797	1,561,510	5,575,307	4,544,635	1,740,967	6,285,602
2027	3,572,027	1,411,583	4,983,610	4,085,866	1,589,547	5,675,413	4,667,034	1,787,856	6,454,891
2028	3,619,246	1,430,243	5,049,489	4,176,008	1,624,615	5,800,623	4,811,268	1,843,109	6,654,377
2029	3,634,554	1,436,292	5,070,846	4,229,530	1,645,437	5,874,967	4,914,246	1,882,558	6,796,804
2030	3,665,301	1,448,443	5,113,744	4,301,090	1,673,277	5,974,367	5,038,963	1,930,336	6,969,299
2031	3,695,785	1,460,489	5,156,274	4,372,633	1,701,109	6,073,742	5,164,688	1,978,498	7,143,186
2032	3,742,251	1,478,852	5,221,102	4,463,449	1,736,440	6,199,888	5,314,285	2,035,806	7,350,092
2033	3,755,855	1,484,228	5,240,083	4,515,350	1,756,631	6,271,981	5,418,556	2,075,750	7,494,306
2034	3,785,478	1,495,934	5,281,413	4,586,577	1,784,341	6,370,918	5,546,767	2,124,866	7,671,633

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.56%	1.56%	2.69%	2.69%	2.69%	3.81%	3.81%	3.81%
2017	0.66%	0.66%	0.66%	1.75%	1.75%	1.75%	2.84%	2.84%	2.84%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.47%	1.47%	1.47%	2.51%	2.51%	2.51%	3.55%	3.55%	3.55%
2021	0.57%	0.57%	0.57%	1.58%	1.58%	1.58%	2.59%	2.59%	2.59%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.31%	3.31%	3.31%
2025	0.49%	0.49%	0.49%	1.42%	1.42%	1.42%	2.35%	2.35%	2.35%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.32%	1.32%	1.32%	2.21%	2.21%	2.21%	3.09%	3.09%	3.09%
2029	0.42%	0.42%	0.42%	1.28%	1.28%	1.28%	2.14%	2.14%	2.14%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.26%	1.26%	1.26%	2.08%	2.08%	2.08%	2.90%	2.90%	2.90%
2033	0.36%	0.36%	0.36%	1.16%	1.16%	1.16%	1.96%	1.96%	1.96%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	3,430	48,110	51,540	3,430	48,693	52,123	3,430	49,276	52,707
2016	3,484	48,634	52,117	3,522	49,768	53,291	3,561	50,916	54,477
2017	3,507	49,182	52,689	3,584	50,876	54,460	3,662	52,607	56,270
2018	3,544	49,711	53,256	3,661	51,970	55,631	3,780	54,304	58,085
2019	3,582	50,235	53,817	3,738	53,065	56,803	3,900	56,021	59,921
2020	3,635	50,737	54,372	3,832	54,143	57,975	4,038	57,737	61,775
2021	3,655	51,267	54,923	3,893	55,257	59,149	4,143	59,509	63,652
2022	3,692	51,776	55,467	3,970	56,353	60,323	4,266	61,280	65,546
2023	3,727	52,279	56,006	4,047	57,448	61,495	4,390	63,066	67,456
2024	3,779	52,760	56,540	4,142	58,525	62,667	4,536	64,850	69,385
2025	3,798	53,270	57,068	4,201	59,636	63,837	4,642	66,686	71,328
2026	3,833	53,757	57,590	4,278	60,728	65,006	4,770	68,518	73,288
2027	3,867	54,240	58,107	4,355	61,819	66,174	4,898	70,364	75,262
2028	3,918	54,701	58,619	4,451	62,888	67,339	5,050	72,200	77,250
2029	3,935	55,190	59,125	4,508	63,992	68,500	5,158	74,091	79,249
2030	3,968	55,656	59,625	4,584	65,075	69,659	5,289	75,971	81,260
2031	4,001	56,119	60,121	4,661	66,157	70,818	5,421	77,867	83,287
2032	4,052	56,560	60,611	4,757	67,217	71,974	5,578	79,749	85,326
2033	4,066	57,031	61,098	4,813	68,317	73,129	5,687	81,694	87,381
2034	4,098	57,481	61,580	4,889	69,394	74,283	5,822	83,627	89,449

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.56%	1.09%	1.12%	2.69%	2.21%	2.24%	3.81%	3.33%	3.36%
2017	0.66%	1.13%	1.10%	1.75%	2.22%	2.19%	2.84%	3.32%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.47%	1.00%	1.03%	2.51%	2.03%	2.06%	3.55%	3.06%	3.09%
2021	0.57%	1.04%	1.01%	1.58%	2.06%	2.03%	2.59%	3.07%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.40%	0.92%	0.95%	2.35%	1.88%	1.91%	3.31%	2.83%	2.86%
2025	0.49%	0.96%	0.93%	1.42%	1.90%	1.87%	2.35%	2.83%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.32%	0.85%	0.88%	2.21%	1.73%	1.76%	3.09%	2.61%	2.64%
2029	0.42%	0.89%	0.86%	1.28%	1.76%	1.72%	2.14%	2.62%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.26%	0.78%	0.82%	2.08%	1.60%	1.63%	2.90%	2.42%	2.45%
2033	0.36%	0.83%	0.80%	1.16%	1.64%	1.61%	1.96%	2.44%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,352,695	1,067,683	4,420,378	3,390,632	1,079,764	4,470,395	3,428,568	1,091,845	4,520,412
2016	3,405,797	1,083,636	4,489,433	3,482,472	1,108,032	4,590,504	3,560,001	1,132,700	4,692,701
2017	3,427,416	1,091,478	4,518,894	3,542,597	1,128,158	4,670,755	3,660,330	1,165,650	4,825,980
2018	3,464,270	1,103,214	4,567,484	3,618,782	1,152,419	4,771,202	3,778,405	1,203,252	4,981,658
2019	3,500,780	1,114,841	4,615,621	3,695,059	1,176,710	4,871,770	3,897,868	1,241,295	5,139,163
2020	3,553,123	1,130,512	4,683,635	3,788,593	1,205,432	4,994,025	4,036,922	1,284,444	5,321,366
2021	3,572,707	1,137,747	4,710,454	3,847,669	1,225,309	5,072,978	4,140,568	1,318,584	5,459,152
2022	3,608,138	1,149,029	4,757,167	3,923,983	1,249,612	5,173,595	4,263,752	1,357,813	5,621,566
2023	3,643,189	1,160,192	4,803,381	4,000,223	1,273,891	5,274,114	4,388,015	1,397,385	5,785,400
2024	3,694,807	1,175,592	4,870,399	4,095,213	1,302,990	5,398,203	4,534,241	1,442,678	5,976,919
2025	3,712,250	1,182,185	4,894,435	4,152,593	1,322,414	5,475,006	4,639,897	1,477,598	6,117,496
2026	3,746,254	1,193,013	4,939,267	4,228,667	1,346,640	5,575,307	4,767,400	1,518,202	6,285,602
2027	3,779,886	1,203,724	4,983,610	4,304,593	1,370,819	5,675,413	4,895,799	1,559,092	6,454,891
2028	3,830,669	1,218,819	5,049,489	4,400,499	1,400,124	5,800,623	5,048,178	1,606,199	6,654,377
2029	3,846,052	1,224,794	5,070,846	4,455,948	1,419,019	5,874,967	5,155,128	1,641,676	6,796,804
2030	3,878,588	1,235,156	5,113,744	4,531,339	1,443,028	5,974,367	5,285,959	1,683,340	6,969,299
2031	3,910,846	1,245,428	5,156,274	4,606,712	1,467,030	6,073,742	5,417,846	1,725,340	7,143,186
2032	3,960,860	1,260,243	5,221,102	4,703,391	1,496,497	6,199,888	5,575,965	1,774,127	7,350,092
2033	3,974,412	1,265,671	5,240,083	4,757,069	1,514,912	6,271,981	5,684,158	1,810,148	7,494,306
2034	4,005,759	1,275,654	5,281,413	4,832,109	1,538,809	6,370,918	5,818,654	1,852,979	7,671,633

Annual Change

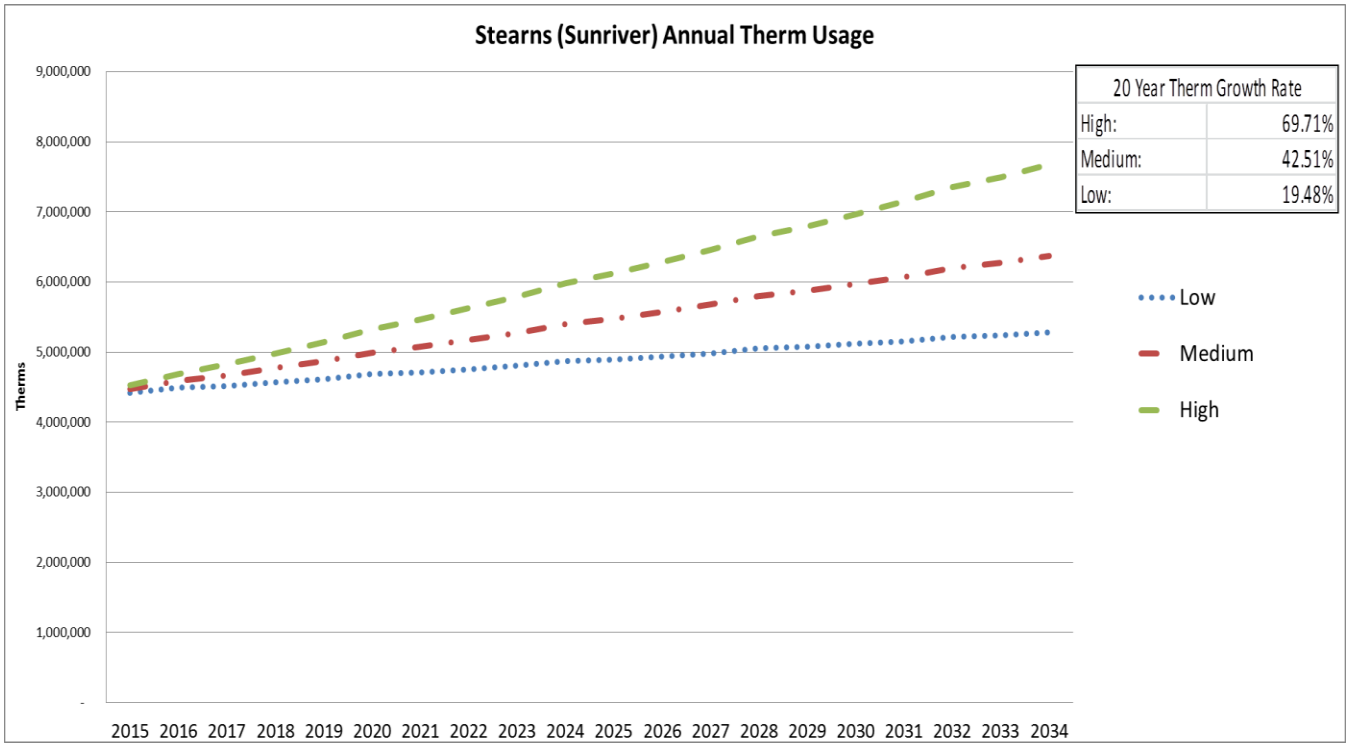
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.49%	1.56%	2.71%	2.62%	2.69%	3.83%	3.74%	3.81%
2017	0.63%	0.72%	0.66%	1.73%	1.82%	1.75%	2.82%	2.91%	2.84%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.50%	1.41%	1.47%	2.53%	2.44%	2.51%	3.57%	3.48%	3.55%
2021	0.55%	0.64%	0.57%	1.56%	1.65%	1.58%	2.57%	2.66%	2.59%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.42%	1.33%	1.40%	2.37%	2.28%	2.35%	3.33%	3.24%	3.31%
2025	0.47%	0.56%	0.49%	1.40%	1.49%	1.42%	2.33%	2.42%	2.35%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.25%	1.32%	2.23%	2.14%	2.21%	3.11%	3.02%	3.09%
2029	0.40%	0.49%	0.42%	1.26%	1.35%	1.28%	2.12%	2.21%	2.14%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.28%	1.19%	1.26%	2.10%	2.01%	2.08%	2.92%	2.83%	2.90%
2033	0.34%	0.43%	0.36%	1.14%	1.23%	1.16%	1.94%	2.03%	1.96%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

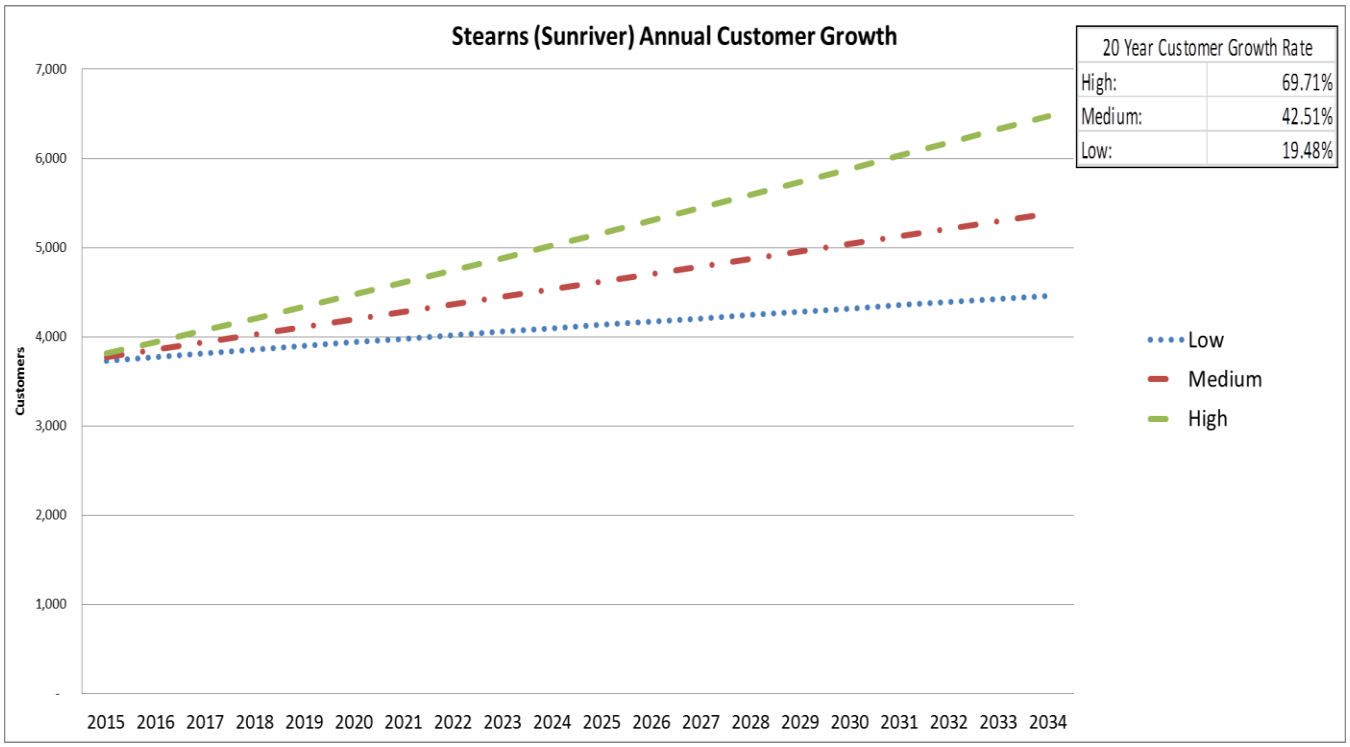
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,509	224	3,732	3,548	226	3,775	3,588	229	3,817
2016	3,548	226	3,774	3,628	231	3,859	3,709	236	3,945
2017	3,587	229	3,815	3,708	236	3,944	3,831	244	4,075
2018	3,626	231	3,857	3,787	241	4,029	3,954	252	4,206
2019	3,664	233	3,897	3,867	246	4,113	4,079	260	4,339
2020	3,702	236	3,937	3,947	251	4,198	4,206	268	4,473
2021	3,739	238	3,977	4,027	257	4,283	4,333	276	4,609
2022	3,776	241	4,017	4,107	262	4,368	4,462	284	4,747
2023	3,813	243	4,056	4,186	267	4,453	4,592	293	4,885
2024	3,849	245	4,094	4,266	272	4,538	4,724	301	5,025
2025	3,885	248	4,133	4,346	277	4,623	4,856	309	5,165
2026	3,921	250	4,170	4,426	282	4,707	4,989	318	5,307
2027	3,956	252	4,208	4,505	287	4,792	5,124	326	5,450
2028	3,991	254	4,245	4,584	292	4,876	5,259	335	5,594
2029	4,025	256	4,282	4,663	297	4,960	5,395	344	5,739
2030	4,059	259	4,318	4,742	302	5,044	5,532	352	5,884
2031	4,093	261	4,354	4,821	307	5,128	5,670	361	6,031
2032	4,126	263	4,389	4,900	312	5,212	5,809	370	6,179
2033	4,159	265	4,424	4,979	317	5,296	5,949	379	6,328
2034	4,192	267	4,459	5,057	322	5,379	6,090	388	6,477

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Stearns (Sunriver) Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Stearns (Sunriver) Annual Customer Growth
Customers
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pronghorn

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	332,507	215,778	548,285	338,711	215,778	554,489	344,915	215,778	560,693
2016	336,230	218,194	554,424	346,296	220,610	566,906	356,500	223,026	579,527
2017	339,917	220,587	560,505	353,891	225,449	579,341	368,230	230,364	598,594
2018	343,572	222,959	566,532	361,502	230,298	591,800	380,108	237,796	617,904
2019	347,193	225,309	572,502	369,122	235,152	604,274	392,126	245,314	637,440
2020	350,774	227,633	578,407	376,736	240,003	616,739	404,259	252,904	657,164
2021	354,327	229,938	584,265	384,367	244,864	629,231	416,542	260,588	677,130
2022	357,840	232,219	590,059	391,990	249,721	641,711	428,934	268,341	697,275
2023	361,317	234,474	595,791	399,606	254,572	654,179	441,435	276,162	717,597
2024	364,762	236,710	601,471	407,226	259,427	666,653	454,061	284,060	738,122
2025	368,166	238,919	607,085	414,827	264,269	679,097	466,775	292,014	758,788
2026	371,538	241,108	612,646	422,427	269,111	691,538	479,601	300,038	779,640
2027	374,874	243,272	618,146	430,012	273,942	703,954	492,518	308,119	800,637
2028	378,174	245,414	623,588	437,584	278,766	716,350	505,527	316,257	821,784
2029	381,436	247,531	628,966	445,132	283,575	728,706	518,607	324,440	843,047
2030	384,663	249,625	634,287	452,663	288,372	741,035	531,768	332,674	864,442
2031	387,862	251,701	639,562	460,192	293,169	753,361	545,036	340,974	886,011
2032	391,027	253,755	644,782	467,703	297,954	765,657	558,380	349,322	907,702
2033	394,166	255,792	649,958	475,212	302,738	777,950	571,827	357,735	929,562
2034	397,275	257,809	655,084	482,708	307,513	790,222	585,358	366,199	951,557

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	591	5,851	6,442	591	5,924	6,515	591	5,997	6,588
2016	598	5,917	6,515	604	6,057	6,661	611	6,199	6,810
2017	604	5,982	6,586	618	6,190	6,807	631	6,402	7,034
2018	611	6,046	6,657	631	6,323	6,954	651	6,609	7,261
2019	617	6,110	6,727	644	6,456	7,100	672	6,818	7,490
2020	624	6,173	6,796	658	6,589	7,247	693	7,029	7,722
2021	630	6,235	6,865	671	6,723	7,394	714	7,242	7,956
2022	636	6,297	6,933	684	6,856	7,540	735	7,458	8,193
2023	642	6,358	7,001	697	6,989	7,687	757	7,675	8,432
2024	649	6,419	7,067	711	7,123	7,833	778	7,895	8,673
2025	655	6,479	7,133	724	7,256	7,980	800	8,116	8,916
2026	661	6,538	7,199	737	7,388	8,126	822	8,339	9,161
2027	666	6,597	7,263	751	7,521	8,272	844	8,564	9,408
2028	672	6,655	7,327	764	7,654	8,417	866	8,790	9,656
2029	678	6,712	7,390	777	7,786	8,562	889	9,017	9,906
2030	684	6,769	7,453	790	7,917	8,707	911	9,246	10,157
2031	690	6,825	7,515	803	8,049	8,852	934	9,477	10,411
2032	695	6,881	7,576	816	8,180	8,997	957	9,709	10,666
2033	701	6,936	7,637	829	8,312	9,141	980	9,942	10,923
2034	706	6,991	7,697	843	8,443	9,285	1,003	10,178	11,181

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	296,169	252,116	548,285	299,521	254,968	554,489	302,872	257,821	560,693
2016	299,485	254,939	554,424	306,228	260,678	566,906	313,045	266,481	579,527
2017	302,770	257,735	560,505	312,945	266,396	579,341	323,345	275,249	598,594
2018	306,026	260,506	566,532	319,675	272,125	591,800	333,776	284,128	617,904
2019	309,251	263,251	572,502	326,413	277,861	604,274	344,329	293,112	637,440
2020	312,440	265,967	578,407	333,146	283,593	616,739	354,983	302,181	657,164
2021	315,605	268,660	584,265	339,894	289,337	629,231	365,768	311,362	677,130
2022	318,734	271,324	590,059	346,636	295,075	641,711	376,650	320,625	697,275
2023	321,831	273,960	595,791	353,370	300,808	654,179	387,627	329,970	717,597
2024	324,899	276,572	601,471	360,109	306,544	666,653	398,714	339,407	738,122
2025	327,932	279,153	607,085	366,830	312,266	679,097	409,878	348,911	758,788
2026	330,935	281,710	612,646	373,551	317,987	691,538	421,141	358,499	779,640
2027	333,906	284,240	618,146	380,258	323,696	703,954	432,484	368,154	800,637
2028	336,846	286,742	623,588	386,954	329,396	716,350	443,907	377,878	821,784
2029	339,751	289,215	628,966	393,628	335,078	728,706	455,392	387,655	843,047
2030	342,625	291,662	634,287	400,288	340,747	741,035	466,949	397,493	864,442
2031	345,475	294,087	639,562	406,946	346,415	753,361	478,600	407,411	886,011
2032	348,294	296,487	644,782	413,588	352,069	765,657	490,317	417,385	907,702
2033	351,090	298,867	649,958	420,228	357,722	777,950	502,125	427,437	929,562
2034	353,859	301,225	655,084	426,857	363,365	790,222	514,006	437,551	951,557

Annual Change

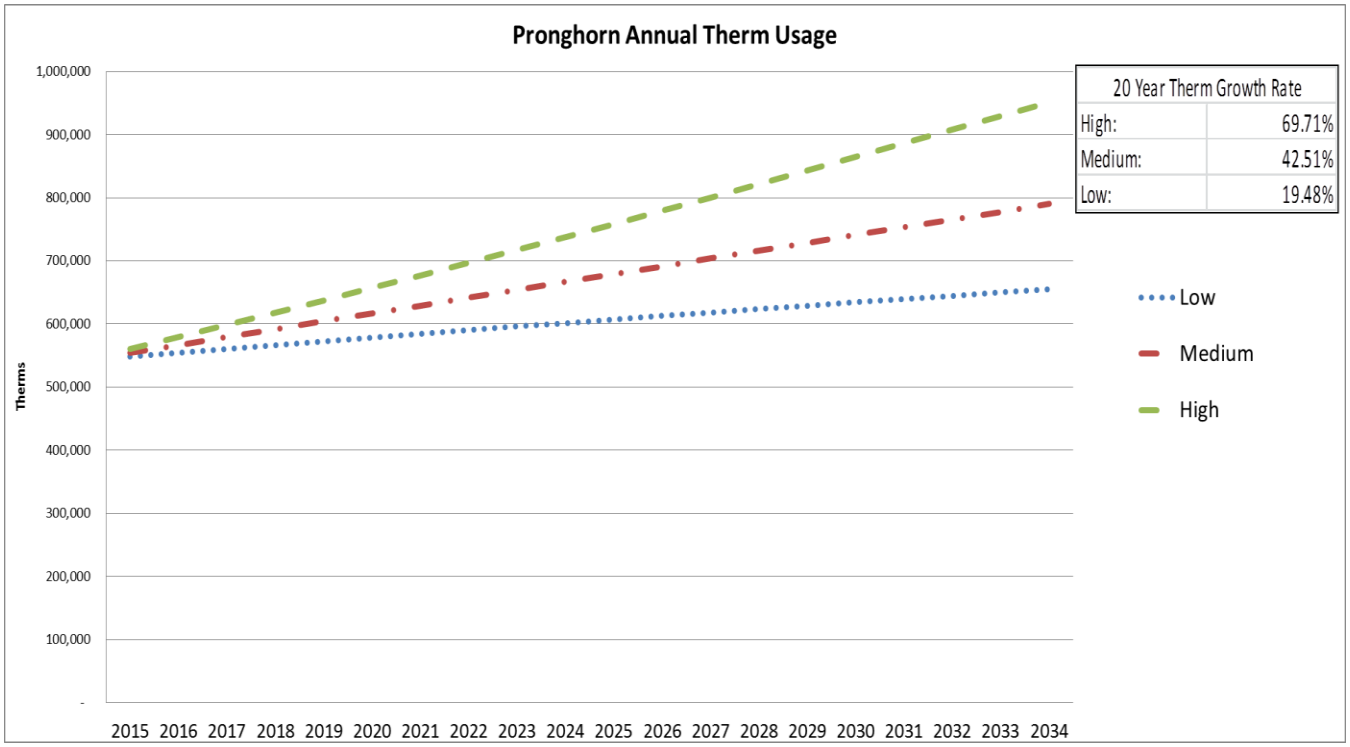
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

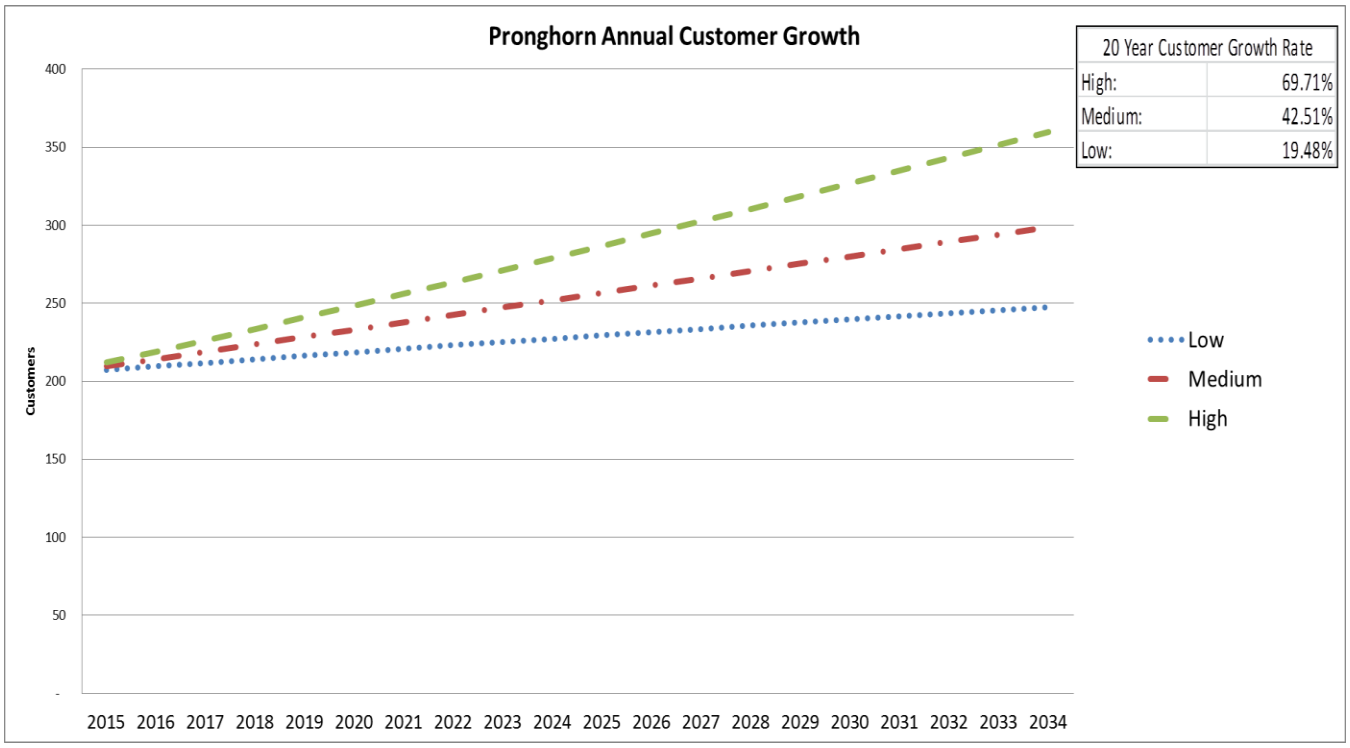
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	183	24	207	185	25	210	187	25	212
2016	185	25	210	189	25	214	193	26	219
2017	187	25	212	193	26	219	200	27	226
2018	189	25	214	198	26	224	206	27	234
2019	191	25	216	202	27	228	213	28	241
2020	193	26	219	206	27	233	219	29	248
2021	195	26	221	210	28	238	226	30	256
2022	197	26	223	214	28	243	233	31	264
2023	199	26	225	218	29	247	239	32	271
2024	201	27	227	222	30	252	246	33	279
2025	203	27	229	227	30	257	253	34	287
2026	204	27	232	231	31	261	260	35	295
2027	206	27	234	235	31	266	267	35	303
2028	208	28	236	239	32	271	274	36	311
2029	210	28	238	243	32	275	281	37	319
2030	212	28	240	247	33	280	289	38	327
2031	213	28	242	251	33	285	296	39	335
2032	215	29	244	256	34	289	303	40	343
2033	217	29	246	260	34	294	310	41	351
2034	219	29	248	264	35	299	318	42	360

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Pronghorn Annual Therm Usage
Therms
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Pronghorn Annual Customer Growth
Customers
400
350
300
250
200
150
100
50
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bend Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,458,743	6,537,097	30,995,840	24,809,467	6,537,097	31,346,564	25,160,190	6,537,097	31,697,287
2016	24,843,310	6,639,880	31,483,190	25,478,575	6,713,402	32,191,977	26,121,729	6,786,923	32,908,653
2017	25,003,852	6,682,788	31,686,640	25,921,410	6,830,085	32,751,495	26,860,952	6,978,988	33,839,940
2018	25,272,711	6,754,646	32,027,358	26,478,861	6,976,969	33,455,830	27,727,437	7,204,117	34,931,553
2019	25,539,061	6,825,834	32,364,895	27,036,985	7,124,030	34,161,015	28,604,099	7,431,890	36,035,990
2020	25,917,970	6,927,105	32,845,075	27,718,226	7,303,532	35,021,758	29,621,170	7,696,145	37,317,315
2021	26,063,787	6,966,078	33,029,865	28,153,637	7,418,259	35,571,897	30,385,126	7,894,635	38,279,761
2022	26,322,259	7,035,160	33,357,419	28,712,031	7,565,392	36,277,422	31,289,105	8,129,506	39,418,611
2023	26,577,970	7,103,504	33,681,474	29,269,885	7,712,382	36,982,267	32,200,992	8,366,432	40,567,424
2024	26,951,471	7,203,329	34,154,801	29,961,526	7,894,624	37,856,150	33,270,277	8,644,252	41,914,529
2025	27,081,787	7,238,159	34,319,946	30,384,783	8,006,149	38,390,932	34,049,406	8,846,685	42,896,091
2026	27,329,852	7,304,459	34,634,311	30,941,423	8,152,819	39,094,242	34,985,068	9,089,788	44,074,856
2027	27,575,208	7,370,036	34,945,244	31,496,983	8,299,204	39,796,188	35,927,315	9,334,601	45,261,916
2028	27,942,508	7,468,204	35,410,712	32,195,069	8,483,144	40,678,213	37,041,321	9,624,041	46,665,362
2029	28,057,904	7,499,046	35,556,949	32,604,455	8,591,015	41,195,470	37,830,371	9,829,052	47,659,423
2030	28,295,262	7,562,485	35,857,747	33,156,097	8,736,368	41,892,465	38,790,461	10,078,501	48,868,962
2031	28,530,589	7,625,381	36,155,969	33,707,603	8,881,685	42,589,288	39,758,300	10,329,964	50,088,264
2032	28,892,170	7,722,021	36,614,190	34,411,103	9,067,052	43,478,155	40,913,989	10,630,234	51,544,223
2033	28,994,320	7,749,322	36,743,642	34,807,775	9,171,572	43,979,347	41,712,602	10,837,729	52,550,331
2034	29,223,004	7,810,443	37,033,446	35,356,846	9,316,248	44,673,094	42,699,587	11,094,167	53,793,754

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.57%	1.57%	1.57%	2.70%	2.70%	2.70%	3.82%	3.82%	3.82%
2017	0.65%	0.65%	0.65%	1.74%	1.74%	1.74%	2.83%	2.83%	2.83%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.48%	1.48%	1.48%	2.52%	2.52%	2.52%	3.56%	3.56%	3.56%
2021	0.56%	0.56%	0.56%	1.57%	1.57%	1.57%	2.58%	2.58%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	1.41%	1.41%	2.36%	2.36%	2.36%	3.32%	3.32%	3.32%
2025	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.33%	1.33%	1.33%	2.22%	2.22%	2.22%	3.10%	3.10%	3.10%
2029	0.41%	0.41%	0.41%	1.27%	1.27%	1.27%	2.13%	2.13%	2.13%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	1.27%	1.27%	2.09%	2.09%	2.09%	2.91%	2.91%	2.91%
2033	0.35%	0.35%	0.35%	1.15%	1.15%	1.15%	1.95%	1.95%	1.95%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	17,910	355,309	373,218	17,910	359,532	377,442	17,910	363,755	381,665
2016	18,191	359,206	377,397	18,393	367,501	385,894	18,594	375,890	394,485
2017	18,309	363,227	381,536	18,713	375,646	394,358	19,121	388,344	407,464
2018	18,506	367,133	385,639	19,115	383,724	402,839	19,737	400,871	420,608
2019	18,701	371,002	389,703	19,518	391,812	411,330	20,361	413,545	433,907
2020	18,978	374,744	393,723	20,010	399,805	419,815	21,085	426,247	447,332
2021	19,085	378,625	397,710	20,324	407,994	428,318	21,629	439,294	460,924
2022	19,274	382,380	401,654	20,727	416,086	436,814	22,273	452,364	474,636
2023	19,462	386,094	405,556	21,130	424,171	445,301	22,922	465,547	488,469
2024	19,735	389,687	409,423	21,629	432,163	453,792	23,683	478,758	502,440
2025	19,831	393,413	413,244	21,935	440,328	462,262	24,237	492,271	516,508
2026	20,012	397,017	417,029	22,336	448,394	470,731	24,904	505,798	530,702
2027	20,192	400,581	420,773	22,738	456,445	479,183	25,574	519,421	544,995
2028	20,461	404,017	424,478	23,241	464,379	487,620	26,367	533,023	559,390
2029	20,545	407,593	428,138	23,537	472,494	496,031	26,929	546,934	573,863
2030	20,719	411,041	431,760	23,935	480,489	504,424	27,612	560,815	588,427
2031	20,891	414,460	435,351	24,333	488,481	512,814	28,301	574,808	603,109
2032	21,156	417,748	438,904	24,841	496,343	521,184	29,124	588,750	617,874
2033	21,231	421,196	442,427	25,128	504,424	529,552	29,692	603,062	632,754
2034	21,398	424,518	445,917	25,524	512,381	537,905	30,395	617,331	647,726

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.57%	1.10%	1.12%	2.70%	2.22%	2.24%	3.82%	3.34%	3.36%
2017	0.65%	1.12%	1.10%	1.74%	2.22%	2.19%	2.83%	3.31%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.48%	1.01%	1.03%	2.52%	2.04%	2.06%	3.56%	3.07%	3.09%
2021	0.56%	1.04%	1.01%	1.57%	2.05%	2.03%	2.58%	3.06%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	0.93%	0.95%	2.36%	1.88%	1.91%	3.32%	2.84%	2.86%
2025	0.48%	0.96%	0.93%	1.41%	1.89%	1.87%	2.34%	2.82%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.33%	0.86%	0.88%	2.22%	1.74%	1.76%	3.10%	2.62%	2.64%
2029	0.41%	0.89%	0.86%	1.27%	1.75%	1.72%	2.13%	2.61%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	0.79%	0.82%	2.09%	1.61%	1.63%	2.91%	2.43%	2.45%
2033	0.35%	0.83%	0.80%	1.15%	1.63%	1.61%	1.95%	2.43%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	19,571,498	11,424,342	30,995,840	19,792,953	11,553,610	31,346,564	20,014,408	11,682,879	31,697,287
2016	19,880,335	11,602,855	31,483,190	20,327,904	11,864,073	32,191,977	20,780,455	12,128,197	32,908,653
2017	20,007,685	11,678,955	31,686,640	20,680,060	12,071,435	32,751,495	21,367,329	12,472,611	33,839,940
2018	20,222,822	11,804,535	32,027,358	21,124,793	12,331,037	33,455,830	22,056,600	12,874,954	34,931,553
2019	20,435,952	11,928,944	32,364,895	21,570,064	12,590,952	34,161,015	22,753,966	13,282,023	36,035,990
2020	20,740,309	12,104,766	32,845,075	22,114,794	12,906,964	35,021,758	23,564,344	13,752,971	37,317,315
2021	20,855,829	12,174,036	33,029,865	22,460,927	13,110,969	35,571,897	24,170,736	14,109,025	38,279,761
2022	21,062,654	12,294,765	33,357,419	22,906,413	13,371,010	36,277,422	24,889,832	14,528,778	39,418,611
2023	21,267,270	12,414,204	33,681,474	23,351,468	13,630,799	36,982,267	25,615,220	14,952,204	40,567,424
2024	21,567,346	12,587,454	34,154,801	23,904,596	13,951,554	37,856,150	26,467,295	15,447,234	41,914,529
2025	21,670,416	12,649,530	34,319,946	24,240,932	14,150,000	38,390,932	27,085,595	15,810,496	42,896,091
2026	21,868,914	12,765,397	34,634,311	24,685,019	14,409,224	39,094,242	27,829,894	16,244,961	44,074,856
2027	22,065,244	12,880,000	34,945,244	25,128,243	14,667,944	39,796,188	28,579,432	16,682,484	45,261,916
2028	22,360,402	13,050,309	35,410,712	25,686,612	14,991,601	40,678,213	29,467,250	17,198,113	46,665,362
2029	22,451,489	13,105,460	35,556,949	26,011,783	15,183,687	41,195,470	30,093,274	17,566,149	47,659,423
2030	22,641,420	13,216,327	35,857,747	26,451,882	15,440,583	41,892,465	30,857,005	18,011,957	48,868,962
2031	22,829,724	13,326,245	36,155,969	26,891,872	15,697,416	42,589,288	31,626,901	18,461,363	50,088,264
2032	23,120,350	13,493,841	36,614,190	27,454,660	16,023,495	43,478,155	32,548,049	18,996,174	51,544,223
2033	23,200,795	13,542,848	36,743,642	27,769,588	16,209,759	43,979,347	33,181,508	19,368,823	52,550,331
2034	23,383,784	13,649,663	37,033,446	28,207,636	16,465,458	44,673,094	33,966,634	19,827,120	53,793,754

Annual Change

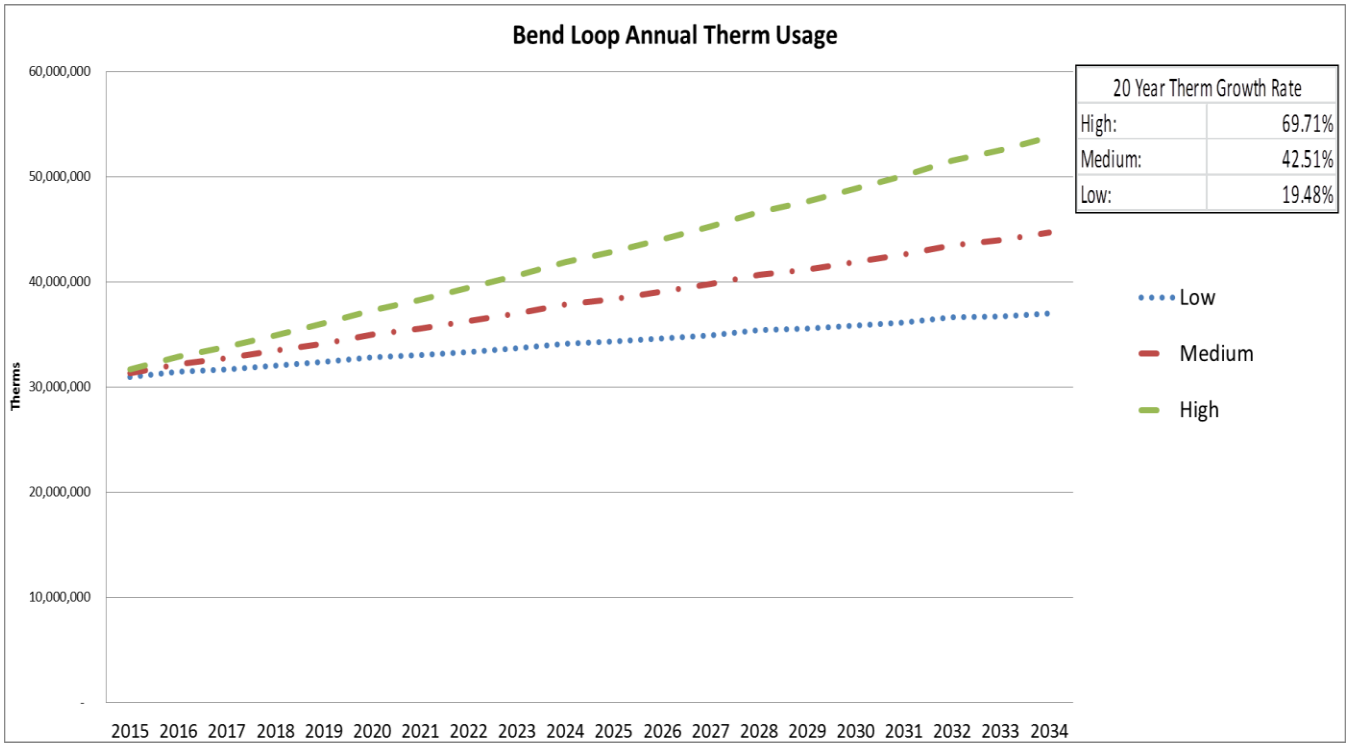
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.58%	1.56%	1.57%	2.70%	2.69%	2.70%	3.83%	3.81%	3.82%
2017	0.64%	0.66%	0.65%	1.73%	1.75%	1.74%	2.82%	2.84%	2.83%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.49%	1.47%	1.48%	2.53%	2.51%	2.52%	3.56%	3.55%	3.56%
2021	0.56%	0.57%	0.56%	1.57%	1.58%	1.57%	2.57%	2.59%	2.58%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	1.41%	1.40%	1.41%	2.37%	2.35%	2.36%	3.33%	3.31%	3.32%
2025	0.48%	0.49%	0.48%	1.41%	1.42%	1.41%	2.34%	2.35%	2.34%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	1.34%	1.32%	1.33%	2.22%	2.21%	2.22%	3.11%	3.09%	3.10%
2029	0.41%	0.42%	0.41%	1.27%	1.28%	1.27%	2.12%	2.14%	2.13%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	1.27%	1.26%	1.27%	2.09%	2.08%	2.09%	2.91%	2.90%	2.91%
2033	0.35%	0.36%	0.35%	1.15%	1.16%	1.15%	1.95%	1.96%	1.95%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%

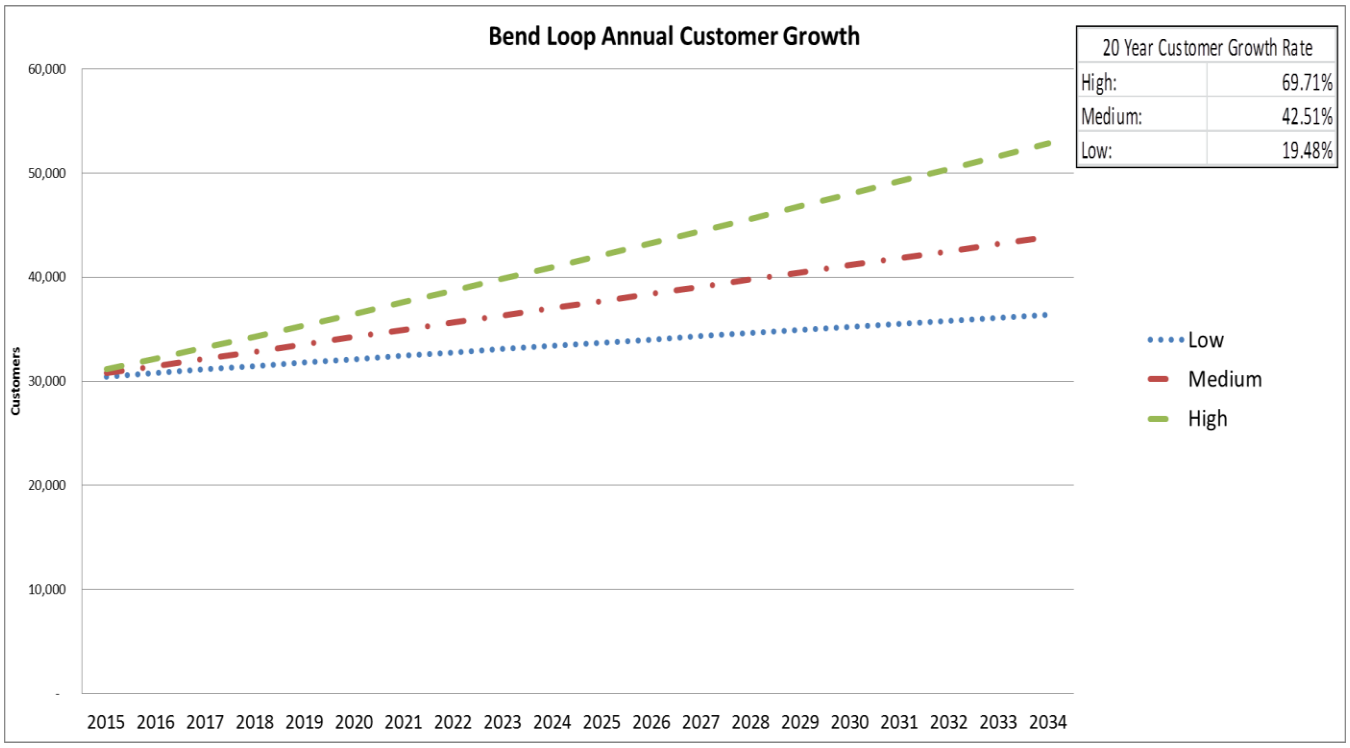
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	26,426	4,029	30,456	26,725	4,075	30,800	27,024	4,121	31,145
2016	26,722	4,075	30,797	27,324	4,166	31,490	27,932	4,259	32,191
2017	27,015	4,119	31,135	27,923	4,258	32,181	28,851	4,399	33,250
2018	27,306	4,164	31,469	28,524	4,349	32,873	29,782	4,541	34,323
2019	27,594	4,207	31,801	29,125	4,441	33,566	30,724	4,685	35,408
2020	27,878	4,251	32,129	29,726	4,533	34,258	31,674	4,830	36,504
2021	28,161	4,294	32,454	30,328	4,624	34,952	32,637	4,976	37,613
2022	28,440	4,336	32,776	30,929	4,716	35,645	33,608	5,124	38,732
2023	28,716	4,379	33,095	31,530	4,808	36,338	34,587	5,274	39,861
2024	28,990	4,420	33,410	32,132	4,899	37,031	35,576	5,425	41,001
2025	29,261	4,462	33,722	32,731	4,991	37,722	36,572	5,576	42,149
2026	29,529	4,502	34,031	33,331	5,082	38,413	37,577	5,730	43,307
2027	29,794	4,543	34,336	33,929	5,173	39,103	38,589	5,884	44,473
2028	30,056	4,583	34,639	34,527	5,265	39,791	39,609	6,039	45,648
2029	30,315	4,622	34,938	35,122	5,355	40,478	40,633	6,196	46,829
2030	30,572	4,661	35,233	35,717	5,446	41,163	41,665	6,353	48,018
2031	30,826	4,700	35,526	36,311	5,537	41,847	42,704	6,511	49,216
2032	31,077	4,739	35,816	36,903	5,627	42,530	43,750	6,671	50,421
2033	31,327	4,777	36,104	37,496	5,717	43,213	44,803	6,831	51,635
2034	31,574	4,814	36,388	38,087	5,807	43,895	45,863	6,993	52,857

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.12%	1.12%	1.12%	2.24%	2.24%	2.24%	3.36%	3.36%	3.36%
2017	1.10%	1.10%	1.10%	2.19%	2.19%	2.19%	3.29%	3.29%	3.29%
2018	1.08%	1.08%	1.08%	2.15%	2.15%	2.15%	3.23%	3.23%	3.23%
2019	1.05%	1.05%	1.05%	2.11%	2.11%	2.11%	3.16%	3.16%	3.16%
2020	1.03%	1.03%	1.03%	2.06%	2.06%	2.06%	3.09%	3.09%	3.09%
2021	1.01%	1.01%	1.01%	2.03%	2.03%	2.03%	3.04%	3.04%	3.04%
2022	0.99%	0.99%	0.99%	1.98%	1.98%	1.98%	2.98%	2.98%	2.98%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2024	0.95%	0.95%	0.95%	1.91%	1.91%	1.91%	2.86%	2.86%	2.86%
2025	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2026	0.92%	0.92%	0.92%	1.83%	1.83%	1.83%	2.75%	2.75%	2.75%
2027	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.69%	2.69%	2.69%
2028	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2029	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.59%	2.59%	2.59%
2030	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2031	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2032	0.82%	0.82%	0.82%	1.63%	1.63%	1.63%	2.45%	2.45%	2.45%
2033	0.80%	0.80%	0.80%	1.61%	1.61%	1.61%	2.41%	2.41%	2.41%
2034	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%


Bend Loop Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High


Bend Loop Annual Customer Growth
Customers
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 69.71%
Medium: 42.51%
Low: 19.48%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

McCleary (Aberdeen/Hoquiam)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,553,430	2,322,352	5,875,782	3,567,270	2,322,352	5,889,622	3,581,110	2,322,352	5,903,462
2016	3,577,128	2,337,840	5,914,968	3,599,551	2,343,368	5,942,919	3,622,041	2,348,896	5,970,936
2017	3,570,277	2,333,363	5,903,640	3,601,136	2,344,400	5,945,536	3,632,167	2,355,462	5,987,629
2018	3,578,754	2,338,903	5,917,657	3,618,237	2,355,532	5,973,769	3,658,039	2,372,240	6,030,279
2019	3,587,258	2,344,461	5,931,719	3,635,433	2,366,727	6,002,160	3,684,117	2,389,152	6,073,268
2020	3,611,093	2,360,038	5,971,131	3,668,151	2,388,027	6,056,178	3,725,950	2,416,281	6,142,231
2021	3,604,112	2,355,476	5,959,588	3,669,634	2,388,993	6,058,626	3,736,166	2,422,906	6,159,071
2022	3,612,486	2,360,949	5,973,435	3,686,686	2,400,094	6,086,780	3,762,208	2,439,794	6,202,003
2023	3,620,771	2,366,363	5,987,134	3,703,595	2,411,102	6,114,698	3,788,092	2,456,580	6,244,672
2024	3,644,601	2,381,937	6,026,539	3,736,462	2,432,499	6,168,960	3,830,392	2,484,012	6,314,404
2025	3,637,143	2,377,063	6,014,207	3,737,127	2,432,932	6,170,059	3,839,595	2,489,979	6,329,574
2026	3,645,232	2,382,350	6,027,582	3,753,749	2,443,753	6,197,502	3,865,212	2,506,592	6,371,804
2027	3,653,187	2,387,549	6,040,735	3,770,132	2,454,419	6,224,551	3,890,516	2,523,002	6,413,518
2028	3,676,733	2,402,938	6,079,671	3,802,563	2,475,532	6,278,095	3,932,373	2,550,146	6,482,519
2029	3,668,744	2,397,716	6,066,460	3,802,277	2,475,345	6,277,622	3,940,325	2,555,303	6,495,628
2030	3,676,325	2,402,670	6,078,995	3,817,990	2,485,575	6,303,565	3,964,750	2,571,143	6,535,893
2031	3,683,890	2,407,615	6,091,504	3,833,703	2,495,805	6,329,508	3,989,226	2,587,016	6,576,242
2032	3,707,156	2,422,820	6,129,977	3,865,686	2,516,626	6,382,312	4,030,592	2,613,841	6,644,433
2033	3,698,698	2,417,293	6,115,991	3,864,555	2,515,890	6,380,445	4,037,430	2,618,276	6,655,706
2034	3,706,011	2,422,072	6,128,084	3,879,838	2,525,839	6,405,677	4,061,380	2,633,807	6,695,187

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.67%	0.67%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2017	-0.19%	-0.19%	-0.19%	0.04%	0.04%	0.04%	0.28%	0.28%	0.28%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.66%	0.66%	0.66%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2021	-0.19%	-0.19%	-0.19%	0.04%	0.04%	0.04%	0.27%	0.27%	0.27%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.66%	0.66%	0.66%	0.89%	0.89%	0.89%	1.12%	1.12%	1.12%
2025	-0.20%	-0.20%	-0.20%	0.02%	0.02%	0.02%	0.24%	0.24%	0.24%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.64%	0.64%	0.64%	0.86%	0.86%	0.86%	1.08%	1.08%	1.08%
2029	-0.22%	-0.22%	-0.22%	-0.01%	-0.01%	-0.01%	0.20%	0.20%	0.20%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.63%	0.63%	0.63%	0.83%	0.83%	0.83%	1.04%	1.04%	1.04%
2033	-0.23%	-0.23%	-0.23%	-0.03%	-0.03%	-0.03%	0.17%	0.17%	0.17%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	6,363	47,063	53,425	6,363	47,189	53,551	6,363	47,315	53,677
2016	6,405	47,147	53,552	6,420	47,385	53,805	6,435	47,623	54,059
2017	6,393	47,286	53,679	6,423	47,637	54,060	6,453	47,989	54,442
2018	6,408	47,398	53,806	6,454	47,863	54,316	6,499	48,331	54,830
2019	6,423	47,511	53,934	6,484	48,090	54,575	6,546	48,675	55,221
2020	6,466	47,595	54,061	6,543	48,288	54,831	6,620	48,990	55,610
2021	6,453	47,734	54,187	6,545	48,543	55,088	6,638	49,363	56,001
2022	6,468	47,845	54,313	6,576	48,768	55,344	6,684	49,707	56,392
2023	6,483	47,955	54,438	6,606	48,992	55,598	6,730	50,049	56,780
2024	6,526	48,036	54,562	6,664	49,187	55,852	6,806	50,363	57,168
2025	6,513	48,172	54,684	6,666	49,436	56,101	6,822	50,730	57,552
2026	6,527	48,279	54,806	6,695	49,655	56,351	6,867	51,068	57,936
2027	6,541	48,384	54,925	6,724	49,872	56,597	6,912	51,402	58,315
2028	6,583	48,460	55,043	6,782	50,057	56,840	6,987	51,704	58,690
2029	6,569	48,590	55,159	6,782	50,297	57,079	7,001	52,061	59,061
2030	6,583	48,691	55,273	6,810	50,505	57,315	7,044	52,383	59,428
2031	6,596	48,791	55,387	6,838	50,713	57,551	7,088	52,707	59,794
2032	6,638	48,861	55,499	6,895	50,888	57,783	7,161	52,995	60,156
2033	6,623	48,987	55,610	6,893	51,121	58,014	7,173	53,344	60,517
2034	6,636	49,084	55,720	6,920	51,323	58,244	7,216	53,660	60,876

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.18%	0.24%	0.90%	0.42%	0.47%	1.14%	0.65%	0.71%
2017	-0.19%	0.29%	0.24%	0.04%	0.53%	0.47%	0.28%	0.77%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.66%	0.18%	0.23%	0.90%	0.41%	0.47%	1.14%	0.65%	0.70%
2021	-0.19%	0.29%	0.23%	0.04%	0.53%	0.47%	0.27%	0.76%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.66%	0.17%	0.23%	0.89%	0.40%	0.46%	1.12%	0.63%	0.68%
2025	-0.20%	0.28%	0.22%	0.02%	0.50%	0.45%	0.24%	0.73%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.64%	0.16%	0.21%	0.86%	0.37%	0.43%	1.08%	0.59%	0.64%
2029	-0.22%	0.27%	0.21%	-0.01%	0.48%	0.42%	0.20%	0.69%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.63%	0.14%	0.20%	0.83%	0.35%	0.40%	1.04%	0.55%	0.61%
2033	-0.23%	0.26%	0.20%	-0.03%	0.46%	0.40%	0.17%	0.66%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,384,966	3,490,815	5,875,782	2,390,584	3,499,038	5,889,622	2,396,202	3,507,260	5,903,462
2016	2,401,502	3,513,466	5,914,968	2,412,851	3,530,069	5,942,919	2,424,226	3,546,711	5,970,936
2017	2,396,274	3,507,366	5,903,640	2,413,279	3,532,256	5,945,536	2,430,365	3,557,264	5,987,629
2018	2,401,963	3,515,694	5,917,657	2,424,739	3,549,030	5,973,769	2,447,676	3,582,602	6,030,279
2019	2,407,671	3,524,048	5,931,719	2,436,263	3,565,897	6,002,160	2,465,126	3,608,143	6,073,268
2020	2,424,305	3,546,826	5,971,131	2,458,834	3,597,344	6,056,178	2,493,772	3,648,459	6,142,231
2021	2,418,983	3,540,605	5,959,588	2,459,183	3,599,444	6,058,626	2,499,953	3,659,118	6,159,071
2022	2,424,604	3,548,832	5,973,435	2,470,610	3,616,170	6,086,780	2,517,379	3,684,624	6,202,003
2023	2,430,164	3,556,970	5,987,134	2,481,942	3,632,756	6,114,698	2,534,698	3,709,974	6,244,672
2024	2,446,801	3,579,738	6,026,539	2,504,624	3,664,336	6,168,960	2,563,675	3,750,729	6,314,404
2025	2,441,153	3,573,054	6,014,207	2,504,413	3,665,646	6,170,059	2,569,160	3,760,414	6,329,574
2026	2,446,582	3,581,000	6,027,582	2,515,552	3,681,950	6,197,502	2,586,301	3,785,503	6,371,804
2027	2,451,921	3,588,815	6,040,735	2,526,531	3,698,020	6,224,551	2,603,232	3,810,286	6,413,518
2028	2,468,373	3,611,298	6,079,671	2,548,934	3,729,162	6,278,095	2,631,930	3,850,588	6,482,519
2029	2,462,362	3,604,098	6,066,460	2,548,072	3,729,550	6,277,622	2,636,560	3,859,067	6,495,628
2030	2,467,450	3,611,545	6,078,995	2,558,603	3,744,962	6,303,565	2,652,904	3,882,989	6,535,893
2031	2,472,528	3,618,977	6,091,504	2,569,133	3,760,375	6,329,508	2,669,282	3,906,960	6,576,242
2032	2,488,797	3,641,180	6,129,977	2,591,246	3,791,066	6,382,312	2,697,668	3,946,765	6,644,433
2033	2,482,467	3,633,524	6,115,991	2,589,808	3,790,637	6,380,445	2,701,536	3,954,170	6,655,706
2034	2,487,375	3,640,709	6,128,084	2,600,050	3,805,627	6,405,677	2,717,561	3,977,626	6,695,187

Annual Change

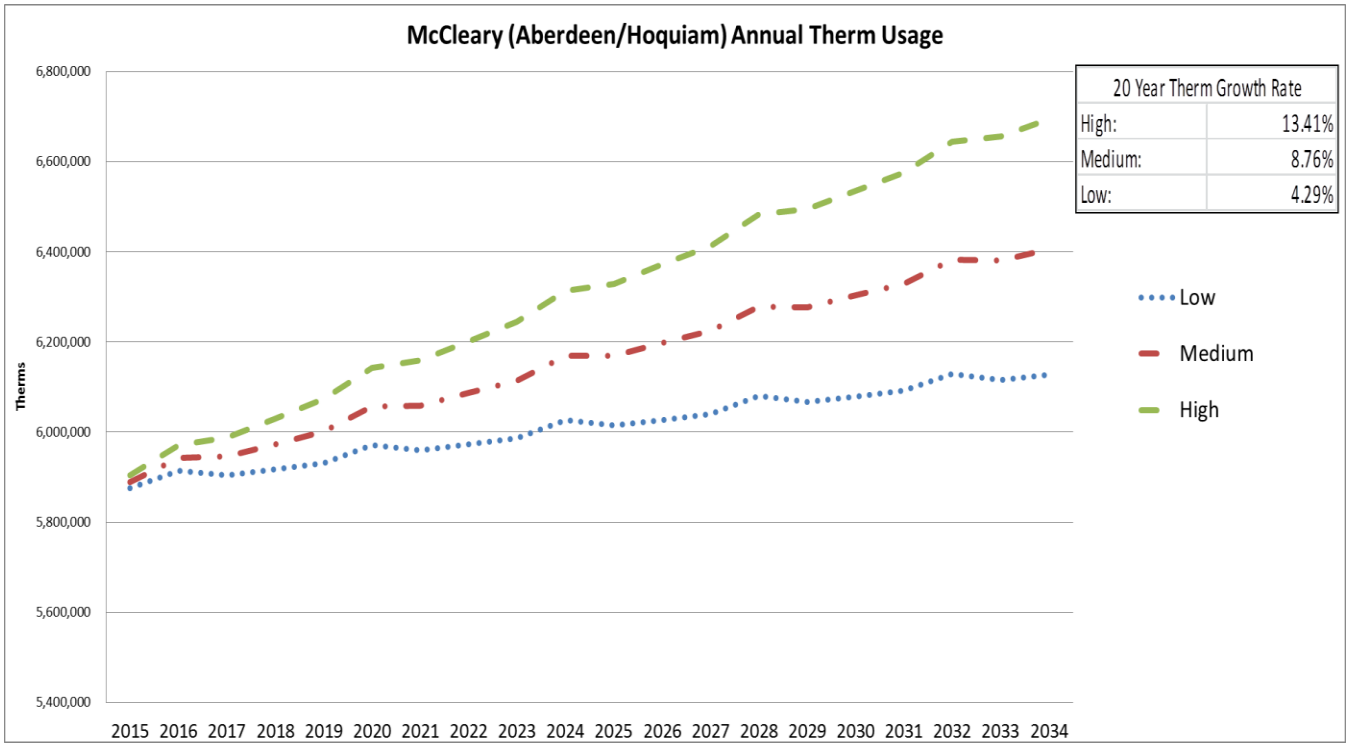
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.65%	0.67%	0.93%	0.89%	0.90%	1.17%	1.12%	1.14%
2017	-0.22%	-0.17%	-0.19%	0.02%	0.06%	0.04%	0.25%	0.30%	0.28%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.69%	0.65%	0.66%	0.93%	0.88%	0.90%	1.16%	1.12%	1.14%
2021	-0.22%	-0.18%	-0.19%	0.01%	0.06%	0.04%	0.25%	0.29%	0.27%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.68%	0.64%	0.66%	0.91%	0.87%	0.89%	1.14%	1.10%	1.12%
2025	-0.23%	-0.19%	-0.20%	-0.01%	0.04%	0.02%	0.21%	0.26%	0.24%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.67%	0.63%	0.64%	0.89%	0.84%	0.86%	1.10%	1.06%	1.08%
2029	-0.24%	-0.20%	-0.22%	-0.03%	0.01%	-0.01%	0.18%	0.22%	0.20%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.66%	0.61%	0.63%	0.86%	0.82%	0.83%	1.06%	1.02%	1.04%
2033	-0.25%	-0.21%	-0.23%	-0.06%	-0.01%	-0.03%	0.14%	0.19%	0.17%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

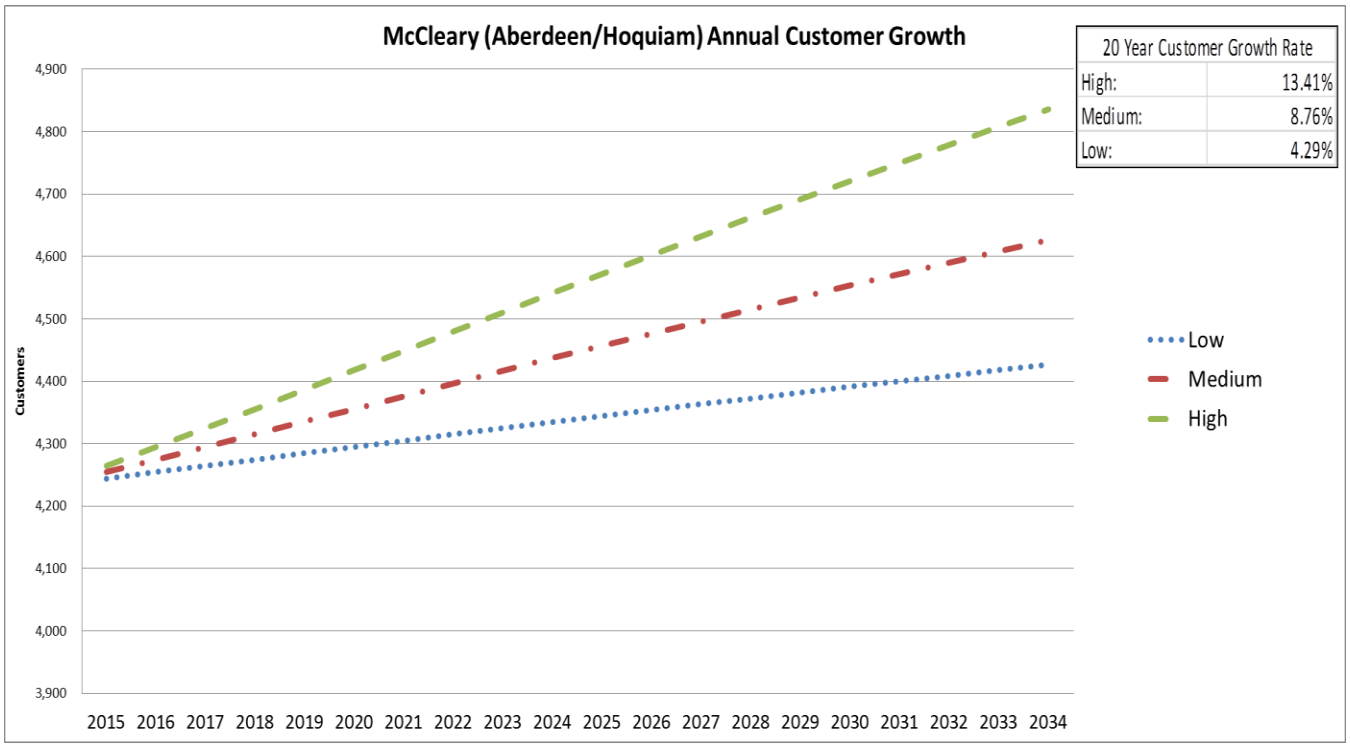
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,486	758	4,244	3,494	760	4,254	3,503	762	4,264
2016	3,494	760	4,254	3,511	763	4,274	3,528	767	4,295
2017	3,503	762	4,264	3,528	767	4,295	3,553	772	4,325
2018	3,511	763	4,275	3,544	771	4,315	3,578	778	4,356
2019	3,519	765	4,285	3,561	774	4,336	3,603	784	4,387
2020	3,528	767	4,295	3,578	778	4,356	3,629	789	4,418
2021	3,536	769	4,305	3,595	782	4,376	3,654	795	4,449
2022	3,544	771	4,315	3,611	785	4,397	3,680	800	4,480
2023	3,552	772	4,325	3,628	789	4,417	3,705	806	4,511
2024	3,560	774	4,335	3,645	792	4,437	3,730	811	4,542
2025	3,568	776	4,344	3,661	796	4,457	3,755	817	4,572
2026	3,576	778	4,354	3,677	800	4,477	3,781	822	4,603
2027	3,584	779	4,363	3,693	803	4,496	3,805	827	4,633
2028	3,592	781	4,373	3,709	806	4,516	3,830	833	4,663
2029	3,599	783	4,382	3,725	810	4,535	3,854	838	4,692
2030	3,607	784	4,391	3,740	813	4,553	3,878	843	4,721
2031	3,614	786	4,400	3,755	817	4,572	3,902	848	4,750
2032	3,622	787	4,409	3,771	820	4,590	3,925	854	4,779
2033	3,629	789	4,418	3,786	823	4,609	3,949	859	4,808
2034	3,636	791	4,427	3,801	826	4,627	3,972	864	4,836

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2017	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2021	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.68%	0.68%	0.68%
2025	0.22%	0.22%	0.22%	0.45%	0.45%	0.45%	0.67%	0.67%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.21%	0.21%	0.21%	0.43%	0.43%	0.43%	0.64%	0.64%	0.64%
2029	0.21%	0.21%	0.21%	0.42%	0.42%	0.42%	0.63%	0.63%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.61%	0.61%	0.61%
2033	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.60%	0.60%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%


McCleary (Aberdeen/Hoquiam) Annual Therm Usage
Therms
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High


McCleary (Aberdeen/Hoquiam) Annual Customer Growth
Customers
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
4,100
4,000
3,900
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Acme

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	74,371	11,093	85,464	75,184	11,093	86,276	75,996	11,093	87,089
2016	75,413	11,248	86,661	76,951	11,353	88,304	78,504	11,459	89,962
2017	75,774	11,302	87,077	78,034	11,513	89,547	80,337	11,726	92,064
2018	76,471	11,406	87,877	79,469	11,725	91,194	82,554	12,050	94,604
2019	77,165	11,509	88,674	80,910	11,938	92,848	84,800	12,378	97,177
2020	78,204	11,664	89,869	82,726	12,206	94,931	87,462	12,766	100,229
2021	78,539	11,714	90,253	83,805	12,365	96,169	89,370	13,045	102,415
2022	79,220	11,816	91,036	85,257	12,579	97,836	91,693	13,384	105,077
2023	79,895	11,917	91,812	86,711	12,794	99,504	94,038	13,726	107,765
2024	80,930	12,071	93,001	88,566	13,067	101,633	96,845	14,136	110,981
2025	81,232	12,116	93,348	89,625	13,223	102,848	98,798	14,421	113,219
2026	81,893	12,215	94,107	91,083	13,439	104,522	101,210	14,773	115,983
2027	82,548	12,312	94,861	92,541	13,654	106,195	103,640	15,128	118,768
2028	83,574	12,465	96,039	94,423	13,931	108,354	106,568	15,555	122,123
2029	83,842	12,505	96,348	95,454	14,083	109,537	108,552	15,845	124,397
2030	84,481	12,601	97,081	96,907	14,298	111,205	111,031	16,207	127,238
2031	85,115	12,695	97,810	98,363	14,513	112,875	113,533	16,572	130,104
2032	86,130	12,847	98,977	100,266	14,794	115,060	116,572	17,016	133,588
2033	86,369	12,882	99,251	101,271	14,942	116,213	118,586	17,310	135,896
2034	86,989	12,975	99,964	102,726	15,156	117,883	121,142	17,683	138,825

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.35%	1.35%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.30%	1.30%	1.30%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.30%	1.30%	2.14%	2.14%	2.14%	2.98%	2.98%	2.98%
2025	0.37%	0.37%	0.37%	1.20%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.82%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.09%	1.09%	1.09%	1.86%	1.86%	1.86%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.94%	1.94%	1.94%	2.68%	2.68%	2.68%
2033	0.28%	0.28%	0.28%	1.00%	1.00%	1.00%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	30	977	1,008	30	987	1,017	30	997	1,027
2016	31	986	1,017	31	1,005	1,037	31	1,025	1,056
2017	31	996	1,027	32	1,024	1,056	32	1,053	1,086
2018	31	1,005	1,036	32	1,043	1,075	33	1,083	1,116
2019	32	1,014	1,046	33	1,062	1,095	34	1,112	1,146
2020	32	1,023	1,055	33	1,081	1,114	35	1,142	1,177
2021	32	1,032	1,064	34	1,100	1,134	36	1,172	1,208
2022	32	1,041	1,073	34	1,119	1,154	37	1,202	1,239
2023	33	1,050	1,083	35	1,138	1,173	38	1,233	1,271
2024	33	1,059	1,092	36	1,157	1,193	39	1,264	1,303
2025	33	1,068	1,101	36	1,177	1,213	40	1,296	1,335
2026	33	1,076	1,110	37	1,196	1,232	40	1,327	1,368
2027	34	1,085	1,119	37	1,215	1,252	41	1,359	1,400
2028	34	1,093	1,127	38	1,234	1,272	43	1,391	1,434
2029	34	1,102	1,136	39	1,253	1,292	43	1,423	1,467
2030	35	1,110	1,145	39	1,272	1,311	44	1,456	1,500
2031	35	1,119	1,153	40	1,291	1,331	45	1,489	1,534
2032	35	1,127	1,162	41	1,310	1,351	47	1,522	1,568
2033	35	1,135	1,170	41	1,329	1,370	47	1,555	1,602
2034	36	1,143	1,179	42	1,348	1,390	48	1,589	1,637

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	0.93%	0.95%	2.35%	1.88%	1.89%	3.30%	2.82%	2.84%
2017	0.48%	0.95%	0.93%	1.41%	1.88%	1.86%	2.34%	2.81%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	0.88%	0.89%	2.24%	1.77%	1.78%	3.14%	2.66%	2.68%
2021	0.43%	0.89%	0.88%	1.30%	1.78%	1.76%	2.18%	2.66%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	0.83%	0.84%	2.14%	1.67%	1.68%	2.98%	2.51%	2.52%
2025	0.37%	0.84%	0.83%	1.20%	1.67%	1.65%	2.02%	2.49%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	0.77%	0.79%	2.03%	1.56%	1.58%	2.82%	2.35%	2.36%
2029	0.32%	0.79%	0.77%	1.09%	1.56%	1.55%	1.86%	2.34%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	0.72%	0.74%	1.94%	1.46%	1.48%	2.68%	2.20%	2.22%
2033	0.28%	0.74%	0.73%	1.00%	1.47%	1.46%	1.73%	2.20%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	50,740	34,724	85,464	51,222	35,054	86,276	51,704	35,384	87,089
2016	51,451	35,210	86,661	52,427	35,877	88,304	53,411	36,551	89,962
2017	51,697	35,379	87,077	53,164	36,383	89,547	54,658	37,405	92,064
2018	52,173	35,705	87,877	54,142	37,052	91,194	56,166	38,438	94,604
2019	52,646	36,028	88,674	55,124	37,724	92,848	57,694	39,483	97,177
2020	53,356	36,513	89,869	56,361	38,570	94,931	59,506	40,722	100,229
2021	53,583	36,670	90,253	57,096	39,074	96,169	60,804	41,611	102,415
2022	54,048	36,988	91,036	58,085	39,751	97,836	62,385	42,693	105,077
2023	54,509	37,303	91,812	59,076	40,429	99,504	63,980	43,785	107,765
2024	55,215	37,786	93,001	60,340	41,293	101,633	65,890	45,091	110,981
2025	55,421	37,927	93,348	61,061	41,787	102,848	67,218	46,001	113,219
2026	55,872	38,236	94,107	62,055	42,467	104,522	68,859	47,124	115,983
2027	56,319	38,542	94,861	63,048	43,147	106,195	70,513	48,255	118,768
2028	57,019	39,020	96,039	64,331	44,024	108,354	72,505	49,618	122,123
2029	57,202	39,146	96,348	65,032	44,505	109,537	73,854	50,542	124,397
2030	57,637	39,444	97,081	66,023	45,183	111,205	75,541	51,697	127,238
2031	58,070	39,740	97,810	67,014	45,861	112,875	77,243	52,861	130,104
2032	58,763	40,214	98,977	68,312	46,748	115,060	79,312	54,276	133,588
2033	58,925	40,326	99,251	68,996	47,217	116,213	80,682	55,214	135,896
2034	59,349	40,615	99,964	69,987	47,896	117,883	82,420	56,404	138,825

Annual Change

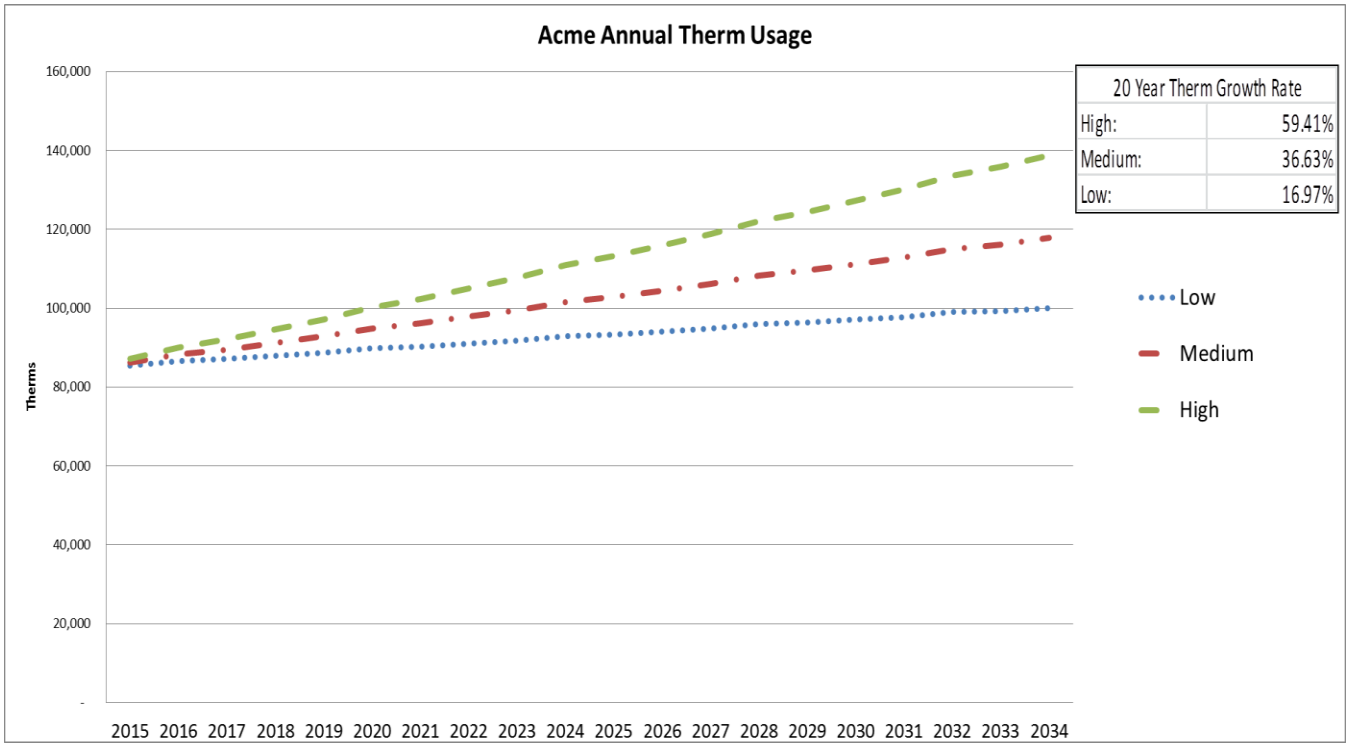
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.33%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.35%	1.35%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.30%	1.31%	1.30%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.29%	1.30%	2.14%	2.14%	2.14%	2.99%	2.98%	2.98%
2025	0.37%	0.37%	0.37%	1.19%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.83%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.09%	1.09%	1.09%	1.86%	1.86%	1.86%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.94%	1.93%	1.94%	2.68%	2.68%	2.68%
2033	0.28%	0.28%	0.28%	1.00%	1.00%	1.00%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

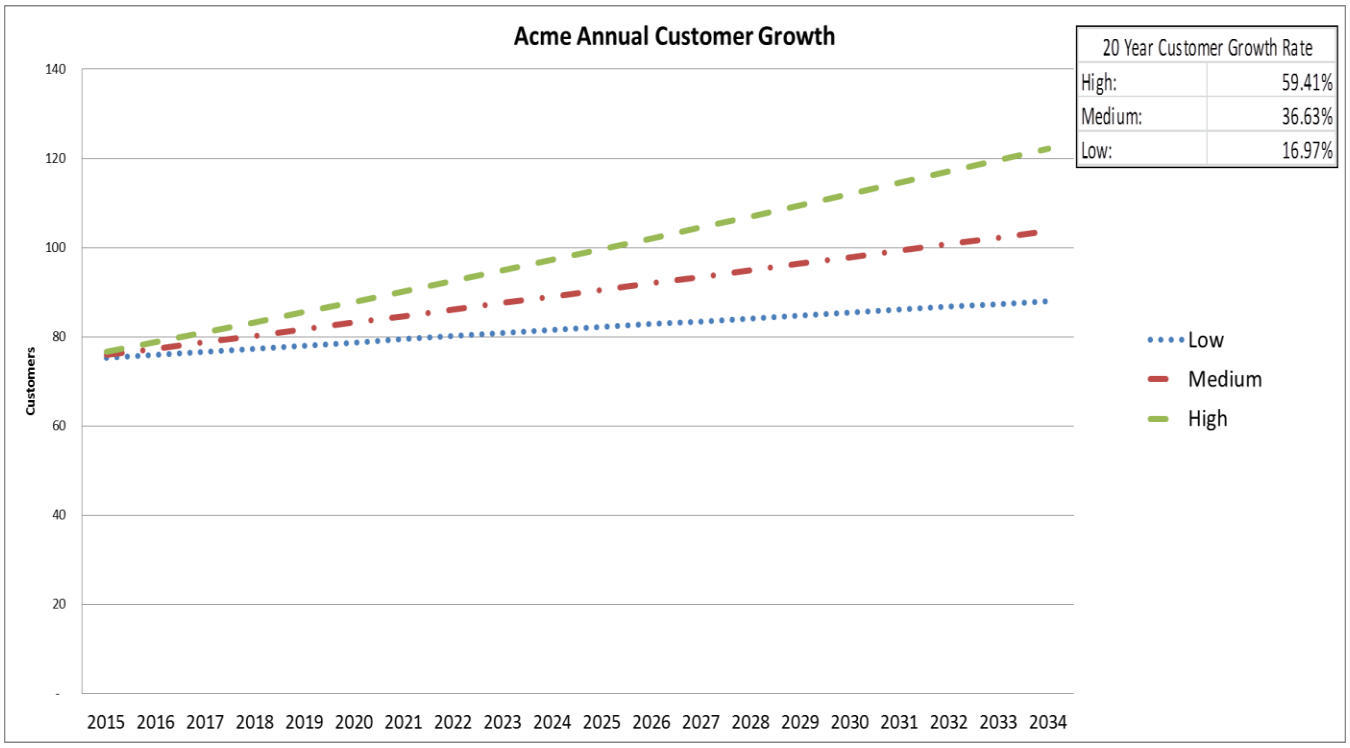
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	66	9	75	67	9	76	67	9	77
2016	67	9	76	68	9	77	69	10	79
2017	67	9	77	69	10	79	71	10	81
2018	68	9	77	71	10	80	73	10	83
2019	69	9	78	72	10	82	75	10	86
2020	69	10	79	73	10	83	77	11	88
2021	70	10	79	74	10	85	79	11	90
2022	70	10	80	76	10	86	81	11	92
2023	71	10	81	77	11	88	83	11	95
2024	72	10	81	78	11	89	85	12	97
2025	72	10	82	80	11	91	88	12	100
2026	73	10	83	81	11	92	90	12	102
2027	73	10	83	82	11	93	92	13	105
2028	74	10	84	83	11	95	94	13	107
2029	75	10	85	85	12	96	96	13	109
2030	75	10	85	86	12	98	98	14	112
2031	76	10	86	87	12	99	101	14	115
2032	76	10	87	89	12	101	103	14	117
2033	77	11	87	90	12	102	105	14	120
2034	77	11	88	91	13	104	107	15	122

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Acme Annual Therm Usage
Therms
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Acme Annual Customer Growth
Customers
140
120
100
80
60
40
20
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Arlington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,512,012	2,186,013	5,698,025	3,556,404	2,186,013	5,742,417	3,600,795	2,186,013	5,786,808
2016	3,554,660	2,212,559	5,767,219	3,627,322	2,229,605	5,856,927	3,700,677	2,246,650	5,947,327
2017	3,566,471	2,219,910	5,786,381	3,667,122	2,254,069	5,921,191	3,769,591	2,288,488	6,058,079
2018	3,593,592	2,236,792	5,830,384	3,722,896	2,288,351	6,011,247	3,855,589	2,340,696	6,196,285
2019	3,620,622	2,253,617	5,874,239	3,778,902	2,322,776	6,101,678	3,942,593	2,393,515	6,336,108
2020	3,663,336	2,280,203	5,943,540	3,851,642	2,367,487	6,219,129	4,047,861	2,457,423	6,505,285
2021	3,674,274	2,287,012	5,961,286	3,891,309	2,391,869	6,283,178	4,119,151	2,500,702	6,619,853
2022	3,700,891	2,303,579	6,004,470	3,947,687	2,426,523	6,374,209	4,208,669	2,555,048	6,763,717
2023	3,727,322	2,320,031	6,047,353	4,004,073	2,461,182	6,465,256	4,298,841	2,609,791	6,908,632
2024	3,769,952	2,346,566	6,116,518	4,078,264	2,506,785	6,585,049	4,408,978	2,676,654	7,085,632
2025	3,779,710	2,352,639	6,132,349	4,117,022	2,530,608	6,647,630	4,481,368	2,720,602	7,201,970
2026	3,805,641	2,368,779	6,174,420	4,173,512	2,565,331	6,738,843	4,573,602	2,776,596	7,350,198
2027	3,831,370	2,384,794	6,216,164	4,229,944	2,600,018	6,829,961	4,666,364	2,832,911	7,499,276
2028	3,873,662	2,411,118	6,284,780	4,304,945	2,646,119	6,951,063	4,780,334	2,902,101	7,682,435
2029	3,882,185	2,416,423	6,298,608	4,342,515	2,669,212	7,011,727	4,853,255	2,946,371	7,799,627
2030	3,907,263	2,432,033	6,339,296	4,398,620	2,703,698	7,102,317	4,947,310	3,003,471	7,950,781
2031	3,932,207	2,447,559	6,379,767	4,454,782	2,738,219	7,193,001	5,042,062	3,060,994	8,103,057
2032	3,974,143	2,473,662	6,447,805	4,530,441	2,784,724	7,315,165	5,159,555	3,132,323	8,291,878
2033	3,981,541	2,478,266	6,459,807	4,566,910	2,807,141	7,374,051	5,233,018	3,176,922	8,409,941
2034	4,005,974	2,493,474	6,499,448	4,622,960	2,841,593	7,464,553	5,329,357	3,235,408	8,564,765

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	1.21%	1.21%	1.99%	1.99%	1.99%	2.77%	2.77%	2.77%
2017	0.33%	0.33%	0.33%	1.10%	1.10%	1.10%	1.86%	1.86%	1.86%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.18%	1.18%	1.18%	1.92%	1.92%	1.92%	2.67%	2.67%	2.67%
2021	0.30%	0.30%	0.30%	1.03%	1.03%	1.03%	1.76%	1.76%	1.76%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.14%	1.14%	1.14%	1.85%	1.85%	1.85%	2.56%	2.56%	2.56%
2025	0.26%	0.26%	0.26%	0.95%	0.95%	0.95%	1.64%	1.64%	1.64%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.10%	1.10%	1.10%	1.77%	1.77%	1.77%	2.44%	2.44%	2.44%
2029	0.22%	0.22%	0.22%	0.87%	0.87%	0.87%	1.53%	1.53%	1.53%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.07%	1.07%	1.07%	1.70%	1.70%	1.70%	2.33%	2.33%	2.33%
2033	0.19%	0.19%	0.19%	0.80%	0.80%	0.80%	1.42%	1.42%	1.42%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	5,989	52,878	58,867	5,989	53,337	59,326	5,989	53,795	59,784
2016	6,062	53,262	59,324	6,109	54,139	60,247	6,155	55,022	61,177
2017	6,082	53,698	59,780	6,176	54,997	61,173	6,270	56,317	62,587
2018	6,128	54,106	60,235	6,269	55,834	62,103	6,413	57,602	64,015
2019	6,174	54,513	60,688	6,364	56,674	63,037	6,558	58,902	65,459
2020	6,247	54,891	61,138	6,486	57,487	63,973	6,733	60,184	66,916
2021	6,266	55,321	61,587	6,553	58,359	64,913	6,851	61,540	68,391
2022	6,311	55,722	62,033	6,648	59,205	65,853	7,000	62,877	69,877
2023	6,356	56,120	62,476	6,743	60,051	66,794	7,150	64,224	71,374
2024	6,429	56,488	62,917	6,868	60,869	67,737	7,333	65,553	72,886
2025	6,446	56,909	63,354	6,933	61,745	68,678	7,454	66,951	74,405
2026	6,490	57,299	63,789	7,028	62,592	69,620	7,607	68,329	75,936
2027	6,534	57,687	64,220	7,123	63,438	70,561	7,761	69,715	77,476
2028	6,606	58,042	64,648	7,250	64,252	71,502	7,951	71,074	79,025
2029	6,620	58,452	65,072	7,313	65,126	72,439	8,072	72,507	80,579
2030	6,663	58,829	65,492	7,407	65,968	73,375	8,229	73,912	82,141
2031	6,706	59,205	65,910	7,502	66,810	74,312	8,386	75,328	83,714
2032	6,777	59,548	66,325	7,629	67,618	75,247	8,582	76,712	85,294
2033	6,790	59,948	66,737	7,691	68,492	76,183	8,704	78,181	86,884
2034	6,831	60,315	67,147	7,785	69,332	77,118	8,864	79,620	88,484

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	0.73%	0.78%	1.99%	1.50%	1.55%	2.77%	2.28%	2.33%
2017	0.33%	0.82%	0.77%	1.10%	1.59%	1.54%	1.86%	2.35%	2.30%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.18%	0.69%	0.74%	1.92%	1.43%	1.48%	2.67%	2.18%	2.23%
2021	0.30%	0.78%	0.73%	1.03%	1.52%	1.47%	1.76%	2.25%	2.20%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.14%	0.66%	0.71%	1.85%	1.36%	1.41%	2.56%	2.07%	2.12%
2025	0.26%	0.74%	0.69%	0.95%	1.44%	1.39%	1.64%	2.13%	2.08%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.10%	0.62%	0.67%	1.77%	1.28%	1.33%	2.44%	1.95%	2.00%
2029	0.22%	0.71%	0.66%	0.87%	1.36%	1.31%	1.53%	2.02%	1.97%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.07%	0.58%	0.63%	1.70%	1.21%	1.26%	2.33%	1.84%	1.89%
2033	0.19%	0.67%	0.62%	0.80%	1.29%	1.24%	1.42%	1.91%	1.86%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,589,721	2,108,303	5,698,025	3,617,688	2,124,729	5,742,417	3,645,655	2,141,154	5,786,808
2016	3,633,630	2,133,589	5,767,219	3,690,150	2,166,776	5,856,927	3,747,107	2,200,220	5,947,327
2017	3,645,385	2,140,996	5,786,381	3,730,315	2,190,876	5,921,191	3,816,553	2,241,526	6,058,079
2018	3,673,107	2,157,277	5,830,384	3,787,049	2,224,197	6,011,247	3,903,622	2,292,663	6,196,285
2019	3,700,735	2,173,504	5,874,239	3,844,021	2,257,658	6,101,678	3,991,710	2,344,398	6,336,108
2020	3,744,721	2,198,819	5,943,540	3,918,355	2,300,774	6,219,129	4,098,647	2,406,637	6,505,285
2021	3,755,574	2,205,712	5,961,286	3,958,364	2,324,814	6,283,178	4,170,467	2,449,385	6,619,853
2022	3,782,780	2,221,690	6,004,470	4,015,714	2,358,496	6,374,209	4,261,101	2,502,616	6,763,717
2023	3,809,796	2,237,557	6,047,353	4,073,072	2,392,183	6,465,256	4,352,396	2,556,235	6,908,632
2024	3,853,705	2,262,813	6,116,518	4,148,903	2,436,146	6,585,049	4,464,295	2,621,337	7,085,632
2025	3,863,343	2,269,006	6,132,349	4,187,967	2,459,663	6,647,630	4,537,198	2,664,772	7,201,970
2026	3,889,848	2,284,573	6,174,420	4,245,430	2,493,412	6,738,843	4,630,581	2,719,618	7,350,198
2027	3,916,146	2,300,018	6,216,164	4,302,834	2,527,127	6,829,961	4,724,498	2,774,777	7,499,276
2028	3,959,719	2,325,061	6,284,780	4,379,510	2,571,553	6,951,063	4,840,309	2,842,125	7,682,435
2029	3,968,085	2,330,523	6,298,608	4,417,346	2,594,381	7,011,727	4,913,718	2,885,909	7,799,627
2030	3,993,718	2,345,578	6,339,296	4,474,417	2,627,900	7,102,317	5,008,944	2,941,837	7,950,781
2031	4,019,215	2,360,552	6,379,767	4,531,548	2,661,454	7,193,001	5,104,877	2,998,180	8,103,057
2032	4,062,433	2,385,373	6,447,805	4,608,911	2,706,253	7,315,165	5,224,289	3,067,589	8,291,878
2033	4,069,640	2,390,168	6,459,807	4,645,607	2,728,443	7,374,051	5,298,212	3,111,729	8,409,941
2034	4,094,613	2,404,835	6,499,448	4,702,624	2,761,930	7,464,553	5,395,751	3,169,015	8,564,765

Annual Change

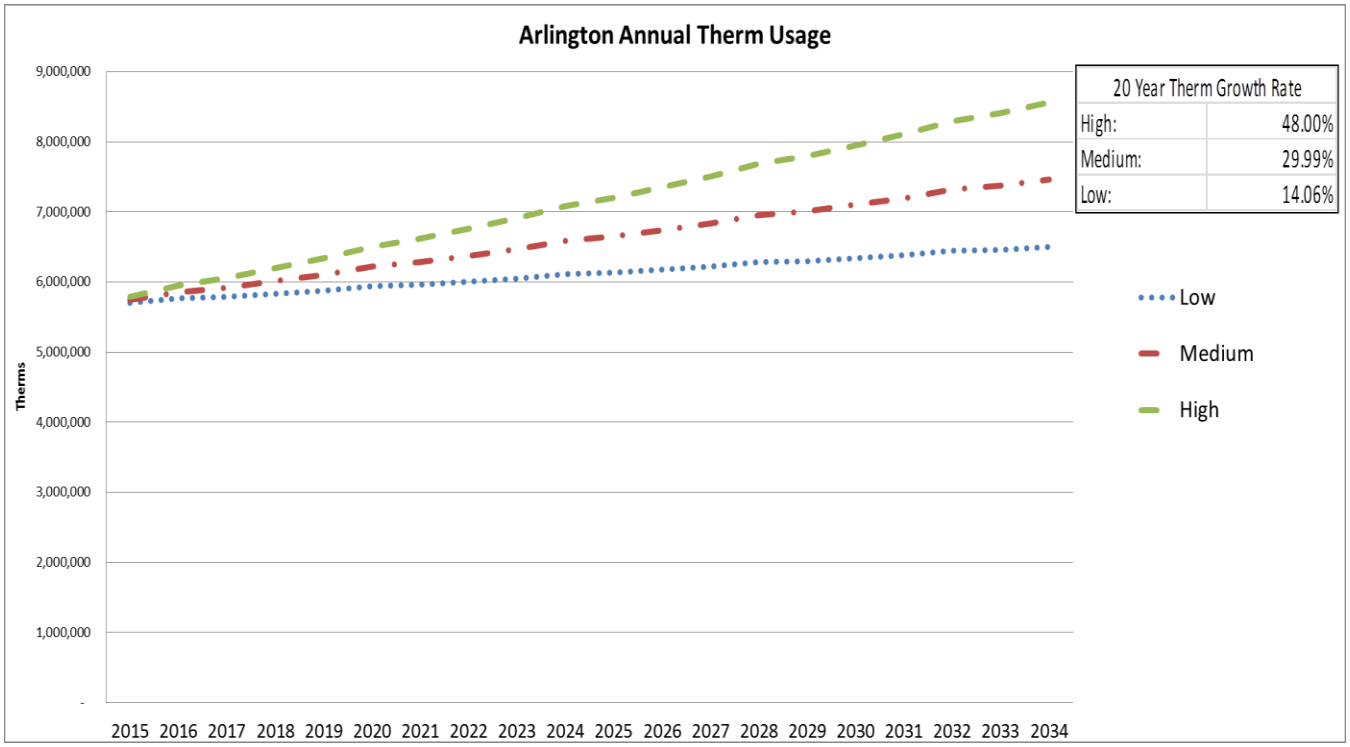
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.22%	1.20%	1.21%	2.00%	1.98%	1.99%	2.78%	2.76%	2.77%
2017	0.32%	0.35%	0.33%	1.09%	1.11%	1.10%	1.85%	1.88%	1.86%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	1.19%	1.16%	1.18%	1.93%	1.91%	1.92%	2.68%	2.65%	2.67%
2021	0.29%	0.31%	0.30%	1.02%	1.04%	1.03%	1.75%	1.78%	1.76%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	1.15%	1.13%	1.14%	1.86%	1.84%	1.85%	2.57%	2.55%	2.56%
2025	0.25%	0.27%	0.26%	0.94%	0.97%	0.95%	1.63%	1.66%	1.64%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	1.11%	1.09%	1.10%	1.78%	1.76%	1.77%	2.45%	2.43%	2.44%
2029	0.21%	0.23%	0.22%	0.86%	0.89%	0.87%	1.52%	1.54%	1.53%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	1.08%	1.05%	1.07%	1.71%	1.68%	1.70%	2.34%	2.32%	2.33%
2033	0.18%	0.20%	0.19%	0.80%	0.82%	0.80%	1.41%	1.44%	1.42%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%

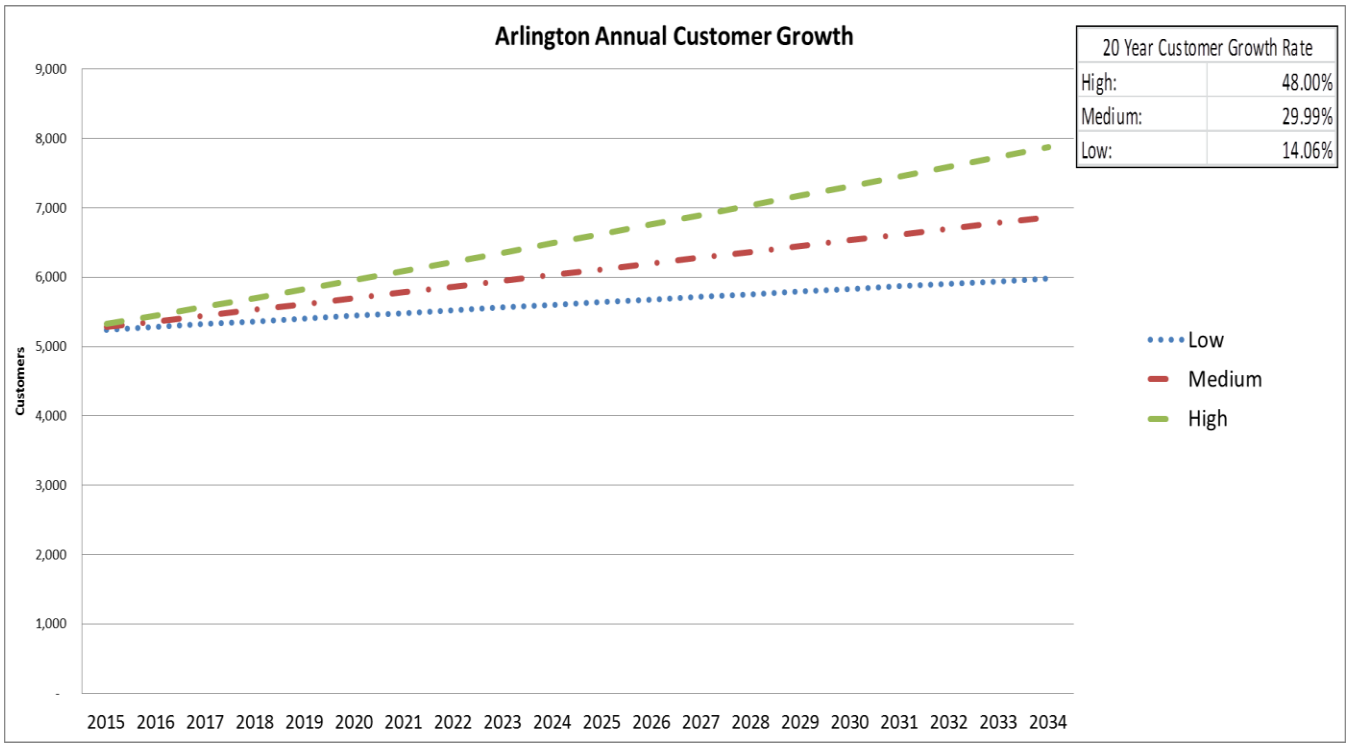
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,670	573	5,243	4,706	578	5,284	4,743	582	5,325
2016	4,706	578	5,284	4,779	587	5,366	4,853	596	5,449
2017	4,742	582	5,324	4,853	596	5,449	4,965	609	5,574
2018	4,778	587	5,365	4,927	605	5,531	5,078	623	5,702
2019	4,814	591	5,405	5,001	614	5,615	5,193	637	5,830
2020	4,850	595	5,445	5,075	623	5,698	5,309	652	5,960
2021	4,886	600	5,485	5,150	632	5,782	5,425	666	6,091
2022	4,921	604	5,525	5,224	641	5,865	5,543	680	6,224
2023	4,956	608	5,565	5,299	650	5,949	5,662	695	6,357
2024	4,991	613	5,604	5,374	660	6,033	5,782	710	6,492
2025	5,026	617	5,643	5,448	669	6,117	5,903	725	6,627
2026	5,060	621	5,682	5,523	678	6,201	6,024	739	6,763
2027	5,095	625	5,720	5,598	687	6,285	6,146	754	6,901
2028	5,129	630	5,758	5,672	696	6,369	6,269	770	7,039
2029	5,162	634	5,796	5,747	705	6,452	6,392	785	7,177
2030	5,196	638	5,833	5,821	714	6,535	6,516	800	7,316
2031	5,229	642	5,871	5,895	724	6,619	6,641	815	7,456
2032	5,262	646	5,907	5,969	733	6,702	6,766	831	7,597
2033	5,294	650	5,944	6,044	742	6,785	6,893	846	7,739
2034	5,327	654	5,981	6,118	751	6,869	7,019	862	7,881

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.78%	0.78%	1.55%	1.55%	1.55%	2.33%	2.33%	2.33%
2017	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.30%	2.30%	2.30%
2018	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2019	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.26%	2.26%	2.26%
2020	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.23%	2.23%	2.23%
2021	0.73%	0.73%	0.73%	1.47%	1.47%	1.47%	2.20%	2.20%	2.20%
2022	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2023	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2024	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%
2025	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2026	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2027	0.68%	0.68%	0.68%	1.35%	1.35%	1.35%	2.03%	2.03%	2.03%
2028	0.67%	0.67%	0.67%	1.33%	1.33%	1.33%	2.00%	2.00%	2.00%
2029	0.66%	0.66%	0.66%	1.31%	1.31%	1.31%	1.97%	1.97%	1.97%
2030	0.65%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2031	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2032	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2033	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2034	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%


Arlington Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 48.00%
Medium: 29.99%
Low: 14.06%
Low
Medium
High


Arlington Annual Customer Growth
Customers
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 48.00%
Medium: 29.99%
Low: 14.06%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bremerton (Shelton)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,277,702	8,971,425	33,249,127	24,457,667	8,971,425	33,429,092	24,637,632	8,971,425	33,609,057
2016	24,517,941	9,060,202	33,578,143	24,832,592	9,108,953	33,941,546	25,149,200	9,157,705	34,306,905
2017	24,540,350	9,068,483	33,608,833	24,988,281	9,166,062	34,154,343	25,441,561	9,264,164	34,705,725
2018	24,671,710	9,117,024	33,788,734	25,255,796	9,264,190	34,519,986	25,850,112	9,412,932	35,263,043
2019	24,802,949	9,165,522	33,968,471	25,524,488	9,362,751	34,887,238	26,262,634	9,563,145	35,825,779
2020	25,044,763	9,254,880	34,299,644	25,908,312	9,503,543	35,411,855	26,796,436	9,757,522	36,553,958
2021	25,064,105	9,262,028	34,326,133	26,063,402	9,560,432	35,623,835	27,096,556	9,866,806	36,963,361
2022	25,193,923	9,310,000	34,503,923	26,333,390	9,659,467	35,992,857	27,517,590	10,020,119	37,537,709
2023	25,322,963	9,357,684	34,680,647	26,603,141	9,758,416	36,361,557	27,940,413	10,174,084	38,114,497
2024	25,565,206	9,447,201	35,012,407	26,993,434	9,901,581	36,895,015	28,492,954	10,375,283	38,868,237
2025	25,579,117	9,452,342	35,031,459	27,142,703	9,956,335	37,099,039	28,792,573	10,484,385	39,276,958
2026	25,706,029	9,499,240	35,205,269	27,412,043	10,055,133	37,467,176	29,221,140	10,640,441	39,861,581
2027	25,832,013	9,545,796	35,377,809	27,680,734	10,153,693	37,834,427	29,650,776	10,796,887	40,447,663
2028	26,072,861	9,634,797	35,707,657	28,073,408	10,297,731	38,371,139	30,215,565	11,002,546	41,218,111
2029	26,080,816	9,637,736	35,718,552	28,215,229	10,349,753	38,564,982	30,511,632	11,110,354	41,621,986
2030	26,203,555	9,683,093	35,886,648	28,480,797	10,447,167	38,927,964	30,942,405	11,267,214	42,209,619
2031	26,325,803	9,728,268	36,054,071	28,746,541	10,544,646	39,291,188	31,375,474	11,424,910	42,800,384
2032	26,565,045	9,816,675	36,381,720	29,140,773	10,689,256	39,830,030	31,950,913	11,634,447	43,585,361
2033	26,567,672	9,817,646	36,385,318	29,275,967	10,738,847	40,014,815	32,244,216	11,741,249	43,985,465
2034	26,687,557	9,861,948	36,549,504	29,540,179	10,835,764	40,375,943	32,680,716	11,900,194	44,580,910

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.99%	0.99%	1.53%	1.53%	1.53%	2.08%	2.08%	2.08%
2017	0.09%	0.09%	0.09%	0.63%	0.63%	0.63%	1.16%	1.16%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.97%	0.97%	0.97%	1.50%	1.50%	1.50%	2.03%	2.03%	2.03%
2021	0.08%	0.08%	0.08%	0.60%	0.60%	0.60%	1.12%	1.12%	1.12%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.96%	0.96%	0.96%	1.47%	1.47%	1.47%	1.98%	1.98%	1.98%
2025	0.05%	0.05%	0.05%	0.55%	0.55%	0.55%	1.05%	1.05%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.93%	0.93%	0.93%	1.42%	1.42%	1.42%	1.90%	1.90%	1.90%
2029	0.03%	0.03%	0.03%	0.51%	0.51%	0.51%	0.98%	0.98%	0.98%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%	1.83%	1.83%	1.83%
2033	0.01%	0.01%	0.01%	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	24,579	302,613	327,192	24,579	304,384	328,963	24,579	306,155	330,734
2016	24,822	304,140	328,962	24,956	307,566	332,522	25,090	311,012	336,102
2017	24,845	305,887	330,732	25,112	310,987	336,100	25,381	316,145	341,526
2018	24,978	307,524	332,502	25,381	314,317	339,698	25,789	321,221	347,010
2019	25,111	309,160	334,271	25,651	317,661	343,312	26,200	326,348	352,548
2020	25,356	310,675	336,031	26,037	320,890	346,927	26,733	331,383	358,116
2021	25,375	312,415	337,790	26,193	324,368	350,561	27,032	336,710	363,742
2022	25,507	314,033	339,540	26,464	327,728	354,192	27,452	341,942	369,394
2023	25,637	315,642	341,279	26,735	331,085	357,820	27,874	347,196	375,070
2024	25,883	317,131	343,014	27,128	334,330	361,457	28,425	352,363	380,789
2025	25,897	318,834	344,731	27,278	337,800	365,078	28,724	357,785	386,510
2026	26,025	320,416	346,442	27,548	341,152	368,700	29,152	363,111	392,263
2027	26,153	321,987	348,140	27,818	344,496	372,314	29,581	368,450	398,030
2028	26,397	323,428	349,825	28,213	347,706	375,919	30,144	373,666	403,810
2029	26,405	325,088	351,493	28,355	351,148	379,503	30,439	379,147	409,586
2030	26,529	326,618	353,147	28,622	354,453	383,075	30,869	384,500	415,369
2031	26,653	328,142	354,794	28,889	357,760	386,650	31,301	389,881	421,182
2032	26,895	329,534	356,429	29,286	360,926	390,211	31,875	395,127	427,002
2033	26,898	331,156	358,054	29,421	364,349	393,771	32,168	400,676	432,844
2034	27,019	332,651	359,670	29,687	367,637	397,324	32,603	406,101	438,704

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.50%	0.54%	1.53%	1.05%	1.08%	2.08%	1.59%	1.62%
2017	0.09%	0.57%	0.54%	0.63%	1.11%	1.08%	1.16%	1.65%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.97%	0.49%	0.53%	1.50%	1.02%	1.05%	2.03%	1.54%	1.58%
2021	0.08%	0.56%	0.52%	0.60%	1.08%	1.05%	1.12%	1.61%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.96%	0.47%	0.51%	1.47%	0.98%	1.02%	1.98%	1.49%	1.52%
2025	0.05%	0.54%	0.50%	0.55%	1.04%	1.00%	1.05%	1.54%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.93%	0.45%	0.48%	1.42%	0.93%	0.97%	1.90%	1.42%	1.45%
2029	0.03%	0.51%	0.48%	0.51%	0.99%	0.95%	0.98%	1.47%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.91%	0.42%	0.46%	1.37%	0.88%	0.92%	1.83%	1.35%	1.38%
2033	0.01%	0.49%	0.46%	0.46%	0.95%	0.91%	0.92%	1.40%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	20,246,951	13,002,176	33,249,127	20,356,541	13,072,552	33,429,092	20,466,130	13,142,928	33,609,057
2016	20,449,351	13,128,792	33,578,143	20,670,666	13,270,879	33,941,546	20,893,173	13,413,732	34,306,905
2017	20,465,993	13,142,840	33,608,833	20,798,180	13,356,163	34,154,343	21,133,942	13,571,783	34,705,725
2018	20,575,543	13,213,191	33,788,734	21,020,837	13,499,149	34,519,986	21,473,319	13,789,724	35,263,043
2019	20,684,993	13,283,477	33,968,471	21,244,474	13,642,764	34,887,238	21,815,996	14,009,784	35,825,779
2020	20,888,751	13,410,893	34,299,644	21,566,096	13,845,759	35,411,855	22,261,646	14,292,312	36,553,958
2021	20,902,791	13,423,342	34,326,133	21,693,022	13,930,813	35,623,835	22,508,723	14,454,639	36,963,361
2022	21,011,055	13,492,868	34,503,923	21,917,737	14,075,120	35,992,857	22,858,470	14,679,239	37,537,709
2023	21,118,671	13,561,976	34,680,647	22,142,256	14,219,301	36,361,557	23,209,703	14,904,794	38,114,497
2024	21,322,829	13,689,578	35,012,407	22,469,352	14,425,663	36,895,015	23,671,060	15,197,177	38,868,237
2025	21,332,297	13,699,162	35,031,459	22,591,343	14,507,696	37,099,039	23,917,580	15,359,378	39,276,958
2026	21,438,138	13,767,131	35,205,269	22,815,519	14,651,657	37,467,176	24,273,584	15,587,997	39,861,581
2027	21,543,205	13,834,603	35,377,809	23,039,155	14,795,272	37,834,427	24,630,477	15,817,186	40,447,663
2028	21,746,242	13,961,415	35,707,657	23,368,323	15,002,816	38,371,139	25,102,152	16,115,960	41,218,111
2029	21,750,700	13,967,852	35,718,552	23,484,025	15,080,958	38,564,982	25,345,578	16,276,409	41,621,986
2030	21,853,061	14,033,586	35,886,648	23,705,061	15,222,903	38,927,964	25,703,415	16,506,204	42,209,619
2031	21,955,013	14,099,058	36,054,071	23,926,245	15,364,943	39,291,188	26,063,159	16,737,225	42,800,384
2032	22,156,752	14,224,968	36,381,720	24,256,799	15,573,231	39,830,030	26,543,825	17,041,536	43,585,361
2033	22,156,725	14,228,593	36,385,318	24,366,896	15,647,919	40,014,815	26,784,811	17,200,655	43,985,465
2034	22,256,706	14,292,799	36,549,504	24,586,804	15,789,140	40,375,943	27,147,405	17,433,505	44,580,910

Annual Change

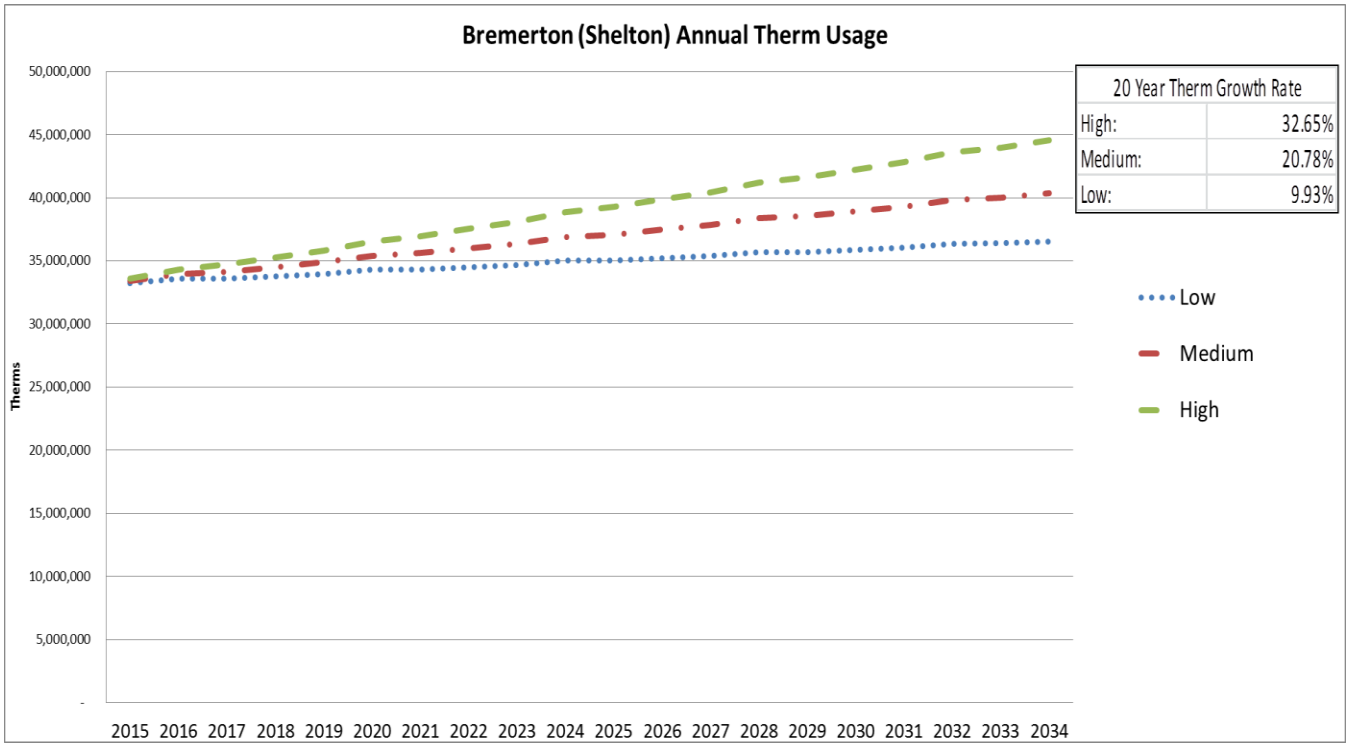
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.00%	0.97%	0.99%	1.54%	1.52%	1.53%	2.09%	2.06%	2.08%
2017	0.08%	0.11%	0.09%	0.62%	0.64%	0.63%	1.15%	1.18%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.99%	0.96%	0.97%	1.51%	1.49%	1.50%	2.04%	2.02%	2.03%
2021	0.07%	0.09%	0.08%	0.59%	0.61%	0.60%	1.11%	1.14%	1.12%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.97%	0.94%	0.96%	1.48%	1.45%	1.47%	1.99%	1.96%	1.98%
2025	0.04%	0.07%	0.05%	0.54%	0.57%	0.55%	1.04%	1.07%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.94%	0.92%	0.93%	1.43%	1.40%	1.42%	1.92%	1.89%	1.90%
2029	0.02%	0.05%	0.03%	0.50%	0.52%	0.51%	0.97%	1.00%	0.98%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.92%	0.89%	0.91%	1.38%	1.36%	1.37%	1.84%	1.82%	1.83%
2033	0.00%	0.03%	0.01%	0.45%	0.48%	0.46%	0.91%	0.93%	0.92%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

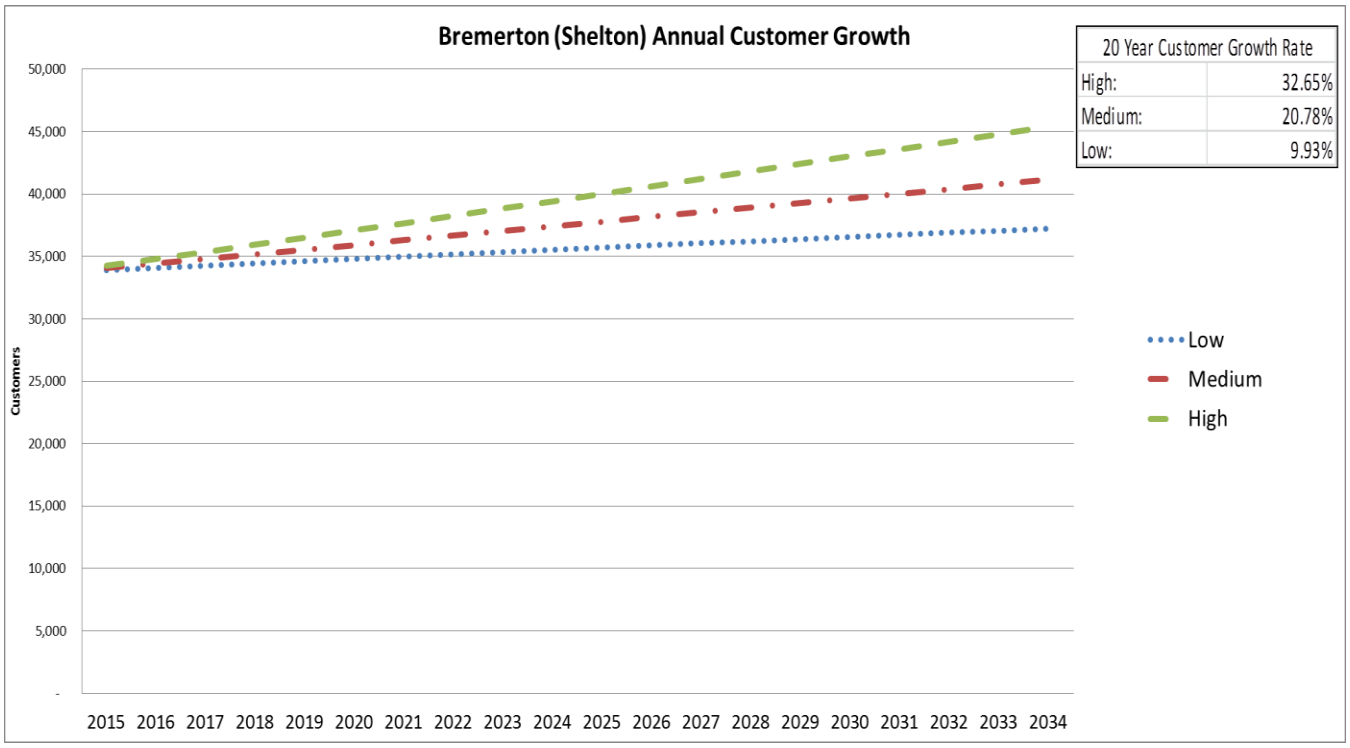
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,924	2,957	33,881	31,091	2,973	34,064	31,258	2,989	34,247
2016	31,091	2,973	34,064	31,427	3,005	34,433	31,766	3,038	34,803
2017	31,258	2,989	34,247	31,765	3,038	34,803	32,278	3,087	35,365
2018	31,425	3,005	34,430	32,106	3,070	35,176	32,797	3,136	35,933
2019	31,593	3,021	34,614	32,447	3,103	35,550	33,320	3,186	36,506
2020	31,759	3,037	34,796	32,789	3,135	35,924	33,846	3,236	37,083
2021	31,925	3,053	34,978	33,132	3,168	36,300	34,378	3,287	37,665
2022	32,091	3,069	35,159	33,475	3,201	36,676	34,912	3,338	38,251
2023	32,255	3,084	35,339	33,818	3,234	37,052	35,449	3,390	38,838
2024	32,419	3,100	35,519	34,162	3,267	37,429	35,989	3,441	39,430
2025	32,581	3,116	35,697	34,504	3,299	37,804	36,530	3,493	40,023
2026	32,743	3,131	35,874	34,847	3,332	38,179	37,073	3,545	40,619
2027	32,903	3,146	36,050	35,188	3,365	38,553	37,619	3,597	41,216
2028	33,063	3,162	36,224	35,529	3,397	38,926	38,165	3,649	41,814
2029	33,220	3,177	36,397	35,868	3,430	39,297	38,711	3,702	42,412
2030	33,377	3,192	36,568	36,205	3,462	39,667	39,257	3,754	43,011
2031	33,532	3,206	36,739	36,543	3,494	40,037	39,807	3,806	43,613
2032	33,687	3,221	36,908	36,880	3,527	40,406	40,357	3,859	44,216
2033	33,840	3,236	37,076	37,216	3,559	40,775	40,909	3,912	44,821
2034	33,993	3,251	37,244	37,552	3,591	41,143	41,463	3,965	45,428

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2017	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.61%	1.61%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2021	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2025	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.48%	0.48%	0.48%	0.97%	0.97%	0.97%	1.45%	1.45%	1.45%
2029	0.48%	0.48%	0.48%	0.95%	0.95%	0.95%	1.43%	1.43%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%	1.38%	1.38%	1.38%
2033	0.46%	0.46%	0.46%	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%


Bremerton (Shelton) Annual Therm Usage
Therms
50,000,000
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High


Bremerton (Shelton) Annual Customer Growth
Customers
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Castle Rock

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	94,658	59,378	154,037	95,030	59,378	154,408	95,401	59,378	154,779
2016	95,284	59,771	155,055	95,892	59,917	155,809	96,501	60,063	156,564
2017	95,125	59,671	154,796	95,968	59,965	155,933	96,816	60,259	157,075
2018	95,364	59,821	155,184	96,450	60,265	156,715	97,544	60,712	158,256
2019	95,605	59,972	155,576	96,937	60,570	157,507	98,284	61,172	159,457
2020	96,245	60,373	156,619	97,833	61,130	158,962	99,442	61,893	161,335
2021	96,091	60,277	156,368	97,924	61,187	159,111	99,788	62,108	161,896
2022	96,336	60,430	156,766	98,423	61,498	159,922	100,550	62,583	163,133
2023	96,580	60,584	157,164	98,923	61,811	160,734	101,316	63,059	164,376
2024	97,228	60,990	158,219	99,839	62,383	162,223	102,513	63,805	166,318
2025	97,070	60,891	157,961	99,927	62,438	162,365	102,860	64,021	166,881
2026	97,314	61,044	158,358	100,430	62,752	163,183	103,637	64,504	168,141
2027	97,558	61,197	158,754	100,933	63,066	163,999	104,415	64,988	169,403
2028	98,206	61,604	159,810	101,855	63,643	165,498	105,629	65,744	171,374
2029	98,040	61,499	159,539	101,931	63,690	165,622	105,967	65,954	171,921
2030	98,278	61,649	159,927	102,427	64,000	166,427	106,739	66,435	173,175
2031	98,517	61,798	160,315	102,924	64,311	167,235	107,516	66,919	174,435
2032	99,164	62,204	161,368	103,848	64,888	168,737	108,742	67,681	176,423
2033	98,989	62,095	161,084	103,913	64,929	168,842	109,068	67,885	176,953
2034	99,225	62,243	161,468	104,408	65,238	169,645	109,847	68,369	178,216

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.66%	0.66%	0.66%	0.91%	0.91%	0.91%	1.15%	1.15%	1.15%
2017	-0.17%	-0.17%	-0.17%	0.08%	0.08%	0.08%	0.33%	0.33%	0.33%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.67%	0.67%	0.67%	0.92%	0.92%	0.92%	1.18%	1.18%	1.18%
2021	-0.16%	-0.16%	-0.16%	0.09%	0.09%	0.09%	0.35%	0.35%	0.35%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.67%	0.67%	0.67%	0.93%	0.93%	0.93%	1.18%	1.18%	1.18%
2025	-0.16%	-0.16%	-0.16%	0.09%	0.09%	0.09%	0.34%	0.34%	0.34%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.66%	0.66%	0.66%	0.91%	0.91%	0.91%	1.16%	1.16%	1.16%
2029	-0.17%	-0.17%	-0.17%	0.07%	0.07%	0.07%	0.32%	0.32%	0.32%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.66%	0.66%	0.66%	0.90%	0.90%	0.90%	1.14%	1.14%	1.14%
2033	-0.18%	-0.18%	-0.18%	0.06%	0.06%	0.06%	0.30%	0.30%	0.30%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	163	1,190	1,353	163	1,193	1,356	163	1,197	1,359
2016	164	1,192	1,356	164	1,198	1,363	165	1,205	1,369
2017	163	1,196	1,359	164	1,205	1,369	165	1,214	1,379
2018	164	1,199	1,363	165	1,211	1,376	166	1,223	1,390
2019	164	1,202	1,366	166	1,217	1,383	168	1,233	1,400
2020	165	1,204	1,370	167	1,223	1,390	170	1,241	1,411
2021	165	1,208	1,373	168	1,230	1,397	170	1,252	1,422
2022	166	1,211	1,377	168	1,236	1,404	171	1,261	1,433
2023	166	1,214	1,380	169	1,242	1,412	173	1,271	1,444
2024	167	1,217	1,384	171	1,248	1,419	175	1,280	1,455
2025	167	1,220	1,387	171	1,255	1,426	175	1,290	1,466
2026	167	1,223	1,391	172	1,261	1,433	177	1,300	1,477
2027	168	1,226	1,394	173	1,267	1,440	178	1,310	1,488
2028	169	1,229	1,398	174	1,273	1,447	180	1,319	1,499
2029	168	1,233	1,401	174	1,280	1,454	181	1,329	1,510
2030	169	1,236	1,404	175	1,286	1,462	182	1,339	1,521
2031	169	1,239	1,408	176	1,292	1,469	183	1,349	1,532
2032	170	1,241	1,411	178	1,298	1,476	185	1,357	1,543
2033	170	1,244	1,415	178	1,305	1,483	186	1,368	1,554
2034	171	1,247	1,418	179	1,311	1,490	187	1,378	1,565

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.66%	0.19%	0.24%	0.91%	0.43%	0.49%	1.15%	0.68%	0.73%
2017	-0.17%	0.30%	0.25%	0.08%	0.55%	0.50%	0.33%	0.80%	0.74%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.67%	0.20%	0.25%	0.92%	0.45%	0.51%	1.18%	0.70%	0.76%
2021	-0.16%	0.31%	0.25%	0.09%	0.57%	0.51%	0.35%	0.82%	0.76%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.67%	0.20%	0.25%	0.93%	0.45%	0.51%	1.18%	0.71%	0.76%
2025	-0.16%	0.31%	0.25%	0.09%	0.56%	0.50%	0.34%	0.81%	0.76%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.66%	0.19%	0.25%	0.91%	0.44%	0.50%	1.16%	0.69%	0.74%
2029	-0.17%	0.30%	0.25%	0.07%	0.55%	0.49%	0.32%	0.79%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.66%	0.18%	0.24%	0.90%	0.42%	0.48%	1.14%	0.66%	0.72%
2033	-0.18%	0.30%	0.24%	0.06%	0.54%	0.48%	0.30%	0.77%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	34,940	119,097	154,037	35,024	119,384	154,408	35,108	119,671	154,779
2016	35,194	119,861	155,055	35,365	120,443	155,809	35,537	121,027	156,564
2017	35,112	119,684	154,796	35,370	120,563	155,933	35,629	121,446	157,075
2018	35,200	119,984	155,184	35,547	121,167	156,715	35,897	122,360	158,256
2019	35,289	120,287	155,576	35,727	121,780	157,507	36,169	123,287	159,457
2020	35,549	121,069	156,619	36,081	122,881	158,962	36,620	124,716	161,335
2021	35,469	120,899	156,368	36,091	123,020	159,111	36,722	125,173	161,896
2022	35,559	121,207	156,766	36,275	123,647	159,922	37,003	126,130	163,133
2023	35,649	121,515	157,164	36,459	124,275	160,734	37,285	127,091	164,376
2024	35,912	122,306	158,219	36,821	125,401	162,223	37,751	128,567	166,318
2025	35,830	122,131	157,961	36,829	125,536	162,365	37,853	129,028	166,881
2026	35,920	122,438	158,358	37,014	126,168	163,183	38,139	130,002	168,141
2027	36,010	122,745	158,754	37,200	126,799	163,999	38,425	130,978	169,403
2028	36,274	123,536	159,810	37,565	127,933	165,498	38,898	132,475	171,374
2029	36,188	123,351	159,539	37,568	128,054	165,622	38,996	132,924	171,921
2030	36,276	123,651	159,927	37,750	128,677	166,427	39,281	133,894	173,175
2031	36,364	123,951	160,315	37,933	129,301	167,235	39,567	134,868	174,435
2032	36,627	124,741	161,368	38,300	130,437	168,737	40,044	136,378	176,423
2033	36,538	124,546	161,084	38,298	130,544	168,842	40,138	136,815	176,953
2034	36,625	124,842	161,468	38,480	131,165	169,645	40,424	137,792	178,216

Annual Change

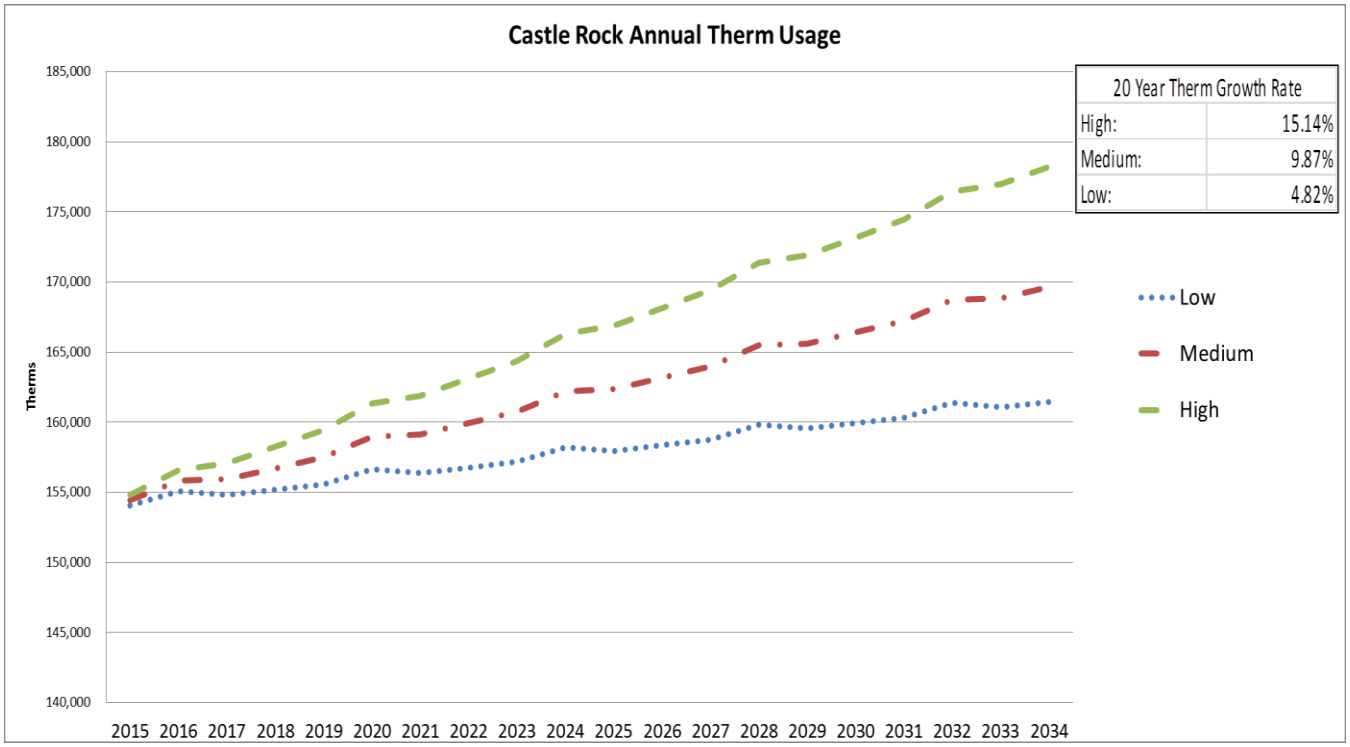
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.73%	0.64%	0.66%	0.97%	0.89%	0.91%	1.22%	1.13%	1.15%
2017	-0.23%	-0.15%	-0.17%	0.01%	0.10%	0.08%	0.26%	0.35%	0.33%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.74%	0.65%	0.67%	0.99%	0.90%	0.92%	1.25%	1.16%	1.18%
2021	-0.23%	-0.14%	-0.16%	0.03%	0.11%	0.09%	0.28%	0.37%	0.35%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.74%	0.65%	0.67%	0.99%	0.91%	0.93%	1.25%	1.16%	1.18%
2025	-0.23%	-0.14%	-0.16%	0.02%	0.11%	0.09%	0.27%	0.36%	0.34%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.73%	0.65%	0.66%	0.98%	0.89%	0.91%	1.23%	1.14%	1.16%
2029	-0.24%	-0.15%	-0.17%	0.01%	0.09%	0.07%	0.25%	0.34%	0.32%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.72%	0.64%	0.66%	0.97%	0.88%	0.90%	1.21%	1.12%	1.14%
2033	-0.24%	-0.16%	-0.18%	0.00%	0.08%	0.06%	0.23%	0.32%	0.30%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

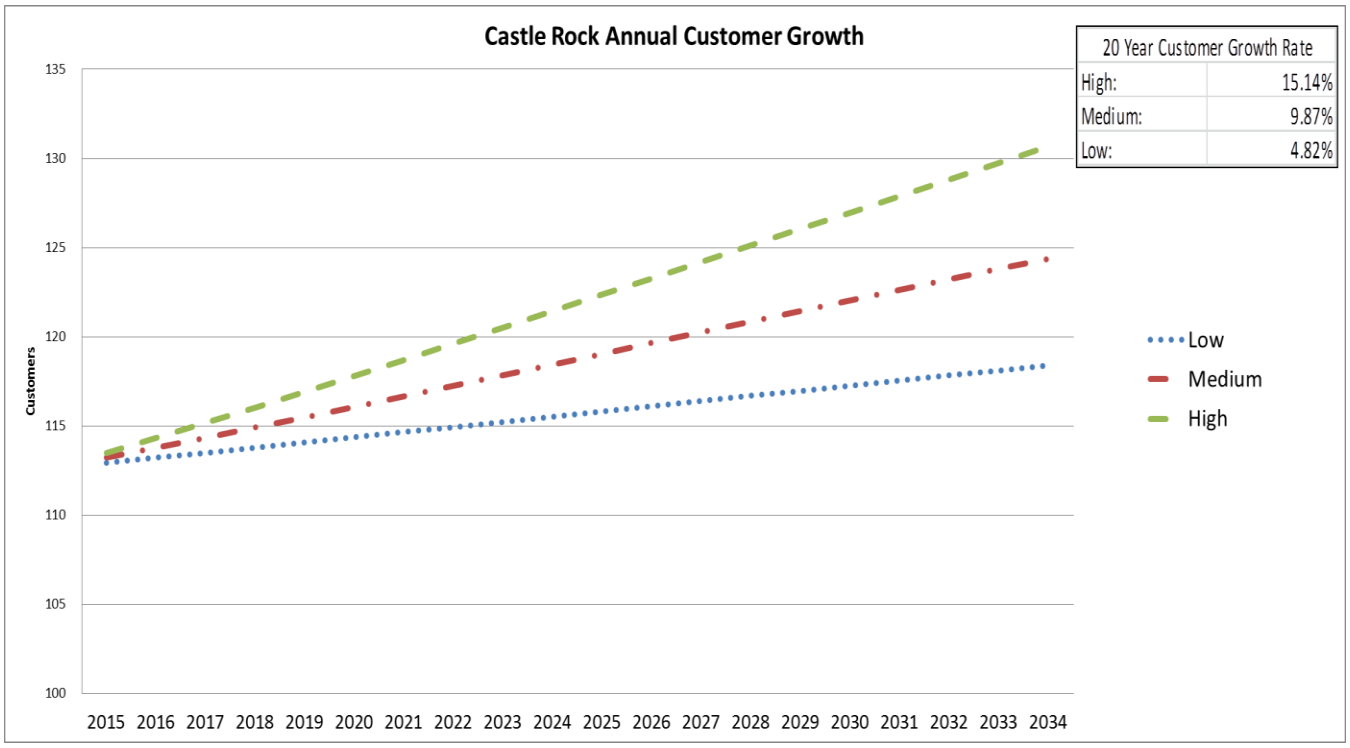
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	64	49	113	64	49	113	65	49	113
2016	64	49	113	65	49	114	65	49	114
2017	65	49	113	65	49	114	66	50	115
2018	65	49	114	65	49	115	66	50	116
2019	65	49	114	66	50	115	67	50	117
2020	65	49	114	66	50	116	67	51	118
2021	65	49	115	66	50	117	68	51	119
2022	65	49	115	67	50	117	68	51	120
2023	66	50	115	67	51	118	69	52	121
2024	66	50	116	67	51	118	69	52	121
2025	66	50	116	68	51	119	70	53	122
2026	66	50	116	68	52	120	70	53	123
2027	66	50	116	68	52	120	71	53	124
2028	66	50	117	69	52	121	71	54	125
2029	67	50	117	69	52	121	72	54	126
2030	67	50	117	69	53	122	72	55	127
2031	67	51	118	70	53	123	73	55	128
2032	67	51	118	70	53	123	73	55	129
2033	67	51	118	71	53	124	74	56	130
2034	67	51	118	71	54	124	74	56	131

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2018	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2019	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2020	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2021	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2022	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2023	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2024	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2025	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2029	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%


Castle Rock Annual Therm Usage
Therms
185,000
180,000
175,000
170,000
165,000
160,000
155,000
150,000
145,000
140,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.14%
Medium: 9.87%
Low: 4.82%
Low
Medium
High


Castle Rock Annual Customer Growth
Customers
135
130
125
120
115
110
105
100
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.14%
Medium: 9.87%
Low: 4.82%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Walla Walla

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,747,482	4,043,380	12,790,863	8,751,579	4,043,380	12,794,960	8,755,676	4,043,380	12,799,057
2016	8,782,050	4,059,359	12,841,409	8,788,534	4,060,454	12,848,988	8,795,020	4,061,550	12,856,570
2017	8,734,660	4,037,454	12,772,114	8,743,026	4,039,429	12,782,455	8,751,397	4,041,404	12,792,801
2018	8,730,241	4,035,411	12,765,652	8,740,077	4,038,066	12,778,144	8,749,921	4,040,723	12,790,644
2019	8,726,928	4,033,879	12,760,807	8,737,866	4,037,045	12,774,911	8,748,814	4,040,212	12,789,026
2020	8,765,622	4,051,765	12,817,387	8,777,571	4,055,389	12,832,961	8,789,534	4,059,016	12,848,550
2021	8,722,511	4,031,838	12,754,349	8,734,918	4,035,682	12,770,600	8,747,338	4,039,530	12,786,868
2022	8,721,186	4,031,225	12,752,412	8,734,033	4,035,274	12,769,307	8,746,895	4,039,325	12,786,221
2023	8,720,082	4,030,715	12,750,797	8,733,296	4,034,933	12,768,229	8,746,526	4,039,155	12,785,681
2024	8,761,407	4,049,817	12,811,224	8,774,757	4,054,089	12,828,847	8,788,125	4,058,365	12,846,490
2025	8,719,420	4,030,409	12,749,829	8,732,854	4,034,729	12,767,583	8,746,305	4,039,053	12,785,358
2026	8,719,199	4,030,307	12,749,506	8,732,706	4,034,661	12,767,367	8,746,231	4,039,019	12,785,250
2027	8,719,199	4,030,307	12,749,506	8,732,706	4,034,661	12,767,367	8,746,231	4,039,019	12,785,250
2028	8,760,742	4,049,509	12,810,251	8,774,313	4,053,884	12,828,197	8,787,902	4,058,262	12,846,165
2029	8,718,758	4,030,103	12,748,861	8,732,412	4,034,525	12,766,936	8,746,083	4,038,950	12,785,034
2030	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2031	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2032	8,759,854	4,049,099	12,808,954	8,773,721	4,053,610	12,827,331	8,787,606	4,058,125	12,845,731
2033	8,718,316	4,029,899	12,748,215	8,732,117	4,034,388	12,766,505	8,745,936	4,038,882	12,784,818
2034	8,718,390	4,029,933	12,748,323	8,732,264	4,034,457	12,766,721	8,746,157	4,038,985	12,785,142

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.40%	0.40%	0.40%	0.42%	0.42%	0.42%	0.45%	0.45%	0.45%
2017	-0.54%	-0.54%	-0.54%	-0.52%	-0.52%	-0.52%	-0.50%	-0.50%	-0.50%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.44%	0.44%	0.44%	0.45%	0.45%	0.45%	0.47%	0.47%	0.47%
2021	-0.49%	-0.49%	-0.49%	-0.49%	-0.49%	-0.49%	-0.48%	-0.48%	-0.48%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.48%	0.48%	0.48%
2025	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%
2029	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%	-0.48%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%
2033	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	11,078	159,821	170,899	11,078	159,876	170,954	11,078	159,931	171,008
2016	11,122	159,639	170,761	11,125	159,737	170,861	11,128	159,835	170,962
2017	11,062	159,587	170,648	11,067	159,720	170,786	11,072	159,852	170,925
2018	11,056	159,506	170,562	11,063	159,666	170,729	11,070	159,825	170,896
2019	11,052	159,446	170,497	11,060	159,625	170,686	11,069	159,805	170,874
2020	11,101	159,340	170,441	11,111	159,538	170,648	11,121	159,735	170,856
2021	11,046	159,365	170,411	11,057	159,571	170,628	11,067	159,778	170,845
2022	11,044	159,341	170,385	11,056	159,555	170,611	11,067	159,770	170,837
2023	11,043	159,320	170,363	11,055	159,542	170,596	11,066	159,763	170,830
2024	11,095	159,264	170,359	11,107	159,486	170,594	11,119	159,709	170,828
2025	11,042	159,308	170,351	11,054	159,534	170,588	11,066	159,759	170,825
2026	11,042	159,304	170,346	11,054	159,531	170,585	11,066	159,758	170,824
2027	11,042	159,304	170,346	11,054	159,531	170,585	11,066	159,758	170,824
2028	11,095	159,252	170,346	11,107	159,478	170,585	11,119	159,705	170,824
2029	11,041	159,296	170,338	11,053	159,526	170,579	11,066	159,755	170,821
2030	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2031	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2032	11,093	159,236	170,329	11,106	159,468	170,573	11,118	159,700	170,818
2033	11,041	159,288	170,329	11,053	159,520	170,573	11,065	159,753	170,818
2034	11,041	159,290	170,330	11,053	159,523	170,576	11,066	159,757	170,822

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.40%	-0.11%	-0.08%	0.42%	-0.09%	-0.05%	0.45%	-0.06%	-0.03%
2017	-0.54%	-0.03%	-0.07%	-0.52%	-0.01%	-0.04%	-0.50%	0.01%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.44%	-0.07%	-0.03%	0.45%	-0.05%	-0.02%	0.47%	-0.04%	-0.01%
2021	-0.49%	0.02%	-0.02%	-0.49%	0.02%	-0.01%	-0.48%	0.03%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.47%	-0.04%	0.00%	0.47%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2025	-0.48%	0.03%	-0.01%	-0.48%	0.03%	0.00%	-0.48%	0.03%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2029	-0.48%	0.03%	-0.01%	-0.48%	0.03%	0.00%	-0.48%	0.03%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%	0.48%	-0.03%	0.00%
2033	-0.47%	0.03%	0.00%	-0.47%	0.03%	0.00%	-0.47%	0.03%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,487,729	6,303,133	12,790,863	6,489,808	6,305,152	12,794,960	6,491,886	6,307,171	12,799,057
2016	6,514,667	6,326,742	12,841,409	6,518,513	6,330,476	12,848,988	6,522,359	6,334,211	12,856,570
2017	6,478,220	6,293,894	12,772,114	6,483,465	6,298,990	12,782,455	6,488,713	6,304,089	12,792,801
2018	6,474,942	6,290,710	12,765,652	6,481,278	6,296,865	12,778,144	6,487,619	6,303,025	12,790,644
2019	6,472,485	6,288,322	12,760,807	6,479,638	6,295,272	12,774,911	6,486,798	6,302,228	12,789,026
2020	6,502,481	6,314,907	12,817,387	6,510,381	6,322,579	12,832,961	6,518,290	6,330,260	12,848,550
2021	6,469,209	6,285,140	12,754,349	6,477,452	6,293,148	12,770,600	6,485,703	6,301,165	12,786,868
2022	6,468,227	6,284,185	12,752,412	6,476,796	6,292,511	12,769,307	6,485,375	6,300,846	12,786,221
2023	6,467,408	6,283,390	12,750,797	6,476,249	6,291,980	12,768,229	6,485,101	6,300,580	12,785,681
2024	6,499,354	6,311,870	12,811,224	6,508,294	6,320,552	12,828,847	6,517,245	6,329,245	12,846,490
2025	6,466,917	6,282,912	12,749,829	6,475,922	6,291,661	12,767,583	6,484,937	6,300,420	12,785,358
2026	6,466,753	6,282,753	12,749,506	6,475,812	6,291,555	12,767,367	6,484,883	6,300,367	12,785,250
2027	6,466,753	6,282,753	12,749,506	6,475,812	6,291,555	12,767,367	6,484,883	6,300,367	12,785,250
2028	6,498,860	6,311,391	12,810,251	6,507,965	6,320,232	12,828,197	6,517,080	6,329,085	12,846,165
2029	6,466,425	6,282,435	12,748,861	6,475,594	6,291,343	12,766,936	6,484,773	6,300,261	12,785,034
2030	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2031	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2032	6,498,202	6,310,751	12,808,954	6,507,525	6,319,806	12,827,331	6,516,860	6,328,871	12,845,731
2033	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2034	6,466,153	6,282,170	12,748,323	6,475,484	6,291,236	12,766,721	6,484,828	6,300,314	12,785,142

Annual Change

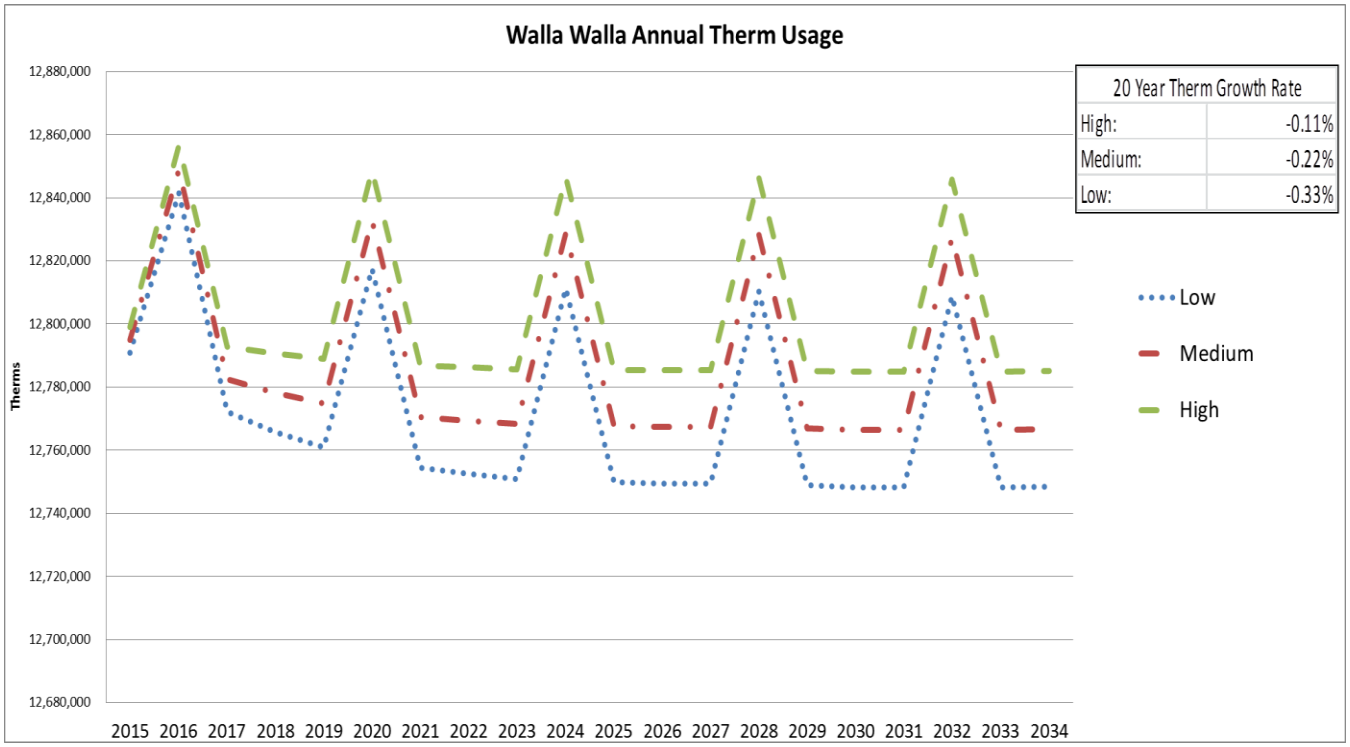
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.42%	0.37%	0.40%	0.44%	0.40%	0.42%	0.47%	0.43%	0.45%
2017	-0.56%	-0.52%	-0.54%	-0.54%	-0.50%	-0.52%	-0.52%	-0.48%	-0.50%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.46%	0.42%	0.44%	0.47%	0.43%	0.45%	0.49%	0.44%	0.47%
2021	-0.51%	-0.47%	-0.49%	-0.51%	-0.47%	-0.49%	-0.50%	-0.46%	-0.48%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.49%	0.45%	0.47%	0.49%	0.45%	0.47%	0.50%	0.45%	0.48%
2025	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%
2029	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%
2033	-0.49%	-0.45%	-0.47%	-0.49%	-0.45%	-0.47%	-0.49%	-0.45%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

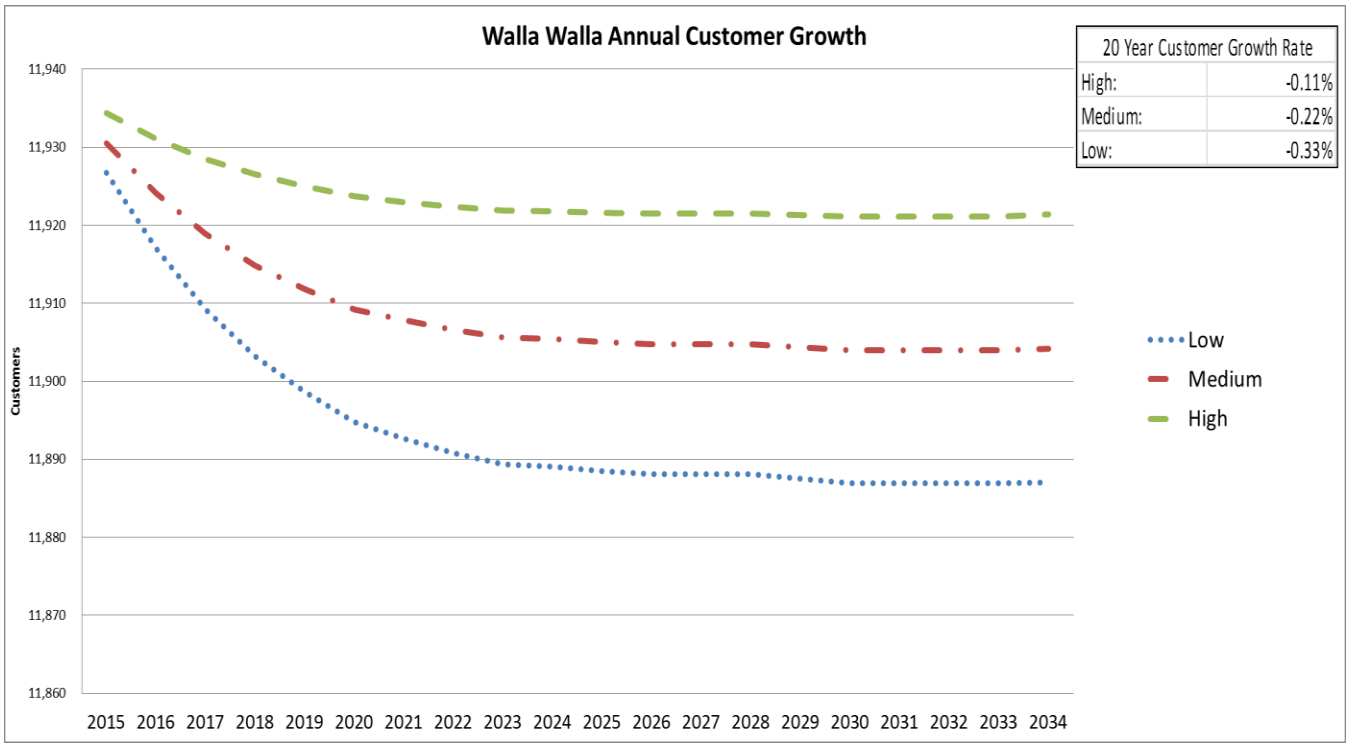
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,654	1,272	11,927	10,658	1,273	11,931	10,661	1,273	11,934
2016	10,646	1,271	11,917	10,652	1,272	11,924	10,658	1,273	11,931
2017	10,639	1,271	11,909	10,647	1,272	11,919	10,656	1,273	11,929
2018	10,633	1,270	11,903	10,644	1,271	11,915	10,654	1,272	11,927
2019	10,629	1,269	11,899	10,641	1,271	11,912	10,653	1,272	11,925
2020	10,626	1,269	11,895	10,639	1,271	11,909	10,652	1,272	11,924
2021	10,624	1,269	11,893	10,637	1,270	11,908	10,651	1,272	11,923
2022	10,622	1,269	11,891	10,636	1,270	11,907	10,650	1,272	11,922
2023	10,621	1,268	11,889	10,635	1,270	11,906	10,650	1,272	11,922
2024	10,621	1,268	11,889	10,635	1,270	11,905	10,650	1,272	11,922
2025	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,922
2026	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2027	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2028	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2029	10,619	1,268	11,888	10,634	1,270	11,904	10,649	1,272	11,921
2030	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2031	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2032	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2033	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2034	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.08%	-0.08%	-0.08%	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%
2017	-0.07%	-0.07%	-0.07%	-0.04%	-0.04%	-0.04%	-0.02%	-0.02%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
2021	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%


Walla Walla Annual Therm Usage
20 Year Therm Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High
Therms
12,880,000
12,860,000
12,840,000
12,820,000
12,800,000
12,780,000
12,760,000
12,740,000
12,720,000
12,700,000
12,680,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034


Walla Walla Annual Customer Growth
20 Year Customer Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High
Customers
11,940
11,930
11,920
11,910
11,900
11,890
11,880
11,870
11,860
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Deming

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	109,683	33,799	143,482	111,030	33,799	144,829	112,378	33,799	146,177
2016	111,210	34,269	145,479	113,619	34,587	148,206	116,053	34,904	150,957
2017	111,728	34,429	146,158	115,191	35,066	150,257	118,724	35,708	154,432
2018	112,745	34,743	147,488	117,288	35,704	152,991	121,965	36,682	158,647
2019	113,757	35,054	148,811	119,392	36,344	155,736	125,248	37,670	162,918
2020	115,282	35,524	150,806	122,053	37,154	159,207	129,150	38,843	167,994
2021	115,762	35,672	151,434	123,620	37,631	161,252	131,930	39,679	171,610
2022	116,756	35,979	152,735	125,743	38,278	164,021	135,328	40,701	176,030
2023	117,743	36,282	154,025	127,868	38,924	166,792	138,758	41,733	180,491
2024	119,262	36,751	156,013	130,589	39,753	170,341	142,873	42,970	185,843
2025	119,696	36,884	156,581	132,128	40,221	172,350	145,722	43,827	189,549
2026	120,663	37,182	157,845	134,262	40,871	175,133	149,252	44,889	194,141
2027	121,621	37,478	159,099	136,396	41,520	177,916	152,810	45,959	198,769
2028	123,129	37,942	161,071	139,158	42,361	181,519	157,105	47,251	204,356
2029	123,515	38,061	161,576	140,660	42,818	183,478	160,003	48,123	208,125
2030	124,450	38,349	162,799	142,789	43,466	186,255	163,635	49,215	212,850
2031	125,379	38,636	164,015	144,921	44,116	189,037	167,301	50,318	217,619
2032	126,873	39,096	165,970	147,719	44,967	192,686	171,766	51,660	223,426
2033	127,217	39,202	166,419	149,185	45,414	194,599	174,711	52,546	227,257
2034	128,127	39,482	167,609	151,319	46,063	197,382	178,460	53,674	232,133

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	1.39%	1.39%	2.33%	2.33%	2.33%	3.27%	3.27%	3.27%
2017	0.47%	0.47%	0.47%	1.38%	1.38%	1.38%	2.30%	2.30%	2.30%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.34%	1.34%	1.34%	2.23%	2.23%	2.23%	3.12%	3.12%	3.12%
2021	0.42%	0.42%	0.42%	1.28%	1.28%	1.28%	2.15%	2.15%	2.15%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.29%	1.29%	1.29%	2.13%	2.13%	2.13%	2.97%	2.97%	2.97%
2025	0.36%	0.36%	0.36%	1.18%	1.18%	1.18%	1.99%	1.99%	1.99%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.81%	2.81%	2.81%
2029	0.31%	0.31%	0.31%	1.08%	1.08%	1.08%	1.84%	1.84%	1.84%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.19%	1.19%	1.19%	1.93%	1.93%	1.93%	2.67%	2.67%	2.67%
2033	0.27%	0.27%	0.27%	0.99%	0.99%	0.99%	1.71%	1.71%	1.71%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	93	1,578	1,670	93	1,594	1,686	93	1,609	1,702
2016	94	1,592	1,686	95	1,623	1,718	96	1,654	1,750
2017	94	1,607	1,702	96	1,653	1,749	98	1,700	1,798
2018	95	1,622	1,717	98	1,683	1,781	100	1,747	1,847
2019	96	1,636	1,732	100	1,714	1,813	103	1,794	1,897
2020	97	1,650	1,748	102	1,743	1,845	106	1,841	1,947
2021	98	1,665	1,763	103	1,774	1,877	109	1,889	1,998
2022	99	1,680	1,778	105	1,805	1,910	112	1,938	2,049
2023	99	1,694	1,793	107	1,835	1,942	114	1,987	2,101
2024	101	1,707	1,808	109	1,865	1,974	118	2,036	2,154
2025	101	1,722	1,823	110	1,896	2,007	120	2,087	2,207
2026	102	1,736	1,838	112	1,927	2,039	123	2,137	2,260
2027	103	1,750	1,852	114	1,958	2,071	126	2,188	2,314
2028	104	1,763	1,867	116	1,988	2,104	129	2,239	2,368
2029	104	1,777	1,881	117	2,019	2,136	132	2,291	2,423
2030	105	1,790	1,895	119	2,049	2,168	135	2,343	2,478
2031	106	1,804	1,910	121	2,080	2,201	138	2,396	2,534
2032	107	1,816	1,924	123	2,110	2,233	142	2,448	2,589
2033	107	1,830	1,937	124	2,141	2,266	144	2,502	2,646
2034	108	1,843	1,951	126	2,172	2,298	147	2,556	2,703

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	0.91%	0.93%	2.33%	1.84%	1.87%	3.27%	2.78%	2.80%
2017	0.47%	0.95%	0.92%	1.38%	1.87%	1.84%	2.30%	2.79%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.34%	0.86%	0.88%	2.23%	1.74%	1.77%	3.12%	2.62%	2.65%
2021	0.42%	0.90%	0.87%	1.28%	1.77%	1.74%	2.15%	2.64%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.29%	0.81%	0.83%	2.13%	1.64%	1.67%	2.97%	2.47%	2.50%
2025	0.36%	0.85%	0.82%	1.18%	1.66%	1.64%	1.99%	2.48%	2.46%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.24%	0.76%	0.78%	2.03%	1.54%	1.56%	2.81%	2.32%	2.35%
2029	0.31%	0.80%	0.77%	1.08%	1.56%	1.54%	1.84%	2.33%	2.31%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.19%	0.71%	0.74%	1.93%	1.44%	1.47%	2.67%	2.18%	2.21%
2033	0.27%	0.75%	0.73%	0.99%	1.48%	1.45%	1.71%	2.20%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,096	130,386	143,482	13,219	131,610	144,829	13,342	132,835	146,177
2016	13,281	132,198	145,479	13,530	134,676	148,206	13,781	137,176	150,957
2017	13,340	132,818	146,158	13,714	136,543	150,257	14,095	140,337	154,432
2018	13,461	134,026	147,488	13,964	139,027	152,991	14,480	144,167	158,647
2019	13,582	135,229	148,811	14,214	141,522	155,736	14,870	148,048	162,918
2020	13,767	137,039	150,806	14,534	144,672	159,207	15,336	152,657	167,994
2021	13,822	137,613	151,434	14,718	146,534	161,252	15,663	155,947	171,610
2022	13,940	138,794	152,735	14,970	149,050	164,021	16,066	159,963	176,030
2023	14,058	139,967	154,025	15,223	151,569	166,792	16,474	164,018	180,491
2024	14,243	141,770	156,013	15,551	154,791	170,341	16,966	168,877	185,843
2025	14,291	142,289	156,581	15,731	156,619	172,350	17,300	172,249	189,549
2026	14,407	143,438	157,845	15,985	159,148	175,133	17,719	176,421	194,141
2027	14,521	144,578	159,099	16,239	161,678	177,916	18,142	180,627	198,769
2028	14,704	146,366	161,071	16,571	164,948	181,519	18,656	185,700	204,356
2029	14,747	146,829	161,576	16,746	166,732	183,478	18,996	189,130	208,125
2030	14,859	147,940	162,799	17,000	169,255	186,255	19,427	193,423	212,850
2031	14,970	149,045	164,015	17,254	171,783	189,037	19,862	197,757	217,619
2032	15,152	150,818	165,970	17,591	175,095	192,686	20,397	203,029	223,426
2033	15,189	151,230	166,419	17,761	176,837	194,599	20,742	206,515	227,257
2034	15,298	152,311	167,609	18,015	179,367	197,382	21,187	210,946	232,133

Annual Change

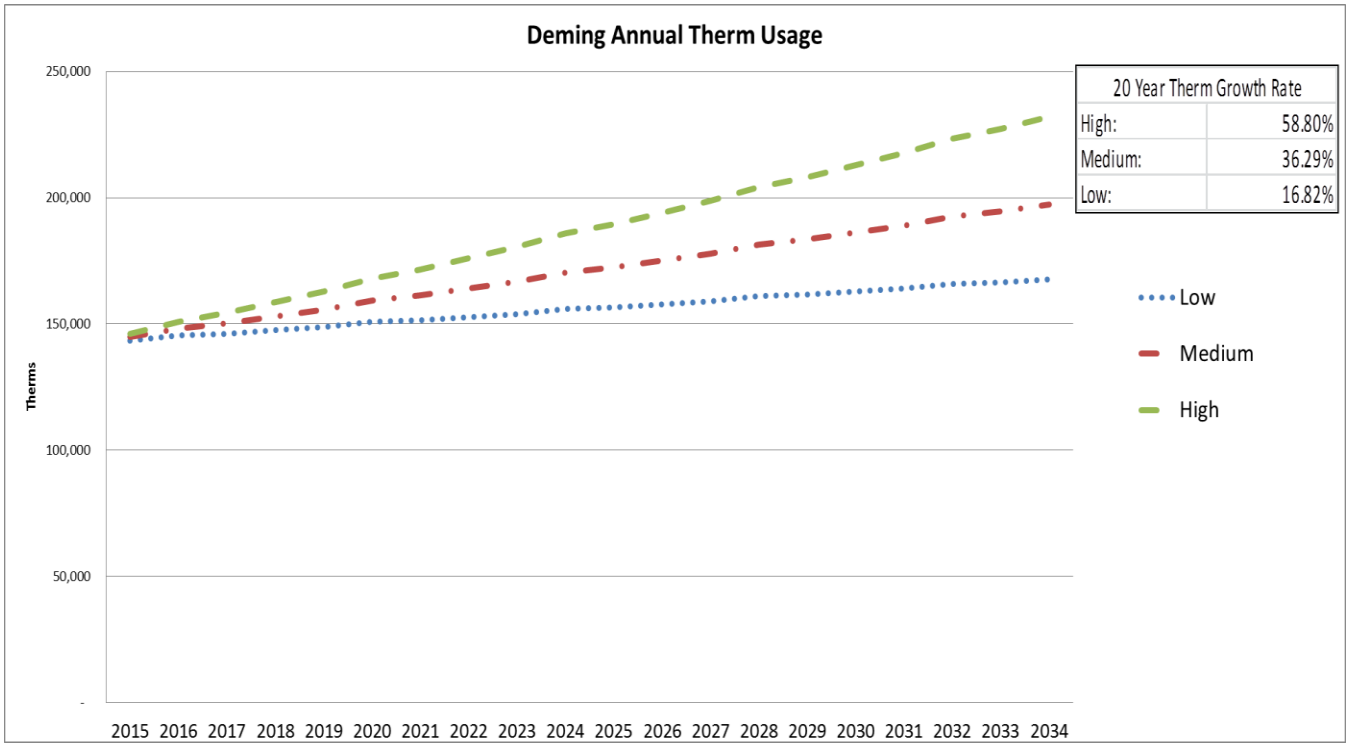
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.42%	1.39%	1.39%	2.35%	2.33%	2.33%	3.29%	3.27%	3.27%
2017	0.44%	0.47%	0.47%	1.36%	1.39%	1.38%	2.28%	2.30%	2.30%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	1.36%	1.34%	1.34%	2.25%	2.23%	2.23%	3.14%	3.11%	3.12%
2021	0.39%	0.42%	0.42%	1.26%	1.29%	1.28%	2.13%	2.15%	2.15%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	1.31%	1.29%	1.29%	2.15%	2.13%	2.13%	2.99%	2.96%	2.97%
2025	0.34%	0.37%	0.36%	1.16%	1.18%	1.18%	1.97%	2.00%	1.99%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	1.26%	1.24%	1.24%	2.05%	2.02%	2.03%	2.83%	2.81%	2.81%
2029	0.29%	0.32%	0.31%	1.06%	1.08%	1.08%	1.82%	1.85%	1.84%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	1.21%	1.19%	1.19%	1.95%	1.93%	1.93%	2.69%	2.67%	2.67%
2033	0.25%	0.27%	0.27%	0.97%	0.99%	0.99%	1.69%	1.72%	1.71%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

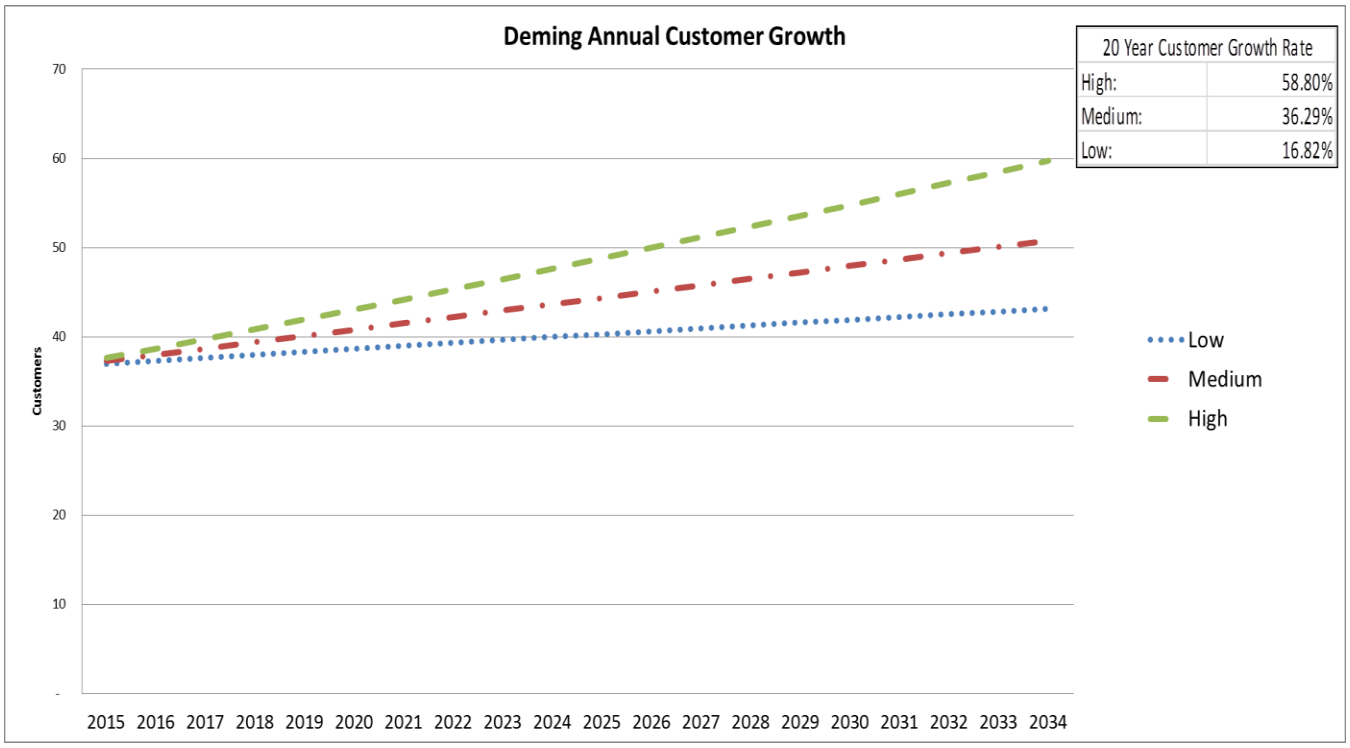
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24	13	37	24	13	37	25	13	38
2016	24	13	37	25	13	38	25	13	39
2017	25	13	38	25	13	39	26	14	40
2018	25	13	38	26	14	39	27	14	41
2019	25	13	38	26	14	40	27	15	42
2020	25	13	39	27	14	41	28	15	43
2021	25	13	39	27	14	42	29	15	44
2022	26	14	39	28	15	42	30	16	45
2023	26	14	40	28	15	43	30	16	46
2024	26	14	40	29	15	44	31	16	48
2025	26	14	40	29	15	44	32	17	49
2026	27	14	41	29	16	45	33	17	50
2027	27	14	41	30	16	46	33	18	51
2028	27	14	41	30	16	47	34	18	52
2029	27	14	42	31	16	47	35	19	54
2030	27	15	42	31	17	48	36	19	55
2031	28	15	42	32	17	49	37	19	56
2032	28	15	43	32	17	49	37	20	57
2033	28	15	43	33	17	50	38	20	58
2034	28	15	43	33	18	51	39	21	60

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.93%	0.93%	0.93%	1.87%	1.87%	1.87%	2.80%	2.80%	2.80%
2017	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.77%	2.77%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.73%	2.73%	2.73%
2019	0.90%	0.90%	0.90%	1.79%	1.79%	1.79%	2.69%	2.69%	2.69%
2020	0.88%	0.88%	0.88%	1.77%	1.77%	1.77%	2.65%	2.65%	2.65%
2021	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.62%	2.62%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2024	0.83%	0.83%	0.83%	1.67%	1.67%	1.67%	2.50%	2.50%	2.50%
2025	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2026	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%
2027	0.79%	0.79%	0.79%	1.59%	1.59%	1.59%	2.38%	2.38%	2.38%
2028	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.35%	2.35%	2.35%
2029	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.31%	2.31%	2.31%
2030	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2032	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2033	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%


Deming Annual Therm Usage
20 Year Therm Growth Rate
High: 58.80%
Medium: 36.29%
Low: 16.82%
Therms
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Deming Annual Customer Growth
20 Year Customer Growth Rate
High: 58.80%
Medium: 36.29%
Low: 16.82%
Customers
70
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Wenatchee

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,049,850	1,599,156	4,649,006	3,077,154	1,599,156	4,676,310	3,104,458	1,599,156	4,703,614
2016	3,081,082	1,615,532	4,696,614	3,126,818	1,624,965	4,751,783	3,172,876	1,634,399	4,807,274
2017	3,085,667	1,617,936	4,703,602	3,149,639	1,636,825	4,786,465	3,214,470	1,655,824	4,870,294
2018	3,103,595	1,627,336	4,730,930	3,186,238	1,655,845	4,842,083	3,270,498	1,684,685	4,955,184
2019	3,121,500	1,636,724	4,758,225	3,223,003	1,674,951	4,897,955	3,327,104	1,713,844	5,040,948
2020	3,152,953	1,653,216	4,806,169	3,273,962	1,701,434	4,975,396	3,398,789	1,750,770	5,149,558
2021	3,157,150	1,655,417	4,812,567	3,296,831	1,713,318	5,010,149	3,441,746	1,772,898	5,214,643
2022	3,174,885	1,664,716	4,839,601	3,333,869	1,732,567	5,066,437	3,499,746	1,802,775	5,302,521
2023	3,192,518	1,673,962	4,866,480	3,370,902	1,751,812	5,122,715	3,558,059	1,832,812	5,390,871
2024	3,224,058	1,690,500	4,914,558	3,422,872	1,778,821	5,201,693	3,632,618	1,871,219	5,503,838
2025	3,227,580	1,692,346	4,919,926	3,445,145	1,790,396	5,235,541	3,675,927	1,893,528	5,569,455
2026	3,244,964	1,701,461	4,946,425	3,482,257	1,809,682	5,291,939	3,735,323	1,924,124	5,659,447
2027	3,262,241	1,710,520	4,972,761	3,519,338	1,828,953	5,348,291	3,794,987	1,954,858	5,749,845
2028	3,293,639	1,726,984	5,020,623	3,571,805	1,856,219	5,428,023	3,871,613	1,994,329	5,865,942
2029	3,296,402	1,728,432	5,024,834	3,593,237	1,867,357	5,460,593	3,914,828	2,016,590	5,931,417
2030	3,313,267	1,737,275	5,050,543	3,630,005	1,886,465	5,516,469	3,974,916	2,047,542	6,022,458
2031	3,330,089	1,746,096	5,076,185	3,666,864	1,905,620	5,572,484	4,035,459	2,078,729	6,114,187
2032	3,361,320	1,762,471	5,123,791	3,719,723	1,933,090	5,652,813	4,113,956	2,119,164	6,233,121
2033	3,363,415	1,763,570	5,126,985	3,740,440	1,943,856	5,684,296	4,157,217	2,141,449	6,298,666
2034	3,379,934	1,772,231	5,152,165	3,777,181	1,962,950	5,740,131	4,218,470	2,173,001	6,391,470

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	1.02%	1.02%	1.61%	1.61%	1.61%	2.20%	2.20%	2.20%
2017	0.15%	0.15%	0.15%	0.73%	0.73%	0.73%	1.31%	1.31%	1.31%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.01%	1.01%	1.01%	1.58%	1.58%	1.58%	2.15%	2.15%	2.15%
2021	0.13%	0.13%	0.13%	0.70%	0.70%	0.70%	1.26%	1.26%	1.26%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.99%	0.99%	0.99%	1.54%	1.54%	1.54%	2.10%	2.10%	2.10%
2025	0.11%	0.11%	0.11%	0.65%	0.65%	0.65%	1.19%	1.19%	1.19%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.96%	0.96%	0.96%	1.49%	1.49%	1.49%	2.02%	2.02%	2.02%
2029	0.08%	0.08%	0.08%	0.60%	0.60%	0.60%	1.12%	1.12%	1.12%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.94%	0.94%	0.94%	1.44%	1.44%	1.44%	1.95%	1.95%	1.95%
2033	0.06%	0.06%	0.06%	0.56%	0.56%	0.56%	1.05%	1.05%	1.05%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	4,381	45,002	49,383	4,381	45,292	49,673	4,381	45,582	49,963
2016	4,426	45,247	49,673	4,452	45,805	50,257	4,478	46,366	50,844
2017	4,433	45,531	49,963	4,484	46,359	50,843	4,537	47,197	51,734
2018	4,458	45,795	50,254	4,537	46,898	51,434	4,616	48,020	52,636
2019	4,484	46,059	50,543	4,589	47,439	52,028	4,695	48,851	53,547
2020	4,529	46,303	50,832	4,661	47,960	52,622	4,797	49,667	54,464
2021	4,535	46,585	51,121	4,694	48,526	53,220	4,857	50,534	55,392
2022	4,561	46,847	51,408	4,747	49,071	53,817	4,939	51,386	56,325
2023	4,586	47,107	51,693	4,799	49,616	54,415	5,021	52,242	57,264
2024	4,632	47,347	51,978	4,873	50,142	55,015	5,127	53,084	58,211
2025	4,637	47,625	52,261	4,905	50,709	55,614	5,188	53,973	59,161
2026	4,662	47,881	52,543	4,958	51,255	56,213	5,272	54,845	60,117
2027	4,686	48,136	52,822	5,011	51,801	56,811	5,356	55,721	61,077
2028	4,731	48,369	53,100	5,086	52,324	57,409	5,464	56,577	62,041
2029	4,735	48,640	53,376	5,116	52,888	58,004	5,525	57,481	63,006
2030	4,760	48,889	53,649	5,168	53,429	58,598	5,610	58,363	63,973
2031	4,784	49,137	53,921	5,221	53,972	59,193	5,695	59,252	64,947
2032	4,829	49,363	54,191	5,296	54,490	59,787	5,806	60,118	65,924
2033	4,832	49,629	54,461	5,326	55,055	60,381	5,867	61,040	66,907
2034	4,855	49,873	54,728	5,378	55,596	60,974	5,953	61,939	67,892

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.54%	0.59%	1.61%	1.13%	1.17%	2.20%	1.72%	1.76%
2017	0.15%	0.63%	0.58%	0.73%	1.21%	1.17%	1.31%	1.79%	1.75%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.01%	0.53%	0.57%	1.58%	1.10%	1.14%	2.15%	1.67%	1.71%
2021	0.13%	0.61%	0.57%	0.70%	1.18%	1.14%	1.26%	1.75%	1.70%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.99%	0.51%	0.55%	1.54%	1.06%	1.10%	2.10%	1.61%	1.65%
2025	0.11%	0.59%	0.54%	0.65%	1.13%	1.09%	1.19%	1.67%	1.63%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.96%	0.48%	0.53%	1.49%	1.01%	1.05%	2.02%	1.54%	1.58%
2029	0.08%	0.56%	0.52%	0.60%	1.08%	1.04%	1.12%	1.60%	1.56%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.94%	0.46%	0.50%	1.44%	0.96%	1.00%	1.95%	1.46%	1.50%
2033	0.06%	0.54%	0.50%	0.56%	1.04%	0.99%	1.05%	1.53%	1.49%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	654,992	3,994,014	4,649,006	658,839	4,017,471	4,676,310	662,686	4,040,928	4,703,614
2016	661,807	4,034,807	4,696,614	669,581	4,082,202	4,751,783	677,400	4,129,874	4,807,274
2017	662,684	4,040,918	4,703,602	674,359	4,112,106	4,786,465	686,169	4,184,125	4,870,294
2018	666,535	4,064,396	4,730,930	682,195	4,159,889	4,842,083	698,129	4,257,054	4,955,184
2019	670,380	4,087,845	4,758,225	690,066	4,207,888	4,897,955	710,213	4,330,736	5,040,948
2020	677,245	4,128,925	4,806,169	701,090	4,274,305	4,975,396	725,632	4,423,926	5,149,558
2021	678,036	4,134,531	4,812,567	705,873	4,304,276	5,010,149	734,684	4,479,959	5,214,643
2022	681,845	4,157,756	4,839,601	713,804	4,352,633	5,066,437	747,065	4,555,455	5,302,521
2023	685,632	4,180,848	4,866,480	721,733	4,400,982	5,122,715	759,513	4,631,358	5,390,871
2024	692,518	4,222,040	4,914,558	732,978	4,468,714	5,201,693	775,554	4,728,284	5,503,838
2025	693,162	4,226,764	4,919,926	737,629	4,497,913	5,235,541	784,673	4,784,782	5,569,455
2026	696,895	4,249,530	4,946,425	745,574	4,546,364	5,291,939	797,352	4,862,095	5,659,447
2027	700,606	4,272,155	4,972,761	753,514	4,594,777	5,348,291	810,088	4,939,757	5,749,845
2028	707,463	4,313,159	5,020,623	764,871	4,663,152	5,428,023	826,579	5,039,364	5,865,942
2029	707,942	4,316,892	5,024,834	769,336	4,691,258	5,460,593	835,670	5,095,748	5,931,417
2030	711,564	4,338,978	5,050,543	777,208	4,739,261	5,516,469	848,496	5,173,962	6,022,458
2031	715,177	4,361,008	5,076,185	785,100	4,787,384	5,572,484	861,420	5,252,767	6,114,187
2032	722,001	4,401,790	5,123,791	796,546	4,856,266	5,652,813	878,318	5,354,802	6,233,121
2033	722,334	4,404,651	5,126,985	800,853	4,883,443	5,684,296	887,411	5,411,255	6,298,666
2034	725,882	4,426,283	5,152,165	808,720	4,931,411	5,740,131	900,486	5,490,984	6,391,470

Annual Change

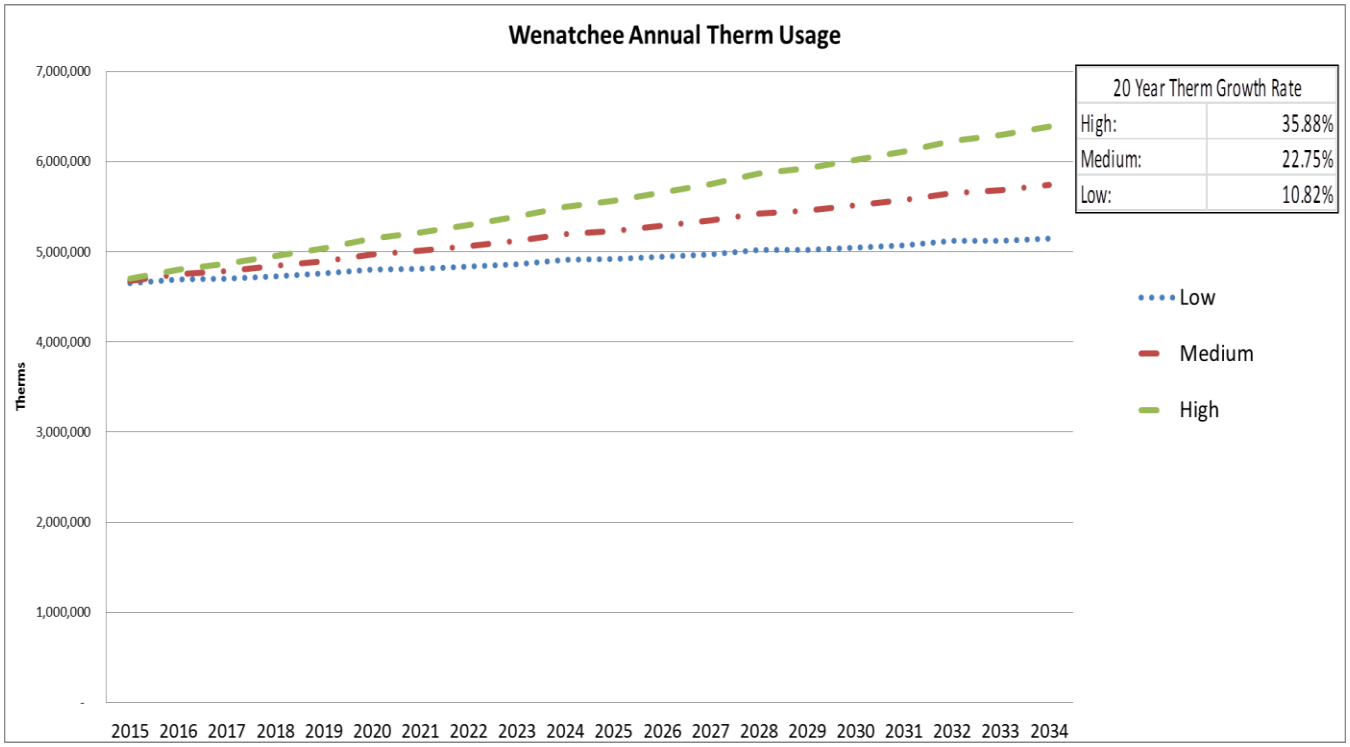
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	1.02%	1.02%	1.63%	1.61%	1.61%	2.22%	2.20%	2.20%
2017	0.13%	0.15%	0.15%	0.71%	0.73%	0.73%	1.29%	1.31%	1.31%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	1.02%	1.00%	1.01%	1.60%	1.58%	1.58%	2.17%	2.15%	2.15%
2021	0.12%	0.14%	0.13%	0.68%	0.70%	0.70%	1.25%	1.27%	1.26%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	1.00%	0.99%	0.99%	1.56%	1.54%	1.54%	2.11%	2.09%	2.10%
2025	0.09%	0.11%	0.11%	0.63%	0.65%	0.65%	1.18%	1.19%	1.19%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.98%	0.96%	0.96%	1.51%	1.49%	1.49%	2.04%	2.02%	2.02%
2029	0.07%	0.09%	0.08%	0.58%	0.60%	0.60%	1.10%	1.12%	1.12%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.95%	0.94%	0.94%	1.46%	1.44%	1.44%	1.96%	1.94%	1.95%
2033	0.05%	0.06%	0.06%	0.54%	0.56%	0.56%	1.04%	1.05%	1.05%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%

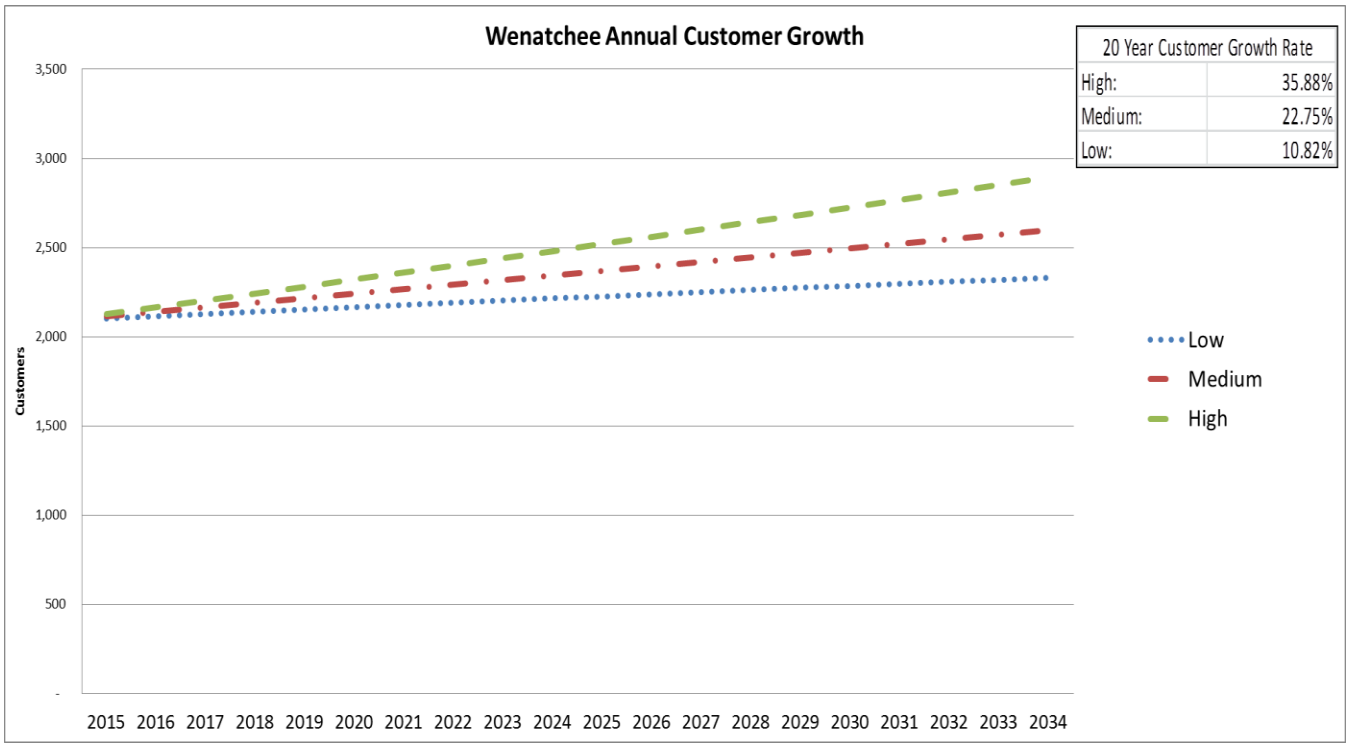
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,397	707	2,104	1,405	711	2,116	1,413	715	2,128
2016	1,405	711	2,116	1,422	719	2,141	1,438	728	2,166
2017	1,413	715	2,128	1,438	728	2,166	1,463	740	2,204
2018	1,421	719	2,141	1,455	736	2,191	1,489	753	2,242
2019	1,430	723	2,153	1,472	745	2,216	1,515	766	2,281
2020	1,438	728	2,165	1,488	753	2,242	1,541	780	2,320
2021	1,446	732	2,178	1,505	762	2,267	1,567	793	2,360
2022	1,454	736	2,190	1,522	770	2,293	1,593	806	2,399
2023	1,462	740	2,202	1,539	779	2,318	1,620	820	2,439
2024	1,470	744	2,214	1,556	787	2,344	1,647	833	2,480
2025	1,478	748	2,226	1,573	796	2,369	1,673	847	2,520
2026	1,486	752	2,238	1,590	805	2,395	1,700	860	2,561
2027	1,494	756	2,250	1,607	813	2,420	1,728	874	2,602
2028	1,502	760	2,262	1,624	822	2,446	1,755	888	2,643
2029	1,510	764	2,274	1,641	830	2,471	1,782	902	2,684
2030	1,518	768	2,285	1,658	839	2,496	1,810	916	2,725
2031	1,525	772	2,297	1,674	847	2,522	1,837	930	2,767
2032	1,533	776	2,309	1,691	856	2,547	1,865	944	2,808
2033	1,540	779	2,320	1,708	864	2,572	1,893	958	2,850
2034	1,548	783	2,331	1,725	873	2,597	1,920	972	2,892

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2017	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2018	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2019	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2020	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2021	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.70%	1.70%	1.70%
2022	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.69%	1.69%	1.69%
2023	0.56%	0.56%	0.56%	1.11%	1.11%	1.11%	1.67%	1.67%	1.67%
2024	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.65%	1.65%	1.65%
2025	0.54%	0.54%	0.54%	1.09%	1.09%	1.09%	1.63%	1.63%	1.63%
2026	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2027	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2028	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2029	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.56%	1.56%	1.56%
2030	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2031	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2032	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2033	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2034	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%


Wenatchee Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 35.88%
Medium: 22.75%
Low: 10.82%
Low
Medium
High


Wenatchee Annual Customer Growth
Customers
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 35.88%
Medium: 22.75%
Low: 10.82%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Finley

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	91,201	10,272	101,473	91,845	10,272	102,117	92,489	10,272	102,761
2016	92,270	10,393	102,663	93,506	10,458	103,964	94,751	10,524	105,274
2017	92,355	10,402	102,757	94,176	10,533	104,709	96,022	10,665	106,686
2018	92,930	10,467	103,398	95,350	10,664	106,015	97,817	10,864	108,681
2019	93,504	10,532	104,036	96,528	10,796	107,324	99,629	11,065	110,695
2020	94,579	10,653	105,232	98,230	10,986	109,216	101,997	11,328	113,326
2021	94,645	10,660	105,305	98,890	11,060	109,950	103,297	11,473	114,770
2022	95,211	10,724	105,935	100,073	11,193	111,266	105,151	11,679	116,830
2023	95,773	10,787	106,561	101,255	11,325	112,580	107,014	11,886	118,900
2024	96,850	10,909	107,759	102,989	11,519	114,508	109,476	12,159	121,635
2025	96,889	10,913	107,802	103,620	11,589	115,210	110,774	12,303	123,078
2026	97,441	10,975	108,416	104,801	11,721	116,523	112,668	12,514	125,182
2027	97,989	11,037	109,026	105,981	11,853	117,834	114,570	12,725	127,295
2028	99,061	11,158	110,218	107,731	12,049	119,780	117,101	13,006	130,107
2029	99,071	11,159	110,230	108,328	12,116	120,444	118,387	13,149	131,535
2030	99,605	11,219	110,824	109,496	12,246	121,742	120,301	13,361	133,662
2031	100,137	11,279	111,415	110,664	12,377	123,041	122,226	13,575	135,802
2032	101,203	11,399	112,602	112,429	12,574	125,003	124,822	13,863	138,686
2033	101,188	11,397	112,585	112,994	12,638	125,631	126,096	14,005	140,101
2034	101,709	11,456	113,165	114,157	12,768	126,925	128,044	14,221	142,265

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	1.17%	1.17%	1.81%	1.81%	1.81%	2.45%	2.45%	2.45%
2017	0.09%	0.09%	0.09%	0.72%	0.72%	0.72%	1.34%	1.34%	1.34%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.15%	1.15%	1.15%	1.76%	1.76%	1.76%	2.38%	2.38%	2.38%
2021	0.07%	0.07%	0.07%	0.67%	0.67%	0.67%	1.27%	1.27%	1.27%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.12%	1.12%	1.12%	1.71%	1.71%	1.71%	2.30%	2.30%	2.30%
2025	0.04%	0.04%	0.04%	0.61%	0.61%	0.61%	1.19%	1.19%	1.19%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.09%	1.09%	1.09%	1.65%	1.65%	1.65%	2.21%	2.21%	2.21%
2029	0.01%	0.01%	0.01%	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.07%	1.07%	1.07%	1.59%	1.59%	1.59%	2.12%	2.12%	2.12%
2033	-0.02%	-0.02%	-0.02%	0.50%	0.50%	0.50%	1.02%	1.02%	1.02%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	28	1,620	1,648	28	1,631	1,659	28	1,641	1,669
2016	28	1,630	1,659	29	1,651	1,680	29	1,672	1,701
2017	28	1,641	1,669	29	1,672	1,701	29	1,704	1,733
2018	29	1,651	1,680	29	1,693	1,722	30	1,736	1,766
2019	29	1,661	1,690	30	1,714	1,744	30	1,768	1,798
2020	29	1,671	1,700	30	1,735	1,765	31	1,800	1,831
2021	29	1,682	1,711	30	1,756	1,786	31	1,833	1,864
2022	29	1,692	1,721	31	1,777	1,808	32	1,866	1,898
2023	30	1,702	1,731	31	1,798	1,829	33	1,899	1,932
2024	30	1,711	1,741	32	1,819	1,850	33	1,932	1,965
2025	30	1,721	1,751	32	1,840	1,872	34	1,966	1,999
2026	30	1,731	1,761	32	1,861	1,893	34	1,999	2,034
2027	30	1,741	1,771	32	1,882	1,914	35	2,033	2,068
2028	31	1,750	1,781	33	1,902	1,935	36	2,067	2,102
2029	31	1,760	1,791	33	1,923	1,957	36	2,101	2,137
2030	31	1,770	1,800	34	1,944	1,978	37	2,135	2,171
2031	31	1,779	1,810	34	1,965	1,999	37	2,169	2,206
2032	31	1,788	1,820	34	1,985	2,020	38	2,203	2,241
2033	31	1,798	1,829	35	2,006	2,041	38	2,238	2,276
2034	31	1,807	1,838	35	2,027	2,062	39	2,272	2,311

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	0.62%	0.63%	1.81%	1.26%	1.27%	2.45%	1.89%	1.90%
2017	0.09%	0.64%	0.63%	0.72%	1.27%	1.26%	1.34%	1.89%	1.88%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.15%	0.60%	0.61%	1.76%	1.21%	1.22%	2.38%	1.82%	1.83%
2021	0.07%	0.62%	0.61%	0.67%	1.22%	1.21%	1.27%	1.83%	1.82%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.12%	0.58%	0.59%	1.71%	1.16%	1.17%	2.30%	1.75%	1.76%
2025	0.04%	0.59%	0.58%	0.61%	1.16%	1.15%	1.19%	1.74%	1.73%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.09%	0.55%	0.55%	1.65%	1.10%	1.11%	2.21%	1.66%	1.66%
2029	0.01%	0.56%	0.55%	0.55%	1.10%	1.09%	1.10%	1.65%	1.64%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.07%	0.52%	0.53%	1.59%	1.04%	1.05%	2.12%	1.57%	1.58%
2033	-0.02%	0.53%	0.52%	0.50%	1.05%	1.04%	1.02%	1.57%	1.56%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	14,605	86,868	101,473	14,698	87,420	102,117	14,790	87,971	102,761
2016	14,779	87,884	102,663	14,966	88,998	103,964	15,155	90,119	105,274
2017	14,790	87,967	102,757	15,071	89,639	104,709	15,355	91,331	106,686
2018	14,882	88,516	103,398	15,259	90,756	106,015	15,642	93,039	108,681
2019	14,974	89,062	104,036	15,447	91,877	107,324	15,932	94,763	110,695
2020	15,149	90,083	105,232	15,723	93,494	109,216	16,314	97,012	113,326
2021	15,157	90,149	105,305	15,825	94,125	109,950	16,519	98,251	114,770
2022	15,247	90,688	105,935	16,014	95,251	111,266	16,815	100,014	116,830
2023	15,337	91,223	106,561	16,204	96,376	112,580	17,113	101,787	118,900
2024	15,513	92,246	107,759	16,484	98,024	114,508	17,510	104,125	121,635
2025	15,516	92,286	107,802	16,582	98,628	115,210	17,714	105,363	123,078
2026	15,604	92,812	108,416	16,771	99,752	116,523	18,017	107,165	125,182
2027	15,692	93,334	109,026	16,960	100,874	117,834	18,321	108,973	127,295
2028	15,867	94,352	110,218	17,243	102,537	119,780	18,730	111,377	130,107
2029	15,865	94,365	110,230	17,335	103,108	120,444	18,932	112,604	131,535
2030	15,951	94,873	110,824	17,522	104,220	121,742	19,238	114,424	133,662
2031	16,036	95,379	111,415	17,709	105,332	123,041	19,546	116,256	135,802
2032	16,210	96,392	112,602	17,995	107,008	125,003	19,965	118,721	138,686
2033	16,204	96,381	112,585	18,082	107,549	125,631	20,165	119,936	140,101
2034	16,288	96,877	113,165	18,268	108,657	126,925	20,476	121,789	142,265

Annual Change

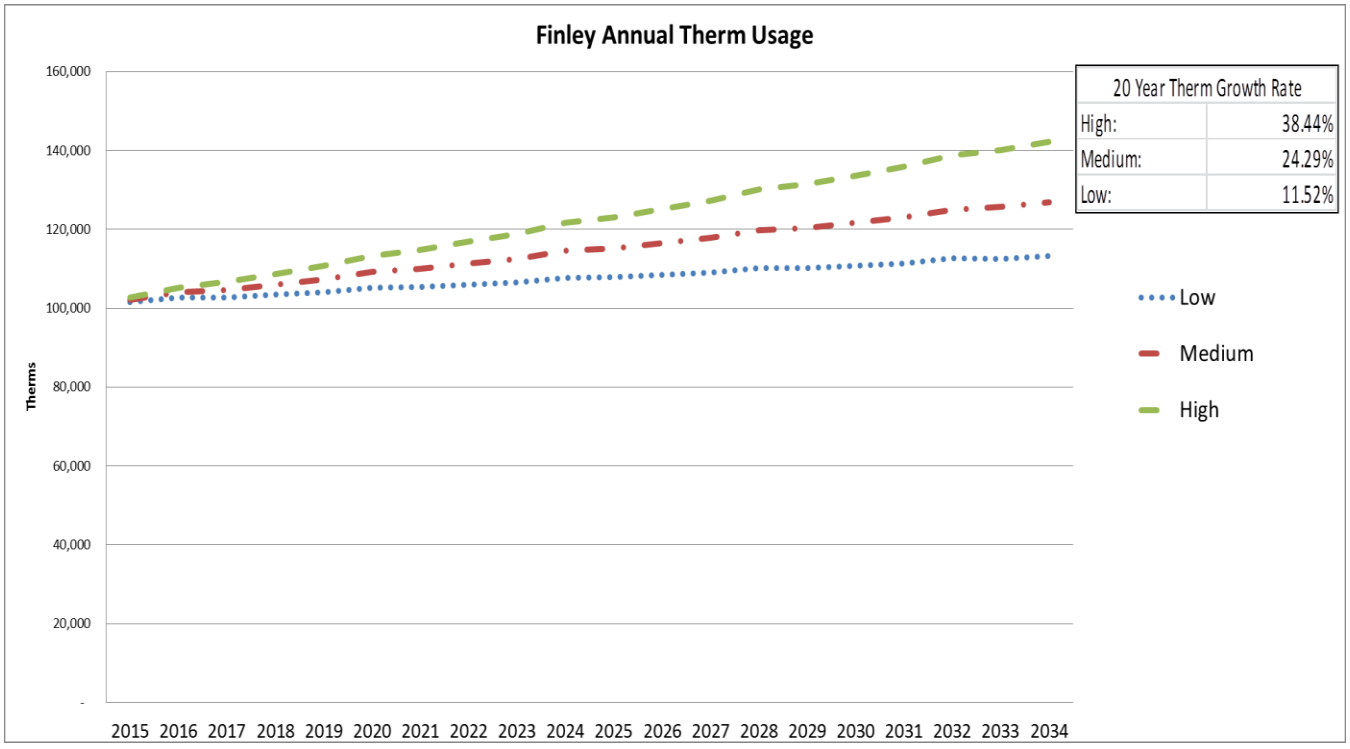
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.19%	1.17%	1.17%	1.83%	1.81%	1.81%	2.47%	2.44%	2.45%
2017	0.07%	0.10%	0.09%	0.70%	0.72%	0.72%	1.32%	1.34%	1.34%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	1.17%	1.15%	1.15%	1.78%	1.76%	1.76%	2.40%	2.37%	2.38%
2021	0.05%	0.07%	0.07%	0.65%	0.68%	0.67%	1.25%	1.28%	1.27%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	1.14%	1.12%	1.12%	1.73%	1.71%	1.71%	2.32%	2.30%	2.30%
2025	0.02%	0.04%	0.04%	0.59%	0.62%	0.61%	1.17%	1.19%	1.19%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	1.11%	1.09%	1.09%	1.67%	1.65%	1.65%	2.23%	2.21%	2.21%
2029	-0.01%	0.01%	0.01%	0.53%	0.56%	0.55%	1.08%	1.10%	1.10%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	1.09%	1.06%	1.07%	1.61%	1.59%	1.59%	2.14%	2.12%	2.12%
2033	-0.03%	-0.01%	-0.02%	0.48%	0.51%	0.50%	1.00%	1.02%	1.02%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%

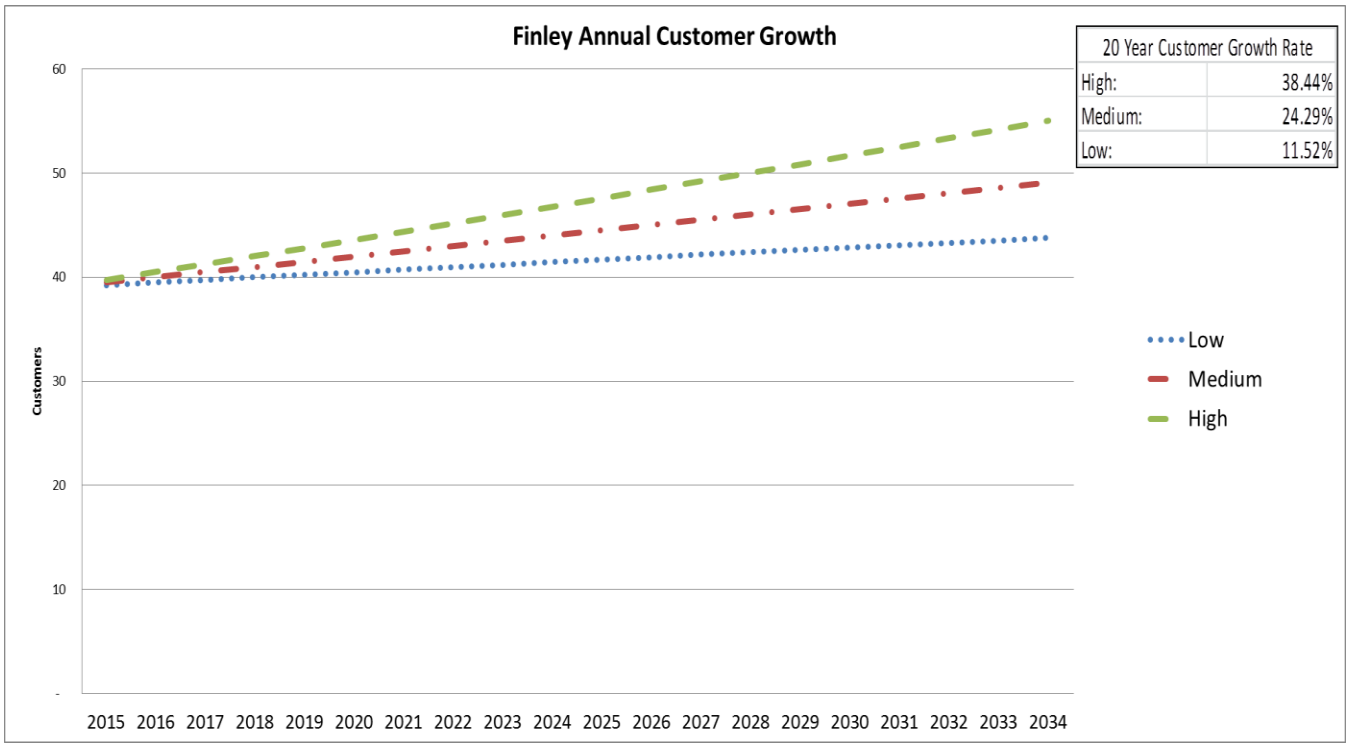
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	26	13	39	26	13	39	26	13	40
2016	26	13	39	27	13	40	27	14	41
2017	26	13	40	27	14	41	28	14	41
2018	27	13	40	27	14	41	28	14	42
2019	27	13	40	28	14	42	29	14	43
2020	27	13	40	28	14	42	29	15	44
2021	27	14	41	28	14	43	30	15	44
2022	27	14	41	29	14	43	30	15	45
2023	27	14	41	29	15	44	31	15	46
2024	28	14	41	29	15	44	31	16	47
2025	28	14	42	30	15	45	32	16	48
2026	28	14	42	30	15	45	32	16	48
2027	28	14	42	30	15	46	33	16	49
2028	28	14	42	31	15	46	33	17	50
2029	28	14	43	31	16	47	34	17	51
2030	29	14	43	31	16	47	34	17	52
2031	29	14	43	32	16	48	35	18	53
2032	29	14	43	32	16	48	36	18	53
2033	29	15	44	32	16	49	36	18	54
2034	29	15	44	33	16	49	37	18	55

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2017	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.88%	1.88%	1.88%
2018	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2019	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2020	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2021	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2022	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2024	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2025	0.58%	0.58%	0.58%	1.15%	1.15%	1.15%	1.73%	1.73%	1.73%
2026	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2027	0.56%	0.56%	0.56%	1.13%	1.13%	1.13%	1.69%	1.69%	1.69%
2028	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2029	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2030	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2031	0.53%	0.53%	0.53%	1.07%	1.07%	1.07%	1.60%	1.60%	1.60%
2032	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2033	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.56%	1.56%	1.56%
2034	0.51%	0.51%	0.51%	1.03%	1.03%	1.03%	1.54%	1.54%	1.54%


Finley Annual Therm Usage
Therms
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 38.44%
Medium: 24.29%
Low: 11.52%
Low
Medium
High


Finley Annual Customer Growth
Customers
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 38.44%
Medium: 24.29%
Low: 11.52%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Grandview

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,419,130	406,706	1,825,836	1,420,299	406,706	1,827,005	1,421,468	406,706	1,828,174
2016	1,426,133	408,713	1,834,846	1,428,283	408,993	1,837,276	1,430,436	409,272	1,839,708
2017	1,421,139	407,282	1,828,421	1,424,322	407,858	1,832,181	1,427,510	408,435	1,835,945
2018	1,422,245	407,599	1,829,844	1,426,539	408,493	1,835,032	1,430,843	409,389	1,840,232
2019	1,423,404	407,931	1,831,336	1,428,865	409,159	1,838,024	1,434,342	410,390	1,844,731
2020	1,430,637	410,004	1,840,641	1,437,315	411,579	1,848,894	1,444,020	413,159	1,857,178
2021	1,425,822	408,624	1,834,446	1,433,721	410,550	1,844,270	1,441,657	412,483	1,854,139
2022	1,427,075	408,983	1,836,058	1,436,240	411,271	1,847,511	1,445,457	413,570	1,859,027
2023	1,428,338	409,345	1,837,683	1,438,782	411,999	1,850,781	1,449,294	414,668	1,863,962
2024	1,435,707	411,457	1,847,163	1,447,516	414,500	1,862,015	1,459,412	417,563	1,876,975
2025	1,430,909	410,082	1,840,990	1,443,964	413,483	1,857,446	1,457,127	416,909	1,874,035
2026	1,432,208	410,454	1,842,662	1,446,585	414,234	1,860,819	1,461,095	418,044	1,879,140
2027	1,433,500	410,825	1,844,325	1,449,196	414,981	1,864,177	1,465,051	419,176	1,884,227
2028	1,440,886	412,941	1,853,827	1,457,974	417,495	1,875,468	1,475,249	422,094	1,897,343
2029	1,436,056	411,557	1,847,613	1,454,366	416,461	1,870,827	1,472,894	421,420	1,894,314
2030	1,437,311	411,917	1,849,228	1,456,908	417,189	1,874,097	1,476,755	422,525	1,899,280
2031	1,438,587	412,283	1,850,870	1,459,496	417,930	1,877,426	1,480,690	423,651	1,904,341
2032	1,445,965	414,397	1,860,362	1,468,266	420,442	1,888,707	1,490,891	426,569	1,917,460
2033	1,441,120	413,008	1,854,128	1,464,637	419,403	1,884,040	1,488,517	425,890	1,914,408
2034	1,442,399	413,375	1,855,774	1,467,236	420,147	1,887,383	1,492,480	427,024	1,919,504

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.49%	0.49%	0.49%	0.56%	0.56%	0.56%	0.63%	0.63%	0.63%
2017	-0.35%	-0.35%	-0.35%	-0.28%	-0.28%	-0.28%	-0.20%	-0.20%	-0.20%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.51%	0.51%	0.51%	0.59%	0.59%	0.59%	0.67%	0.67%	0.67%
2021	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.52%	0.52%	0.52%	0.61%	0.61%	0.61%	0.70%	0.70%	0.70%
2025	-0.33%	-0.33%	-0.33%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.52%	0.52%	0.52%	0.61%	0.61%	0.61%	0.70%	0.70%	0.70%
2029	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.51%	0.51%	0.51%	0.60%	0.60%	0.60%	0.69%	0.69%	0.69%
2033	-0.34%	-0.34%	-0.34%	-0.25%	-0.25%	-0.25%	-0.16%	-0.16%	-0.16%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,114	17,632	18,747	1,114	17,644	18,759	1,114	17,656	18,771
2016	1,120	17,640	18,759	1,121	17,664	18,784	1,121	17,688	18,809
2017	1,116	17,657	18,773	1,117	17,694	18,812	1,119	17,731	18,850
2018	1,117	17,671	18,788	1,119	17,722	18,841	1,122	17,773	18,894
2019	1,118	17,685	18,803	1,121	17,751	18,872	1,124	17,816	18,941
2020	1,123	17,695	18,819	1,128	17,775	18,903	1,132	17,856	18,988
2021	1,120	17,715	18,835	1,125	17,811	18,936	1,130	17,907	19,037
2022	1,121	17,731	18,852	1,127	17,842	18,969	1,133	17,954	19,087
2023	1,121	17,747	18,868	1,129	17,874	19,003	1,136	18,002	19,138
2024	1,127	17,758	18,885	1,136	17,902	19,037	1,144	18,046	19,190
2025	1,124	17,779	18,902	1,133	17,938	19,071	1,142	18,099	19,241
2026	1,125	17,795	18,919	1,135	17,971	19,106	1,145	18,149	19,294
2027	1,126	17,811	18,936	1,137	18,003	19,140	1,148	18,198	19,346
2028	1,131	17,822	18,953	1,144	18,031	19,175	1,156	18,242	19,398
2029	1,128	17,843	18,970	1,141	18,068	19,208	1,155	18,295	19,450
2030	1,129	17,858	18,987	1,143	18,099	19,242	1,158	18,343	19,501
2031	1,130	17,874	19,004	1,145	18,131	19,276	1,161	18,392	19,553
2032	1,135	17,885	19,020	1,152	18,158	19,310	1,169	18,435	19,604
2033	1,132	17,906	19,037	1,149	18,195	19,344	1,167	18,489	19,656
2034	1,133	17,921	19,054	1,151	18,227	19,378	1,170	18,538	19,708

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.49%	0.04%	0.07%	0.56%	0.11%	0.14%	0.63%	0.18%	0.21%
2017	-0.35%	0.10%	0.07%	-0.28%	0.17%	0.15%	-0.20%	0.25%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.51%	0.06%	0.08%	0.59%	0.14%	0.17%	0.67%	0.22%	0.25%
2021	-0.34%	0.11%	0.09%	-0.25%	0.20%	0.17%	-0.16%	0.29%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.52%	0.06%	0.09%	0.61%	0.15%	0.18%	0.70%	0.25%	0.27%
2025	-0.33%	0.12%	0.09%	-0.25%	0.21%	0.18%	-0.16%	0.29%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.52%	0.06%	0.09%	0.61%	0.15%	0.18%	0.70%	0.24%	0.27%
2029	-0.34%	0.12%	0.09%	-0.25%	0.20%	0.18%	-0.16%	0.29%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.51%	0.06%	0.09%	0.60%	0.15%	0.18%	0.69%	0.24%	0.26%
2033	-0.34%	0.12%	0.09%	-0.25%	0.20%	0.18%	-0.16%	0.29%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	584,079	1,241,758	1,825,836	584,452	1,242,553	1,827,005	584,826	1,243,348	1,828,174
2016	587,346	1,247,501	1,834,846	588,124	1,249,153	1,837,276	588,902	1,250,806	1,839,708
2017	584,905	1,243,516	1,828,421	586,108	1,246,072	1,832,181	587,312	1,248,633	1,835,945
2018	585,361	1,244,484	1,829,844	587,020	1,248,012	1,835,032	588,684	1,251,548	1,840,232
2019	585,838	1,245,498	1,831,336	587,977	1,250,046	1,838,024	590,123	1,254,608	1,844,731
2020	589,201	1,251,440	1,840,641	591,843	1,257,052	1,848,894	594,494	1,262,684	1,857,178
2021	586,833	1,247,614	1,834,446	589,976	1,254,295	1,844,270	593,133	1,261,007	1,854,139
2022	587,348	1,248,710	1,836,058	591,012	1,256,499	1,847,511	594,696	1,264,331	1,859,027
2023	587,868	1,249,815	1,837,683	592,058	1,258,723	1,850,781	596,275	1,267,687	1,863,962
2024	591,289	1,255,875	1,847,163	596,043	1,265,973	1,862,015	600,831	1,276,143	1,876,975
2025	588,926	1,252,064	1,840,990	594,190	1,263,256	1,857,446	599,497	1,274,538	1,874,035
2026	589,461	1,253,201	1,842,662	595,269	1,265,550	1,860,819	601,130	1,278,010	1,879,140
2027	589,993	1,254,332	1,844,325	596,344	1,267,834	1,864,177	602,757	1,281,469	1,884,227
2028	593,422	1,260,406	1,853,827	600,349	1,275,119	1,875,468	607,351	1,289,992	1,897,343
2029	591,045	1,256,568	1,847,613	598,471	1,272,356	1,870,827	605,984	1,288,329	1,894,314
2030	591,561	1,257,666	1,849,228	599,517	1,274,580	1,874,097	607,573	1,291,707	1,899,280
2031	592,087	1,258,783	1,850,870	600,582	1,276,844	1,877,426	609,192	1,295,149	1,904,341
2032	595,513	1,264,848	1,860,362	604,587	1,284,120	1,888,707	613,791	1,303,669	1,917,460
2033	593,129	1,260,999	1,854,128	602,698	1,281,342	1,884,040	612,412	1,301,995	1,914,408
2034	593,655	1,262,118	1,855,774	603,767	1,283,616	1,887,383	614,042	1,305,461	1,919,504

Annual Change

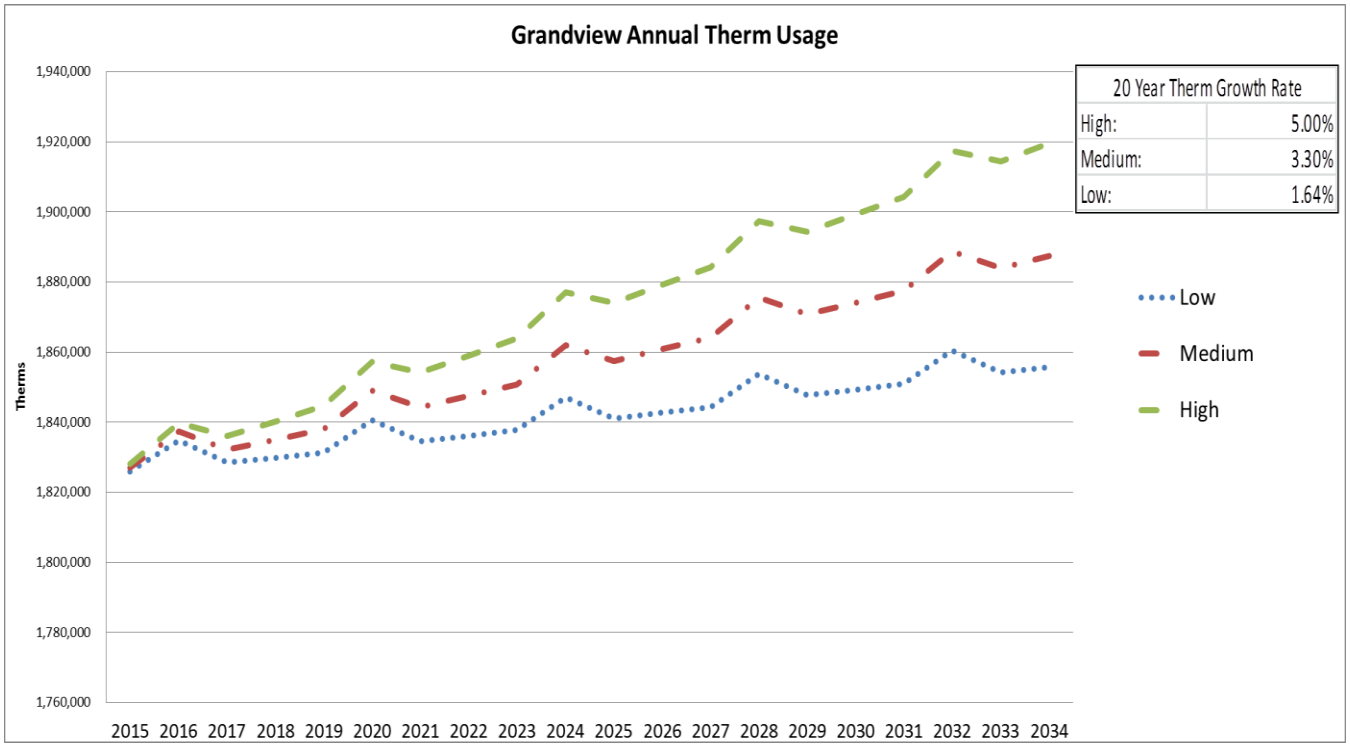
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.46%	0.49%	0.63%	0.53%	0.56%	0.70%	0.60%	0.63%
2017	-0.42%	-0.32%	-0.35%	-0.34%	-0.25%	-0.28%	-0.27%	-0.17%	-0.20%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.57%	0.48%	0.51%	0.66%	0.56%	0.59%	0.74%	0.64%	0.67%
2021	-0.40%	-0.31%	-0.34%	-0.32%	-0.22%	-0.25%	-0.23%	-0.13%	-0.16%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.58%	0.48%	0.52%	0.67%	0.58%	0.61%	0.76%	0.67%	0.70%
2025	-0.40%	-0.30%	-0.33%	-0.31%	-0.21%	-0.25%	-0.22%	-0.13%	-0.16%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.58%	0.48%	0.52%	0.67%	0.57%	0.61%	0.76%	0.67%	0.70%
2029	-0.40%	-0.30%	-0.34%	-0.31%	-0.22%	-0.25%	-0.23%	-0.13%	-0.16%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.58%	0.48%	0.51%	0.67%	0.57%	0.60%	0.75%	0.66%	0.69%
2033	-0.40%	-0.30%	-0.34%	-0.31%	-0.22%	-0.25%	-0.22%	-0.13%	-0.16%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

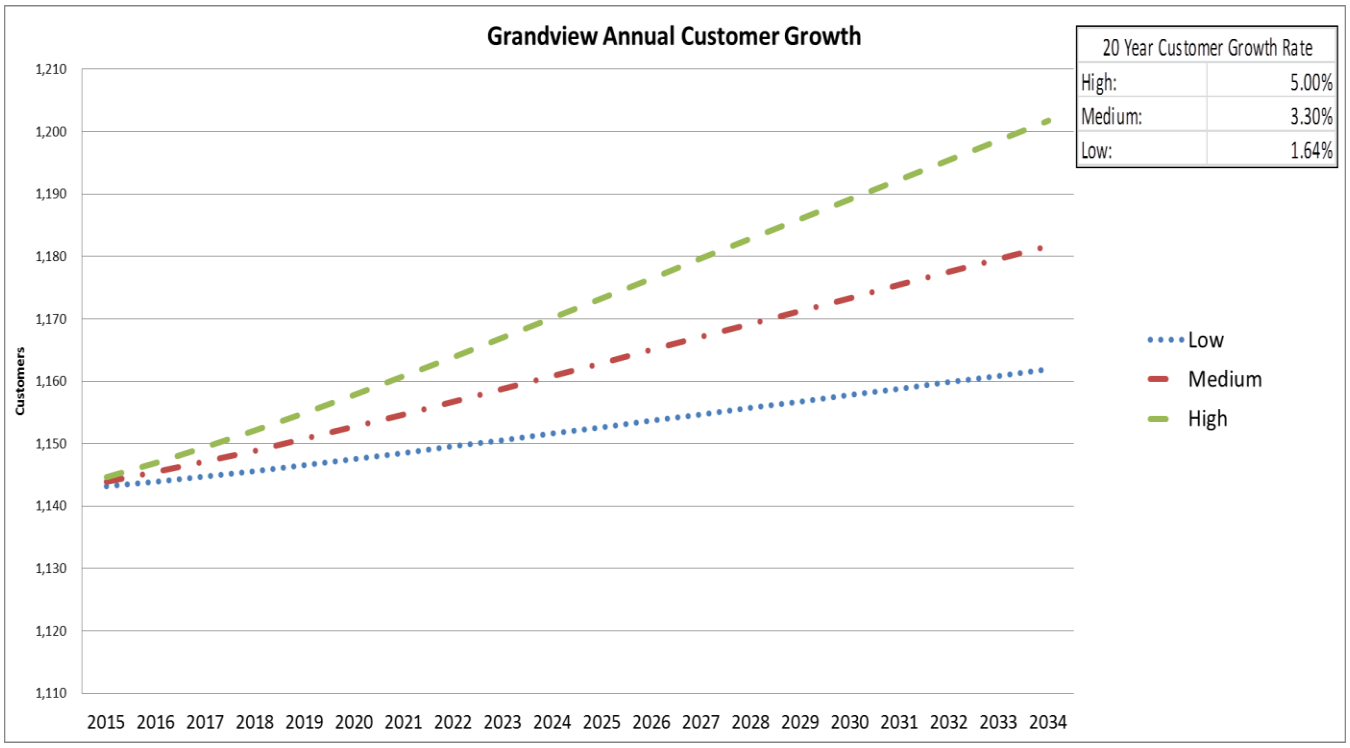
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	951	192	1,143	952	192	1,144	952	192	1,145
2016	952	192	1,144	953	193	1,145	954	193	1,147
2017	952	192	1,145	954	193	1,147	956	193	1,149
2018	953	193	1,146	956	193	1,149	958	194	1,152
2019	954	193	1,147	957	193	1,151	961	194	1,155
2020	955	193	1,148	959	194	1,153	963	195	1,158
2021	955	193	1,149	961	194	1,155	966	195	1,161
2022	956	193	1,150	962	194	1,157	968	196	1,164
2023	957	193	1,151	964	195	1,159	971	196	1,167
2024	958	194	1,152	966	195	1,161	973	197	1,170
2025	959	194	1,153	967	196	1,163	976	197	1,173
2026	960	194	1,154	969	196	1,165	979	198	1,177
2027	961	194	1,155	971	196	1,167	981	198	1,180
2028	961	194	1,156	973	197	1,169	984	199	1,183
2029	962	194	1,157	974	197	1,171	987	199	1,186
2030	963	195	1,158	976	197	1,173	989	200	1,189
2031	964	195	1,159	978	198	1,175	992	200	1,192
2032	965	195	1,160	980	198	1,178	994	201	1,195
2033	966	195	1,161	981	198	1,180	997	202	1,199
2034	967	195	1,162	983	199	1,182	1,000	202	1,202

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


Grandview Annual Therm Usage
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Therms
1,940,000
1,920,000
1,900,000
1,880,000
1,860,000
1,840,000
1,820,000
1,800,000
1,780,000
1,760,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Grandview Annual Customer Growth
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Customers
1,210
1,200
1,190
1,180
1,170
1,160
1,150
1,140
1,130
1,120
1,110
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zillah (Toppenish)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,825,230	1,060,423	3,885,653	2,828,488	1,060,423	3,888,911	2,831,746	1,060,423	3,892,170
2016	2,840,263	1,066,066	3,906,329	2,846,037	1,067,002	3,913,040	2,851,817	1,067,939	3,919,756
2017	2,830,326	1,062,336	3,892,662	2,838,697	1,064,250	3,902,948	2,847,084	1,066,167	3,913,251
2018	2,833,064	1,063,364	3,896,428	2,844,189	1,066,309	3,910,499	2,855,347	1,069,261	3,924,607
2019	2,835,901	1,064,428	3,900,329	2,849,885	1,068,445	3,918,329	2,863,923	1,072,473	3,936,396
2020	2,851,373	1,070,236	3,921,608	2,868,335	1,075,362	3,943,697	2,885,381	1,080,508	3,965,889
2021	2,841,755	1,066,625	3,908,380	2,861,656	1,072,858	3,934,514	2,881,677	1,079,121	3,960,797
2022	2,844,761	1,067,754	3,912,514	2,867,710	1,075,128	3,942,838	2,890,821	1,082,545	3,973,366
2023	2,847,783	1,068,888	3,916,671	2,873,803	1,077,412	3,951,215	2,900,034	1,085,995	3,986,029
2024	2,863,515	1,074,793	3,938,308	2,892,803	1,084,535	3,977,338	2,922,360	1,094,356	4,016,716
2025	2,853,902	1,071,185	3,925,087	2,886,161	1,082,045	3,968,206	2,918,750	1,093,004	4,011,754
2026	2,856,984	1,072,341	3,929,325	2,892,393	1,084,381	3,976,774	2,928,204	1,096,544	4,024,748
2027	2,860,048	1,073,492	3,933,540	2,898,598	1,086,708	3,985,306	2,937,627	1,100,073	4,037,699
2028	2,875,812	1,079,408	3,955,220	2,917,688	1,093,865	4,011,553	2,960,129	1,108,499	4,068,629
2029	2,866,111	1,075,767	3,941,878	2,910,893	1,091,317	4,002,210	2,956,328	1,107,076	4,063,403
2030	2,869,093	1,076,886	3,945,979	2,916,950	1,093,588	4,010,538	2,965,555	1,110,531	4,076,086
2031	2,872,112	1,078,020	3,950,132	2,923,090	1,095,890	4,018,981	2,974,919	1,114,038	4,088,957
2032	2,887,858	1,083,930	3,971,788	2,942,169	1,103,043	4,045,211	2,997,443	1,122,473	4,119,916
2033	2,878,102	1,080,268	3,958,371	2,935,289	1,100,464	4,035,753	2,993,551	1,121,015	4,114,567
2034	2,881,116	1,081,399	3,962,515	2,941,436	1,102,768	4,044,205	3,002,955	1,124,537	4,127,492

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.53%	0.53%	0.62%	0.62%	0.62%	0.71%	0.71%	0.71%
2017	-0.35%	-0.35%	-0.35%	-0.26%	-0.26%	-0.26%	-0.17%	-0.17%	-0.17%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.55%	0.55%	0.55%	0.65%	0.65%	0.65%	0.75%	0.75%	0.75%
2021	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.55%	0.55%	0.55%	0.66%	0.66%	0.66%	0.77%	0.77%	0.77%
2025	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.12%	-0.12%	-0.12%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.55%	0.55%	0.55%	0.66%	0.66%	0.66%	0.77%	0.77%	0.77%
2029	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.55%	0.55%	0.55%	0.65%	0.65%	0.65%	0.76%	0.76%	0.76%
2033	-0.34%	-0.34%	-0.34%	-0.23%	-0.23%	-0.23%	-0.13%	-0.13%	-0.13%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,905	41,633	44,539	2,905	41,671	44,576	2,905	41,708	44,613
2016	2,921	41,657	44,578	2,923	41,731	44,654	2,926	41,805	44,731
2017	2,911	41,708	44,619	2,916	41,821	44,737	2,921	41,934	44,855
2018	2,913	41,749	44,662	2,921	41,902	44,823	2,929	42,056	44,985
2019	2,916	41,791	44,707	2,927	41,986	44,913	2,938	42,182	45,120
2020	2,932	41,820	44,752	2,946	42,058	45,004	2,960	42,297	45,258
2021	2,922	41,877	44,799	2,939	42,159	45,099	2,956	42,443	45,400
2022	2,925	41,921	44,847	2,946	42,249	45,194	2,966	42,578	45,544
2023	2,928	41,966	44,894	2,952	42,338	45,290	2,975	42,714	45,689
2024	2,945	41,998	44,943	2,971	42,417	45,388	2,998	42,839	45,838
2025	2,935	42,056	44,991	2,965	42,520	45,485	2,995	42,990	45,984
2026	2,938	42,101	45,039	2,971	42,612	45,583	3,004	43,129	46,133
2027	2,941	42,146	45,088	2,977	42,704	45,681	3,014	43,268	46,281
2028	2,957	42,178	45,136	2,997	42,782	45,779	3,037	43,393	46,430
2029	2,947	42,236	45,183	2,990	42,885	45,875	3,033	43,543	46,576
2030	2,950	42,280	45,230	2,996	42,974	45,970	3,043	43,679	46,721
2031	2,953	42,324	45,278	3,002	43,064	46,067	3,052	43,817	46,869
2032	2,970	42,355	45,325	3,022	43,141	46,163	3,075	43,940	47,015
2033	2,960	42,413	45,372	3,015	43,244	46,259	3,071	44,091	47,163
2034	2,963	42,457	45,420	3,021	43,335	46,356	3,081	44,230	47,311

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.06%	0.09%	0.62%	0.14%	0.18%	0.71%	0.23%	0.26%
2017	-0.35%	0.12%	0.09%	-0.26%	0.22%	0.18%	-0.17%	0.31%	0.28%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.55%	0.07%	0.10%	0.65%	0.17%	0.20%	0.75%	0.27%	0.30%
2021	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.35%	0.31%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.55%	0.08%	0.11%	0.66%	0.19%	0.22%	0.77%	0.29%	0.32%
2025	-0.34%	0.14%	0.11%	-0.23%	0.24%	0.21%	-0.12%	0.35%	0.32%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.55%	0.08%	0.11%	0.66%	0.18%	0.21%	0.77%	0.29%	0.32%
2029	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.35%	0.31%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.55%	0.07%	0.10%	0.65%	0.18%	0.21%	0.76%	0.28%	0.31%
2033	-0.34%	0.14%	0.10%	-0.23%	0.24%	0.21%	-0.13%	0.34%	0.31%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,135,542	2,750,111	3,885,653	1,136,494	2,752,417	3,888,911	1,137,446	2,754,723	3,892,170
2016	1,142,233	2,764,095	3,906,329	1,144,195	2,768,844	3,913,040	1,146,159	2,773,597	3,919,756
2017	1,137,590	2,755,072	3,892,662	1,140,596	2,762,351	3,902,948	1,143,607	2,769,644	3,913,251
2018	1,138,691	2,757,737	3,896,428	1,142,803	2,767,696	3,910,499	1,146,926	2,777,681	3,924,607
2019	1,139,831	2,760,498	3,900,329	1,145,091	2,773,238	3,918,329	1,150,371	2,786,025	3,936,396
2020	1,146,701	2,774,907	3,921,608	1,153,160	2,790,537	3,943,697	1,159,649	2,806,240	3,965,889
2021	1,142,184	2,766,196	3,908,380	1,149,821	2,784,693	3,934,514	1,157,502	2,803,295	3,960,797
2022	1,143,392	2,769,122	3,912,514	1,152,254	2,790,584	3,942,838	1,161,175	2,812,191	3,973,366
2023	1,144,607	2,772,064	3,916,671	1,154,702	2,796,513	3,951,215	1,164,876	2,821,153	3,986,029
2024	1,151,584	2,786,724	3,938,308	1,162,997	2,814,342	3,977,338	1,174,511	2,842,205	4,016,716
2025	1,147,066	2,778,021	3,925,087	1,159,667	2,808,539	3,968,206	1,172,394	2,839,360	4,011,754
2026	1,148,305	2,781,020	3,929,325	1,162,171	2,814,603	3,976,774	1,176,191	2,848,557	4,024,748
2027	1,149,536	2,784,003	3,933,540	1,164,664	2,820,641	3,985,306	1,179,976	2,857,723	4,037,699
2028	1,156,529	2,798,691	3,955,220	1,173,001	2,838,551	4,011,553	1,189,691	2,878,938	4,068,629
2029	1,151,973	2,789,905	3,941,878	1,169,605	2,832,606	4,002,210	1,187,488	2,875,916	4,063,403
2030	1,153,172	2,792,807	3,945,979	1,172,038	2,838,500	4,010,538	1,191,194	2,884,892	4,076,086
2031	1,154,385	2,795,747	3,950,132	1,174,506	2,844,475	4,018,981	1,194,955	2,894,001	4,088,957
2032	1,161,374	2,810,414	3,971,788	1,182,843	2,862,368	4,045,211	1,204,687	2,915,228	4,119,916
2033	1,156,793	2,801,578	3,958,371	1,179,407	2,856,346	4,035,753	1,202,440	2,912,127	4,114,567
2034	1,158,004	2,804,511	3,962,515	1,181,877	2,862,327	4,044,205	1,206,217	2,921,275	4,127,492

Annual Change

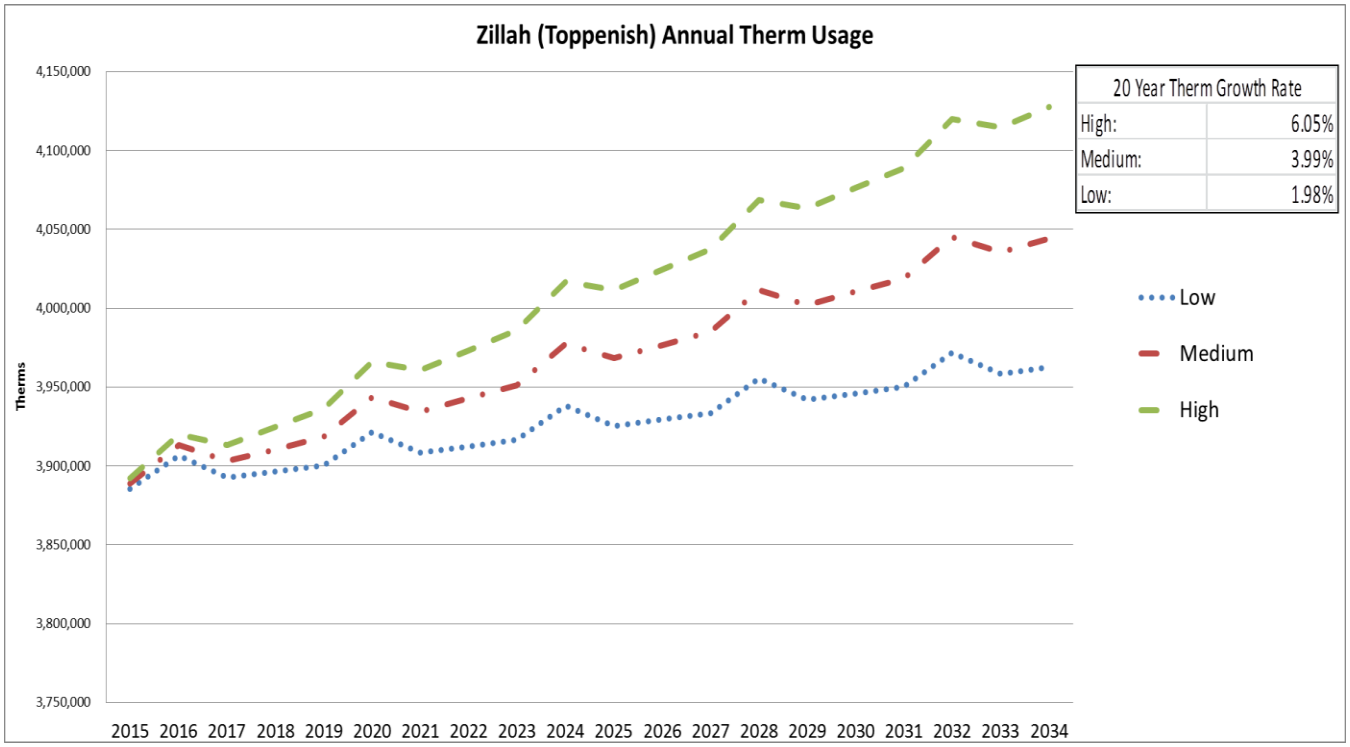
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.51%	0.53%	0.68%	0.60%	0.62%	0.77%	0.69%	0.71%
2017	-0.41%	-0.33%	-0.35%	-0.31%	-0.23%	-0.26%	-0.22%	-0.14%	-0.17%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.60%	0.52%	0.55%	0.70%	0.62%	0.65%	0.81%	0.73%	0.75%
2021	-0.39%	-0.31%	-0.34%	-0.29%	-0.21%	-0.23%	-0.19%	-0.10%	-0.13%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.61%	0.53%	0.55%	0.72%	0.64%	0.66%	0.83%	0.75%	0.77%
2025	-0.39%	-0.31%	-0.34%	-0.29%	-0.21%	-0.23%	-0.18%	-0.10%	-0.12%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.61%	0.53%	0.55%	0.72%	0.63%	0.66%	0.82%	0.74%	0.77%
2029	-0.39%	-0.31%	-0.34%	-0.29%	-0.21%	-0.23%	-0.19%	-0.10%	-0.13%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.61%	0.52%	0.55%	0.71%	0.63%	0.65%	0.81%	0.73%	0.76%
2033	-0.39%	-0.31%	-0.34%	-0.29%	-0.21%	-0.23%	-0.19%	-0.11%	-0.13%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%

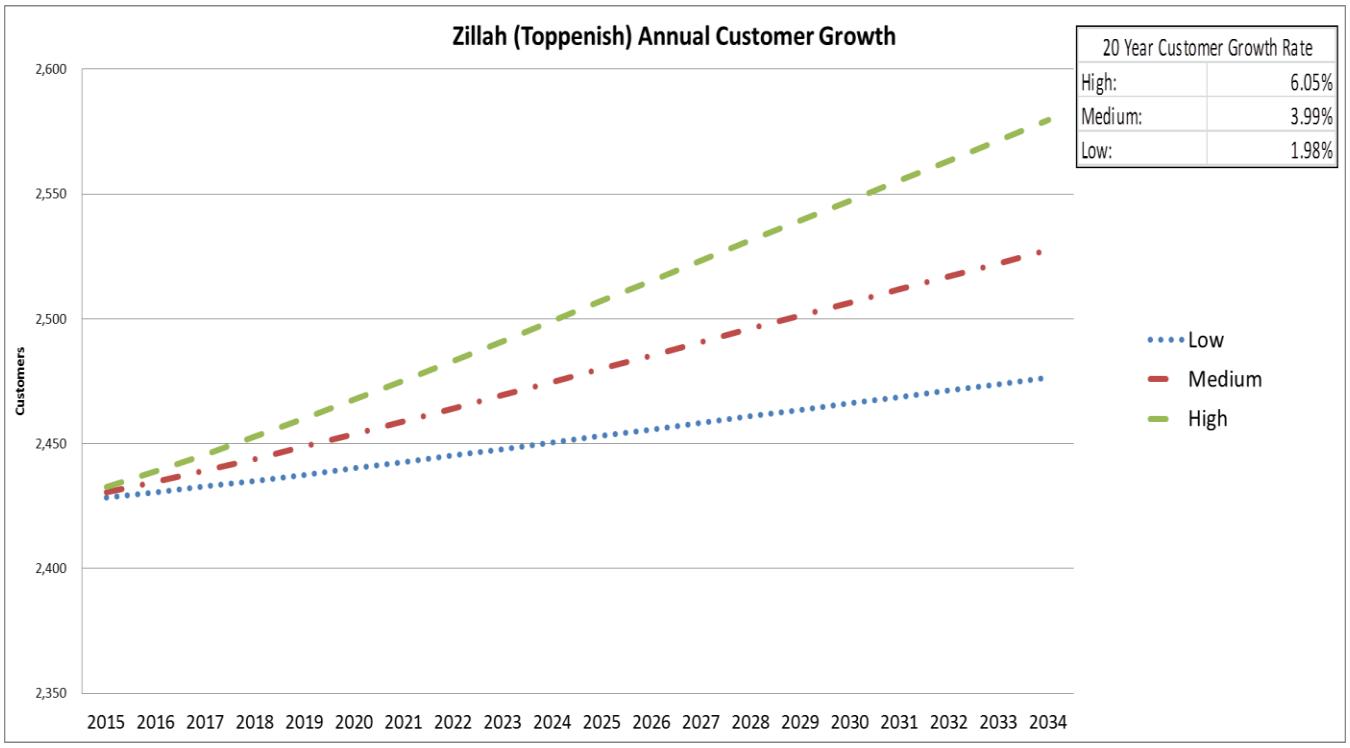
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,907	521	2,428	1,909	522	2,431	1,910	522	2,433
2016	1,909	522	2,431	1,912	523	2,435	1,915	524	2,439
2017	1,911	522	2,433	1,916	524	2,439	1,921	525	2,446
2018	1,912	523	2,435	1,919	525	2,444	1,926	527	2,453
2019	1,914	523	2,438	1,923	526	2,449	1,932	528	2,460
2020	1,916	524	2,440	1,927	527	2,454	1,938	530	2,468
2021	1,918	524	2,443	1,931	528	2,459	1,944	531	2,475
2022	1,920	525	2,445	1,935	529	2,464	1,950	533	2,483
2023	1,922	526	2,448	1,939	530	2,469	1,956	535	2,491
2024	1,924	526	2,451	1,943	531	2,475	1,963	537	2,499
2025	1,926	527	2,453	1,948	532	2,480	1,969	538	2,507
2026	1,929	527	2,456	1,952	534	2,485	1,975	540	2,515
2027	1,931	528	2,458	1,956	535	2,491	1,982	542	2,523
2028	1,933	528	2,461	1,960	536	2,496	1,988	543	2,532
2029	1,935	529	2,464	1,964	537	2,501	1,994	545	2,540
2030	1,937	529	2,466	1,968	538	2,507	2,001	547	2,547
2031	1,939	530	2,469	1,973	539	2,512	2,007	549	2,556
2032	1,941	531	2,471	1,977	540	2,517	2,013	550	2,564
2033	1,943	531	2,474	1,981	541	2,522	2,019	552	2,572
2034	1,945	532	2,477	1,985	543	2,528	2,026	554	2,580

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2017	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.28%	0.28%	0.28%
2018	0.10%	0.10%	0.10%	0.19%	0.19%	0.19%	0.29%	0.29%	0.29%
2019	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2020	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%	0.30%	0.30%	0.30%
2021	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2022	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2023	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2024	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2025	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2026	0.11%	0.11%	0.11%	0.22%	0.22%	0.22%	0.32%	0.32%	0.32%
2027	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2028	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2029	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2030	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2031	0.11%	0.11%	0.11%	0.21%	0.21%	0.21%	0.32%	0.32%	0.32%
2032	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2033	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%
2034	0.10%	0.10%	0.10%	0.21%	0.21%	0.21%	0.31%	0.31%	0.31%


Zillah (Toppenish) Annual Therm Usage
Therms
4,150,000
4,100,000
4,050,000
4,000,000
3,950,000
3,900,000
3,850,000
3,800,000
3,750,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.05%
Medium: 3.99%
Low: 1.98%
Low
Medium
High


Zillah (Toppenish) Annual Customer Growth
Customers
2,600
2,550
2,500
2,450
2,400
2,350
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.05%
Medium: 3.99%
Low: 1.98%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kalama #2

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	265,679	327,113	592,793	267,270	327,113	594,384	268,861	327,113	595,974
2016	266,396	327,996	594,392	268,712	328,878	597,591	271,037	329,761	600,798
2017	267,116	328,883	595,999	270,165	330,657	600,822	273,235	332,436	605,671
2018	267,840	329,774	597,615	271,630	332,449	604,079	275,457	335,139	610,596
2019	268,566	330,668	599,234	273,102	334,251	607,353	277,696	337,863	615,559
2020	269,290	331,559	600,850	274,575	336,054	610,628	279,943	340,596	620,539
2021	270,016	332,452	602,468	276,053	337,863	613,917	282,204	343,348	625,552
2022	270,738	333,342	604,081	277,531	339,672	617,204	284,470	346,105	630,575
2023	271,457	334,227	605,684	279,005	341,475	620,480	286,735	348,861	635,596
2024	272,174	335,110	607,283	280,478	343,279	623,757	289,007	351,625	640,632
2025	272,883	335,983	608,866	281,940	345,069	627,009	291,267	354,375	645,642
2026	273,590	336,853	610,443	283,401	346,856	630,257	293,530	357,128	650,658
2027	274,291	337,716	612,007	284,853	348,634	633,487	295,787	359,873	655,660
2028	274,985	338,571	613,557	286,295	350,398	636,693	298,033	362,606	660,638
2029	275,671	339,416	615,087	287,723	352,146	639,869	300,263	365,319	665,582
2030	276,350	340,251	616,600	289,139	353,879	643,019	302,479	368,016	670,495
2031	277,024	341,082	618,106	290,551	355,607	646,159	304,695	370,712	675,407
2032	277,691	341,903	619,595	291,951	357,320	649,271	306,896	373,390	680,286
2033	278,353	342,718	621,071	293,343	359,024	652,366	309,091	376,060	685,151
2034	279,010	343,526	622,536	294,726	360,717	655,444	311,278	378,721	689,999

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	896	5,550	6,446	896	5,568	6,464	896	5,585	6,481
2016	899	5,565	6,464	901	5,598	6,499	903	5,630	6,534
2017	901	5,580	6,481	906	5,628	6,534	911	5,676	6,587
2018	903	5,595	6,499	911	5,658	6,569	918	5,722	6,640
2019	906	5,611	6,517	916	5,689	6,605	926	5,768	6,694
2020	908	5,626	6,534	921	5,720	6,640	933	5,815	6,748
2021	911	5,641	6,552	926	5,751	6,676	941	5,862	6,803
2022	913	5,656	6,569	931	5,781	6,712	948	5,909	6,857
2023	916	5,671	6,587	936	5,812	6,748	956	5,956	6,912
2024	918	5,686	6,604	940	5,843	6,783	963	6,003	6,967
2025	921	5,701	6,621	945	5,873	6,819	971	6,050	7,021
2026	923	5,716	6,638	950	5,904	6,854	978	6,097	7,076
2027	925	5,730	6,655	955	5,934	6,889	986	6,144	7,130
2028	928	5,745	6,672	960	5,964	6,924	993	6,191	7,184
2029	930	5,759	6,689	965	5,994	6,958	1,001	6,237	7,238
2030	932	5,773	6,705	970	6,023	6,993	1,008	6,283	7,291
2031	934	5,787	6,722	974	6,053	7,027	1,016	6,329	7,345
2032	937	5,801	6,738	979	6,082	7,061	1,023	6,375	7,398
2033	939	5,815	6,754	984	6,111	7,094	1,030	6,421	7,451
2034	941	5,829	6,770	988	6,140	7,128	1,038	6,466	7,504

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	189,048	403,745	592,793	189,556	404,828	594,384	190,063	405,911	595,974
2016	189,558	404,834	594,392	190,578	407,012	597,591	191,601	409,197	600,798
2017	190,071	405,928	595,999	191,609	409,213	600,822	193,155	412,516	605,671
2018	190,586	407,029	597,615	192,648	411,431	604,079	194,726	415,870	610,596
2019	191,102	408,132	599,234	193,692	413,661	607,353	196,309	419,251	615,559
2020	191,618	409,232	600,850	194,736	415,892	610,628	197,897	422,642	620,539
2021	192,134	410,334	602,468	195,785	418,132	613,917	199,495	426,056	625,552
2022	192,648	411,433	604,081	196,833	420,370	617,204	201,098	429,478	630,575
2023	193,159	412,525	605,684	197,878	422,602	620,480	202,699	432,898	635,596
2024	193,669	413,614	607,283	198,923	424,834	623,757	204,305	436,327	640,632
2025	194,174	414,692	608,866	199,960	427,049	627,009	205,902	439,739	645,642
2026	194,677	415,766	610,443	200,996	429,261	630,257	207,502	443,156	650,658
2027	195,176	416,831	612,007	202,026	431,461	633,487	209,097	446,563	655,660
2028	195,670	417,887	613,557	203,049	433,645	636,693	210,685	449,953	660,638
2029	196,158	418,929	615,087	204,062	435,808	639,869	212,261	453,320	665,582
2030	196,641	419,960	616,600	205,066	437,953	643,019	213,828	456,667	670,495
2031	197,121	420,985	618,106	206,067	440,092	646,159	215,395	460,012	675,407
2032	197,596	421,999	619,595	207,060	442,211	649,271	216,951	463,335	680,286
2033	198,067	423,005	621,071	208,047	444,319	652,366	218,502	466,649	685,151
2034	198,534	424,003	622,536	209,028	446,415	655,444	220,048	469,951	689,999

Annual Change

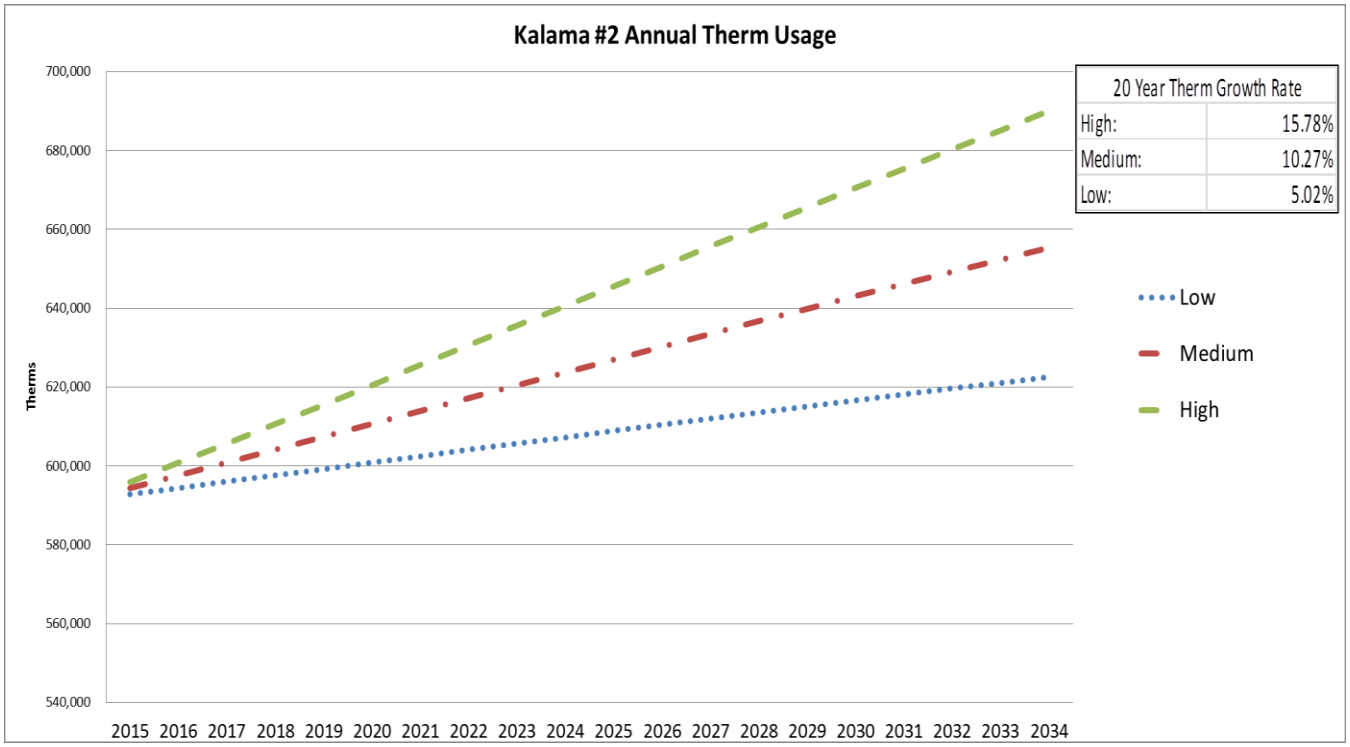
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%

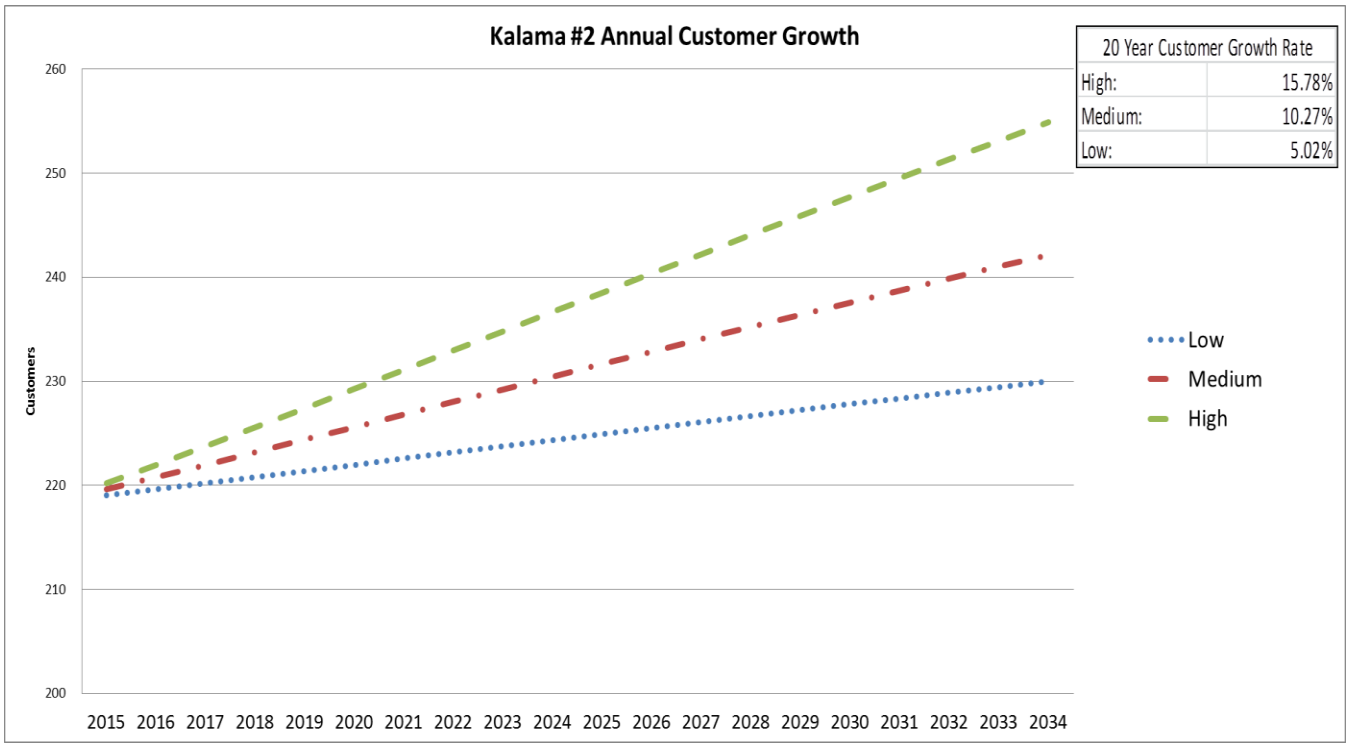
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	169	50	219	169	50	220	170	50	220
2016	169	50	220	170	51	221	171	51	222
2017	170	50	220	171	51	222	172	51	224
2018	170	51	221	172	51	223	174	52	226
2019	171	51	221	173	51	224	175	52	227
2020	171	51	222	174	52	226	177	53	229
2021	172	51	223	175	52	227	178	53	231
2022	172	51	223	176	52	228	180	53	233
2023	172	51	224	177	53	229	181	54	235
2024	173	51	224	178	53	230	182	54	237
2025	173	52	225	179	53	232	184	55	239
2026	174	52	226	179	53	233	185	55	240
2027	174	52	226	180	54	234	187	56	242
2028	175	52	227	181	54	235	188	56	244
2029	175	52	227	182	54	236	190	56	246
2030	176	52	228	183	54	238	191	57	248
2031	176	52	228	184	55	239	192	57	250
2032	176	52	229	185	55	240	194	58	251
2033	177	53	229	186	55	241	195	58	253
2034	177	53	230	187	56	242	196	58	255

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2017	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2018	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2019	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2020	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2021	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.81%	0.81%	0.81%
2022	0.27%	0.27%	0.27%	0.54%	0.54%	0.54%	0.80%	0.80%	0.80%
2023	0.27%	0.27%	0.27%	0.53%	0.53%	0.53%	0.80%	0.80%	0.80%
2024	0.26%	0.26%	0.26%	0.53%	0.53%	0.53%	0.79%	0.79%	0.79%
2025	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2026	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%


Kalama #2 Annual Therm Usage
Therms
700,000
680,000
660,000
640,000
620,000
600,000
580,000
560,000
540,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.78%
Medium: 10.27%
Low: 5.02%
Low
Medium
High


Kalama #2 Annual Customer Growth
Customers
260
250
240
230
220
210
200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.78%
Medium: 10.27%
Low: 5.02%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Lawrence

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	54,962	10,497	65,459	55,578	10,497	66,075	56,195	10,497	66,692
2016	55,737	10,645	66,382	56,886	10,744	67,629	58,045	10,843	68,888
2017	55,990	10,693	66,683	57,666	10,891	68,558	59,376	11,091	70,467
2018	56,500	10,791	67,291	58,718	11,090	69,808	61,000	11,394	72,395
2019	57,008	10,888	67,896	59,774	11,289	71,063	62,646	11,702	74,348
2020	57,783	11,036	68,819	61,118	11,543	72,661	64,612	12,069	76,681
2021	58,016	11,080	69,096	61,896	11,690	73,585	65,996	12,328	78,323
2022	58,515	11,175	69,690	62,961	11,891	74,852	67,699	12,646	80,344
2023	59,010	11,270	70,280	64,026	12,092	76,119	69,418	12,967	82,385
2024	59,782	11,417	71,199	65,401	12,352	77,753	71,491	13,354	84,845
2025	59,991	11,457	71,448	66,164	12,496	78,660	72,908	13,619	86,527
2026	60,476	11,550	72,026	67,234	12,698	79,932	74,677	13,949	88,626
2027	60,957	11,642	72,599	68,304	12,900	81,204	76,460	14,282	90,742
2028	61,723	11,788	73,511	69,700	13,164	82,864	78,624	14,686	93,310
2029	61,908	11,823	73,731	70,442	13,304	83,746	80,064	14,955	95,020
2030	62,377	11,913	74,290	71,510	13,506	85,015	81,884	15,295	97,179
2031	62,843	12,002	74,845	72,579	13,708	86,287	83,721	15,638	99,359
2032	63,603	12,147	75,750	73,993	13,975	87,968	85,971	16,059	102,029
2033	63,765	12,178	75,943	74,717	14,111	88,828	87,433	16,332	103,765
2034	64,222	12,265	76,487	75,786	14,313	90,100	89,310	16,683	105,993

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	1.41%	1.41%	2.35%	2.35%	2.35%	3.29%	3.29%	3.29%
2017	0.45%	0.45%	0.45%	1.37%	1.37%	1.37%	2.29%	2.29%	2.29%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.36%	1.36%	1.36%	2.25%	2.25%	2.25%	3.14%	3.14%	3.14%
2021	0.40%	0.40%	0.40%	1.27%	1.27%	1.27%	2.14%	2.14%	2.14%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.31%	1.31%	1.31%	2.15%	2.15%	2.15%	2.99%	2.99%	2.99%
2025	0.35%	0.35%	0.35%	1.17%	1.17%	1.17%	1.98%	1.98%	1.98%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.26%	1.26%	1.26%	2.04%	2.04%	2.04%	2.83%	2.83%	2.83%
2029	0.30%	0.30%	0.30%	1.07%	1.07%	1.07%	1.83%	1.83%	1.83%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.21%	1.21%	1.21%	1.95%	1.95%	1.95%	2.69%	2.69%	2.69%
2033	0.26%	0.26%	0.26%	0.98%	0.98%	0.98%	1.70%	1.70%	1.70%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	29	787	816	29	795	824	29	803	832
2016	29	795	824	29	810	839	30	825	855
2017	29	802	832	30	825	855	30	848	879
2018	30	810	839	30	840	870	31	872	903
2019	30	817	847	31	855	886	32	895	927
2020	30	824	854	32	870	902	33	919	952
2021	30	831	862	32	886	918	34	943	977
2022	31	838	869	33	901	933	35	967	1,002
2023	31	845	876	33	916	949	36	992	1,027
2024	31	852	884	34	931	965	37	1,016	1,053
2025	31	860	891	34	947	981	37	1,042	1,079
2026	32	866	898	35	962	997	38	1,067	1,105
2027	32	873	905	35	977	1,013	39	1,092	1,132
2028	32	880	912	36	992	1,028	40	1,118	1,158
2029	32	887	919	36	1,008	1,044	41	1,144	1,185
2030	33	894	926	37	1,023	1,060	42	1,170	1,212
2031	33	900	933	38	1,038	1,076	43	1,196	1,239
2032	33	907	940	38	1,054	1,092	44	1,222	1,266
2033	33	914	947	39	1,069	1,108	45	1,249	1,294
2034	34	920	954	39	1,084	1,124	46	1,276	1,322

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	0.92%	0.94%	2.35%	1.86%	1.87%	3.29%	2.79%	2.81%
2017	0.45%	0.94%	0.92%	1.37%	1.87%	1.85%	2.29%	2.79%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.36%	0.87%	0.89%	2.25%	1.75%	1.77%	3.14%	2.64%	2.66%
2021	0.40%	0.89%	0.87%	1.27%	1.76%	1.75%	2.14%	2.64%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.31%	0.82%	0.83%	2.15%	1.65%	1.67%	2.99%	2.49%	2.50%
2025	0.35%	0.84%	0.82%	1.17%	1.66%	1.64%	1.98%	2.48%	2.46%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.26%	0.77%	0.78%	2.04%	1.55%	1.57%	2.83%	2.33%	2.35%
2029	0.30%	0.79%	0.77%	1.07%	1.56%	1.54%	1.83%	2.33%	2.31%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.21%	0.72%	0.74%	1.95%	1.45%	1.47%	2.69%	2.19%	2.21%
2033	0.26%	0.74%	0.73%	0.98%	1.47%	1.45%	1.70%	2.20%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	44,096	21,363	65,459	44,511	21,564	66,075	44,926	21,765	66,692
2016	44,715	21,667	66,382	45,555	22,074	67,629	46,403	22,485	68,888
2017	44,920	21,762	66,683	46,183	22,374	68,558	47,470	22,997	70,467
2018	45,330	21,961	67,291	47,026	22,782	69,808	48,768	23,627	72,395
2019	45,738	22,158	67,896	47,871	23,192	71,063	50,084	24,264	74,348
2020	46,356	22,462	68,819	48,944	23,717	72,661	51,652	25,029	76,681
2021	46,546	22,550	69,096	49,570	24,015	73,585	52,762	25,561	78,323
2022	46,946	22,744	69,690	50,423	24,428	74,852	54,123	26,221	80,344
2023	47,344	22,936	70,280	51,277	24,842	76,119	55,498	26,887	82,385
2024	47,960	23,240	71,199	52,374	25,379	77,753	57,151	27,693	84,845
2025	48,130	23,318	71,448	52,988	25,671	78,660	58,288	28,239	86,527
2026	48,520	23,506	72,026	53,845	26,086	79,932	59,702	28,924	88,626
2027	48,906	23,693	72,599	54,703	26,502	81,204	61,128	29,614	90,742
2028	49,517	23,994	73,511	55,817	27,047	82,864	62,854	30,457	93,310
2029	49,668	24,063	73,731	56,415	27,331	83,746	64,009	31,010	95,020
2030	50,045	24,245	74,290	57,270	27,745	85,015	65,464	31,715	97,179
2031	50,419	24,426	74,845	58,126	28,160	86,287	66,933	32,427	99,359
2032	51,025	24,725	75,750	59,255	28,713	87,968	68,727	33,303	102,029
2033	51,159	24,785	75,943	59,838	28,990	88,828	69,900	33,864	103,765
2034	51,525	24,962	76,487	60,695	29,405	90,100	71,401	34,592	105,993

Annual Change

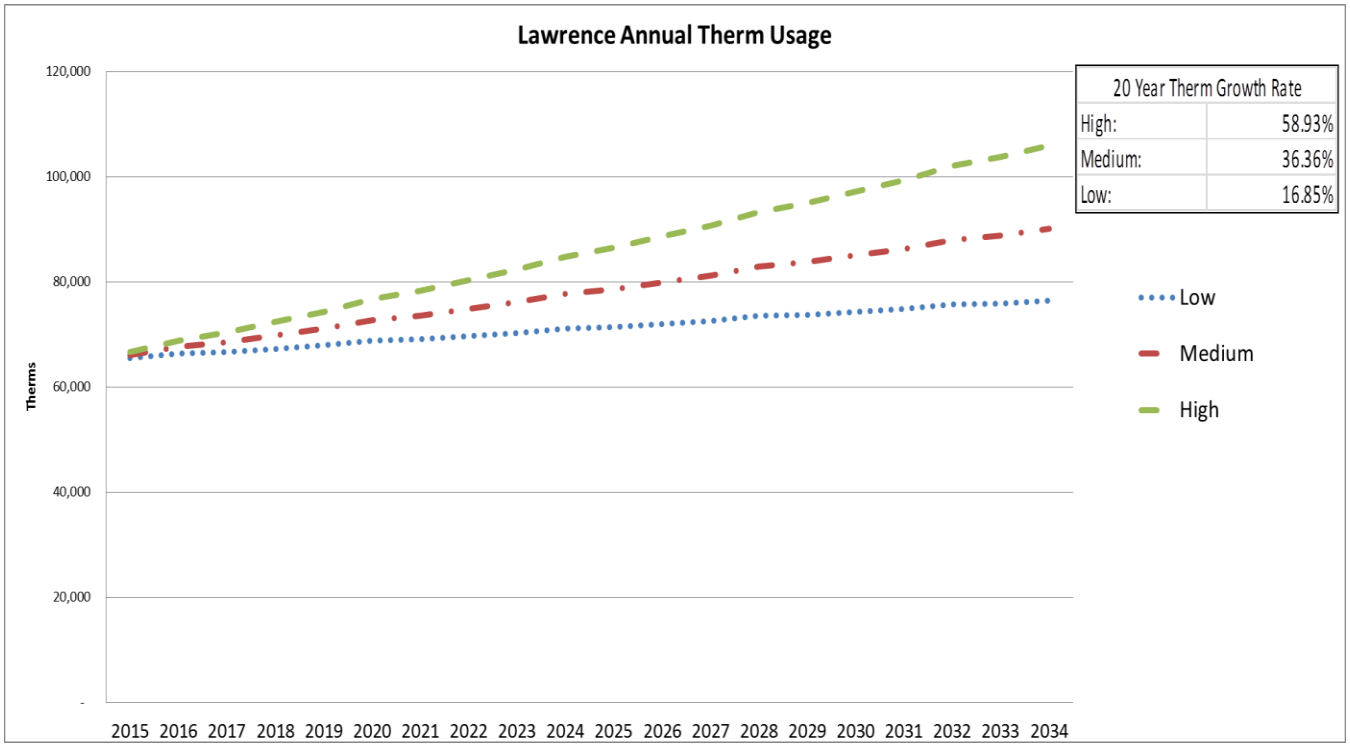
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.42%	1.41%	2.35%	2.37%	2.35%	3.29%	3.31%	3.29%
2017	0.46%	0.44%	0.45%	1.38%	1.36%	1.37%	2.30%	2.28%	2.29%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	1.35%	1.37%	1.36%	2.24%	2.26%	2.25%	3.13%	3.15%	3.14%
2021	0.41%	0.39%	0.40%	1.28%	1.26%	1.27%	2.15%	2.13%	2.14%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	1.30%	1.32%	1.31%	2.14%	2.16%	2.15%	2.98%	3.00%	2.99%
2025	0.36%	0.34%	0.35%	1.17%	1.15%	1.17%	1.99%	1.97%	1.98%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	1.25%	1.27%	1.26%	2.04%	2.06%	2.04%	2.82%	2.84%	2.83%
2029	0.31%	0.29%	0.30%	1.07%	1.05%	1.07%	1.84%	1.82%	1.83%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	1.20%	1.22%	1.21%	1.94%	1.96%	1.95%	2.68%	2.70%	2.69%
2033	0.26%	0.24%	0.26%	0.98%	0.96%	0.98%	1.71%	1.69%	1.70%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%

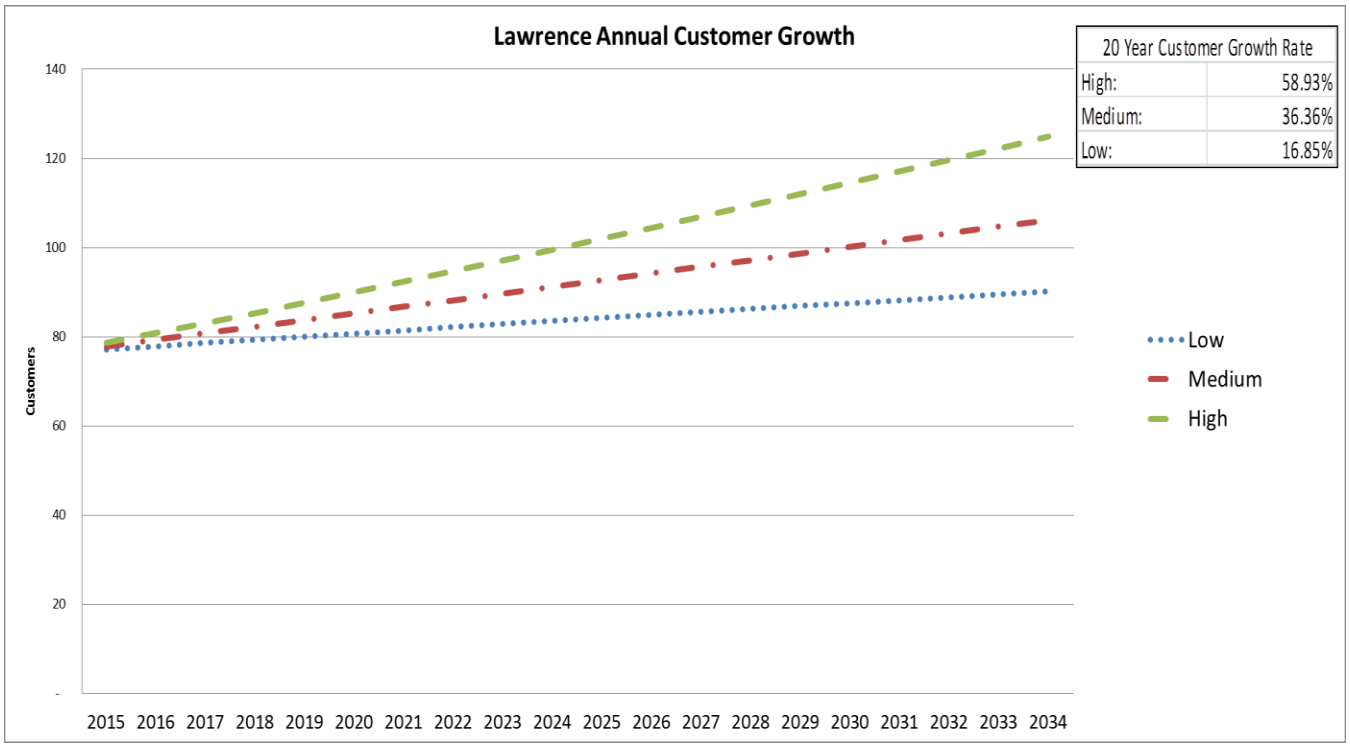
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	60	17	77	61	17	78	62	17	79
2016	61	17	78	62	17	79	63	18	81
2017	62	17	79	63	18	81	65	18	83
2018	62	17	79	64	18	82	67	19	85
2019	63	17	80	66	18	84	69	19	88
2020	63	18	81	67	18	85	70	20	90
2021	64	18	81	68	19	87	72	20	92
2022	64	18	82	69	19	88	74	21	95
2023	65	18	83	70	19	90	76	21	97
2024	65	18	84	71	20	91	78	22	100
2025	66	18	84	73	20	93	80	22	102
2026	66	18	85	74	20	94	82	23	104
2027	67	19	86	75	21	96	84	23	107
2028	68	19	86	76	21	97	86	24	109
2029	68	19	87	77	21	99	88	24	112
2030	69	19	88	78	22	100	90	25	115
2031	69	19	88	80	22	102	92	25	117
2032	70	19	89	81	22	103	94	26	120
2033	70	19	89	82	23	105	96	27	122
2034	71	20	90	83	23	106	98	27	125

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.94%	0.94%	0.94%	1.87%	1.87%	1.87%	2.81%	2.81%	2.81%
2017	0.92%	0.92%	0.92%	1.85%	1.85%	1.85%	2.77%	2.77%	2.77%
2018	0.91%	0.91%	0.91%	1.82%	1.82%	1.82%	2.74%	2.74%	2.74%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.77%	1.77%	1.77%	2.66%	2.66%	2.66%
2021	0.87%	0.87%	0.87%	1.75%	1.75%	1.75%	2.62%	2.62%	2.62%
2022	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2023	0.85%	0.85%	0.85%	1.69%	1.69%	1.69%	2.54%	2.54%	2.54%
2024	0.83%	0.83%	0.83%	1.67%	1.67%	1.67%	2.50%	2.50%	2.50%
2025	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2026	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.43%	2.43%	2.43%
2027	0.80%	0.80%	0.80%	1.59%	1.59%	1.59%	2.39%	2.39%	2.39%
2028	0.78%	0.78%	0.78%	1.57%	1.57%	1.57%	2.35%	2.35%	2.35%
2029	0.77%	0.77%	0.77%	1.54%	1.54%	1.54%	2.31%	2.31%	2.31%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.27%	2.27%	2.27%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.24%	2.24%	2.24%
2032	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2033	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2034	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%


Lawrence Annual Therm Usage
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 58.93%
Medium: 36.36%
Low: 16.85%
Low
Medium
High


Lawrence Annual Customer Growth
140
120
100
80
60
40
20
-
Customers
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 58.93%
Medium: 36.36%
Low: 16.85%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Moxee (Beauchene)

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,336,957	213,091	1,550,049	1,340,756	213,091	1,553,847	1,344,554	213,091	1,557,645
2016	1,344,784	214,339	1,559,123	1,351,946	214,870	1,566,815	1,359,125	215,401	1,574,526
2017	1,343,645	214,157	1,557,803	1,354,186	215,226	1,569,413	1,364,783	216,297	1,581,080
2018	1,347,062	214,702	1,561,764	1,361,074	216,321	1,577,394	1,375,194	217,947	1,593,142
2019	1,350,516	215,253	1,565,769	1,368,055	217,430	1,585,485	1,385,774	219,624	1,605,399
2020	1,358,535	216,531	1,575,065	1,379,698	219,281	1,598,979	1,401,136	222,059	1,623,195
2021	1,357,487	216,364	1,573,850	1,382,194	219,677	1,601,872	1,407,286	223,034	1,630,320
2022	1,360,997	216,923	1,577,920	1,389,342	220,814	1,610,156	1,418,203	224,764	1,642,967
2023	1,364,508	217,483	1,581,991	1,396,512	221,953	1,618,465	1,429,180	226,503	1,655,684
2024	1,372,641	218,779	1,591,420	1,408,462	223,852	1,632,314	1,445,121	229,030	1,674,151
2025	1,371,549	218,605	1,590,154	1,410,941	224,246	1,635,187	1,451,359	230,018	1,681,378
2026	1,375,069	219,166	1,594,235	1,418,184	225,397	1,643,581	1,462,535	231,790	1,694,324
2027	1,378,577	219,725	1,598,302	1,425,419	226,547	1,651,967	1,473,727	233,563	1,707,291
2028	1,386,726	221,024	1,607,749	1,437,477	228,464	1,665,940	1,489,948	236,134	1,726,082
2029	1,385,547	220,836	1,606,382	1,439,851	228,841	1,668,692	1,496,136	237,115	1,733,251
2030	1,389,002	221,387	1,610,388	1,447,032	229,982	1,677,015	1,507,329	238,889	1,746,218
2031	1,392,465	221,939	1,614,404	1,454,249	231,129	1,685,378	1,518,605	240,676	1,759,281
2032	1,400,606	223,236	1,623,842	1,466,362	233,055	1,699,416	1,535,025	243,278	1,778,303
2033	1,399,359	223,037	1,622,396	1,468,665	233,421	1,702,086	1,541,215	244,259	1,785,474
2034	1,402,804	223,587	1,626,391	1,475,898	234,570	1,710,468	1,552,599	246,063	1,798,663

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.59%	0.59%	0.83%	0.83%	0.83%	1.08%	1.08%	1.08%
2017	-0.08%	-0.08%	-0.08%	0.17%	0.17%	0.17%	0.42%	0.42%	0.42%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.59%	0.59%	0.59%	0.85%	0.85%	0.85%	1.11%	1.11%	1.11%
2021	-0.08%	-0.08%	-0.08%	0.18%	0.18%	0.18%	0.44%	0.44%	0.44%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.60%	0.60%	0.60%	0.86%	0.86%	0.86%	1.12%	1.12%	1.12%
2025	-0.08%	-0.08%	-0.08%	0.18%	0.18%	0.18%	0.43%	0.43%	0.43%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.59%	0.59%	0.59%	0.85%	0.85%	0.85%	1.10%	1.10%	1.10%
2029	-0.09%	-0.09%	-0.09%	0.17%	0.17%	0.17%	0.42%	0.42%	0.42%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.58%	0.58%	0.58%	0.83%	0.83%	0.83%	1.08%	1.08%	1.08%
2033	-0.09%	-0.09%	-0.09%	0.16%	0.16%	0.16%	0.40%	0.40%	0.40%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	584	13,304	13,888	584	13,339	13,922	584	13,373	13,956
2016	587	13,336	13,923	589	13,403	13,991	590	13,470	14,060
2017	587	13,371	13,958	590	13,472	14,062	593	13,574	14,166
2018	588	13,405	13,993	593	13,541	14,133	597	13,677	14,274
2019	590	13,439	14,029	596	13,610	14,206	602	13,782	14,384
2020	593	13,472	14,065	601	13,678	14,279	608	13,887	14,495
2021	593	13,509	14,102	602	13,751	14,353	611	13,996	14,607
2022	594	13,544	14,138	605	13,822	14,427	616	14,105	14,721
2023	596	13,579	14,174	608	13,893	14,501	621	14,214	14,835
2024	599	13,612	14,211	613	13,963	14,576	627	14,322	14,950
2025	599	13,649	14,248	614	14,037	14,651	630	14,435	15,065
2026	600	13,684	14,284	618	14,109	14,726	635	14,546	15,181
2027	602	13,719	14,321	621	14,181	14,801	640	14,657	15,297
2028	606	13,751	14,357	626	14,251	14,877	647	14,767	15,414
2029	605	13,788	14,393	627	14,324	14,951	650	14,880	15,530
2030	607	13,822	14,429	630	14,396	15,026	654	14,991	15,646
2031	608	13,857	14,465	633	14,468	15,101	659	15,104	15,763
2032	612	13,889	14,501	639	14,537	15,176	667	15,213	15,880
2033	611	13,925	14,537	640	14,611	15,251	669	15,328	15,998
2034	613	13,960	14,572	643	14,683	15,326	674	15,442	16,116

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.59%	0.23%	0.25%	0.83%	0.48%	0.50%	1.08%	0.73%	0.74%
2017	-0.08%	0.27%	0.25%	0.17%	0.52%	0.50%	0.42%	0.77%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.59%	0.24%	0.26%	0.85%	0.50%	0.51%	1.11%	0.75%	0.77%
2021	-0.08%	0.27%	0.26%	0.18%	0.53%	0.52%	0.44%	0.79%	0.78%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.60%	0.24%	0.26%	0.86%	0.50%	0.52%	1.12%	0.76%	0.78%
2025	-0.08%	0.27%	0.26%	0.18%	0.53%	0.51%	0.43%	0.78%	0.77%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.59%	0.24%	0.25%	0.85%	0.49%	0.51%	1.10%	0.75%	0.76%
2029	-0.09%	0.27%	0.25%	0.17%	0.52%	0.50%	0.42%	0.77%	0.75%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.58%	0.23%	0.25%	0.83%	0.48%	0.49%	1.08%	0.73%	0.74%
2033	-0.09%	0.26%	0.25%	0.16%	0.51%	0.49%	0.40%	0.76%	0.74%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	262,354	1,287,695	1,550,049	262,997	1,290,850	1,553,847	263,640	1,294,006	1,557,645
2016	264,168	1,294,956	1,559,123	265,471	1,301,344	1,566,815	266,778	1,307,749	1,574,526
2017	263,666	1,294,136	1,557,803	265,631	1,303,781	1,569,413	267,606	1,313,474	1,581,080
2018	264,337	1,297,427	1,561,764	266,982	1,310,412	1,577,394	269,648	1,323,494	1,593,142
2019	265,015	1,300,755	1,565,769	268,352	1,317,133	1,585,485	271,722	1,333,677	1,605,399
2020	266,869	1,308,196	1,575,065	270,921	1,328,058	1,598,979	275,024	1,348,171	1,623,195
2021	266,382	1,307,468	1,573,850	271,125	1,330,747	1,601,872	275,940	1,354,380	1,630,320
2022	267,071	1,310,849	1,577,920	272,527	1,337,629	1,610,156	278,081	1,364,886	1,642,967
2023	267,760	1,314,231	1,581,991	273,934	1,344,531	1,618,465	280,233	1,375,451	1,655,684
2024	269,640	1,321,780	1,591,420	276,569	1,355,745	1,632,314	283,657	1,390,494	1,674,151
2025	269,142	1,321,012	1,590,154	276,764	1,358,423	1,635,187	284,582	1,396,796	1,681,378
2026	269,833	1,324,402	1,594,235	278,185	1,365,397	1,643,581	286,773	1,407,551	1,694,324
2027	270,521	1,327,781	1,598,302	279,604	1,372,363	1,651,967	288,968	1,418,323	1,707,291
2028	272,407	1,335,343	1,607,749	282,266	1,383,674	1,665,940	292,456	1,433,626	1,726,082
2029	271,889	1,334,494	1,606,382	282,435	1,386,257	1,668,692	293,362	1,439,889	1,733,251
2030	272,567	1,337,822	1,610,388	283,843	1,393,171	1,677,015	295,557	1,450,662	1,746,218
2031	273,246	1,341,158	1,614,404	285,259	1,400,119	1,685,378	297,767	1,461,513	1,759,281
2032	275,133	1,348,709	1,623,842	287,938	1,411,478	1,699,416	301,304	1,476,999	1,778,303
2033	274,599	1,347,797	1,622,396	288,087	1,413,999	1,702,086	302,201	1,483,273	1,785,474
2034	275,275	1,351,116	1,626,391	289,506	1,420,962	1,710,468	304,433	1,494,230	1,798,663

Annual Change

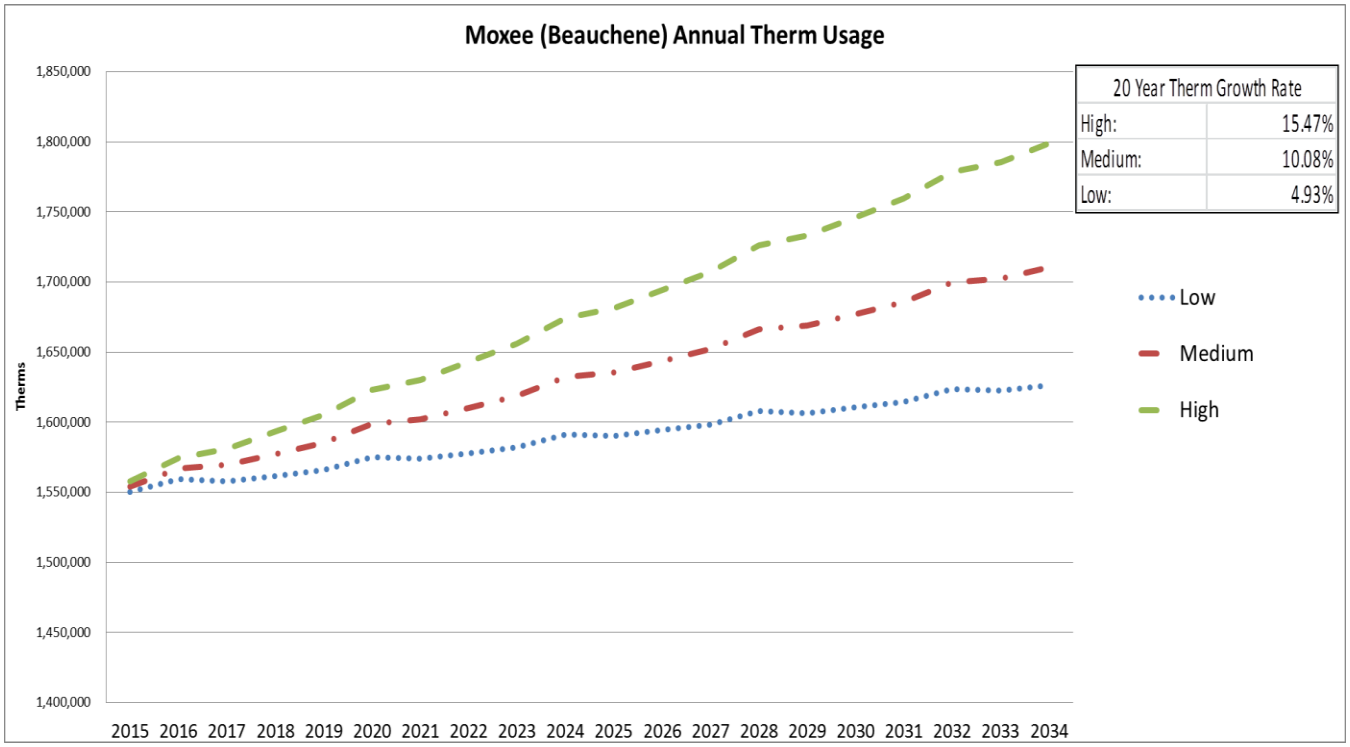
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.56%	0.59%	0.94%	0.81%	0.83%	1.19%	1.06%	1.08%
2017	-0.19%	-0.06%	-0.08%	0.06%	0.19%	0.17%	0.31%	0.44%	0.42%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.70%	0.57%	0.59%	0.96%	0.83%	0.85%	1.22%	1.09%	1.11%
2021	-0.18%	-0.06%	-0.08%	0.08%	0.20%	0.18%	0.33%	0.46%	0.44%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.70%	0.57%	0.60%	0.96%	0.83%	0.86%	1.22%	1.09%	1.12%
2025	-0.18%	-0.06%	-0.08%	0.07%	0.20%	0.18%	0.33%	0.45%	0.43%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.70%	0.57%	0.59%	0.95%	0.82%	0.85%	1.21%	1.08%	1.10%
2029	-0.19%	-0.06%	-0.09%	0.06%	0.19%	0.17%	0.31%	0.44%	0.42%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.69%	0.56%	0.58%	0.94%	0.81%	0.83%	1.19%	1.06%	1.08%
2033	-0.19%	-0.07%	-0.09%	0.05%	0.18%	0.16%	0.30%	0.42%	0.40%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%

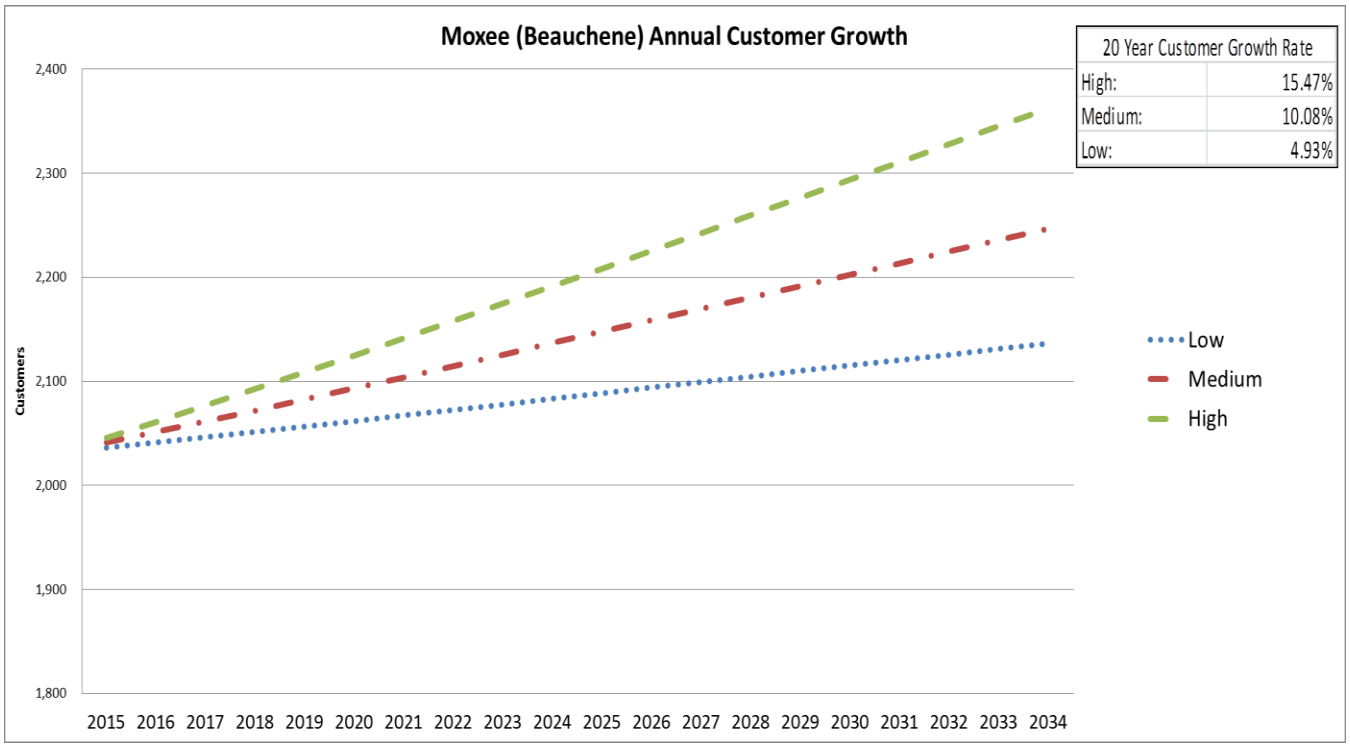
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,614	422	2,036	1,618	423	2,041	1,622	424	2,046
2016	1,618	423	2,041	1,626	425	2,051	1,634	427	2,061
2017	1,622	424	2,046	1,634	427	2,061	1,646	430	2,077
2018	1,626	425	2,051	1,643	429	2,072	1,659	434	2,093
2019	1,631	426	2,057	1,651	431	2,082	1,672	437	2,109
2020	1,635	427	2,062	1,660	434	2,093	1,685	440	2,125
2021	1,639	428	2,067	1,668	436	2,104	1,698	444	2,141
2022	1,643	429	2,073	1,677	438	2,115	1,711	447	2,158
2023	1,647	430	2,078	1,685	440	2,126	1,724	451	2,175
2024	1,652	432	2,083	1,694	443	2,137	1,738	454	2,192
2025	1,656	433	2,089	1,703	445	2,148	1,751	458	2,208
2026	1,660	434	2,094	1,712	447	2,159	1,764	461	2,225
2027	1,664	435	2,099	1,720	450	2,170	1,778	465	2,242
2028	1,669	436	2,105	1,729	452	2,181	1,791	468	2,260
2029	1,673	437	2,110	1,738	454	2,192	1,805	472	2,277
2030	1,677	438	2,115	1,746	456	2,203	1,818	475	2,294
2031	1,681	439	2,120	1,755	459	2,214	1,832	479	2,311
2032	1,685	440	2,126	1,764	461	2,225	1,846	482	2,328
2033	1,690	441	2,131	1,772	463	2,236	1,859	486	2,345
2034	1,694	443	2,136	1,781	465	2,247	1,873	489	2,363

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.74%	0.74%	0.74%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2021	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2022	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2023	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.77%	0.77%	0.77%
2024	0.26%	0.26%	0.26%	0.52%	0.52%	0.52%	0.78%	0.78%	0.78%
2025	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2026	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2027	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2028	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2029	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2030	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2031	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2032	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2033	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2034	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%


Moxee (Beauchene) Annual Therm Usage
20 Year Therm Growth Rate
High: 15.47%
Medium: 10.08%
Low: 4.93%
Therms
1,850,000
1,800,000
1,750,000
1,700,000
1,650,000
1,600,000
1,550,000
1,500,000
1,450,000
1,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Moxee (Beauchene) Annual Customer Growth
20 Year Customer Growth Rate
High: 15.47%
Medium: 10.08%
Low: 4.93%
Customers
2,400
2,300
2,200
2,100
2,000
1,900
1,800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Othello

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,137,738	741,254	1,878,991	1,144,626	741,254	1,885,879	1,151,514	741,254	1,892,767
2016	1,141,931	743,986	1,885,917	1,153,064	746,718	1,899,782	1,164,247	749,450	1,913,697
2017	1,146,184	746,757	1,892,941	1,161,653	752,280	1,913,933	1,177,256	757,824	1,935,080
2018	1,150,446	749,533	1,899,980	1,170,292	757,875	1,928,166	1,190,388	766,278	1,956,665
2019	1,154,767	752,348	1,907,115	1,179,082	763,567	1,942,649	1,203,800	774,911	1,978,711
2020	1,159,073	755,154	1,914,227	1,187,875	769,262	1,957,137	1,217,266	783,580	2,000,846
2021	1,163,438	757,998	1,921,436	1,196,823	775,056	1,971,878	1,231,019	792,433	2,023,452
2022	1,167,788	760,832	1,928,619	1,205,771	780,851	1,986,623	1,244,826	801,320	2,046,147
2023	1,172,133	763,663	1,935,796	1,214,745	786,662	2,001,408	1,258,723	810,266	2,068,989
2024	1,176,521	766,522	1,943,043	1,223,841	792,553	2,016,393	1,272,860	819,366	2,092,226
2025	1,180,873	769,357	1,950,229	1,232,893	798,415	2,031,308	1,286,982	828,457	2,115,440
2026	1,185,263	772,217	1,957,480	1,242,061	804,352	2,046,413	1,301,337	837,698	2,139,035
2027	1,189,631	775,063	1,964,694	1,251,215	810,280	2,061,495	1,315,724	846,959	2,162,683
2028	1,193,978	777,895	1,971,873	1,260,359	816,202	2,076,561	1,330,147	856,243	2,186,390
2029	1,198,332	780,731	1,979,063	1,269,551	822,154	2,091,705	1,344,698	865,610	2,210,308
2030	1,202,680	783,564	1,986,244	1,278,764	828,121	2,106,884	1,359,336	875,033	2,234,368
2031	1,207,007	786,384	1,993,391	1,287,967	834,080	2,122,047	1,374,010	884,479	2,258,489
2032	1,211,357	789,218	2,000,575	1,297,249	840,092	2,137,341	1,388,864	894,041	2,282,904
2033	1,215,685	792,037	2,007,722	1,306,518	846,094	2,152,612	1,403,749	903,622	2,307,371
2034	1,220,034	794,871	2,014,905	1,315,868	852,149	2,168,017	1,418,817	913,322	2,332,139

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,031	18,636	20,667	2,031	18,712	20,743	2,031	18,788	20,819
2016	2,038	18,705	20,743	2,046	18,850	20,896	2,053	18,996	21,049
2017	2,046	18,775	20,821	2,061	18,990	21,052	2,076	19,208	21,284
2018	2,054	18,845	20,898	2,076	19,132	21,208	2,099	19,422	21,522
2019	2,061	18,915	20,977	2,092	19,275	21,367	2,123	19,641	21,764
2020	2,069	18,986	21,055	2,108	19,419	21,527	2,147	19,861	22,007
2021	2,077	19,057	21,134	2,123	19,565	21,689	2,171	20,085	22,256
2022	2,084	19,129	21,213	2,139	19,712	21,851	2,195	20,310	22,506
2023	2,092	19,200	21,292	2,155	19,858	22,014	2,220	20,537	22,757
2024	2,100	19,272	21,372	2,171	20,007	22,178	2,245	20,768	23,013
2025	2,108	19,343	21,451	2,187	20,155	22,343	2,270	20,998	23,268
2026	2,116	19,415	21,530	2,204	20,305	22,509	2,295	21,232	23,527
2027	2,123	19,486	21,610	2,220	20,455	22,675	2,320	21,467	23,788
2028	2,131	19,558	21,689	2,236	20,604	22,840	2,346	21,702	24,048
2029	2,139	19,629	21,768	2,252	20,754	23,007	2,372	21,940	24,311
2030	2,147	19,700	21,847	2,269	20,905	23,174	2,397	22,179	24,576
2031	2,154	19,771	21,925	2,285	21,055	23,341	2,423	22,418	24,841
2032	2,162	19,842	22,004	2,302	21,207	23,509	2,449	22,660	25,110
2033	2,170	19,913	22,083	2,318	21,359	23,677	2,476	22,903	25,379
2034	2,178	19,984	22,162	2,335	21,512	23,846	2,502	23,149	25,651

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	628,393	1,250,598	1,878,991	630,697	1,255,183	1,885,879	633,000	1,259,767	1,892,767
2016	630,709	1,255,208	1,885,917	635,346	1,264,436	1,899,782	640,000	1,273,697	1,913,697
2017	633,058	1,259,883	1,892,941	640,079	1,273,854	1,913,933	647,151	1,287,929	1,935,080
2018	635,412	1,264,567	1,899,980	644,839	1,283,328	1,928,166	654,370	1,302,296	1,956,665
2019	637,799	1,269,317	1,907,115	649,682	1,292,967	1,942,649	661,743	1,316,969	1,978,711
2020	640,177	1,274,050	1,914,227	654,527	1,302,610	1,957,137	669,145	1,331,701	2,000,846
2021	642,588	1,278,848	1,921,436	659,457	1,312,421	1,971,878	676,705	1,346,747	2,023,452
2022	644,990	1,283,629	1,928,619	664,388	1,322,234	1,986,623	684,295	1,361,852	2,046,147
2023	647,390	1,288,406	1,935,796	669,333	1,332,075	2,001,408	691,934	1,377,054	2,068,989
2024	649,814	1,293,229	1,943,043	674,345	1,342,049	2,016,393	699,705	1,392,521	2,092,226
2025	652,217	1,298,012	1,950,229	679,333	1,351,976	2,031,308	707,469	1,407,971	2,115,440
2026	654,642	1,302,838	1,957,480	684,384	1,362,029	2,046,413	715,360	1,423,675	2,139,035
2027	657,055	1,307,639	1,964,694	689,428	1,372,067	2,061,495	723,268	1,439,414	2,162,683
2028	659,455	1,312,417	1,971,873	694,466	1,382,094	2,076,561	731,197	1,455,193	2,186,390
2029	661,860	1,317,203	1,979,063	699,531	1,392,174	2,091,705	739,196	1,471,112	2,210,308
2030	664,262	1,321,982	1,986,244	704,608	1,402,277	2,106,884	747,242	1,487,126	2,234,368
2031	666,652	1,326,739	1,993,391	709,678	1,412,369	2,122,047	755,309	1,503,180	2,258,489
2032	669,054	1,331,520	2,000,575	714,793	1,422,548	2,137,341	763,474	1,519,430	2,282,904
2033	671,445	1,336,277	2,007,722	719,900	1,432,712	2,152,612	771,657	1,535,715	2,307,371
2034	673,847	1,341,058	2,014,905	725,052	1,442,965	2,168,017	779,940	1,552,199	2,332,139

Annual Change

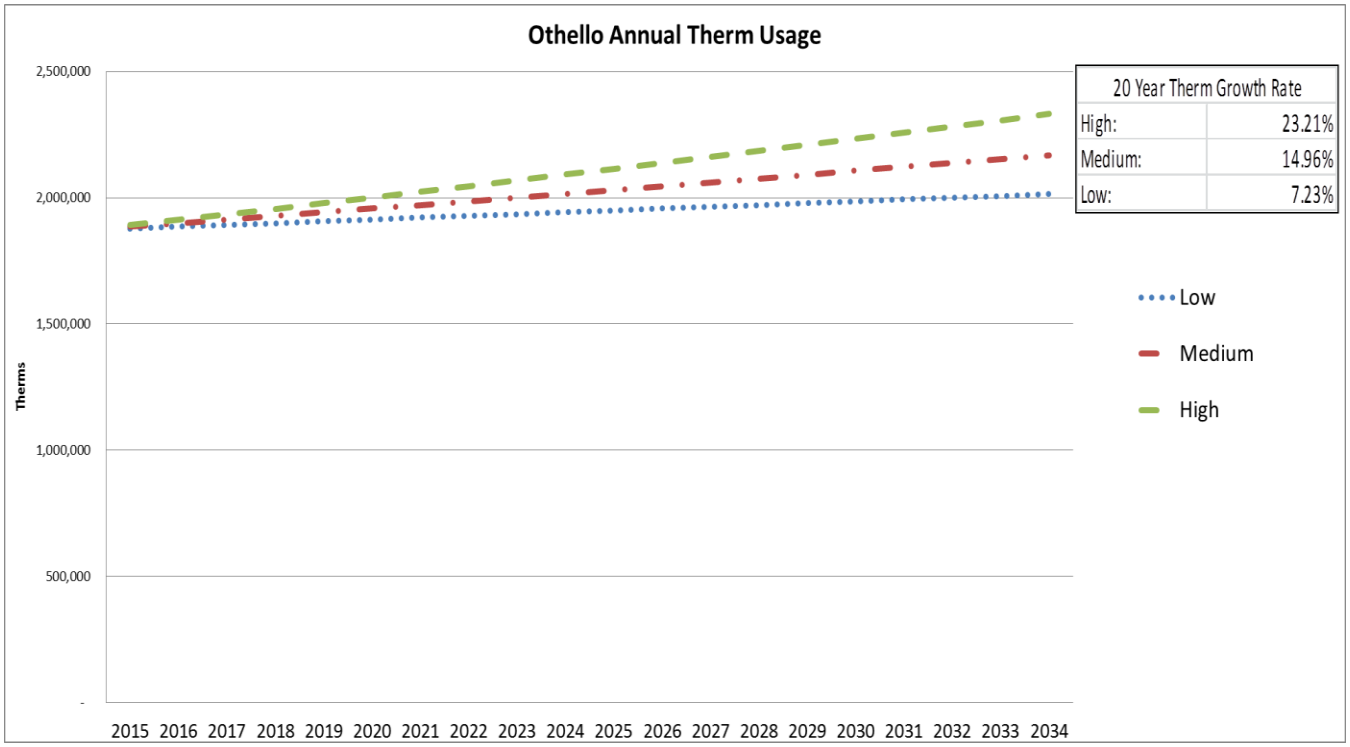
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.38%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%

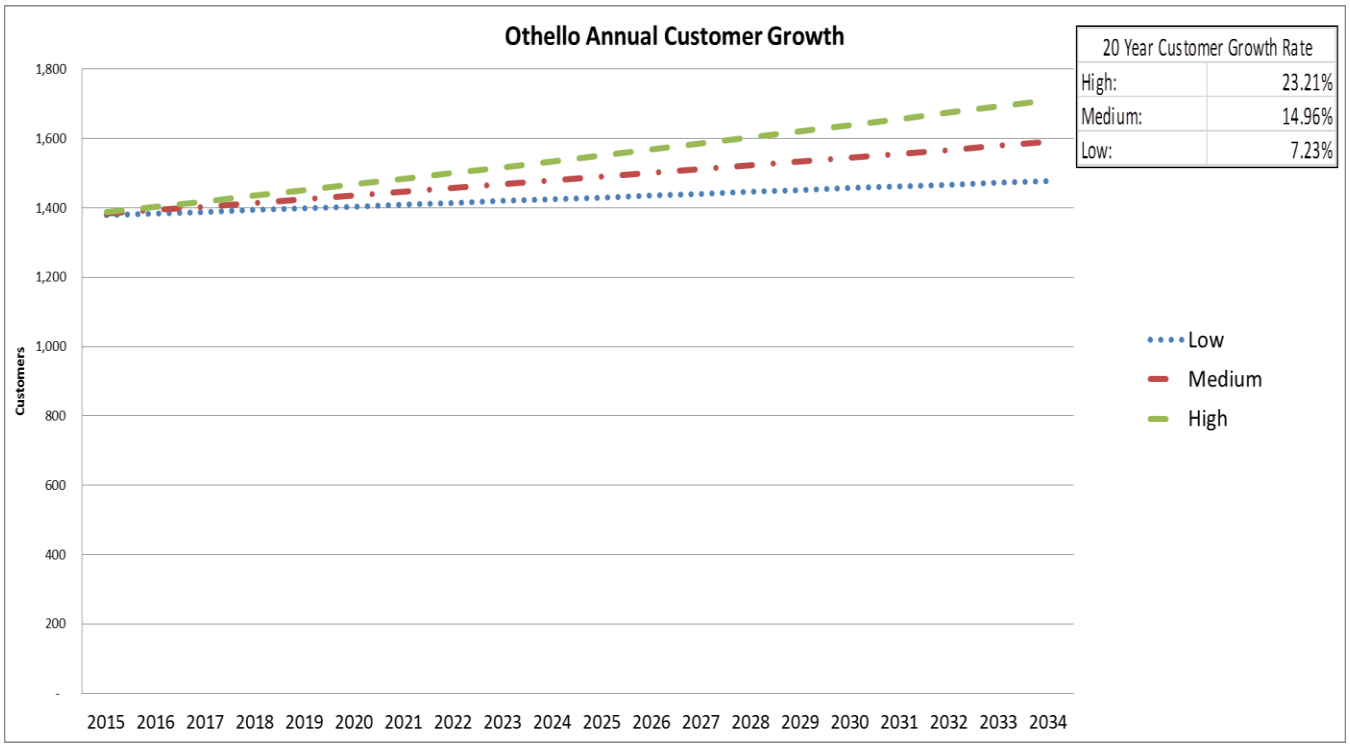
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,083	295	1,378	1,087	296	1,383	1,091	297	1,388
2016	1,087	296	1,383	1,095	298	1,394	1,103	300	1,404
2017	1,091	297	1,389	1,104	300	1,404	1,116	304	1,420
2018	1,095	298	1,394	1,112	303	1,414	1,128	307	1,435
2019	1,100	299	1,399	1,120	305	1,425	1,141	311	1,452
2020	1,104	301	1,404	1,128	307	1,436	1,154	314	1,468
2021	1,108	302	1,410	1,137	310	1,447	1,167	318	1,484
2022	1,112	303	1,415	1,145	312	1,457	1,180	321	1,501
2023	1,116	304	1,420	1,154	314	1,468	1,193	325	1,518
2024	1,120	305	1,425	1,163	317	1,479	1,206	328	1,535
2025	1,124	306	1,431	1,171	319	1,490	1,220	332	1,552
2026	1,129	307	1,436	1,180	321	1,501	1,233	336	1,569
2027	1,133	308	1,441	1,189	324	1,512	1,247	340	1,586
2028	1,137	310	1,447	1,197	326	1,523	1,261	343	1,604
2029	1,141	311	1,452	1,206	328	1,534	1,274	347	1,621
2030	1,145	312	1,457	1,215	331	1,546	1,288	351	1,639
2031	1,149	313	1,462	1,224	333	1,557	1,302	355	1,657
2032	1,153	314	1,468	1,232	336	1,568	1,316	358	1,675
2033	1,158	315	1,473	1,241	338	1,579	1,330	362	1,693
2034	1,162	316	1,478	1,250	340	1,590	1,345	366	1,711

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2017	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2018	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2019	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2020	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2021	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%
2022	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2023	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2024	0.37%	0.37%	0.37%	0.75%	0.75%	0.75%	1.12%	1.12%	1.12%
2025	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2026	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.12%	1.12%	1.12%
2027	0.37%	0.37%	0.37%	0.74%	0.74%	0.74%	1.11%	1.11%	1.11%
2028	0.37%	0.37%	0.37%	0.73%	0.73%	0.73%	1.10%	1.10%	1.10%
2029	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2030	0.36%	0.36%	0.36%	0.73%	0.73%	0.73%	1.09%	1.09%	1.09%
2031	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2032	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.08%	1.08%	1.08%
2033	0.36%	0.36%	0.36%	0.71%	0.71%	0.71%	1.07%	1.07%	1.07%
2034	0.36%	0.36%	0.36%	0.72%	0.72%	0.72%	1.07%	1.07%	1.07%


Othello Annual Therm Usage
Therms
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 23.21%
Medium: 14.96%
Low: 7.23%
Low
Medium
High


Othello Annual Customer Growth
Customers
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 23.21%
Medium: 14.96%
Low: 7.23%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

North Pasco

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,891,372	632,066	4,523,439	3,924,786	632,066	4,556,852	3,958,199	632,066	4,590,265
2016	3,940,319	640,016	4,580,335	4,003,167	644,689	4,647,856	4,066,508	649,362	4,715,870
2017	3,948,466	641,340	4,589,806	4,040,373	650,681	4,691,053	4,133,690	660,089	4,793,779
2018	3,976,842	645,949	4,622,791	4,098,445	660,033	4,758,478	4,222,811	674,321	4,897,131
2019	4,005,058	650,532	4,655,590	4,156,604	669,399	4,826,003	4,312,696	688,674	5,001,370
2020	4,053,971	658,477	4,712,448	4,236,576	682,278	4,918,854	4,425,976	706,763	5,132,740
2021	4,060,945	659,609	4,720,554	4,273,007	688,145	4,961,153	4,494,483	717,703	5,212,186
2022	4,088,601	664,102	4,752,703	4,331,209	697,519	5,028,728	4,586,311	732,366	5,318,677
2023	4,116,011	668,554	4,784,565	4,389,282	706,871	5,096,153	4,678,550	747,096	5,425,646
2024	4,164,766	676,473	4,841,238	4,470,503	719,951	5,190,455	4,796,281	765,896	5,562,177
2025	4,170,250	677,364	4,847,614	4,505,341	725,562	5,230,903	4,864,718	776,824	5,641,542
2026	4,197,047	681,716	4,878,764	4,563,242	734,886	5,298,128	4,958,496	791,799	5,750,295
2027	4,223,575	686,025	4,909,601	4,620,927	744,176	5,365,103	5,052,519	806,813	5,859,332
2028	4,271,917	693,877	4,965,794	4,702,744	757,352	5,460,096	5,173,607	826,149	5,999,756
2029	4,275,884	694,521	4,970,405	4,735,738	762,666	5,498,403	5,241,398	836,974	6,078,372
2030	4,301,634	698,704	5,000,338	4,792,777	771,852	5,564,628	5,336,092	852,095	6,188,187
2031	4,327,231	702,862	5,030,093	4,849,816	781,037	5,630,853	5,431,350	867,307	6,298,657
2032	4,375,133	710,642	5,085,775	4,932,040	794,279	5,726,320	5,555,393	887,115	6,442,508
2033	4,377,728	711,064	5,088,791	4,963,334	799,319	5,762,653	5,622,596	897,846	6,520,442
2034	4,402,711	715,122	5,117,833	5,019,985	808,442	5,828,428	5,718,860	913,218	6,632,078

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.26%	1.26%	1.26%	2.00%	2.00%	2.00%	2.74%	2.74%	2.74%
2017	0.21%	0.21%	0.21%	0.93%	0.93%	0.93%	1.65%	1.65%	1.65%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.22%	1.22%	1.22%	1.92%	1.92%	1.92%	2.63%	2.63%	2.63%
2021	0.17%	0.17%	0.17%	0.86%	0.86%	0.86%	1.55%	1.55%	1.55%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.18%	1.18%	1.18%	1.85%	1.85%	1.85%	2.52%	2.52%	2.52%
2025	0.13%	0.13%	0.13%	0.78%	0.78%	0.78%	1.43%	1.43%	1.43%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.14%	1.14%	1.14%	1.77%	1.77%	1.77%	2.40%	2.40%	2.40%
2029	0.09%	0.09%	0.09%	0.70%	0.70%	0.70%	1.31%	1.31%	1.31%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	1.11%	1.11%	1.70%	1.70%	1.70%	2.28%	2.28%	2.28%
2033	0.06%	0.06%	0.06%	0.63%	0.63%	0.63%	1.21%	1.21%	1.21%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1,732	70,628	72,360	1,732	71,163	72,894	1,732	71,697	73,429
2016	1,753	71,138	72,892	1,766	72,200	73,966	1,779	73,270	75,049
2017	1,757	71,664	73,421	1,783	73,258	75,041	1,808	74,876	76,684
2018	1,770	72,179	73,949	1,808	74,311	76,120	1,847	76,490	78,338
2019	1,782	72,691	74,474	1,834	75,366	77,200	1,887	78,118	80,005
2020	1,804	73,190	74,994	1,869	76,410	78,279	1,936	79,747	81,683
2021	1,807	73,706	75,513	1,885	77,476	79,362	1,966	81,411	83,377
2022	1,819	74,208	76,027	1,911	78,532	80,443	2,006	83,074	85,081
2023	1,832	74,705	76,537	1,937	79,585	81,521	2,047	84,745	86,792
2024	1,853	75,191	77,044	1,972	80,629	82,601	2,098	86,419	88,517
2025	1,856	75,690	77,545	1,988	81,689	83,677	2,128	88,117	90,246
2026	1,868	76,176	78,044	2,013	82,739	84,752	2,169	89,816	91,985
2027	1,880	76,657	78,537	2,039	83,785	85,824	2,210	91,519	93,730
2028	1,901	77,125	79,026	2,075	84,818	86,892	2,263	93,217	95,481
2029	1,903	77,607	79,510	2,089	85,866	87,956	2,293	94,940	97,233
2030	1,914	78,074	79,989	2,115	86,901	89,015	2,335	96,656	98,990
2031	1,926	78,539	80,464	2,140	87,935	90,075	2,376	98,381	100,757
2032	1,947	78,989	80,936	2,176	88,953	91,129	2,430	100,096	102,527
2033	1,948	79,455	81,403	2,190	89,993	92,183	2,460	101,845	104,305
2034	1,959	79,909	81,868	2,215	91,020	93,235	2,502	103,589	106,091

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.26%	0.72%	0.74%	2.00%	1.46%	1.47%	2.74%	2.19%	2.21%
2017	0.21%	0.74%	0.73%	0.93%	1.47%	1.45%	1.65%	2.19%	2.18%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.22%	0.69%	0.70%	1.92%	1.39%	1.40%	2.63%	2.08%	2.10%
2021	0.17%	0.70%	0.69%	0.86%	1.40%	1.38%	1.55%	2.09%	2.07%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.18%	0.65%	0.66%	1.85%	1.31%	1.33%	2.52%	1.97%	1.99%
2025	0.13%	0.66%	0.65%	0.78%	1.31%	1.30%	1.43%	1.97%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.14%	0.61%	0.62%	1.77%	1.23%	1.25%	2.40%	1.86%	1.87%
2029	0.09%	0.62%	0.61%	0.70%	1.24%	1.22%	1.31%	1.85%	1.84%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	0.57%	0.59%	1.70%	1.16%	1.17%	2.28%	1.74%	1.76%
2033	0.06%	0.59%	0.58%	0.63%	1.17%	1.16%	1.21%	1.75%	1.73%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,511,740	2,011,699	4,523,439	2,530,293	2,026,558	4,556,852	2,548,847	2,041,418	4,590,265
2016	2,543,520	2,036,815	4,580,335	2,581,015	2,066,840	4,647,856	2,618,784	2,097,085	4,715,870
2017	2,548,592	2,041,214	4,589,806	2,604,812	2,086,242	4,691,053	2,661,853	2,131,927	4,793,779
2018	2,566,907	2,055,883	4,622,791	2,642,251	2,116,227	4,758,478	2,719,241	2,177,890	4,897,131
2019	2,585,120	2,070,470	4,655,590	2,679,746	2,146,258	4,826,003	2,777,122	2,224,248	5,001,370
2020	2,616,884	2,095,564	4,712,448	2,731,504	2,187,350	4,918,854	2,850,278	2,282,462	5,132,740
2021	2,621,193	2,099,361	4,720,554	2,754,791	2,206,362	4,961,153	2,894,182	2,318,004	5,212,186
2022	2,639,044	2,113,659	4,752,703	2,792,313	2,236,415	5,028,728	2,953,314	2,365,363	5,318,677
2023	2,656,736	2,127,829	4,784,565	2,829,752	2,266,400	5,096,153	3,012,711	2,412,935	5,425,646
2024	2,688,403	2,152,835	4,841,238	2,882,328	2,308,127	5,190,455	3,088,750	2,473,427	5,562,177
2025	2,691,746	2,155,868	4,847,614	2,904,575	2,326,327	5,230,903	3,132,592	2,508,950	5,641,542
2026	2,709,042	2,169,722	4,878,764	2,941,903	2,356,224	5,298,128	3,192,979	2,557,316	5,750,295
2027	2,726,165	2,183,436	4,909,601	2,979,093	2,386,010	5,365,103	3,253,525	2,605,807	5,859,332
2028	2,757,571	2,208,224	4,965,794	3,032,063	2,428,033	5,460,096	3,331,743	2,668,013	5,999,756
2029	2,759,928	2,210,477	4,970,405	3,053,111	2,445,292	5,498,403	3,375,151	2,703,221	6,078,372
2030	2,776,549	2,223,789	5,000,338	3,089,884	2,474,745	5,564,628	3,436,129	2,752,059	6,188,187
2031	2,793,071	2,237,022	5,030,093	3,126,657	2,504,197	5,630,853	3,497,469	2,801,187	6,298,657
2032	2,824,198	2,261,577	5,085,775	3,179,901	2,546,419	5,726,320	3,577,609	2,864,899	6,442,508
2033	2,825,665	2,263,127	5,088,791	3,199,841	2,562,812	5,762,653	3,620,621	2,899,822	6,520,442
2034	2,841,791	2,276,042	5,117,833	3,236,364	2,592,064	5,828,428	3,682,609	2,949,469	6,632,078

Annual Change

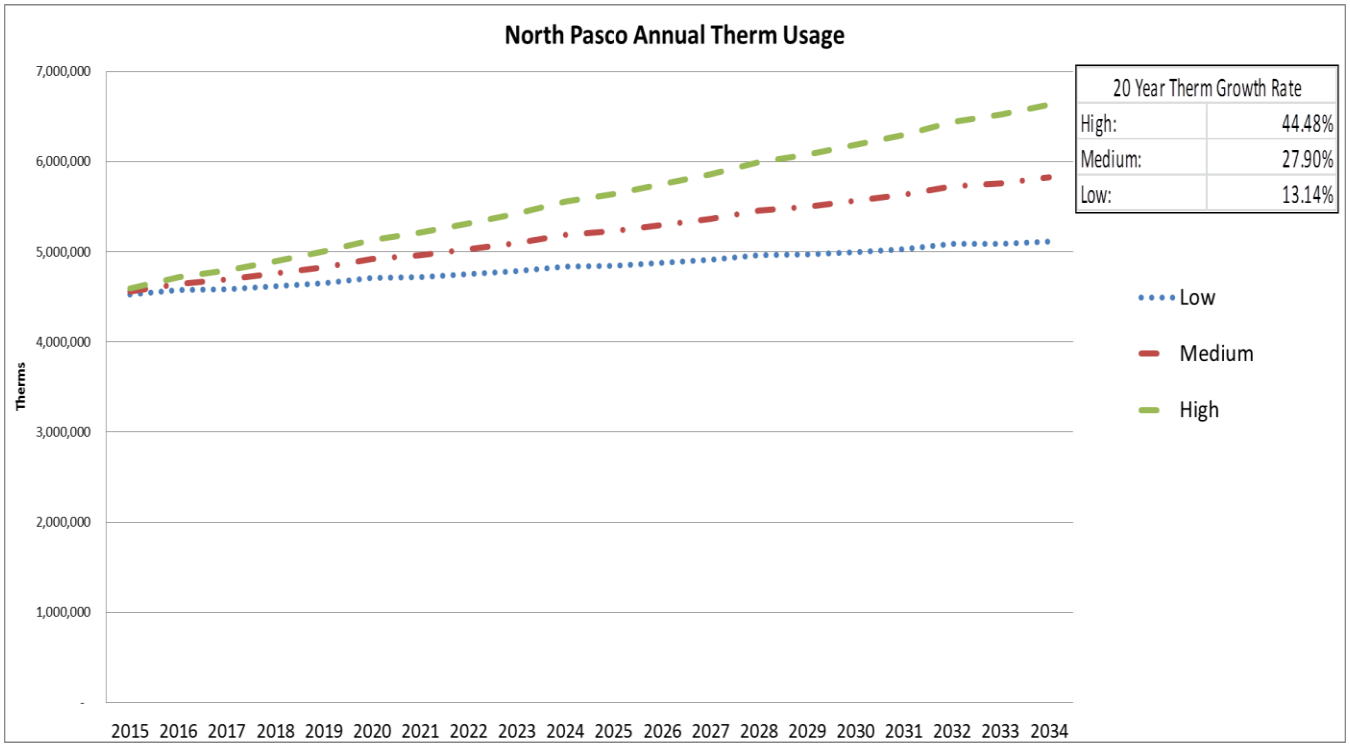
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.27%	1.25%	1.26%	2.00%	1.99%	2.00%	2.74%	2.73%	2.74%
2017	0.20%	0.22%	0.21%	0.92%	0.94%	0.93%	1.64%	1.66%	1.65%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	1.23%	1.21%	1.22%	1.93%	1.91%	1.92%	2.63%	2.62%	2.63%
2021	0.16%	0.18%	0.17%	0.85%	0.87%	0.86%	1.54%	1.56%	1.55%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.19%	1.18%	1.18%	1.86%	1.84%	1.85%	2.52%	2.51%	2.52%
2025	0.12%	0.14%	0.13%	0.77%	0.79%	0.78%	1.42%	1.44%	1.43%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	1.15%	1.14%	1.14%	1.78%	1.76%	1.77%	2.40%	2.39%	2.40%
2029	0.09%	0.10%	0.09%	0.69%	0.71%	0.70%	1.30%	1.32%	1.31%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	1.11%	1.10%	1.11%	1.70%	1.69%	1.70%	2.29%	2.27%	2.28%
2033	0.05%	0.07%	0.06%	0.63%	0.64%	0.63%	1.20%	1.22%	1.21%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%

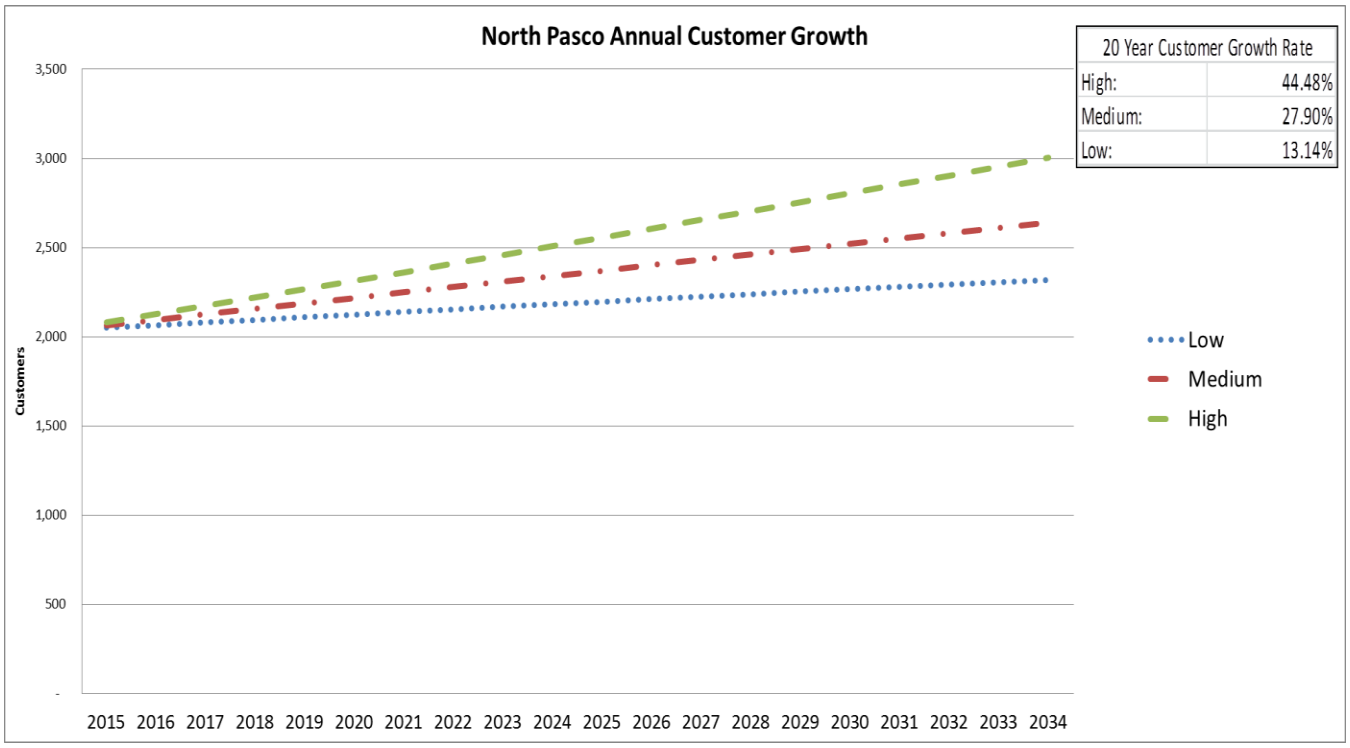
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,851	199	2,050	1,864	201	2,065	1,878	202	2,080
2016	1,864	201	2,065	1,892	204	2,095	1,919	207	2,126
2017	1,878	202	2,080	1,919	207	2,126	1,961	211	2,172
2018	1,891	204	2,095	1,947	210	2,156	2,004	216	2,219
2019	1,905	205	2,110	1,974	213	2,187	2,046	220	2,266
2020	1,918	206	2,125	2,002	216	2,218	2,089	225	2,314
2021	1,931	208	2,139	2,030	218	2,248	2,132	230	2,362
2022	1,944	209	2,154	2,057	221	2,279	2,176	234	2,410
2023	1,958	211	2,168	2,085	224	2,309	2,220	239	2,459
2024	1,970	212	2,183	2,113	227	2,340	2,264	244	2,508
2025	1,983	213	2,197	2,140	230	2,370	2,308	248	2,557
2026	1,996	215	2,211	2,168	233	2,401	2,353	253	2,606
2027	2,009	216	2,225	2,195	236	2,431	2,397	258	2,655
2028	2,021	218	2,239	2,222	239	2,462	2,442	263	2,705
2029	2,034	219	2,252	2,250	242	2,492	2,487	268	2,755
2030	2,046	220	2,266	2,277	245	2,522	2,532	273	2,804
2031	2,058	222	2,279	2,304	248	2,552	2,577	277	2,854
2032	2,070	223	2,293	2,331	251	2,582	2,622	282	2,904
2033	2,082	224	2,306	2,358	254	2,611	2,668	287	2,955
2034	2,094	225	2,319	2,385	257	2,641	2,713	292	3,005

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2017	0.73%	0.73%	0.73%	1.45%	1.45%	1.45%	2.18%	2.18%	2.18%
2018	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.16%	2.16%	2.16%
2019	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2020	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.10%	2.10%	2.10%
2021	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2025	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.95%	1.95%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.90%	1.90%	1.90%
2028	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2029	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.84%	1.84%	1.84%
2030	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2031	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2032	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2033	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.73%	1.73%	1.73%
2034	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%


North Pasco Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 44.48%
Medium: 27.90%
Low: 13.14%
Low
Medium
High


North Pasco Annual Customer Growth
Customers
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 44.48%
Medium: 27.90%
Low: 13.14%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Patterson

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	114,014	115,449	229,463	116,120	115,449	231,568	118,225	115,449	233,674
2016	115,063	116,510	231,573	118,256	117,572	235,828	121,488	118,634	240,122
2017	116,114	117,575	233,689	120,417	119,721	240,138	124,818	121,886	246,704
2018	117,167	118,642	235,809	122,601	121,893	244,494	128,214	125,203	253,417
2019	118,223	119,710	237,933	124,811	124,089	248,900	131,680	128,587	260,267
2020	119,281	120,781	240,062	127,044	126,309	253,353	135,214	132,038	267,252
2021	120,340	121,854	242,194	129,301	128,553	257,854	138,817	135,556	274,373
2022	121,401	122,929	244,330	131,581	130,821	262,402	142,490	139,143	281,633
2023	122,465	124,005	246,470	133,886	133,112	266,998	146,234	142,799	289,032
2024	123,529	125,084	248,613	136,214	135,427	271,641	150,048	146,523	296,571
2025	124,596	126,163	250,759	138,566	137,765	276,331	153,933	150,318	304,251
2026	125,663	127,244	252,908	140,941	140,126	281,066	157,890	154,182	312,072
2027	126,732	128,327	255,059	143,338	142,510	285,848	161,920	158,116	320,036
2028	127,802	129,410	257,213	145,759	144,916	290,675	166,021	162,121	328,142
2029	128,874	130,495	259,369	148,202	147,346	295,548	170,196	166,198	336,394
2030	129,946	131,581	261,526	150,668	149,797	300,465	174,443	170,346	344,789
2031	131,019	132,667	263,686	153,156	152,271	305,427	178,765	174,566	353,331
2032	132,092	133,754	265,847	155,667	154,767	310,433	183,160	178,858	362,018
2033	133,167	134,842	268,009	158,198	157,284	315,482	187,628	183,221	370,850
2034	134,241	135,930	270,172	160,752	159,823	320,575	192,171	187,658	379,829

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2017	0.91%	0.91%	0.91%	1.83%	1.83%	1.83%	2.74%	2.74%	2.74%
2018	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2021	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.66%	2.66%	2.66%
2022	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2023	0.88%	0.88%	0.88%	1.75%	1.75%	1.75%	2.63%	2.63%	2.63%
2024	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2025	0.86%	0.86%	0.86%	1.73%	1.73%	1.73%	2.59%	2.59%	2.59%
2026	0.86%	0.86%	0.86%	1.71%	1.71%	1.71%	2.57%	2.57%	2.57%
2027	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.55%	2.55%	2.55%
2028	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2029	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.51%	2.51%	2.51%
2030	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2031	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2032	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2033	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	316	2,171	2,488	316	2,194	2,510	316	2,217	2,533
2016	319	2,191	2,511	322	2,235	2,557	325	2,278	2,603
2017	322	2,211	2,533	328	2,275	2,603	334	2,341	2,675
2018	325	2,231	2,556	334	2,317	2,651	343	2,404	2,747
2019	328	2,252	2,580	340	2,358	2,698	352	2,469	2,822
2020	331	2,272	2,603	346	2,401	2,747	362	2,536	2,897
2021	334	2,292	2,626	352	2,443	2,795	371	2,603	2,975
2022	337	2,312	2,649	358	2,486	2,845	381	2,672	3,053
2023	340	2,332	2,672	365	2,530	2,895	391	2,742	3,133
2024	343	2,353	2,695	371	2,574	2,945	401	2,814	3,215
2025	346	2,373	2,719	377	2,618	2,996	412	2,887	3,298
2026	349	2,393	2,742	384	2,663	3,047	422	2,961	3,383
2027	352	2,414	2,765	390	2,709	3,099	433	3,036	3,470
2028	355	2,434	2,789	397	2,754	3,151	444	3,113	3,557
2029	358	2,454	2,812	404	2,800	3,204	455	3,192	3,647
2030	360	2,475	2,835	410	2,847	3,257	467	3,271	3,738
2031	363	2,495	2,859	417	2,894	3,311	478	3,352	3,831
2032	366	2,516	2,882	424	2,941	3,365	490	3,435	3,925
2033	369	2,536	2,906	431	2,989	3,420	502	3,519	4,020
2034	372	2,557	2,929	438	3,038	3,475	514	3,604	4,118

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2017	0.91%	0.91%	0.91%	1.83%	1.83%	1.83%	2.74%	2.74%	2.74%
2018	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2019	0.90%	0.90%	0.90%	1.80%	1.80%	1.80%	2.70%	2.70%	2.70%
2020	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2021	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.66%	2.66%	2.66%
2022	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2023	0.88%	0.88%	0.88%	1.75%	1.75%	1.75%	2.63%	2.63%	2.63%
2024	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2025	0.86%	0.86%	0.86%	1.73%	1.73%	1.73%	2.59%	2.59%	2.59%
2026	0.86%	0.86%	0.86%	1.71%	1.71%	1.71%	2.57%	2.57%	2.57%
2027	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.55%	2.55%	2.55%
2028	0.84%	0.84%	0.84%	1.69%	1.69%	1.69%	2.53%	2.53%	2.53%
2029	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.51%	2.51%	2.51%
2030	0.83%	0.83%	0.83%	1.66%	1.66%	1.66%	2.50%	2.50%	2.50%
2031	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2032	0.82%	0.82%	0.82%	1.64%	1.64%	1.64%	2.46%	2.46%	2.46%
2033	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2034	0.81%	0.81%	0.81%	1.61%	1.61%	1.61%	2.42%	2.42%	2.42%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	229,463	229,463	-	231,568	231,568	-	233,674	233,674
2016	-	231,573	231,573	-	235,828	235,828	-	240,122	240,122
2017	-	233,689	233,689	-	240,138	240,138	-	246,704	246,704
2018	-	235,809	235,809	-	244,494	244,494	-	253,417	253,417
2019	-	237,933	237,933	-	248,900	248,900	-	260,267	260,267
2020	-	240,062	240,062	-	253,353	253,353	-	267,252	267,252
2021	-	242,194	242,194	-	257,854	257,854	-	274,373	274,373
2022	-	244,330	244,330	-	262,402	262,402	-	281,633	281,633
2023	-	246,470	246,470	-	266,998	266,998	-	289,032	289,032
2024	-	248,613	248,613	-	271,641	271,641	-	296,571	296,571
2025	-	250,759	250,759	-	276,331	276,331	-	304,251	304,251
2026	-	252,908	252,908	-	281,066	281,066	-	312,072	312,072
2027	-	255,059	255,059	-	285,848	285,848	-	320,036	320,036
2028	-	257,213	257,213	-	290,675	290,675	-	328,142	328,142
2029	-	259,369	259,369	-	295,548	295,548	-	336,394	336,394
2030	-	261,526	261,526	-	300,465	300,465	-	344,789	344,789
2031	-	263,686	263,686	-	305,427	305,427	-	353,331	353,331
2032	-	265,847	265,847	-	310,433	310,433	-	362,018	362,018
2033	-	268,009	268,009	-	315,482	315,482	-	370,850	370,850
2034	-	270,172	270,172	-	320,575	320,575	-	379,829	379,829

Annual Change

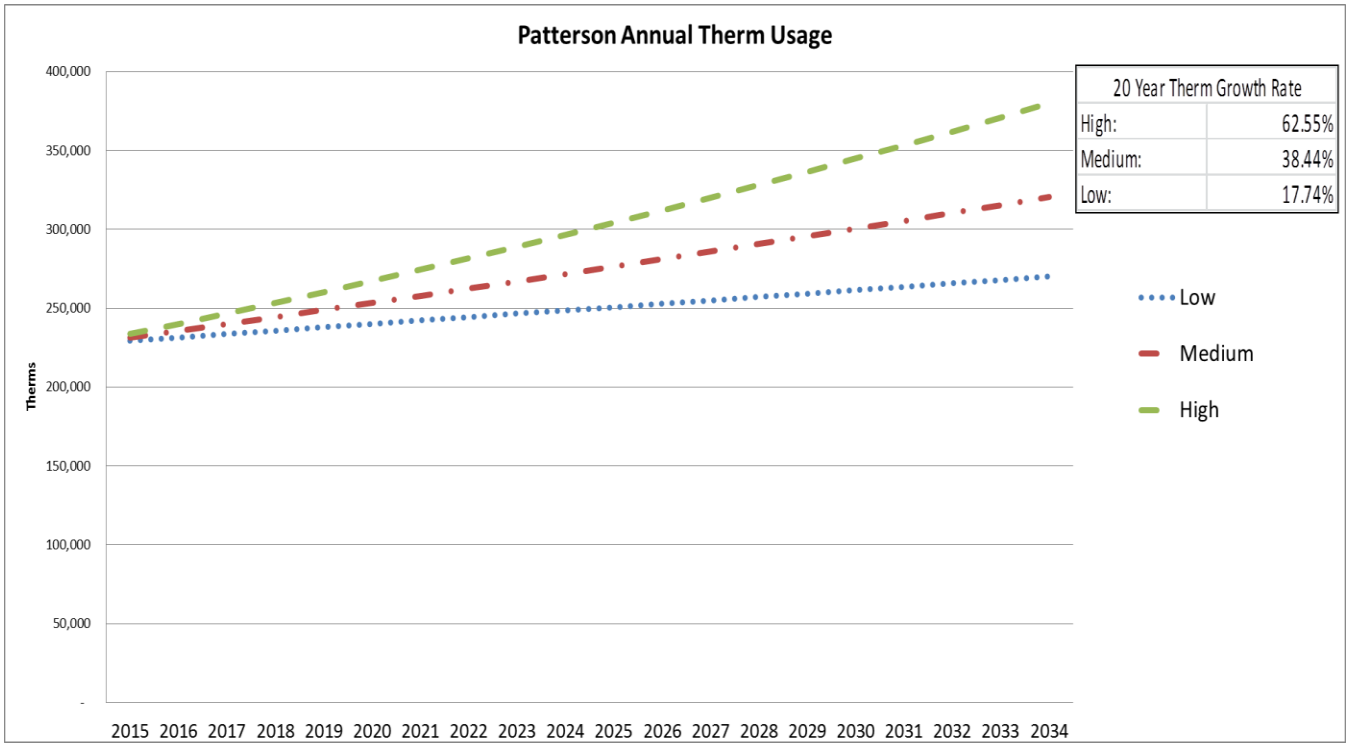
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.92%	0.92%	#DIV/0!	1.84%	1.84%	#DIV/0!	2.76%	2.76%
2017	#DIV/0!	0.91%	0.91%	#DIV/0!	1.83%	1.83%	#DIV/0!	2.74%	2.74%
2018	#DIV/0!	0.91%	0.91%	#DIV/0!	1.81%	1.81%	#DIV/0!	2.72%	2.72%
2019	#DIV/0!	0.90%	0.90%	#DIV/0!	1.80%	1.80%	#DIV/0!	2.70%	2.70%
2020	#DIV/0!	0.89%	0.89%	#DIV/0!	1.79%	1.79%	#DIV/0!	2.68%	2.68%
2021	#DIV/0!	0.89%	0.89%	#DIV/0!	1.78%	1.78%	#DIV/0!	2.66%	2.66%
2022	#DIV/0!	0.88%	0.88%	#DIV/0!	1.76%	1.76%	#DIV/0!	2.65%	2.65%
2023	#DIV/0!	0.88%	0.88%	#DIV/0!	1.75%	1.75%	#DIV/0!	2.63%	2.63%
2024	#DIV/0!	0.87%	0.87%	#DIV/0!	1.74%	1.74%	#DIV/0!	2.61%	2.61%
2025	#DIV/0!	0.86%	0.86%	#DIV/0!	1.73%	1.73%	#DIV/0!	2.59%	2.59%
2026	#DIV/0!	0.86%	0.86%	#DIV/0!	1.71%	1.71%	#DIV/0!	2.57%	2.57%
2027	#DIV/0!	0.85%	0.85%	#DIV/0!	1.70%	1.70%	#DIV/0!	2.55%	2.55%
2028	#DIV/0!	0.84%	0.84%	#DIV/0!	1.69%	1.69%	#DIV/0!	2.53%	2.53%
2029	#DIV/0!	0.84%	0.84%	#DIV/0!	1.68%	1.68%	#DIV/0!	2.51%	2.51%
2030	#DIV/0!	0.83%	0.83%	#DIV/0!	1.66%	1.66%	#DIV/0!	2.50%	2.50%
2031	#DIV/0!	0.83%	0.83%	#DIV/0!	1.65%	1.65%	#DIV/0!	2.48%	2.48%
2032	#DIV/0!	0.82%	0.82%	#DIV/0!	1.64%	1.64%	#DIV/0!	2.46%	2.46%
2033	#DIV/0!	0.81%	0.81%	#DIV/0!	1.63%	1.63%	#DIV/0!	2.44%	2.44%
2034	#DIV/0!	0.81%	0.81%	#DIV/0!	1.61%	1.61%	#DIV/0!	2.42%	2.42%

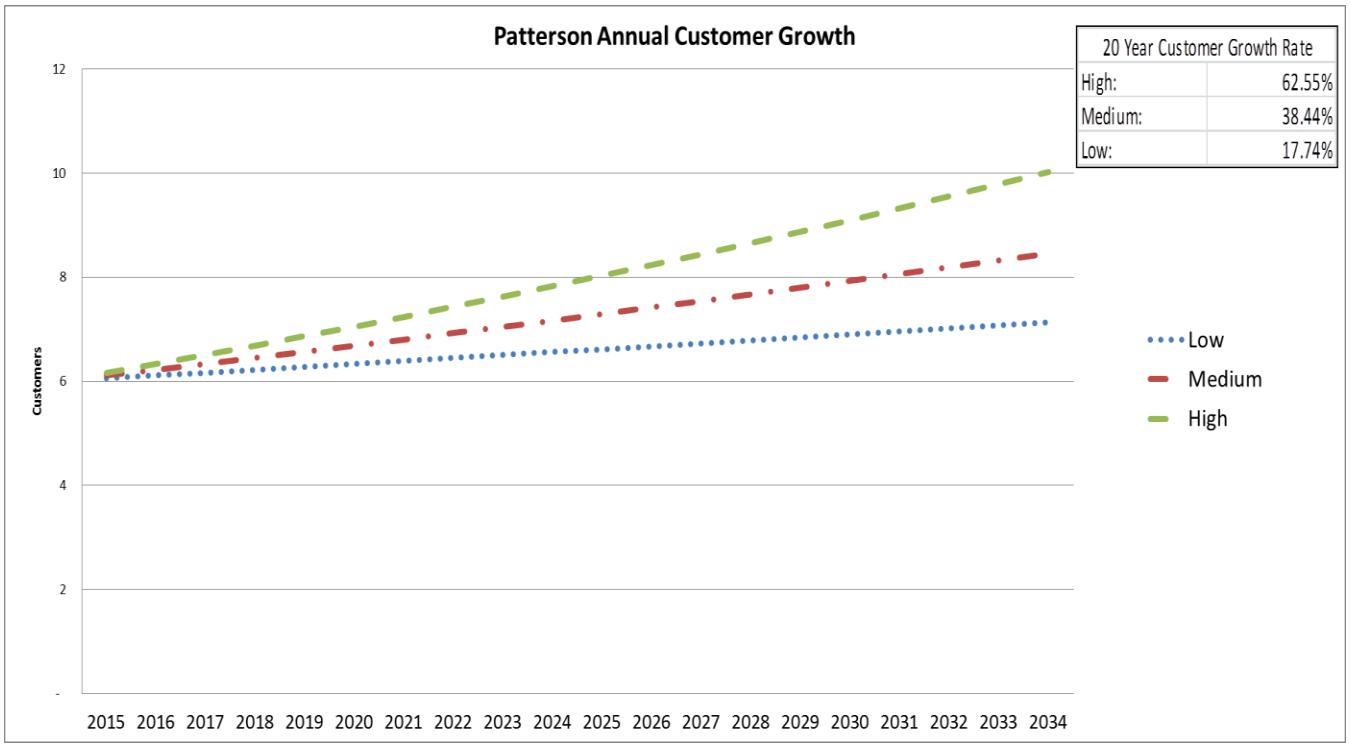
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	6	6	-	6	6	-	6	6
2016	-	6	6	-	6	6	-	6	6
2017	-	6	6	-	6	6	-	7	7
2018	-	6	6	-	6	6	-	7	7
2019	-	6	6	-	7	7	-	7	7
2020	-	6	6	-	7	7	-	7	7
2021	-	6	6	-	7	7	-	7	7
2022	-	6	6	-	7	7	-	7	7
2023	-	7	7	-	7	7	-	8	8
2024	-	7	7	-	7	7	-	8	8
2025	-	7	7	-	7	7	-	8	8
2026	-	7	7	-	7	7	-	8	8
2027	-	7	7	-	8	8	-	8	8
2028	-	7	7	-	8	8	-	9	9
2029	-	7	7	-	8	8	-	9	9
2030	-	7	7	-	8	8	-	9	9
2031	-	7	7	-	8	8	-	9	9
2032	-	7	7	-	8	8	-	10	10
2033	-	7	7	-	8	8	-	10	10
2034	-	7	7	-	8	8	-	10	10

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.92%	0.92%	#DIV/0!	1.84%	1.84%	#DIV/0!	2.76%	2.76%
2017	#DIV/0!	0.91%	0.91%	#DIV/0!	1.83%	1.83%	#DIV/0!	2.74%	2.74%
2018	#DIV/0!	0.91%	0.91%	#DIV/0!	1.81%	1.81%	#DIV/0!	2.72%	2.72%
2019	#DIV/0!	0.90%	0.90%	#DIV/0!	1.80%	1.80%	#DIV/0!	2.70%	2.70%
2020	#DIV/0!	0.89%	0.89%	#DIV/0!	1.79%	1.79%	#DIV/0!	2.68%	2.68%
2021	#DIV/0!	0.89%	0.89%	#DIV/0!	1.78%	1.78%	#DIV/0!	2.66%	2.66%
2022	#DIV/0!	0.88%	0.88%	#DIV/0!	1.76%	1.76%	#DIV/0!	2.65%	2.65%
2023	#DIV/0!	0.88%	0.88%	#DIV/0!	1.75%	1.75%	#DIV/0!	2.63%	2.63%
2024	#DIV/0!	0.87%	0.87%	#DIV/0!	1.74%	1.74%	#DIV/0!	2.61%	2.61%
2025	#DIV/0!	0.86%	0.86%	#DIV/0!	1.73%	1.73%	#DIV/0!	2.59%	2.59%
2026	#DIV/0!	0.86%	0.86%	#DIV/0!	1.71%	1.71%	#DIV/0!	2.57%	2.57%
2027	#DIV/0!	0.85%	0.85%	#DIV/0!	1.70%	1.70%	#DIV/0!	2.55%	2.55%
2028	#DIV/0!	0.84%	0.84%	#DIV/0!	1.69%	1.69%	#DIV/0!	2.53%	2.53%
2029	#DIV/0!	0.84%	0.84%	#DIV/0!	1.68%	1.68%	#DIV/0!	2.51%	2.51%
2030	#DIV/0!	0.83%	0.83%	#DIV/0!	1.66%	1.66%	#DIV/0!	2.50%	2.50%
2031	#DIV/0!	0.83%	0.83%	#DIV/0!	1.65%	1.65%	#DIV/0!	2.48%	2.48%
2032	#DIV/0!	0.82%	0.82%	#DIV/0!	1.64%	1.64%	#DIV/0!	2.46%	2.46%
2033	#DIV/0!	0.81%	0.81%	#DIV/0!	1.63%	1.63%	#DIV/0!	2.44%	2.44%
2034	#DIV/0!	0.81%	0.81%	#DIV/0!	1.61%	1.61%	#DIV/0!	2.42%	2.42%


Patterson Annual Therm Usage
Therms
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 62.55%
Medium: 38.44%
Low: 17.74%
Low
Medium
High


Patterson Annual Customer Growth
Customers
12
10
8
6
4
2
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 62.55%
Medium: 38.44%
Low: 17.74%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Prosser

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	720,255	152,750	873,005	725,775	152,750	878,525	731,295	152,750	884,044
2016	728,155	154,425	882,580	738,333	155,393	893,726	748,582	156,361	904,942
2017	729,332	154,675	884,006	744,125	156,612	900,736	759,115	158,561	917,676
2018	733,860	155,635	889,495	753,365	158,556	911,921	773,255	161,514	934,769
2019	738,374	156,592	894,966	762,632	160,507	923,138	787,522	164,494	952,016
2020	746,303	158,274	904,577	775,479	163,211	938,690	805,599	168,270	973,868
2021	747,344	158,495	905,838	781,217	164,418	945,635	816,397	170,525	986,922
2022	751,796	159,439	911,234	790,525	166,377	956,902	830,987	173,573	1,004,560
2023	756,217	160,376	916,594	799,823	168,334	968,158	845,649	176,635	1,022,284
2024	764,147	162,058	926,205	812,892	171,085	983,977	864,417	180,556	1,044,973
2025	764,985	162,236	927,221	818,424	172,249	990,674	875,234	182,815	1,058,049
2026	769,326	163,157	932,483	827,713	174,204	1,001,916	890,133	185,927	1,076,060
2027	773,635	164,070	937,705	836,984	176,155	1,013,139	905,089	189,051	1,094,140
2028	781,512	165,741	947,252	850,151	178,926	1,029,077	924,350	193,074	1,117,424
2029	782,140	165,874	948,014	855,437	180,039	1,035,475	935,101	195,320	1,130,421
2030	786,335	166,764	953,099	864,614	181,970	1,046,584	950,149	198,463	1,148,612
2031	790,510	167,649	958,160	873,796	183,903	1,057,698	965,284	201,624	1,166,909
2032	798,333	169,308	967,641	887,042	186,691	1,073,733	985,000	205,742	1,190,742
2033	798,769	169,401	968,169	892,100	187,755	1,079,855	995,694	207,976	1,203,670
2034	802,860	170,268	973,129	901,240	189,679	1,090,918	1,010,996	211,172	1,222,168

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	1.10%	1.10%	1.73%	1.73%	1.73%	2.36%	2.36%	2.36%
2017	0.16%	0.16%	0.16%	0.78%	0.78%	0.78%	1.41%	1.41%	1.41%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.07%	1.07%	1.07%	1.68%	1.68%	1.68%	2.30%	2.30%	2.30%
2021	0.14%	0.14%	0.14%	0.74%	0.74%	0.74%	1.34%	1.34%	1.34%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.05%	1.05%	1.05%	1.63%	1.63%	1.63%	2.22%	2.22%	2.22%
2025	0.11%	0.11%	0.11%	0.68%	0.68%	0.68%	1.25%	1.25%	1.25%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.02%	1.02%	1.02%	1.57%	1.57%	1.57%	2.13%	2.13%	2.13%
2029	0.08%	0.08%	0.08%	0.62%	0.62%	0.62%	1.16%	1.16%	1.16%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.99%	0.99%	0.99%	1.52%	1.52%	1.52%	2.04%	2.04%	2.04%
2033	0.05%	0.05%	0.05%	0.57%	0.57%	0.57%	1.09%	1.09%	1.09%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	418	10,196	10,614	418	10,263	10,681	418	10,330	10,749
2016	423	10,258	10,681	426	10,390	10,816	428	10,524	10,952
2017	424	10,324	10,748	429	10,522	10,952	434	10,723	11,157
2018	426	10,388	10,815	434	10,653	11,088	443	10,923	11,365
2019	429	10,452	10,881	440	10,784	11,224	451	11,124	11,575
2020	434	10,514	10,948	447	10,913	11,360	461	11,325	11,786
2021	434	10,579	11,014	450	11,047	11,497	467	11,532	11,999
2022	437	10,642	11,079	456	11,179	11,634	476	11,738	12,214
2023	439	10,705	11,144	461	11,310	11,771	484	11,945	12,429
2024	444	10,765	11,209	469	11,440	11,908	495	12,152	12,647
2025	444	10,829	11,274	472	11,573	12,045	501	12,363	12,864
2026	447	10,891	11,338	477	11,704	12,182	509	12,574	13,083
2027	450	10,952	11,401	483	11,836	12,318	518	12,785	13,303
2028	454	11,010	11,464	490	11,964	12,454	529	12,995	13,523
2029	454	11,072	11,526	493	12,096	12,590	535	13,209	13,744
2030	457	11,131	11,588	499	12,226	12,725	544	13,422	13,965
2031	459	11,190	11,650	504	12,356	12,860	552	13,635	14,188
2032	464	11,247	11,711	511	12,483	12,995	564	13,847	14,411
2033	464	11,307	11,771	514	12,615	13,129	570	14,065	14,635
2034	466	11,365	11,832	520	12,744	13,264	579	14,281	14,860

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.61%	0.63%	1.73%	1.24%	1.26%	2.36%	1.87%	1.89%
2017	0.16%	0.64%	0.63%	0.78%	1.27%	1.25%	1.41%	1.90%	1.88%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.07%	0.59%	0.61%	1.68%	1.20%	1.22%	2.30%	1.80%	1.82%
2021	0.14%	0.62%	0.60%	0.74%	1.23%	1.21%	1.34%	1.83%	1.81%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.05%	0.56%	0.58%	1.63%	1.15%	1.17%	2.22%	1.73%	1.75%
2025	0.11%	0.59%	0.57%	0.68%	1.17%	1.15%	1.25%	1.74%	1.72%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.02%	0.53%	0.55%	1.57%	1.09%	1.10%	2.13%	1.64%	1.66%
2029	0.08%	0.56%	0.54%	0.62%	1.11%	1.09%	1.16%	1.65%	1.63%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.99%	0.50%	0.52%	1.52%	1.03%	1.05%	2.04%	1.55%	1.57%
2033	0.05%	0.54%	0.52%	0.57%	1.06%	1.04%	1.09%	1.57%	1.55%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	264,868	608,137	873,005	266,543	611,982	878,525	268,218	615,827	884,044
2016	267,901	614,679	882,580	271,284	622,442	893,726	274,689	630,254	904,942
2017	268,206	615,800	884,006	273,282	627,454	900,736	278,421	639,255	917,676
2018	269,871	619,624	889,495	276,675	635,246	911,921	283,607	651,161	934,769
2019	271,531	623,435	894,966	280,079	643,060	923,138	288,840	663,176	952,016
2020	274,578	629,999	904,577	284,933	653,757	938,690	295,611	678,258	973,868
2021	274,830	631,008	905,838	286,904	658,731	945,635	299,431	687,492	986,922
2022	276,467	634,767	911,234	290,323	666,580	956,902	304,782	699,778	1,004,560
2023	278,093	638,501	916,594	293,737	674,420	968,158	310,159	712,125	1,022,284
2024	281,143	645,062	926,205	298,679	685,298	983,977	317,194	727,779	1,044,973
2025	281,317	645,904	927,221	300,569	690,105	990,674	321,010	737,038	1,058,049
2026	282,914	649,569	932,483	303,980	697,937	1,001,916	326,475	749,585	1,076,060
2027	284,498	653,207	937,705	307,385	705,754	1,013,139	331,960	762,179	1,094,140
2028	287,532	659,721	947,252	312,369	716,708	1,029,077	339,186	778,238	1,117,424
2029	287,626	660,388	948,014	314,162	721,314	1,035,475	342,968	787,453	1,130,421
2030	289,169	663,930	953,099	317,532	729,052	1,046,584	348,487	800,125	1,148,612
2031	290,704	667,455	958,160	320,904	736,794	1,057,698	354,038	812,871	1,166,909
2032	293,721	673,921	967,641	325,924	747,809	1,073,733	361,441	829,301	1,190,742
2033	293,741	674,428	968,169	327,626	752,229	1,079,855	365,191	838,478	1,203,670
2034	295,246	677,883	973,129	330,983	759,936	1,090,918	370,804	851,364	1,222,168

Annual Change

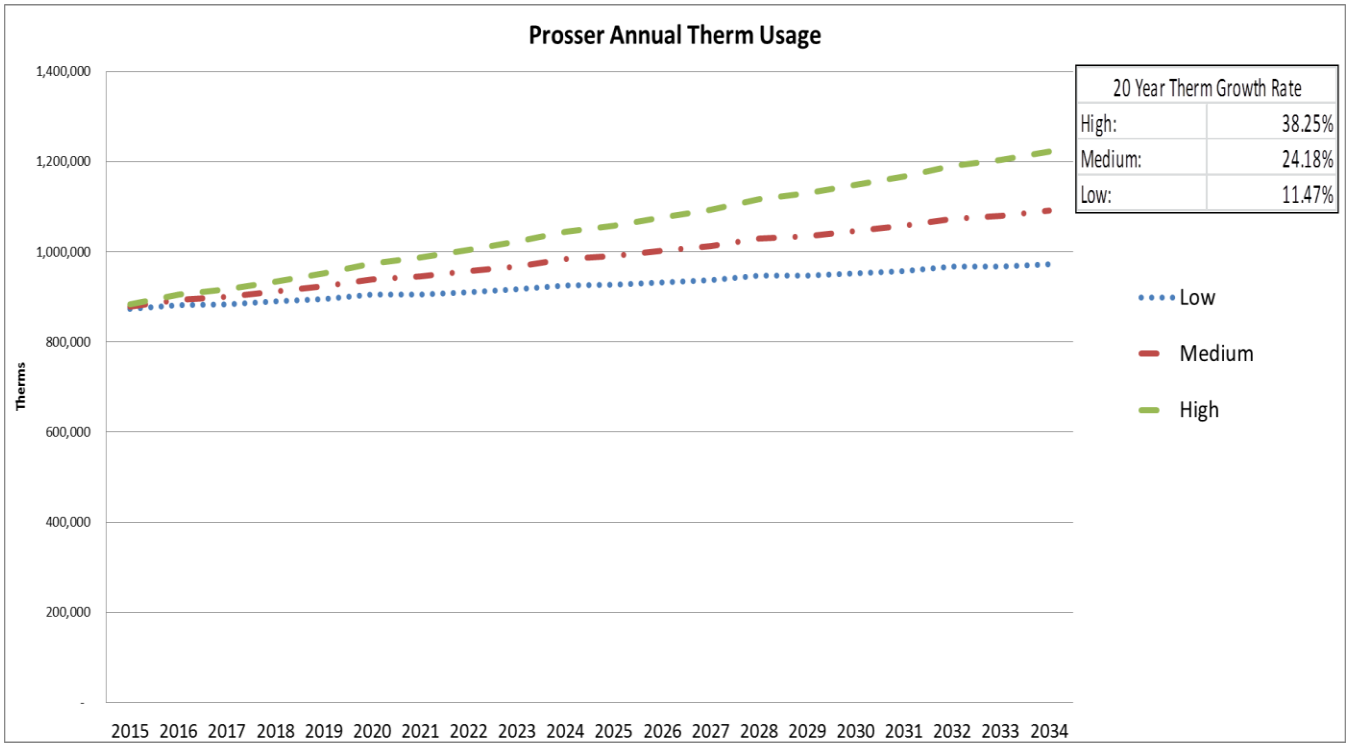
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.14%	1.08%	1.10%	1.78%	1.71%	1.73%	2.41%	2.34%	2.36%
2017	0.11%	0.18%	0.16%	0.74%	0.81%	0.78%	1.36%	1.43%	1.41%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	1.12%	1.05%	1.07%	1.73%	1.66%	1.68%	2.34%	2.27%	2.30%
2021	0.09%	0.16%	0.14%	0.69%	0.76%	0.74%	1.29%	1.36%	1.34%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	1.10%	1.03%	1.05%	1.68%	1.61%	1.63%	2.27%	2.20%	2.22%
2025	0.06%	0.13%	0.11%	0.63%	0.70%	0.68%	1.20%	1.27%	1.25%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	1.07%	1.00%	1.02%	1.62%	1.55%	1.57%	2.18%	2.11%	2.13%
2029	0.03%	0.10%	0.08%	0.57%	0.64%	0.62%	1.11%	1.18%	1.16%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	1.04%	0.97%	0.99%	1.56%	1.49%	1.52%	2.09%	2.02%	2.04%
2033	0.01%	0.08%	0.05%	0.52%	0.59%	0.57%	1.04%	1.11%	1.09%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%

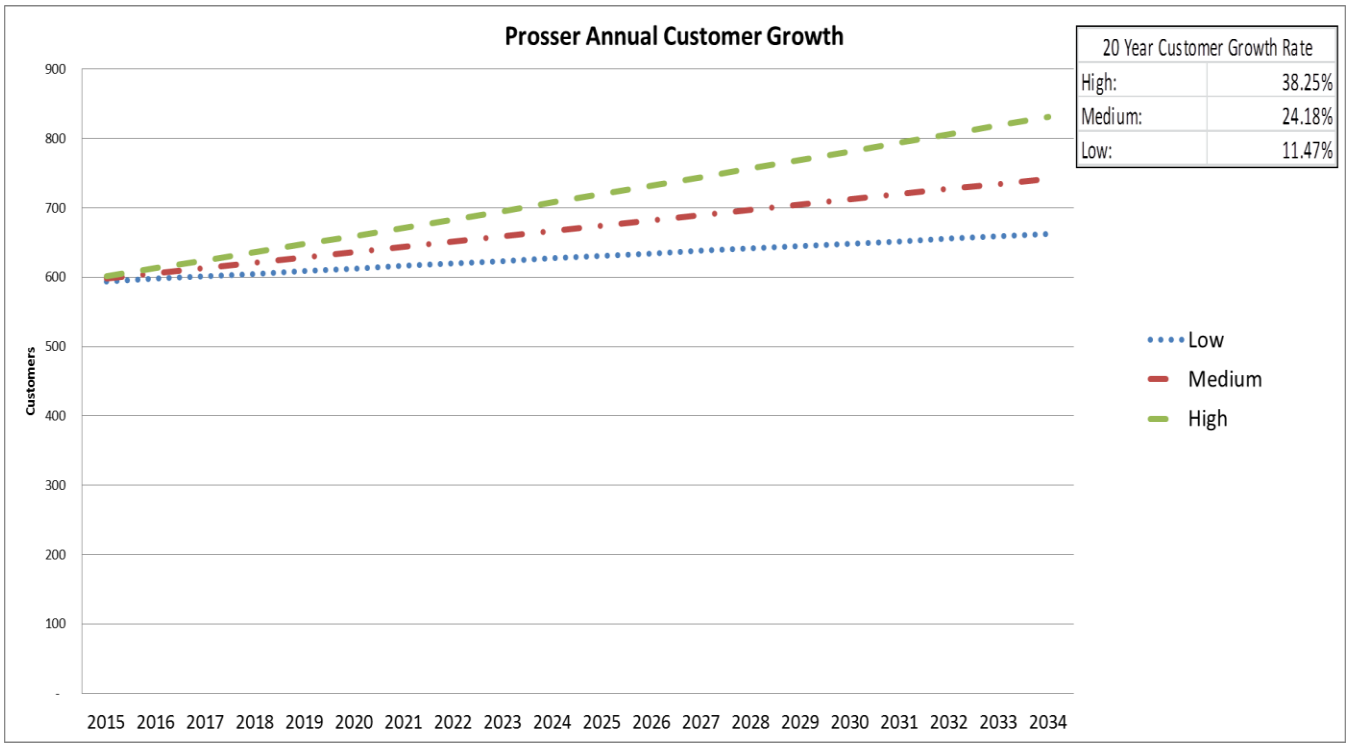
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	451	143	594	454	144	598	457	145	602
2016	454	144	598	460	146	605	465	148	613
2017	457	145	602	465	148	613	474	150	624
2018	460	146	605	471	149	621	483	153	636
2019	462	147	609	477	151	628	492	156	648
2020	465	148	613	483	153	636	501	159	660
2021	468	148	616	489	155	644	510	162	672
2022	471	149	620	494	157	651	519	165	684
2023	474	150	624	500	159	659	528	168	696
2024	476	151	627	506	161	667	537	170	708
2025	479	152	631	512	162	674	547	173	720
2026	482	153	635	518	164	682	556	176	732
2027	484	154	638	523	166	689	565	179	745
2028	487	155	642	529	168	697	575	182	757
2029	490	155	645	535	170	705	584	185	769
2030	492	156	649	541	172	712	593	188	782
2031	495	157	652	546	173	720	603	191	794
2032	498	158	655	552	175	727	612	194	807
2033	500	159	659	558	177	735	622	197	819
2034	503	159	662	564	179	742	631	200	832

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2017	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2018	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2019	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2020	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2021	0.60%	0.60%	0.60%	1.21%	1.21%	1.21%	1.81%	1.81%	1.81%
2022	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2023	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.76%	1.76%	1.76%
2024	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2025	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2026	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%
2027	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2028	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.66%	1.66%	1.66%
2029	0.54%	0.54%	0.54%	1.09%	1.09%	1.09%	1.63%	1.63%	1.63%
2030	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2031	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2032	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2033	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2034	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%


Prosser Annual Therm Usage
Therms
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 38.25%
Medium: 24.18%
Low: 11.47%
Low
Medium
High


Prosser Annual Customer Growth
Customers
900
800
700
600
500
400
300
200
100
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 38.25%
Medium: 24.18%
Low: 11.47%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

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Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	604,318	230,937	835,254	609,677	230,937	840,614	615,036	230,937	845,973
2016	608,209	232,423	840,632	617,528	233,910	851,438	626,916	235,397	862,313
2017	612,115	233,916	846,031	625,460	236,915	862,375	638,995	239,933	878,928
2018	616,037	235,415	851,452	633,475	239,951	873,425	651,277	244,544	895,822
2019	619,972	236,919	856,890	641,567	243,016	884,583	663,757	249,231	912,988
2020	623,909	238,423	862,332	649,716	246,103	895,819	676,404	253,979	930,383
2021	627,862	239,934	867,796	657,949	249,221	907,170	689,260	258,806	948,066
2022	631,815	241,444	873,259	666,234	252,359	918,593	702,278	263,695	965,973
2023	635,768	242,955	878,723	674,571	255,517	930,089	715,461	268,645	984,106
2024	639,728	244,469	884,197	682,975	258,701	941,676	728,831	273,665	1,002,496
2025	643,682	245,980	889,662	691,418	261,899	953,316	742,345	278,739	1,021,085
2026	647,639	247,492	895,131	699,918	265,119	965,037	756,036	283,880	1,039,915
2027	651,593	249,002	900,595	708,463	268,355	976,819	769,881	289,078	1,058,959
2028	655,544	250,513	906,057	717,057	271,610	988,667	783,888	294,338	1,078,226
2029	659,484	252,018	911,502	725,676	274,875	1,000,551	798,021	299,645	1,097,666
2030	663,421	253,522	916,943	734,339	278,157	1,012,496	812,312	305,011	1,117,323
2031	667,358	255,027	922,385	743,056	281,458	1,024,514	826,775	310,441	1,137,216
2032	671,292	256,530	927,822	751,816	284,777	1,036,592	841,396	315,931	1,157,327
2033	675,227	258,034	933,261	760,630	288,115	1,048,745	856,192	321,487	1,177,679
2034	679,161	259,537	938,698	769,493	291,472	1,060,965	871,157	327,106	1,198,263

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	633	8,840	9,473	633	8,901	9,534	633	8,962	9,594
2016	637	8,897	9,534	641	9,015	9,656	645	9,135	9,780
2017	641	8,954	9,595	649	9,131	9,780	657	9,311	9,968
2018	645	9,011	9,656	657	9,248	9,906	670	9,490	10,160
2019	649	9,069	9,718	666	9,366	10,032	683	9,672	10,354
2020	653	9,127	9,780	674	9,485	10,160	696	9,856	10,552
2021	657	9,184	9,842	683	9,606	10,288	709	10,043	10,752
2022	661	9,242	9,904	691	9,727	10,418	722	10,233	10,955
2023	666	9,300	9,966	700	9,848	10,548	736	10,425	11,161
2024	670	9,358	10,028	709	9,971	10,680	750	10,620	11,369
2025	674	9,416	10,090	718	10,094	10,812	764	10,817	11,580
2026	678	9,474	10,152	726	10,218	10,945	778	11,016	11,794
2027	682	9,532	10,214	735	10,343	11,078	792	11,218	12,010
2028	686	9,589	10,276	744	10,469	11,213	806	11,422	12,228
2029	690	9,647	10,338	753	10,594	11,347	821	11,628	12,449
2030	695	9,705	10,399	762	10,721	11,483	836	11,836	12,672
2031	699	9,762	10,461	771	10,848	11,619	851	12,047	12,897
2032	703	9,820	10,523	780	10,976	11,756	866	12,260	13,125
2033	707	9,877	10,584	789	11,105	11,894	881	12,475	13,356
2034	711	9,935	10,646	799	11,234	12,033	896	12,694	13,590

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	43,416	791,838	835,254	43,694	796,919	840,614	43,973	802,000	845,973
2016	43,695	796,936	840,632	44,257	807,181	851,438	44,822	817,490	862,313
2017	43,976	802,055	846,031	44,826	817,549	862,375	45,686	833,242	878,928
2018	44,258	807,194	851,452	45,400	828,025	873,425	46,564	849,257	895,822
2019	44,541	812,350	856,890	45,980	838,603	884,583	47,456	865,531	912,988
2020	44,823	817,509	862,332	46,564	849,255	895,819	48,361	882,022	930,383
2021	45,107	822,688	867,796	47,154	860,016	907,170	49,280	898,786	948,066
2022	45,391	827,868	873,259	47,748	870,845	918,593	50,211	915,762	965,973
2023	45,675	833,048	878,723	48,345	881,743	930,089	51,153	932,953	984,106
2024	45,960	838,237	884,197	48,948	892,728	941,676	52,109	950,387	1,002,496
2025	46,244	843,418	889,662	49,553	903,764	953,316	53,075	968,009	1,021,085
2026	46,528	848,603	895,131	50,162	914,875	965,037	54,054	985,861	1,039,915
2027	46,812	853,783	900,595	50,774	926,044	976,819	55,044	1,003,915	1,058,959
2028	47,096	858,961	906,057	51,390	937,277	988,667	56,045	1,022,180	1,078,226
2029	47,379	864,123	911,502	52,008	948,543	1,000,551	57,056	1,040,610	1,097,666
2030	47,662	869,281	916,943	52,629	959,867	1,012,496	58,078	1,059,245	1,117,323
2031	47,945	874,440	922,385	53,253	971,260	1,024,514	59,112	1,078,105	1,137,216
2032	48,228	879,595	927,822	53,881	982,711	1,036,592	60,157	1,097,170	1,157,327
2033	48,510	884,751	933,261	54,513	994,232	1,048,745	61,215	1,116,464	1,177,679
2034	48,793	889,905	938,698	55,148	1,005,817	1,060,965	62,285	1,135,978	1,198,263

Annual Change

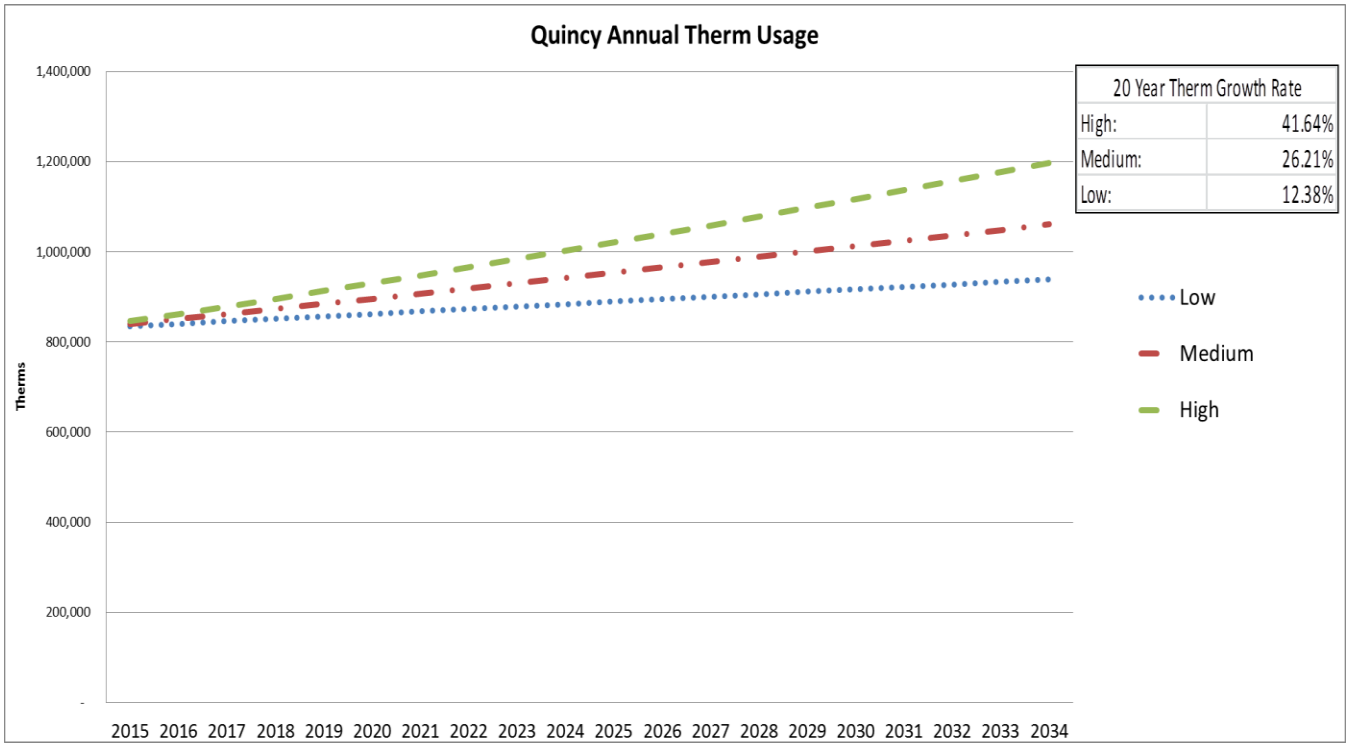
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%

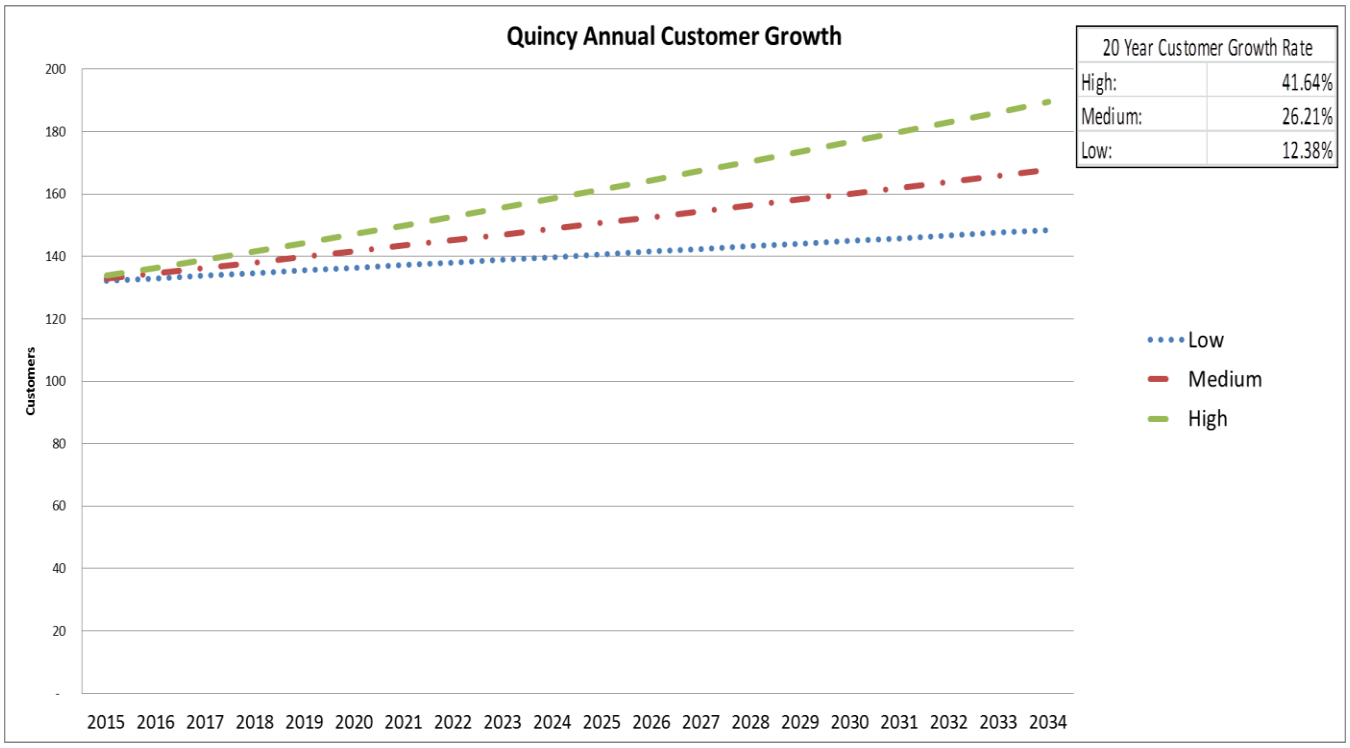
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	61	71	132	62	71	133	62	72	134
2016	62	71	133	62	72	135	63	73	136
2017	62	72	134	63	73	136	64	75	139
2018	62	72	135	64	74	138	66	76	142
2019	63	73	136	65	75	140	67	78	144
2020	63	73	136	66	76	142	68	79	147
2021	64	74	137	66	77	143	69	81	150
2022	64	74	138	67	78	145	71	82	153
2023	64	75	139	68	79	147	72	84	156
2024	65	75	140	69	80	149	73	85	159
2025	65	76	141	70	81	151	75	87	161
2026	66	76	142	71	82	153	76	88	164
2027	66	77	142	72	83	154	78	90	167
2028	66	77	143	72	84	156	79	92	171
2029	67	77	144	73	85	158	80	93	174
2030	67	78	145	74	86	160	82	95	177
2031	68	78	146	75	87	162	83	97	180
2032	68	79	147	76	88	164	85	98	183
2033	68	79	148	77	89	166	86	100	186
2034	69	80	148	78	90	168	88	102	190

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2017	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.93%	1.93%	1.93%
2018	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2019	0.64%	0.64%	0.64%	1.28%	1.28%	1.28%	1.92%	1.92%	1.92%
2020	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2021	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2022	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2023	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2024	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2025	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.85%	1.85%	1.85%
2026	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2027	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2028	0.61%	0.61%	0.61%	1.21%	1.21%	1.21%	1.82%	1.82%	1.82%
2029	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2030	0.60%	0.60%	0.60%	1.19%	1.19%	1.19%	1.79%	1.79%	1.79%
2031	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2033	0.59%	0.59%	0.59%	1.17%	1.17%	1.17%	1.76%	1.76%	1.76%
2034	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%


Quincy Annual Therm Usage
Therms
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 41.64%
Medium: 26.21%
Low: 12.38%
Low
Medium
High


Quincy Annual Customer Growth
Customers
200
180
160
140
120
100
80
60
40
20
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 41.64%
Medium: 26.21%
Low: 12.38%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sunnyside

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,244,465	1,033,135	3,277,600	2,248,489	1,033,135	3,281,625	2,252,514	1,033,135	3,285,649
2016	2,256,993	1,038,902	3,295,896	2,263,893	1,040,213	3,304,107	2,270,804	1,041,524	3,312,328
2017	2,250,225	1,035,787	3,286,012	2,260,038	1,038,442	3,298,480	2,269,879	1,041,100	3,310,979
2018	2,253,238	1,037,174	3,290,411	2,266,089	1,041,222	3,307,312	2,278,995	1,045,282	3,324,277
2019	2,256,318	1,038,592	3,294,910	2,272,285	1,044,069	3,316,355	2,288,342	1,049,569	3,337,911
2020	2,269,166	1,044,506	3,313,672	2,288,363	1,051,457	3,339,820	2,307,695	1,058,445	3,366,140
2021	2,262,597	1,041,482	3,304,078	2,284,940	1,049,884	3,334,824	2,307,472	1,058,343	3,365,815
2022	2,265,787	1,042,950	3,308,737	2,291,383	1,052,844	3,344,227	2,317,231	1,062,819	3,380,050
2023	2,268,983	1,044,421	3,313,404	2,297,848	1,055,815	3,353,663	2,327,039	1,067,317	3,394,356
2024	2,282,019	1,050,422	3,332,441	2,314,341	1,063,393	3,377,733	2,347,073	1,076,506	3,423,580
2025	2,275,416	1,047,382	3,322,799	2,310,887	1,061,806	3,372,693	2,346,860	1,076,408	3,423,268
2026	2,278,641	1,048,867	3,327,507	2,317,437	1,064,815	3,382,252	2,356,837	1,080,984	3,437,821
2027	2,281,847	1,050,343	3,332,190	2,323,959	1,067,812	3,391,771	2,366,787	1,085,548	3,452,335
2028	2,294,900	1,056,351	3,351,250	2,340,522	1,075,423	3,415,945	2,386,986	1,094,812	3,481,798
2029	2,288,195	1,053,265	3,341,460	2,336,898	1,073,757	3,410,655	2,386,566	1,094,620	3,481,186
2030	2,291,324	1,054,705	3,346,029	2,343,289	1,076,694	3,419,983	2,396,357	1,099,110	3,495,467
2031	2,294,476	1,056,156	3,350,632	2,349,736	1,079,656	3,429,392	2,406,246	1,103,646	3,509,892
2032	2,307,508	1,062,154	3,369,662	2,366,292	1,087,264	3,453,556	2,426,489	1,112,931	3,539,420
2033	2,300,727	1,059,033	3,359,760	2,362,547	1,085,543	3,448,090	2,425,939	1,112,678	3,538,617
2034	2,303,858	1,060,474	3,364,332	2,368,978	1,088,498	3,457,476	2,435,844	1,117,221	3,553,065

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.56%	0.56%	0.69%	0.69%	0.69%	0.81%	0.81%	0.81%
2017	-0.30%	-0.30%	-0.30%	-0.17%	-0.17%	-0.17%	-0.04%	-0.04%	-0.04%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.57%	0.57%	0.57%	0.71%	0.71%	0.71%	0.85%	0.85%	0.85%
2021	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.01%	-0.01%	-0.01%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.57%	0.57%	0.57%	0.72%	0.72%	0.72%	0.86%	0.86%	0.86%
2025	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.01%	-0.01%	-0.01%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.57%	0.57%	0.57%	0.71%	0.71%	0.71%	0.85%	0.85%	0.85%
2029	-0.29%	-0.29%	-0.29%	-0.15%	-0.15%	-0.15%	-0.02%	-0.02%	-0.02%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.57%	0.57%	0.57%	0.70%	0.70%	0.70%	0.84%	0.84%	0.84%
2033	-0.29%	-0.29%	-0.29%	-0.16%	-0.16%	-0.16%	-0.02%	-0.02%	-0.02%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,831	34,083	36,913	2,831	34,128	36,959	2,831	34,173	37,004
2016	2,846	34,114	36,960	2,850	34,202	37,052	2,853	34,291	37,144
2017	2,838	34,170	37,008	2,845	34,303	37,148	2,852	34,437	37,289
2018	2,842	34,216	37,058	2,853	34,395	37,248	2,864	34,575	37,439
2019	2,845	34,263	37,108	2,860	34,489	37,350	2,876	34,717	37,593
2020	2,862	34,298	37,159	2,881	34,572	37,452	2,900	34,848	37,748
2021	2,853	34,358	37,211	2,876	34,681	37,558	2,900	35,007	37,907
2022	2,857	34,407	37,264	2,885	34,779	37,664	2,912	35,155	38,067
2023	2,861	34,455	37,317	2,893	34,877	37,770	2,924	35,304	38,228
2024	2,878	34,492	37,370	2,913	34,964	37,878	2,949	35,442	38,392
2025	2,870	34,553	37,422	2,909	35,075	37,984	2,949	35,605	38,554
2026	2,874	34,602	37,475	2,917	35,175	38,092	2,962	35,756	38,718
2027	2,878	34,650	37,528	2,926	35,274	38,199	2,974	35,907	38,881
2028	2,894	34,687	37,581	2,946	35,360	38,306	2,999	36,045	39,045
2029	2,886	34,747	37,632	2,942	35,470	38,412	2,999	36,207	39,206
2030	2,890	34,794	37,684	2,950	35,567	38,517	3,011	36,356	39,367
2031	2,894	34,842	37,736	2,958	35,665	38,623	3,024	36,506	39,529
2032	2,910	34,877	37,787	2,979	35,749	38,728	3,049	36,642	39,691
2033	2,901	34,937	37,839	2,974	35,859	38,833	3,048	36,804	39,853
2034	2,905	34,985	37,890	2,982	35,957	38,939	3,061	36,955	40,016

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.09%	0.13%	0.69%	0.22%	0.25%	0.81%	0.34%	0.38%
2017	-0.30%	0.17%	0.13%	-0.17%	0.30%	0.26%	-0.04%	0.43%	0.39%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.57%	0.10%	0.14%	0.71%	0.24%	0.28%	0.85%	0.38%	0.41%
2021	-0.29%	0.18%	0.14%	-0.15%	0.32%	0.28%	-0.01%	0.46%	0.42%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.57%	0.11%	0.14%	0.72%	0.25%	0.29%	0.86%	0.39%	0.43%
2025	-0.29%	0.18%	0.14%	-0.15%	0.32%	0.28%	-0.01%	0.46%	0.42%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.57%	0.10%	0.14%	0.71%	0.24%	0.28%	0.85%	0.38%	0.42%
2029	-0.29%	0.17%	0.14%	-0.15%	0.31%	0.28%	-0.02%	0.45%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.57%	0.10%	0.14%	0.70%	0.24%	0.27%	0.84%	0.37%	0.41%
2033	-0.29%	0.17%	0.14%	-0.16%	0.31%	0.27%	-0.02%	0.44%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,074,994	2,202,606	3,277,600	1,076,314	2,205,311	3,281,625	1,077,634	2,208,015	3,285,649
2016	1,081,458	2,214,437	3,295,896	1,084,153	2,219,954	3,304,107	1,086,850	2,225,478	3,312,328
2017	1,077,753	2,208,259	3,286,012	1,081,842	2,216,638	3,298,480	1,085,941	2,225,037	3,310,979
2018	1,079,196	2,211,216	3,290,411	1,084,739	2,222,573	3,307,312	1,090,303	2,233,974	3,324,277
2019	1,080,671	2,214,239	3,294,910	1,087,704	2,228,650	3,316,355	1,094,775	2,243,136	3,337,911
2020	1,087,291	2,226,381	3,313,672	1,095,871	2,243,949	3,339,820	1,104,507	2,261,633	3,366,140
2021	1,083,678	2,220,400	3,304,078	1,093,762	2,241,062	3,334,824	1,103,926	2,261,888	3,365,815
2022	1,085,206	2,223,531	3,308,737	1,096,846	2,247,381	3,344,227	1,108,596	2,271,455	3,380,050
2023	1,086,737	2,226,667	3,313,404	1,099,941	2,253,722	3,353,663	1,113,287	2,281,068	3,394,356
2024	1,093,449	2,238,991	3,332,441	1,108,311	2,269,422	3,377,733	1,123,354	2,300,225	3,423,580
2025	1,089,818	2,232,981	3,322,799	1,106,183	2,266,511	3,372,693	1,122,770	2,300,498	3,423,268
2026	1,091,362	2,236,145	3,327,507	1,109,318	2,272,934	3,382,252	1,127,543	2,310,278	3,437,821
2027	1,092,898	2,239,292	3,332,190	1,112,440	2,279,332	3,391,771	1,132,304	2,320,031	3,452,335
2028	1,099,621	2,251,629	3,351,250	1,120,849	2,295,096	3,415,945	1,142,457	2,339,341	3,481,798
2029	1,095,938	2,245,521	3,341,460	1,118,633	2,292,022	3,410,655	1,141,766	2,339,420	3,481,186
2030	1,097,437	2,248,592	3,346,029	1,121,693	2,298,290	3,419,983	1,146,450	2,349,017	3,495,467
2031	1,098,947	2,251,685	3,350,632	1,124,779	2,304,613	3,429,392	1,151,181	2,358,711	3,509,892
2032	1,105,663	2,263,999	3,369,662	1,133,190	2,320,366	3,453,556	1,161,364	2,378,056	3,539,420
2033	1,101,941	2,257,819	3,359,760	1,130,911	2,317,179	3,448,090	1,160,603	2,378,014	3,538,617
2034	1,103,440	2,260,892	3,364,332	1,133,990	2,323,486	3,457,476	1,165,341	2,387,724	3,553,065

Annual Change

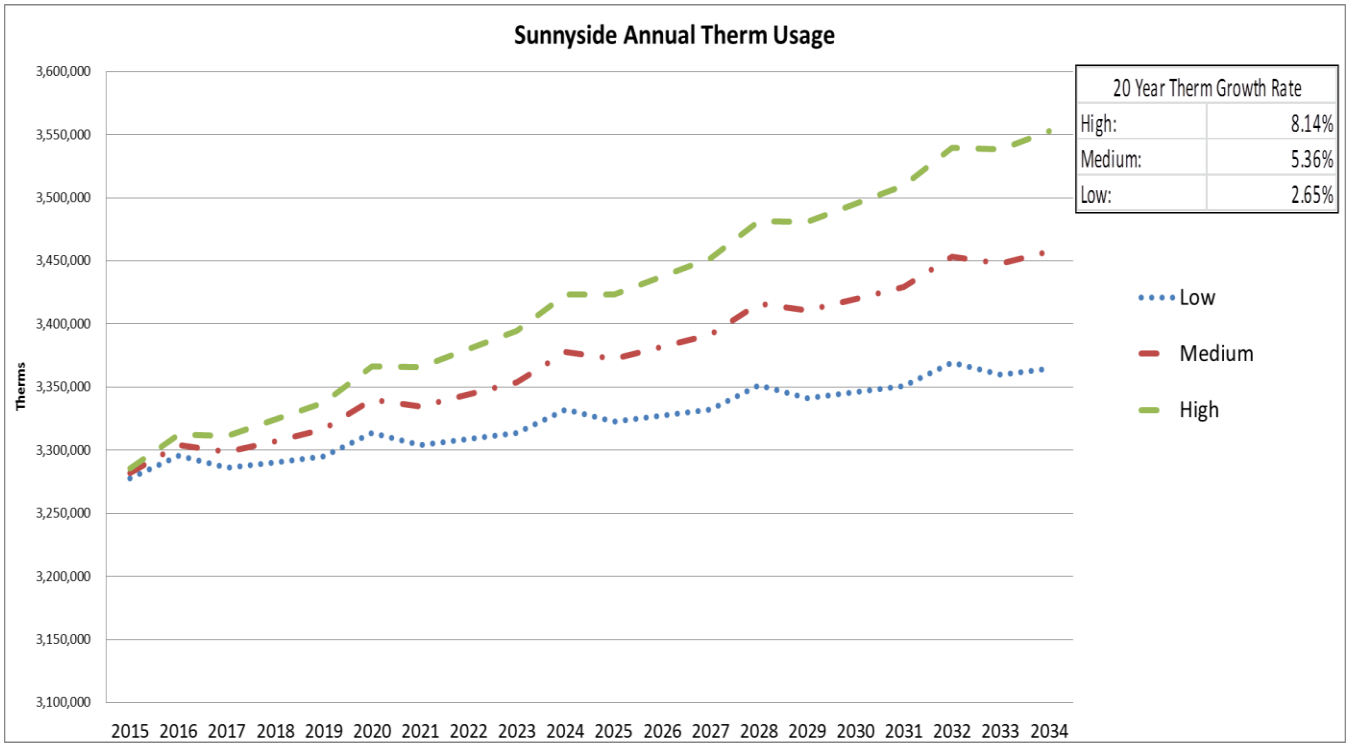
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.60%	0.54%	0.56%	0.73%	0.66%	0.69%	0.86%	0.79%	0.81%
2017	-0.34%	-0.28%	-0.30%	-0.21%	-0.15%	-0.17%	-0.08%	-0.02%	-0.04%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.61%	0.55%	0.57%	0.75%	0.69%	0.71%	0.89%	0.82%	0.85%
2021	-0.33%	-0.27%	-0.29%	-0.19%	-0.13%	-0.15%	-0.05%	0.01%	-0.01%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.62%	0.55%	0.57%	0.76%	0.70%	0.72%	0.90%	0.84%	0.86%
2025	-0.33%	-0.27%	-0.29%	-0.19%	-0.13%	-0.15%	-0.05%	0.01%	-0.01%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.62%	0.55%	0.57%	0.76%	0.69%	0.71%	0.90%	0.83%	0.85%
2029	-0.33%	-0.27%	-0.29%	-0.20%	-0.13%	-0.15%	-0.06%	0.00%	-0.02%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.61%	0.55%	0.57%	0.75%	0.68%	0.70%	0.88%	0.82%	0.84%
2033	-0.34%	-0.27%	-0.29%	-0.20%	-0.14%	-0.16%	-0.07%	0.00%	-0.02%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

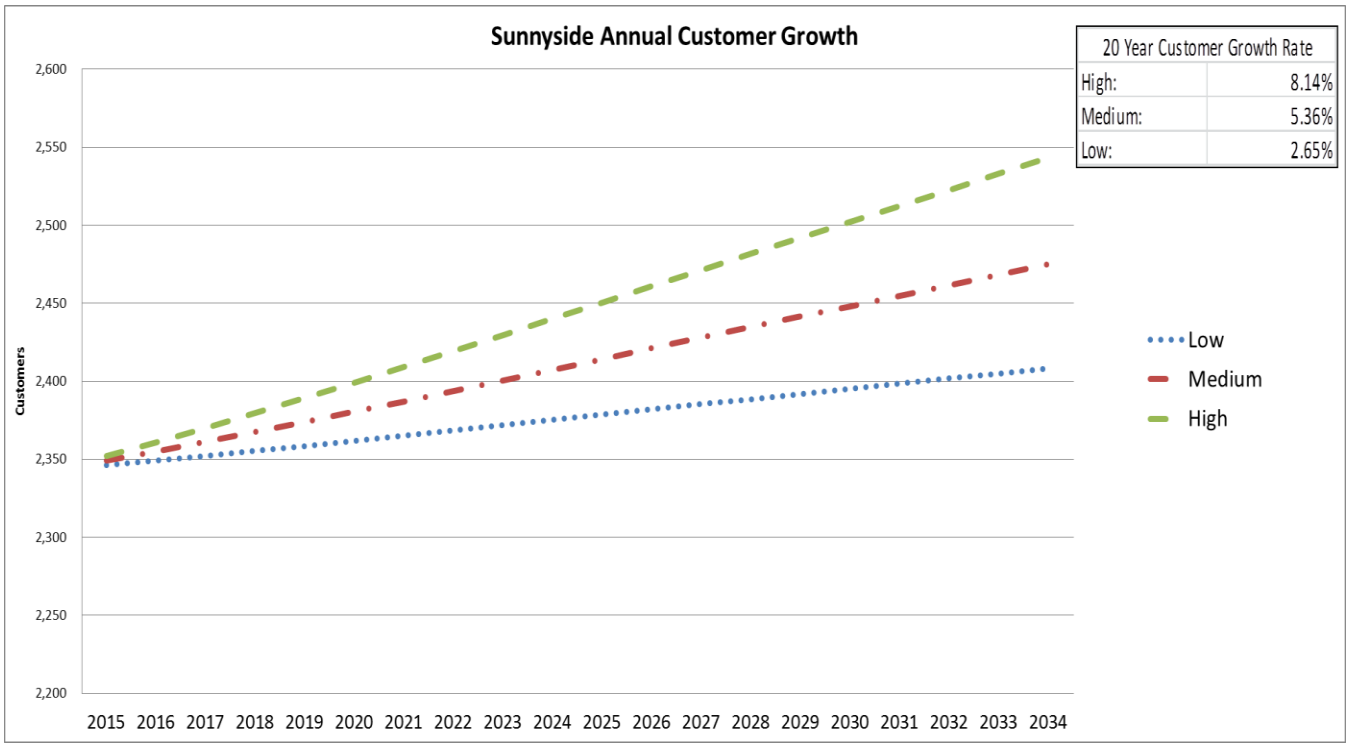
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,819	527	2,346	1,821	528	2,349	1,824	528	2,352
2016	1,822	528	2,349	1,826	529	2,355	1,831	530	2,361
2017	1,824	528	2,352	1,831	530	2,361	1,838	532	2,370
2018	1,826	529	2,355	1,836	532	2,367	1,845	534	2,380
2019	1,829	530	2,359	1,841	533	2,374	1,853	537	2,389
2020	1,831	530	2,362	1,846	535	2,380	1,860	539	2,399
2021	1,834	531	2,365	1,851	536	2,387	1,868	541	2,409
2022	1,837	532	2,369	1,856	538	2,394	1,876	543	2,420
2023	1,839	533	2,372	1,861	539	2,401	1,884	546	2,430
2024	1,842	533	2,375	1,867	541	2,408	1,892	548	2,440
2025	1,844	534	2,379	1,872	542	2,414	1,900	550	2,450
2026	1,847	535	2,382	1,877	544	2,421	1,908	553	2,461
2027	1,850	536	2,385	1,883	545	2,428	1,916	555	2,471
2028	1,852	537	2,389	1,888	547	2,435	1,924	557	2,482
2029	1,855	537	2,392	1,893	548	2,441	1,932	560	2,492
2030	1,857	538	2,395	1,898	550	2,448	1,940	562	2,502
2031	1,860	539	2,398	1,903	551	2,455	1,948	564	2,512
2032	1,862	539	2,402	1,909	553	2,462	1,956	567	2,523
2033	1,865	540	2,405	1,914	554	2,468	1,964	569	2,533
2034	1,867	541	2,408	1,919	556	2,475	1,972	571	2,543

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.13%	0.13%	0.13%	0.25%	0.25%	0.25%	0.38%	0.38%	0.38%
2017	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.39%	0.39%	0.39%
2018	0.13%	0.13%	0.13%	0.27%	0.27%	0.27%	0.40%	0.40%	0.40%
2019	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2020	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2021	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2023	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2024	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2025	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2026	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2030	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2032	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2033	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%


Sunnyside Annual Therm Usage
Therms
3,600,000
3,550,000
3,500,000
3,450,000
3,400,000
3,350,000
3,300,000
3,250,000
3,200,000
3,150,000
3,100,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 8.14%
Medium: 5.36%
Low: 2.65%
Low
Medium
High


Sunnyside Annual Customer Growth
Customers
2,600
2,550
2,500
2,450
2,400
2,350
2,300
2,250
2,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.14%
Medium: 5.36%
Low: 2.65%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Moses Lake

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,670,037	857,347	3,527,384	2,704,489	857,347	3,561,836	2,738,942	857,347	3,596,289
2016	2,708,635	869,741	3,578,376	2,770,319	878,215	3,648,535	2,832,684	886,690	3,719,374
2017	2,722,779	874,282	3,597,062	2,811,858	891,384	3,703,242	2,902,841	908,651	3,811,491
2018	2,749,448	882,846	3,632,294	2,866,941	908,845	3,775,786	2,988,138	935,351	3,923,489
2019	2,776,314	891,472	3,667,786	2,922,968	926,607	3,849,575	3,075,732	962,769	4,038,501
2020	2,816,193	904,277	3,720,470	2,993,577	948,990	3,942,567	3,180,150	995,454	4,175,604
2021	2,830,640	908,916	3,739,557	3,037,915	963,046	4,000,960	3,258,037	1,019,835	4,277,872
2022	2,858,100	917,734	3,775,834	3,096,855	981,730	4,078,586	3,352,855	1,049,515	4,402,369
2023	2,885,761	926,616	3,812,376	3,156,798	1,000,733	4,157,531	3,450,202	1,079,986	4,530,188
2024	2,926,940	939,838	3,866,778	3,232,461	1,024,719	4,257,180	3,566,358	1,116,346	4,682,704
2025	2,941,676	944,570	3,886,246	3,279,720	1,039,700	4,319,420	3,652,683	1,143,367	4,796,050
2026	2,969,936	953,644	3,923,580	3,342,734	1,059,676	4,402,410	3,757,953	1,176,319	4,934,272
2027	2,998,395	962,782	3,961,177	3,406,797	1,079,984	4,486,781	3,865,984	1,210,135	5,076,118
2028	3,040,892	976,428	4,017,320	3,487,793	1,105,661	4,593,454	3,995,017	1,250,525	5,245,542
2029	3,055,911	981,251	4,037,162	3,538,118	1,121,615	4,659,733	4,090,573	1,280,436	5,371,009
2030	3,084,972	990,582	4,075,554	3,605,410	1,142,947	4,748,357	4,207,272	1,316,965	5,524,237
2031	3,114,232	999,978	4,114,210	3,673,805	1,164,628	4,838,433	4,326,990	1,354,439	5,681,429
2032	3,158,063	1,014,052	4,172,115	3,760,422	1,192,087	4,952,509	4,470,126	1,399,244	5,869,371
2033	3,173,356	1,018,962	4,192,318	3,813,954	1,209,057	5,023,010	4,575,748	1,432,306	6,008,055
2034	3,203,220	1,028,552	4,231,772	3,885,741	1,231,814	5,117,554	4,704,937	1,472,745	6,177,682

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	1.45%	1.45%	2.43%	2.43%	2.43%	3.42%	3.42%	3.42%
2017	0.52%	0.52%	0.52%	1.50%	1.50%	1.50%	2.48%	2.48%	2.48%
2018	0.98%	0.98%	0.98%	1.96%	1.96%	1.96%	2.94%	2.94%	2.94%
2019	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2020	1.44%	1.44%	1.44%	2.42%	2.42%	2.42%	3.39%	3.39%	3.39%
2021	0.51%	0.51%	0.51%	1.48%	1.48%	1.48%	2.45%	2.45%	2.45%
2022	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.90%	2.90%	2.90%
2024	1.43%	1.43%	1.43%	2.40%	2.40%	2.40%	3.37%	3.37%	3.37%
2025	0.50%	0.50%	0.50%	1.46%	1.46%	1.46%	2.42%	2.42%	2.42%
2026	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.88%	2.88%	2.88%
2027	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.87%	2.87%	2.87%
2028	1.42%	1.42%	1.42%	2.38%	2.38%	2.38%	3.34%	3.34%	3.34%
2029	0.49%	0.49%	0.49%	1.44%	1.44%	1.44%	2.39%	2.39%	2.39%
2030	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2031	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2032	1.41%	1.41%	1.41%	2.36%	2.36%	2.36%	3.31%	3.31%	3.31%
2033	0.48%	0.48%	0.48%	1.42%	1.42%	1.42%	2.36%	2.36%	2.36%
2034	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,349	38,605	40,954	2,349	39,005	41,354	2,349	39,405	41,754
2016	2,383	38,974	41,357	2,406	39,762	42,168	2,429	40,557	42,987
2017	2,395	39,368	41,763	2,442	40,554	42,996	2,489	41,763	44,253
2018	2,419	39,753	42,172	2,490	41,348	43,838	2,563	42,990	45,553
2019	2,442	40,142	42,584	2,539	42,156	44,695	2,638	44,251	46,888
2020	2,477	40,522	42,999	2,600	42,966	45,566	2,727	45,532	48,260
2021	2,490	40,927	43,418	2,638	43,814	46,452	2,794	46,873	49,668
2022	2,514	41,324	43,839	2,690	44,664	47,354	2,875	48,238	51,113
2023	2,539	41,724	44,263	2,742	45,529	48,270	2,959	49,638	52,597
2024	2,575	42,115	44,690	2,807	46,395	49,202	3,058	51,062	54,120
2025	2,588	42,533	45,121	2,848	47,301	50,150	3,133	52,551	55,684
2026	2,613	42,941	45,554	2,903	48,210	51,113	3,223	54,066	57,289
2027	2,638	43,353	45,991	2,959	49,134	52,093	3,315	55,620	58,935
2028	2,675	43,755	46,430	3,029	50,060	53,089	3,426	57,199	60,625
2029	2,688	44,184	46,873	3,073	51,028	54,101	3,508	58,851	62,359
2030	2,714	44,605	47,319	3,131	51,999	55,130	3,608	60,530	64,138
2031	2,740	45,028	47,767	3,191	52,985	56,176	3,711	62,253	65,963
2032	2,778	45,441	48,219	3,266	53,973	57,239	3,834	64,002	67,835
2033	2,792	45,883	48,674	3,312	55,006	58,319	3,924	65,831	69,756
2034	2,818	46,314	49,132	3,375	56,042	59,417	4,035	67,690	71,725

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	0.96%	0.98%	2.43%	1.94%	1.97%	3.42%	2.92%	2.95%
2017	0.52%	1.01%	0.98%	1.50%	1.99%	1.96%	2.48%	2.97%	2.95%
2018	0.98%	0.98%	0.98%	1.96%	1.96%	1.96%	2.94%	2.94%	2.94%
2019	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2020	1.44%	0.95%	0.97%	2.42%	1.92%	1.95%	3.39%	2.90%	2.92%
2021	0.51%	1.00%	0.97%	1.48%	1.97%	1.95%	2.45%	2.95%	2.92%
2022	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.91%	2.91%	2.91%
2023	0.97%	0.97%	0.97%	1.94%	1.94%	1.94%	2.90%	2.90%	2.90%
2024	1.43%	0.94%	0.97%	2.40%	1.90%	1.93%	3.37%	2.87%	2.90%
2025	0.50%	0.99%	0.96%	1.46%	1.95%	1.93%	2.42%	2.92%	2.89%
2026	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.88%	2.88%	2.88%
2027	0.96%	0.96%	0.96%	1.92%	1.92%	1.92%	2.87%	2.87%	2.87%
2028	1.42%	0.93%	0.96%	2.38%	1.88%	1.91%	3.34%	2.84%	2.87%
2029	0.49%	0.98%	0.95%	1.44%	1.93%	1.91%	2.39%	2.89%	2.86%
2030	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2031	0.95%	0.95%	0.95%	1.90%	1.90%	1.90%	2.85%	2.85%	2.85%
2032	1.41%	0.92%	0.95%	2.36%	1.86%	1.89%	3.31%	2.81%	2.84%
2033	0.48%	0.97%	0.94%	1.42%	1.92%	1.89%	2.36%	2.86%	2.83%
2034	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	3,527,384	3,527,384	-	3,561,836	3,561,836	-	3,596,289	3,596,289
2016	-	3,578,376	3,578,376	-	3,648,535	3,648,535	-	3,719,374	3,719,374
2017	-	3,597,062	3,597,062	-	3,703,242	3,703,242	-	3,811,491	3,811,491
2018	-	3,632,294	3,632,294	-	3,775,786	3,775,786	-	3,923,489	3,923,489
2019	-	3,667,786	3,667,786	-	3,849,575	3,849,575	-	4,038,501	4,038,501
2020	-	3,720,470	3,720,470	-	3,942,567	3,942,567	-	4,175,604	4,175,604
2021	-	3,739,557	3,739,557	-	4,000,960	4,000,960	-	4,277,872	4,277,872
2022	-	3,775,834	3,775,834	-	4,078,586	4,078,586	-	4,402,369	4,402,369
2023	-	3,812,376	3,812,376	-	4,157,531	4,157,531	-	4,530,188	4,530,188
2024	-	3,866,778	3,866,778	-	4,257,180	4,257,180	-	4,682,704	4,682,704
2025	-	3,886,246	3,886,246	-	4,319,420	4,319,420	-	4,796,050	4,796,050
2026	-	3,923,580	3,923,580	-	4,402,410	4,402,410	-	4,934,272	4,934,272
2027	-	3,961,177	3,961,177	-	4,486,781	4,486,781	-	5,076,118	5,076,118
2028	-	4,017,320	4,017,320	-	4,593,454	4,593,454	-	5,245,542	5,245,542
2029	-	4,037,162	4,037,162	-	4,659,733	4,659,733	-	5,371,009	5,371,009
2030	-	4,075,554	4,075,554	-	4,748,357	4,748,357	-	5,524,237	5,524,237
2031	-	4,114,210	4,114,210	-	4,838,433	4,838,433	-	5,681,429	5,681,429
2032	-	4,172,115	4,172,115	-	4,952,509	4,952,509	-	5,869,371	5,869,371
2033	-	4,192,318	4,192,318	-	5,023,010	5,023,010	-	6,008,055	6,008,055
2034	-	4,231,772	4,231,772	-	5,117,554	5,117,554	-	6,177,682	6,177,682

Annual Change

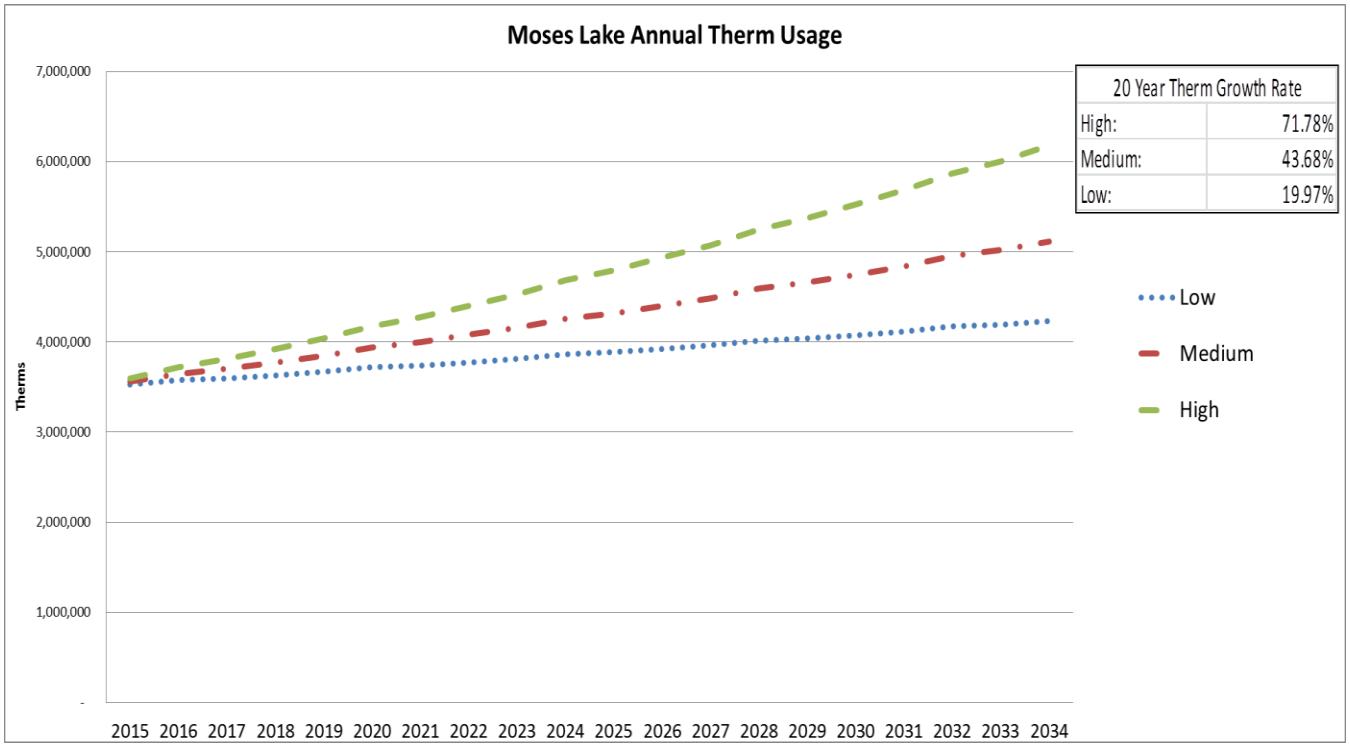
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	1.45%	1.45%	#DIV/0!	2.43%	2.43%	#DIV/0!	3.42%	3.42%
2017	#DIV/0!	0.52%	0.52%	#DIV/0!	1.50%	1.50%	#DIV/0!	2.48%	2.48%
2018	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.94%	2.94%
2019	#DIV/0!	0.98%	0.98%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.93%	2.93%
2020	#DIV/0!	1.44%	1.44%	#DIV/0!	2.42%	2.42%	#DIV/0!	3.39%	3.39%
2021	#DIV/0!	0.51%	0.51%	#DIV/0!	1.48%	1.48%	#DIV/0!	2.45%	2.45%
2022	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.91%	2.91%
2023	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.90%	2.90%
2024	#DIV/0!	1.43%	1.43%	#DIV/0!	2.40%	2.40%	#DIV/0!	3.37%	3.37%
2025	#DIV/0!	0.50%	0.50%	#DIV/0!	1.46%	1.46%	#DIV/0!	2.42%	2.42%
2026	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.88%	2.88%
2027	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.87%	2.87%
2028	#DIV/0!	1.42%	1.42%	#DIV/0!	2.38%	2.38%	#DIV/0!	3.34%	3.34%
2029	#DIV/0!	0.49%	0.49%	#DIV/0!	1.44%	1.44%	#DIV/0!	2.39%	2.39%
2030	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2031	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2032	#DIV/0!	1.41%	1.41%	#DIV/0!	2.36%	2.36%	#DIV/0!	3.31%	3.31%
2033	#DIV/0!	0.48%	0.48%	#DIV/0!	1.42%	1.42%	#DIV/0!	2.36%	2.36%
2034	#DIV/0!	0.94%	0.94%	#DIV/0!	1.88%	1.88%	#DIV/0!	2.82%	2.82%

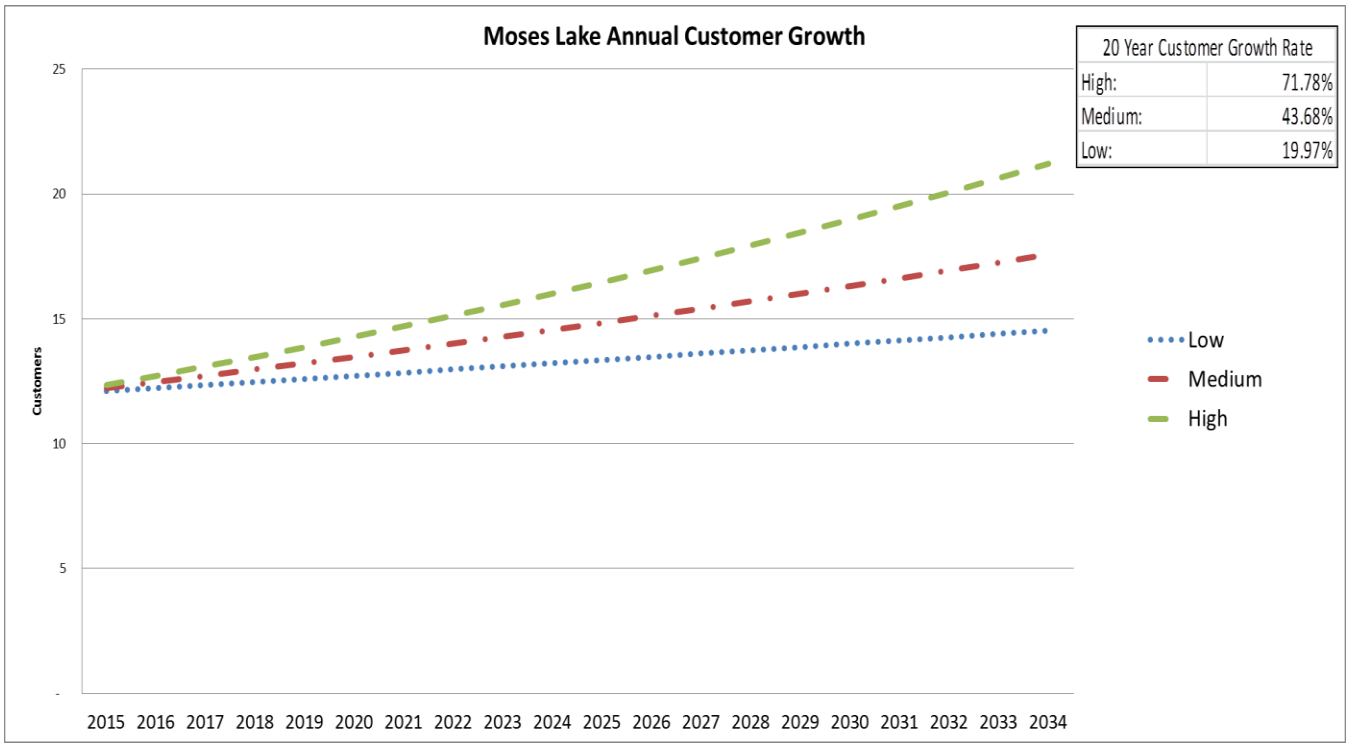
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	-	12	12	-	12	12	-	12	12
2016	-	12	12	-	12	12	-	13	13
2017	-	12	12	-	13	13	-	13	13
2018	-	12	12	-	13	13	-	13	13
2019	-	13	13	-	13	13	-	14	14
2020	-	13	13	-	13	13	-	14	14
2021	-	13	13	-	14	14	-	15	15
2022	-	13	13	-	14	14	-	15	15
2023	-	13	13	-	14	14	-	16	16
2024	-	13	13	-	15	15	-	16	16
2025	-	13	13	-	15	15	-	16	16
2026	-	13	13	-	15	15	-	17	17
2027	-	14	14	-	15	15	-	17	17
2028	-	14	14	-	16	16	-	18	18
2029	-	14	14	-	16	16	-	18	18
2030	-	14	14	-	16	16	-	19	19
2031	-	14	14	-	17	17	-	20	20
2032	-	14	14	-	17	17	-	20	20
2033	-	14	14	-	17	17	-	21	21
2034	-	15	15	-	18	18	-	21	21

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	#DIV/0!	0.98%	0.98%	#DIV/0!	1.97%	1.97%	#DIV/0!	2.95%	2.95%
2017	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.95%	2.95%
2018	#DIV/0!	0.98%	0.98%	#DIV/0!	1.96%	1.96%	#DIV/0!	2.94%	2.94%
2019	#DIV/0!	0.98%	0.98%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.93%	2.93%
2020	#DIV/0!	0.97%	0.97%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.92%	2.92%
2021	#DIV/0!	0.97%	0.97%	#DIV/0!	1.95%	1.95%	#DIV/0!	2.92%	2.92%
2022	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.91%	2.91%
2023	#DIV/0!	0.97%	0.97%	#DIV/0!	1.94%	1.94%	#DIV/0!	2.90%	2.90%
2024	#DIV/0!	0.97%	0.97%	#DIV/0!	1.93%	1.93%	#DIV/0!	2.90%	2.90%
2025	#DIV/0!	0.96%	0.96%	#DIV/0!	1.93%	1.93%	#DIV/0!	2.89%	2.89%
2026	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.88%	2.88%
2027	#DIV/0!	0.96%	0.96%	#DIV/0!	1.92%	1.92%	#DIV/0!	2.87%	2.87%
2028	#DIV/0!	0.96%	0.96%	#DIV/0!	1.91%	1.91%	#DIV/0!	2.87%	2.87%
2029	#DIV/0!	0.95%	0.95%	#DIV/0!	1.91%	1.91%	#DIV/0!	2.86%	2.86%
2030	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2031	#DIV/0!	0.95%	0.95%	#DIV/0!	1.90%	1.90%	#DIV/0!	2.85%	2.85%
2032	#DIV/0!	0.95%	0.95%	#DIV/0!	1.89%	1.89%	#DIV/0!	2.84%	2.84%
2033	#DIV/0!	0.94%	0.94%	#DIV/0!	1.89%	1.89%	#DIV/0!	2.83%	2.83%
2034	#DIV/0!	0.94%	0.94%	#DIV/0!	1.88%	1.88%	#DIV/0!	2.82%	2.82%


Moses Lake Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 71.78%
Medium: 43.68%
Low: 19.97%
Low
Medium
High


Moses Lake Annual Customer Growth
Customers
25
20
15
10
5
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 71.78%
Medium: 43.68%
Low: 19.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Woodland

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,026,242	321,145	1,347,387	1,045,268	321,145	1,366,413	1,064,294	321,145	1,385,439
2016	1,045,018	327,020	1,372,039	1,079,007	331,510	1,410,518	1,113,528	336,001	1,449,529
2017	1,054,626	330,027	1,384,653	1,103,483	339,030	1,442,513	1,153,808	348,155	1,501,963
2018	1,068,547	334,383	1,402,931	1,132,615	347,981	1,480,596	1,199,500	361,942	1,561,442
2019	1,082,296	338,686	1,420,982	1,161,762	356,936	1,518,697	1,245,801	375,913	1,621,714
2020	1,100,590	344,410	1,445,001	1,196,024	367,462	1,563,486	1,298,224	391,731	1,689,956
2021	1,109,278	347,129	1,456,407	1,220,043	374,842	1,594,885	1,340,120	404,373	1,744,493
2022	1,122,524	351,274	1,473,799	1,249,182	383,794	1,632,976	1,388,131	418,860	1,806,991
2023	1,135,605	355,368	1,490,972	1,278,294	392,739	1,671,033	1,436,656	433,502	1,870,158
2024	1,153,501	360,968	1,514,468	1,313,068	403,422	1,716,491	1,492,180	450,257	1,942,437
2025	1,161,315	363,413	1,524,728	1,336,500	410,622	1,747,122	1,535,328	463,276	1,998,604
2026	1,173,949	367,367	1,541,316	1,365,581	419,556	1,785,137	1,585,438	478,396	2,063,834
2027	1,186,434	371,274	1,557,708	1,394,627	428,480	1,823,107	1,636,021	493,660	2,129,680
2028	1,203,949	376,755	1,580,704	1,429,786	439,282	1,869,068	1,694,359	511,263	2,205,622
2029	1,210,968	378,951	1,589,920	1,452,600	446,292	1,898,891	1,738,551	524,598	2,263,149
2030	1,223,022	382,723	1,605,745	1,481,517	455,176	1,936,694	1,790,467	540,263	2,330,730
2031	1,234,962	386,460	1,621,422	1,510,446	464,064	1,974,510	1,842,909	556,087	2,398,995
2032	1,252,152	391,839	1,643,992	1,545,978	474,981	2,020,959	1,903,964	574,510	2,478,473
2033	1,258,474	393,817	1,652,291	1,568,229	481,817	2,050,046	1,949,158	588,147	2,537,305
2034	1,270,063	397,444	1,667,507	1,597,113	490,691	2,087,805	2,003,008	604,396	2,607,404

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.83%	1.83%	1.83%	3.23%	3.23%	3.23%	4.63%	4.63%	4.63%
2017	0.92%	0.92%	0.92%	2.27%	2.27%	2.27%	3.62%	3.62%	3.62%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.69%	1.69%	1.69%	2.95%	2.95%	2.95%	4.21%	4.21%	4.21%
2021	0.79%	0.79%	0.79%	2.01%	2.01%	2.01%	3.23%	3.23%	3.23%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.58%	1.58%	1.58%	2.72%	2.72%	2.72%	3.86%	3.86%	3.86%
2025	0.68%	0.68%	0.68%	1.78%	1.78%	1.78%	2.89%	2.89%	2.89%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.48%	1.48%	1.48%	2.52%	2.52%	2.52%	3.57%	3.57%	3.57%
2029	0.58%	0.58%	0.58%	1.60%	1.60%	1.60%	2.61%	2.61%	2.61%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.39%	1.39%	1.39%	2.35%	2.35%	2.35%	3.31%	3.31%	3.31%
2033	0.50%	0.50%	0.50%	1.44%	1.44%	1.44%	2.37%	2.37%	2.37%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	880	12,036	12,916	880	12,218	13,098	880	12,401	13,281
2016	896	12,200	13,096	908	12,555	13,463	921	12,915	13,835
2017	904	12,369	13,273	929	12,899	13,828	954	13,444	14,397
2018	916	12,532	13,448	953	13,239	14,193	992	13,976	14,968
2019	928	12,693	13,621	978	13,580	14,558	1,030	14,515	15,545
2020	944	12,848	13,792	1,007	13,916	14,923	1,073	15,057	16,130
2021	951	13,010	13,961	1,027	14,261	15,288	1,108	15,614	16,722
2022	962	13,165	14,128	1,051	14,602	15,653	1,148	16,174	17,321
2023	974	13,319	14,292	1,076	14,942	16,018	1,188	16,739	17,927
2024	989	13,466	14,455	1,105	15,278	16,383	1,234	17,306	18,540
2025	996	13,620	14,616	1,125	15,623	16,748	1,269	17,889	19,158
2026	1,006	13,768	14,775	1,149	15,962	17,112	1,311	18,473	19,783
2027	1,017	13,915	14,932	1,174	16,302	17,476	1,352	19,062	20,415
2028	1,032	14,055	15,087	1,204	16,636	17,840	1,401	19,651	21,052
2029	1,038	14,202	15,241	1,223	16,980	18,202	1,437	20,257	21,694
2030	1,049	14,344	15,392	1,247	17,318	18,565	1,480	20,862	22,342
2031	1,059	14,484	15,543	1,271	17,656	18,927	1,524	21,473	22,996
2032	1,074	14,618	15,691	1,301	17,988	19,289	1,574	22,082	23,656
2033	1,079	14,760	15,838	1,320	18,331	19,651	1,611	22,711	24,322
2034	1,089	14,895	15,984	1,344	18,669	20,013	1,656	23,338	24,994

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.83%	1.36%	1.39%	3.23%	2.75%	2.78%	4.63%	4.14%	4.18%
2017	0.92%	1.39%	1.35%	2.27%	2.74%	2.71%	3.62%	4.10%	4.06%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.69%	1.22%	1.25%	2.95%	2.48%	2.51%	4.21%	3.73%	3.76%
2021	0.79%	1.26%	1.22%	2.01%	2.48%	2.45%	3.23%	3.70%	3.67%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.58%	1.11%	1.14%	2.72%	2.25%	2.28%	3.86%	3.39%	3.42%
2025	0.68%	1.14%	1.11%	1.78%	2.26%	2.22%	2.89%	3.37%	3.34%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.48%	1.01%	1.04%	2.52%	2.05%	2.08%	3.57%	3.09%	3.12%
2029	0.58%	1.05%	1.02%	1.60%	2.07%	2.03%	2.61%	3.08%	3.05%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.39%	0.92%	0.96%	2.35%	1.88%	1.91%	3.31%	2.84%	2.87%
2033	0.50%	0.97%	0.94%	1.44%	1.91%	1.88%	2.37%	2.85%	2.82%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	349,683	997,704	1,347,387	354,620	1,011,792	1,366,413	359,558	1,025,881	1,385,439
2016	356,184	1,015,854	1,372,039	366,174	1,044,344	1,410,518	376,301	1,073,228	1,449,529
2017	359,354	1,025,299	1,384,653	374,371	1,068,143	1,442,513	389,799	1,112,164	1,501,963
2018	364,098	1,038,833	1,402,931	384,254	1,096,342	1,480,596	405,236	1,156,206	1,561,442
2019	368,783	1,052,199	1,420,982	394,142	1,124,555	1,518,697	420,878	1,200,836	1,621,714
2020	375,125	1,069,875	1,445,001	405,884	1,157,601	1,563,486	438,716	1,251,239	1,689,956
2021	377,976	1,078,430	1,456,407	413,915	1,180,970	1,594,885	452,742	1,291,751	1,744,493
2022	382,490	1,091,309	1,473,799	423,801	1,209,176	1,632,976	468,962	1,338,029	1,806,991
2023	386,947	1,104,025	1,490,972	433,677	1,237,355	1,671,033	485,356	1,384,802	1,870,158
2024	393,159	1,121,309	1,514,468	445,605	1,270,886	1,716,491	504,261	1,438,176	1,942,437
2025	395,708	1,129,021	1,524,728	453,425	1,293,697	1,747,122	518,691	1,479,913	1,998,604
2026	400,013	1,141,304	1,541,316	463,291	1,321,846	1,785,137	535,620	1,528,214	2,063,834
2027	404,267	1,153,441	1,557,708	473,145	1,349,962	1,823,107	552,709	1,576,972	2,129,680
2028	410,354	1,170,350	1,580,704	485,214	1,383,854	1,869,068	572,584	1,633,038	2,205,622
2029	412,626	1,177,293	1,589,920	492,813	1,406,078	1,898,891	587,347	1,675,802	2,263,149
2030	416,734	1,189,012	1,605,745	502,624	1,434,070	1,936,694	604,886	1,725,844	2,330,730
2031	420,802	1,200,620	1,621,422	512,438	1,462,072	1,974,510	622,603	1,776,392	2,398,995
2032	426,784	1,217,208	1,643,992	524,646	1,496,314	2,020,959	643,417	1,835,056	2,478,473
2033	428,814	1,223,478	1,652,291	532,042	1,518,005	2,050,046	658,498	1,878,806	2,537,305
2034	432,763	1,234,745	1,667,507	541,841	1,545,964	2,087,805	676,691	1,930,713	2,607,404

Annual Change

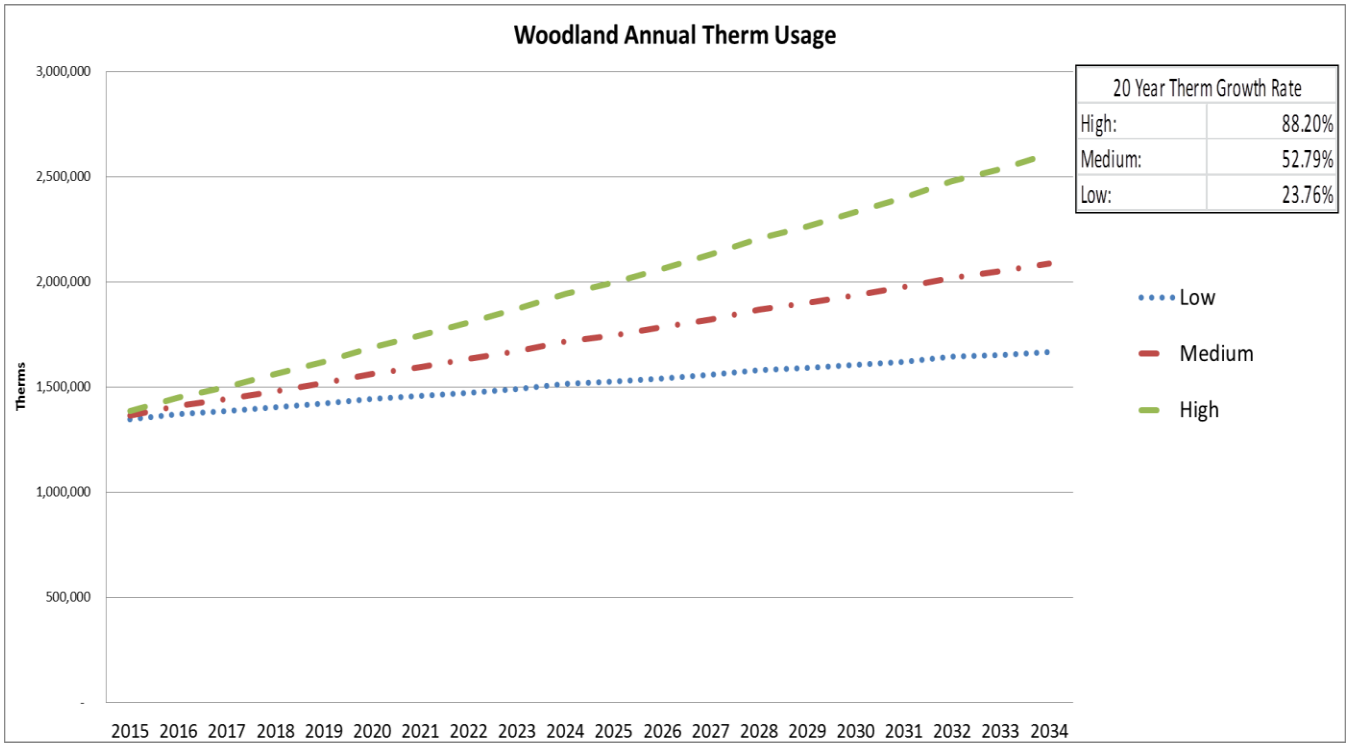
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.86%	1.82%	1.83%	3.26%	3.22%	3.23%	4.66%	4.62%	4.63%
2017	0.89%	0.93%	0.92%	2.24%	2.28%	2.27%	3.59%	3.63%	3.62%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.72%	1.68%	1.69%	2.98%	2.94%	2.95%	4.24%	4.20%	4.21%
2021	0.76%	0.80%	0.79%	1.98%	2.02%	2.01%	3.20%	3.24%	3.23%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.61%	1.57%	1.58%	2.75%	2.71%	2.72%	3.90%	3.85%	3.86%
2025	0.65%	0.69%	0.68%	1.75%	1.79%	1.78%	2.86%	2.90%	2.89%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.51%	1.47%	1.48%	2.55%	2.51%	2.52%	3.60%	3.56%	3.57%
2029	0.55%	0.59%	0.58%	1.57%	1.61%	1.60%	2.58%	2.62%	2.61%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	1.42%	1.38%	1.39%	2.38%	2.34%	2.35%	3.34%	3.30%	3.31%
2033	0.48%	0.52%	0.50%	1.41%	1.45%	1.44%	2.34%	2.38%	2.37%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%

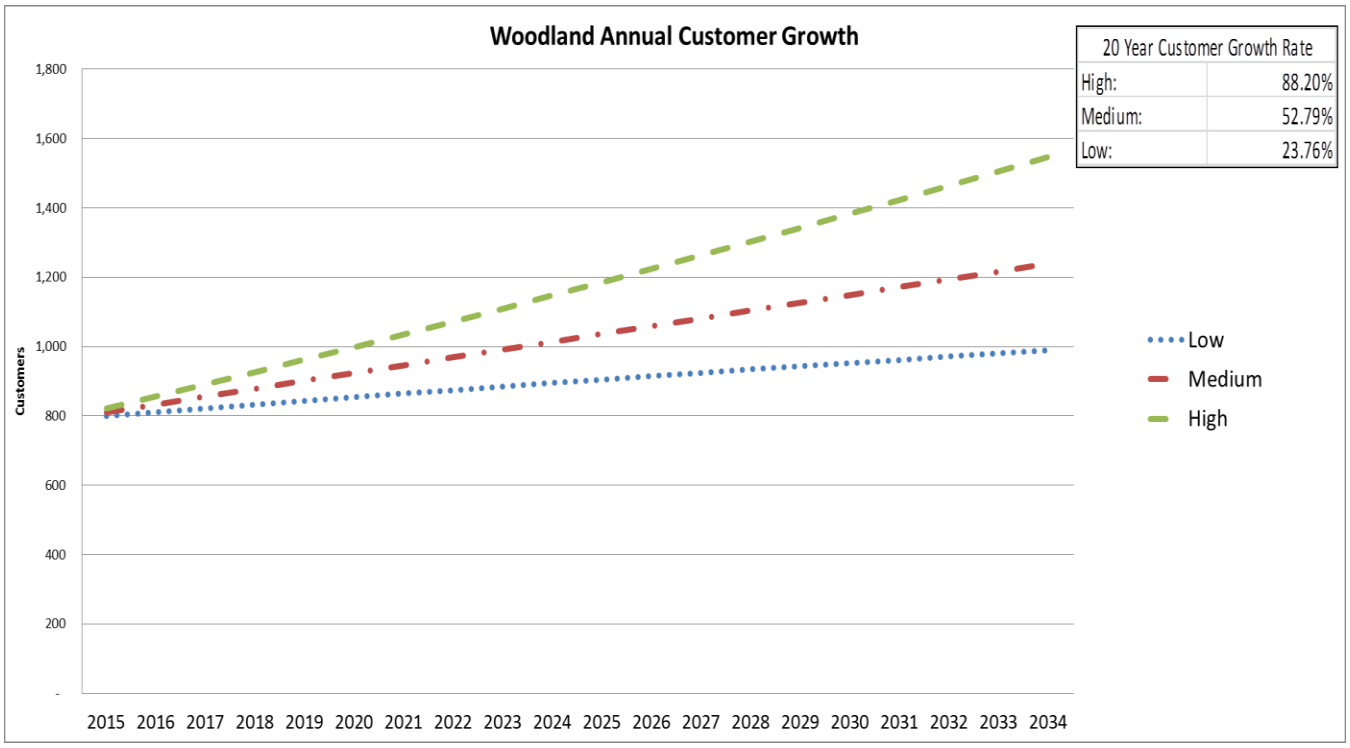
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	588	211	800	597	214	811	605	217	822
2016	597	214	811	613	220	833	630	226	857
2017	605	217	822	630	226	856	656	235	891
2018	613	220	833	647	232	879	682	245	927
2019	621	223	843	663	238	901	708	254	962
2020	628	225	854	680	244	924	735	264	999
2021	636	228	864	697	250	947	762	273	1,035
2022	644	231	875	713	256	969	789	283	1,072
2023	651	234	885	730	262	992	817	293	1,110
2024	659	236	895	746	268	1,014	845	303	1,148
2025	666	239	905	763	274	1,037	873	313	1,186
2026	673	242	915	780	280	1,059	901	323	1,225
2027	680	244	924	796	286	1,082	930	334	1,264
2028	687	247	934	813	292	1,104	959	344	1,303
2029	694	249	944	829	298	1,127	988	355	1,343
2030	701	252	953	846	303	1,149	1,018	365	1,383
2031	708	254	962	862	309	1,172	1,048	376	1,424
2032	715	257	971	879	315	1,194	1,078	387	1,465
2033	722	259	981	895	321	1,217	1,108	398	1,506
2034	728	261	990	912	327	1,239	1,139	409	1,547

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.39%	1.39%	1.39%	2.78%	2.78%	2.78%	4.18%	4.18%	4.18%
2017	1.35%	1.35%	1.35%	2.71%	2.71%	2.71%	4.06%	4.06%	4.06%
2018	1.32%	1.32%	1.32%	2.64%	2.64%	2.64%	3.96%	3.96%	3.96%
2019	1.29%	1.29%	1.29%	2.57%	2.57%	2.57%	3.86%	3.86%	3.86%
2020	1.25%	1.25%	1.25%	2.51%	2.51%	2.51%	3.76%	3.76%	3.76%
2021	1.22%	1.22%	1.22%	2.45%	2.45%	2.45%	3.67%	3.67%	3.67%
2022	1.19%	1.19%	1.19%	2.39%	2.39%	2.39%	3.58%	3.58%	3.58%
2023	1.17%	1.17%	1.17%	2.33%	2.33%	2.33%	3.50%	3.50%	3.50%
2024	1.14%	1.14%	1.14%	2.28%	2.28%	2.28%	3.42%	3.42%	3.42%
2025	1.11%	1.11%	1.11%	2.22%	2.22%	2.22%	3.34%	3.34%	3.34%
2026	1.09%	1.09%	1.09%	2.18%	2.18%	2.18%	3.26%	3.26%	3.26%
2027	1.06%	1.06%	1.06%	2.13%	2.13%	2.13%	3.19%	3.19%	3.19%
2028	1.04%	1.04%	1.04%	2.08%	2.08%	2.08%	3.12%	3.12%	3.12%
2029	1.02%	1.02%	1.02%	2.03%	2.03%	2.03%	3.05%	3.05%	3.05%
2030	1.00%	1.00%	1.00%	1.99%	1.99%	1.99%	2.99%	2.99%	2.99%
2031	0.98%	0.98%	0.98%	1.95%	1.95%	1.95%	2.93%	2.93%	2.93%
2032	0.96%	0.96%	0.96%	1.91%	1.91%	1.91%	2.87%	2.87%	2.87%
2033	0.94%	0.94%	0.94%	1.88%	1.88%	1.88%	2.82%	2.82%	2.82%
2034	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%


Woodland Annual Therm Usage
Therms
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 88.20%
Medium: 52.79%
Low: 23.76%
Low
Medium
High


Woodland Annual Customer Growth
Customers
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 88.20%
Medium: 52.79%
Low: 23.76%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

A/M Rendering

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	214,556	250,848	465,404	218,979	250,848	469,827	223,402	250,848	474,250
2016	217,387	254,157	471,545	223,946	256,538	480,485	230,590	258,919	489,508
2017	218,604	255,580	474,184	227,280	260,357	487,637	236,164	265,178	501,342
2018	220,615	257,931	478,546	231,461	265,147	496,608	242,681	272,495	515,176
2019	222,615	260,270	482,885	235,659	269,955	505,613	249,282	279,907	529,190
2020	225,434	263,565	488,999	240,753	275,791	516,544	256,904	288,466	545,369
2021	226,580	264,905	491,484	244,089	279,612	523,701	262,717	294,993	557,710
2022	228,543	267,201	495,744	248,320	284,458	532,778	269,548	302,663	572,211
2023	230,492	269,478	499,970	252,554	289,308	541,862	276,441	310,403	586,845
2024	233,290	272,750	506,040	257,751	295,262	553,013	284,463	319,410	603,873
2025	234,348	273,987	508,336	261,040	299,030	560,070	290,433	326,114	616,547
2026	236,255	276,217	512,472	265,288	303,897	569,185	297,523	334,075	631,597
2027	238,146	278,428	516,574	269,536	308,762	578,297	304,668	342,097	646,765
2028	240,911	281,660	522,571	274,796	314,788	589,583	313,022	351,478	664,500
2029	241,879	282,792	524,672	278,018	318,479	596,498	319,106	358,310	677,416
2030	243,721	284,945	528,666	282,251	323,328	605,579	326,394	366,492	692,886
2031	245,551	287,085	532,636	286,491	328,184	614,675	333,747	374,750	708,497
2032	248,281	290,277	538,559	291,801	334,268	626,069	342,409	384,476	726,885
2033	249,168	291,314	540,482	294,962	337,889	632,851	348,604	391,432	740,036
2034	250,958	293,407	544,365	299,200	342,743	641,943	356,117	399,867	755,984

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.32%	1.32%	2.27%	2.27%	2.27%	3.22%	3.22%	3.22%
2017	0.56%	0.56%	0.56%	1.49%	1.49%	1.49%	2.42%	2.42%	2.42%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	1.27%	1.27%	2.16%	2.16%	2.16%	3.06%	3.06%	3.06%
2021	0.51%	0.51%	0.51%	1.39%	1.39%	1.39%	2.26%	2.26%	2.26%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	1.21%	1.21%	2.06%	2.06%	2.06%	2.90%	2.90%	2.90%
2025	0.45%	0.45%	0.45%	1.28%	1.28%	1.28%	2.10%	2.10%	2.10%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	1.16%	1.16%	1.95%	1.95%	1.95%	2.74%	2.74%	2.74%
2029	0.40%	0.40%	0.40%	1.17%	1.17%	1.17%	1.94%	1.94%	1.94%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	1.11%	1.11%	1.85%	1.85%	1.85%	2.60%	2.60%	2.60%
2033	0.36%	0.36%	0.36%	1.08%	1.08%	1.08%	1.81%	1.81%	1.81%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	687	2,846	3,534	687	2,880	3,567	687	2,914	3,601
2016	696	2,871	3,567	703	2,932	3,635	709	2,994	3,703
2017	700	2,900	3,600	713	2,989	3,703	727	3,080	3,807
2018	707	2,927	3,634	726	3,044	3,771	747	3,165	3,912
2019	713	2,953	3,666	740	3,099	3,839	767	3,251	4,018
2020	722	2,977	3,699	756	3,152	3,908	790	3,335	4,126
2021	726	3,006	3,732	766	3,210	3,976	808	3,426	4,235
2022	732	3,032	3,764	779	3,266	4,045	829	3,515	4,345
2023	738	3,058	3,796	793	3,322	4,114	850	3,605	4,456
2024	747	3,081	3,828	809	3,374	4,183	875	3,693	4,568
2025	751	3,109	3,860	819	3,433	4,253	893	3,788	4,681
2026	757	3,134	3,891	833	3,489	4,322	915	3,880	4,796
2027	763	3,159	3,922	846	3,545	4,391	937	3,974	4,911
2028	772	3,181	3,953	862	3,598	4,460	963	4,064	5,027
2029	775	3,209	3,984	873	3,657	4,529	982	4,162	5,143
2030	781	3,233	4,014	886	3,712	4,598	1,004	4,257	5,261
2031	787	3,258	4,044	899	3,768	4,667	1,027	4,353	5,379
2032	795	3,279	4,074	916	3,820	4,736	1,053	4,445	5,499
2033	798	3,306	4,104	926	3,879	4,805	1,072	4,547	5,619
2034	804	3,329	4,133	939	3,935	4,874	1,096	4,645	5,740

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	0.86%	0.95%	2.27%	1.80%	1.89%	3.22%	2.75%	2.84%
2017	0.56%	1.02%	0.93%	1.49%	1.95%	1.86%	2.42%	2.89%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	0.80%	0.89%	2.16%	1.69%	1.78%	3.06%	2.59%	2.68%
2021	0.51%	0.97%	0.88%	1.39%	1.85%	1.76%	2.26%	2.73%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	0.75%	0.84%	2.06%	1.59%	1.68%	2.90%	2.43%	2.52%
2025	0.45%	0.92%	0.83%	1.28%	1.74%	1.65%	2.10%	2.57%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	0.70%	0.79%	1.95%	1.49%	1.58%	2.74%	2.27%	2.36%
2029	0.40%	0.86%	0.77%	1.17%	1.64%	1.55%	1.94%	2.41%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	0.65%	0.74%	1.85%	1.39%	1.48%	2.60%	2.13%	2.22%
2033	0.36%	0.82%	0.73%	1.08%	1.55%	1.46%	1.81%	2.28%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	461,284	4,120	465,404	465,668	4,159	469,827	470,052	4,198	474,250
2016	467,371	4,173	471,545	476,232	4,252	480,485	485,176	4,332	489,508
2017	469,987	4,198	474,184	483,320	4,317	487,637	496,904	4,438	501,342
2018	474,310	4,236	478,546	492,212	4,396	496,608	510,615	4,561	515,176
2019	478,610	4,275	482,885	501,138	4,476	505,613	524,505	4,685	529,190
2020	484,671	4,328	488,999	511,972	4,571	516,544	540,543	4,827	545,369
2021	487,133	4,351	491,484	519,065	4,636	523,701	552,773	4,937	557,710
2022	491,355	4,389	495,744	528,062	4,716	532,778	567,145	5,065	572,211
2023	495,544	4,426	499,970	537,065	4,797	541,862	581,650	5,195	586,845
2024	501,562	4,478	506,040	548,119	4,894	553,013	598,529	5,344	603,873
2025	503,836	4,500	508,336	555,112	4,958	560,070	611,089	5,458	616,547
2026	507,935	4,537	512,472	564,146	5,039	569,185	626,006	5,591	631,597
2027	512,001	4,573	516,574	573,178	5,119	578,297	641,040	5,725	646,765
2028	517,947	4,625	522,571	584,365	5,218	589,583	658,620	5,881	664,500
2029	520,027	4,645	524,672	591,217	5,280	596,498	671,419	5,997	677,416
2030	523,986	4,680	528,666	600,218	5,361	605,579	686,752	6,134	692,886
2031	527,921	4,715	532,636	609,234	5,441	614,675	702,225	6,272	708,497
2032	533,793	4,766	538,559	620,528	5,541	626,069	720,452	6,433	726,885
2033	535,697	4,785	540,482	627,248	5,602	632,851	733,485	6,551	740,036
2034	539,546	4,819	544,365	636,260	5,683	641,943	749,292	6,692	755,984

Annual Change

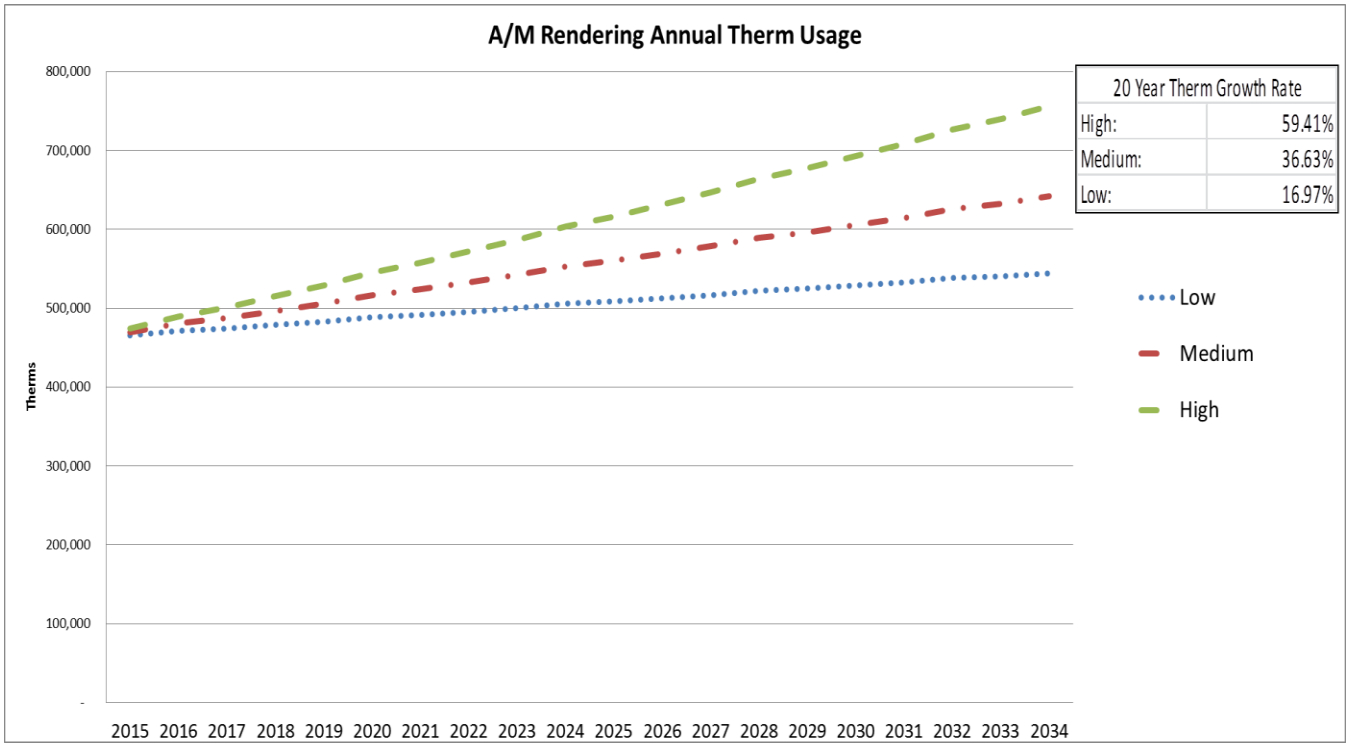
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.29%	1.32%	2.27%	2.24%	2.27%	3.22%	3.19%	3.22%
2017	0.56%	0.59%	0.56%	1.49%	1.52%	1.49%	2.42%	2.44%	2.42%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.27%	1.24%	1.27%	2.16%	2.13%	2.16%	3.06%	3.03%	3.06%
2021	0.51%	0.54%	0.51%	1.39%	1.41%	1.39%	2.26%	2.29%	2.26%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.21%	1.19%	1.21%	2.06%	2.03%	2.06%	2.90%	2.87%	2.90%
2025	0.45%	0.48%	0.45%	1.28%	1.30%	1.28%	2.10%	2.13%	2.10%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.16%	1.13%	1.16%	1.95%	1.92%	1.95%	2.74%	2.71%	2.74%
2029	0.40%	0.43%	0.40%	1.17%	1.20%	1.17%	1.94%	1.97%	1.94%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.11%	1.08%	1.11%	1.85%	1.83%	1.85%	2.60%	2.57%	2.60%
2033	0.36%	0.38%	0.36%	1.08%	1.11%	1.08%	1.81%	1.84%	1.81%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

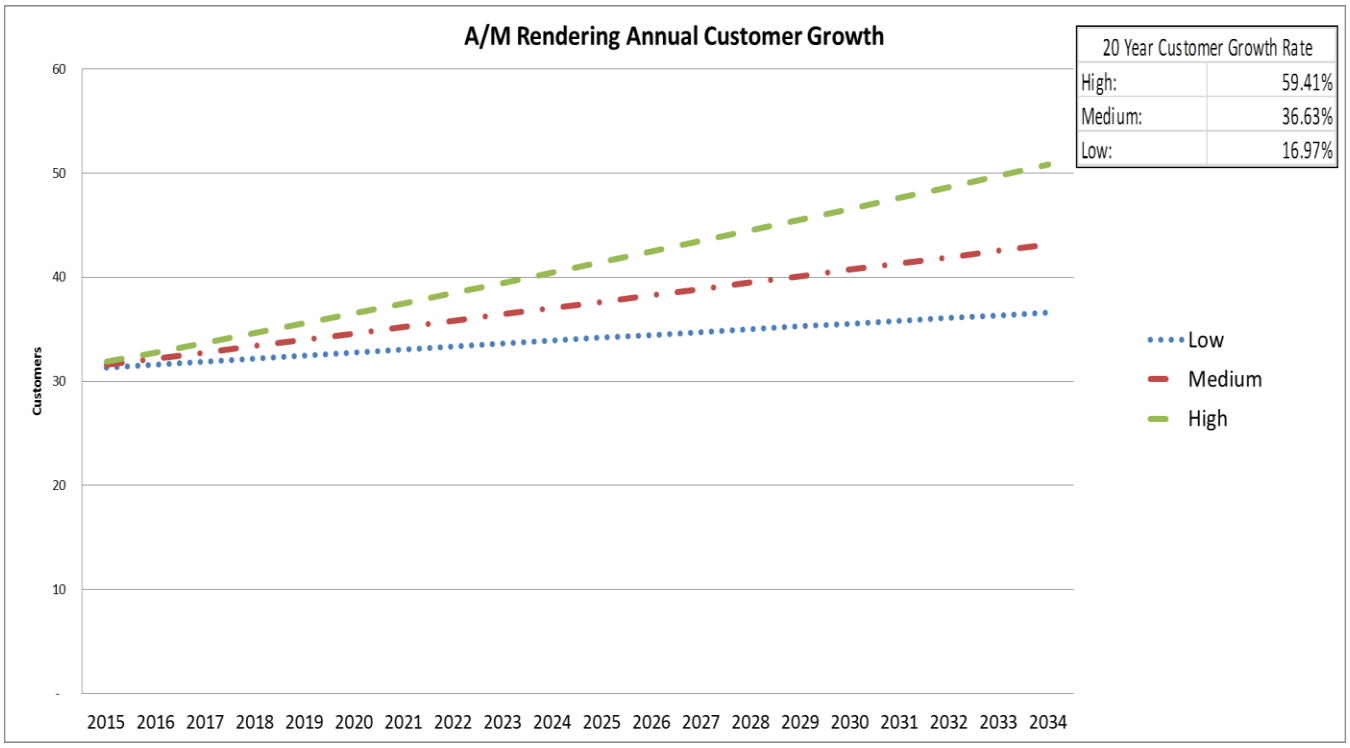
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30	1	31	31	1	32	31	1	32
2016	31	1	32	31	1	32	32	1	33
2017	31	1	32	32	1	33	33	1	34
2018	31	1	32	32	1	33	34	1	35
2019	31	1	32	33	1	34	34	1	36
2020	32	1	33	33	1	35	35	1	37
2021	32	1	33	34	1	35	36	1	38
2022	32	1	33	35	1	36	37	1	38
2023	33	1	34	35	1	36	38	1	39
2024	33	1	34	36	1	37	39	1	40
2025	33	1	34	36	1	38	40	1	41
2026	33	1	34	37	1	38	41	1	42
2027	34	1	35	38	1	39	42	1	43
2028	34	1	35	38	1	40	43	1	45
2029	34	1	35	39	1	40	44	1	46
2030	34	1	36	39	1	41	45	2	47
2031	35	1	36	40	1	41	46	2	48
2032	35	1	36	41	1	42	47	2	49
2033	35	1	36	41	1	43	48	2	50
2034	35	1	37	42	1	43	49	2	51

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


A/M Rendering Annual Therm Usage
Therms
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


A/M Rendering Annual Customer Growth
Customers
60
50
40
30
20
10
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

LDS Church

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	11,046	333	11,379	11,149	333	11,482	11,252	333	11,586
2016	11,283	340	11,624	11,491	343	11,834	11,700	347	12,047
2017	11,245	339	11,584	11,553	345	11,899	11,867	351	12,219
2018	11,344	342	11,687	11,757	351	12,109	12,181	361	12,542
2019	11,443	345	11,788	11,962	358	12,320	12,500	370	12,870
2020	11,684	353	12,036	12,318	368	12,686	12,980	384	13,364
2021	11,639	351	11,990	12,374	370	12,744	13,148	389	13,537
2022	11,736	354	12,091	12,581	376	12,957	13,477	399	13,877
2023	11,833	357	12,190	12,788	382	13,170	13,810	409	14,220
2024	12,077	364	12,441	13,156	393	13,550	14,322	424	14,746
2025	12,025	363	12,388	13,204	395	13,599	14,487	429	14,916
2026	12,120	366	12,485	13,412	401	13,813	14,830	439	15,270
2027	12,214	369	12,583	13,621	407	14,028	15,177	449	15,626
2028	12,460	376	12,836	14,001	419	14,420	15,718	466	16,183
2029	12,401	374	12,775	14,039	420	14,459	15,878	470	16,348
2030	12,493	377	12,870	14,248	426	14,674	16,232	481	16,713
2031	12,585	380	12,965	14,458	432	14,890	16,590	491	17,081
2032	12,833	387	13,220	14,848	444	15,292	17,160	508	17,668
2033	12,767	385	13,152	14,877	445	15,322	17,314	513	17,827
2034	12,857	388	13,245	15,087	451	15,538	17,681	524	18,205

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.15%	2.15%	2.15%	3.07%	3.07%	3.07%	3.98%	3.98%	3.98%
2017	-0.34%	-0.34%	-0.34%	0.54%	0.54%	0.54%	1.43%	1.43%	1.43%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.10%	2.10%	2.10%	2.97%	2.97%	2.97%	3.84%	3.84%	3.84%
2021	-0.38%	-0.38%	-0.38%	0.46%	0.46%	0.46%	1.29%	1.29%	1.29%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.06%	2.06%	2.06%	2.88%	2.88%	2.88%	3.70%	3.70%	3.70%
2025	-0.43%	-0.43%	-0.43%	0.36%	0.36%	0.36%	1.15%	1.15%	1.15%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.01%	2.01%	2.01%	2.79%	2.79%	2.79%	3.56%	3.56%	3.56%
2029	-0.47%	-0.47%	-0.47%	0.27%	0.27%	0.27%	1.02%	1.02%	1.02%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.97%	1.97%	1.97%	2.70%	2.70%	2.70%	3.43%	3.43%	3.43%
2033	-0.51%	-0.51%	-0.51%	0.19%	0.19%	0.19%	0.90%	0.90%	0.90%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1	126	127	1	127	128	1	128	129
2016	1	127	128	1	129	130	1	132	133
2017	1	128	129	1	132	133	1	135	136
2018	1	129	130	1	134	135	1	139	140
2019	1	130	131	1	136	137	1	142	143
2020	1	131	132	1	139	140	1	146	147
2021	1	133	134	1	141	142	1	150	151
2022	1	134	135	1	143	144	1	153	155
2023	1	135	136	1	146	147	1	157	158
2024	1	136	137	1	148	149	1	161	162
2025	1	137	138	1	150	151	1	165	166
2026	1	138	139	1	153	154	1	169	170
2027	1	139	140	1	155	156	1	173	174
2028	1	140	141	1	158	159	1	177	178
2029	1	141	142	1	160	161	1	181	182
2030	1	142	143	1	162	163	1	185	186
2031	1	143	144	1	165	166	1	189	190
2032	1	144	145	1	167	168	1	193	194
2033	1	145	146	1	169	171	1	197	199
2034	1	146	148	1	172	173	1	201	203

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.15%	0.90%	0.90%	3.07%	1.80%	1.81%	3.98%	2.70%	2.71%
2017	-0.34%	0.90%	0.89%	0.54%	1.80%	1.79%	1.43%	2.69%	2.68%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.10%	0.85%	0.86%	2.97%	1.71%	1.72%	3.84%	2.57%	2.58%
2021	-0.38%	0.86%	0.85%	0.46%	1.70%	1.70%	1.29%	2.55%	2.54%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.06%	0.80%	0.81%	2.88%	1.62%	1.63%	3.70%	2.43%	2.44%
2025	-0.43%	0.81%	0.80%	0.36%	1.61%	1.60%	1.15%	2.41%	2.40%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.01%	0.76%	0.77%	2.79%	1.53%	1.53%	3.56%	2.29%	2.30%
2029	-0.47%	0.76%	0.76%	0.27%	1.52%	1.51%	1.02%	2.27%	2.27%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.97%	0.72%	0.72%	2.70%	1.44%	1.45%	3.43%	2.16%	2.17%
2033	-0.51%	0.72%	0.72%	0.19%	1.44%	1.43%	0.90%	2.16%	2.15%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,025	8,354	11,379	3,053	8,429	11,482	3,080	8,505	11,586
2016	3,091	8,533	11,624	3,147	8,687	11,834	3,204	8,843	12,047
2017	3,080	8,504	11,584	3,164	8,735	11,899	3,249	8,970	12,219
2018	3,107	8,579	11,687	3,219	8,889	12,109	3,335	9,208	12,542
2019	3,134	8,654	11,788	3,275	9,044	12,320	3,422	9,448	12,870
2020	3,201	8,835	12,036	3,374	9,312	12,686	3,554	9,810	13,364
2021	3,188	8,802	11,990	3,388	9,355	12,744	3,599	9,938	13,537
2022	3,215	8,876	12,091	3,445	9,512	12,957	3,689	10,187	13,877
2023	3,241	8,949	12,190	3,502	9,669	13,170	3,781	10,439	14,220
2024	3,308	9,133	12,441	3,603	9,946	13,550	3,921	10,825	14,746
2025	3,293	9,094	12,388	3,615	9,983	13,599	3,966	10,950	14,916
2026	3,320	9,166	12,485	3,673	10,141	13,813	4,060	11,210	15,270
2027	3,345	9,237	12,583	3,730	10,299	14,028	4,155	11,472	15,626
2028	3,413	9,422	12,836	3,835	10,585	14,420	4,304	11,880	16,183
2029	3,396	9,378	12,775	3,844	10,615	14,459	4,346	12,001	16,348
2030	3,422	9,448	12,870	3,901	10,773	14,674	4,443	12,269	16,713
2031	3,447	9,518	12,965	3,959	10,931	14,890	4,541	12,540	17,081
2032	3,516	9,704	13,220	4,067	11,225	15,292	4,698	12,970	17,668
2033	3,497	9,655	13,152	4,074	11,248	15,322	4,740	13,088	17,827
2034	3,521	9,723	13,245	4,131	11,407	15,538	4,840	13,365	18,205

Annual Change

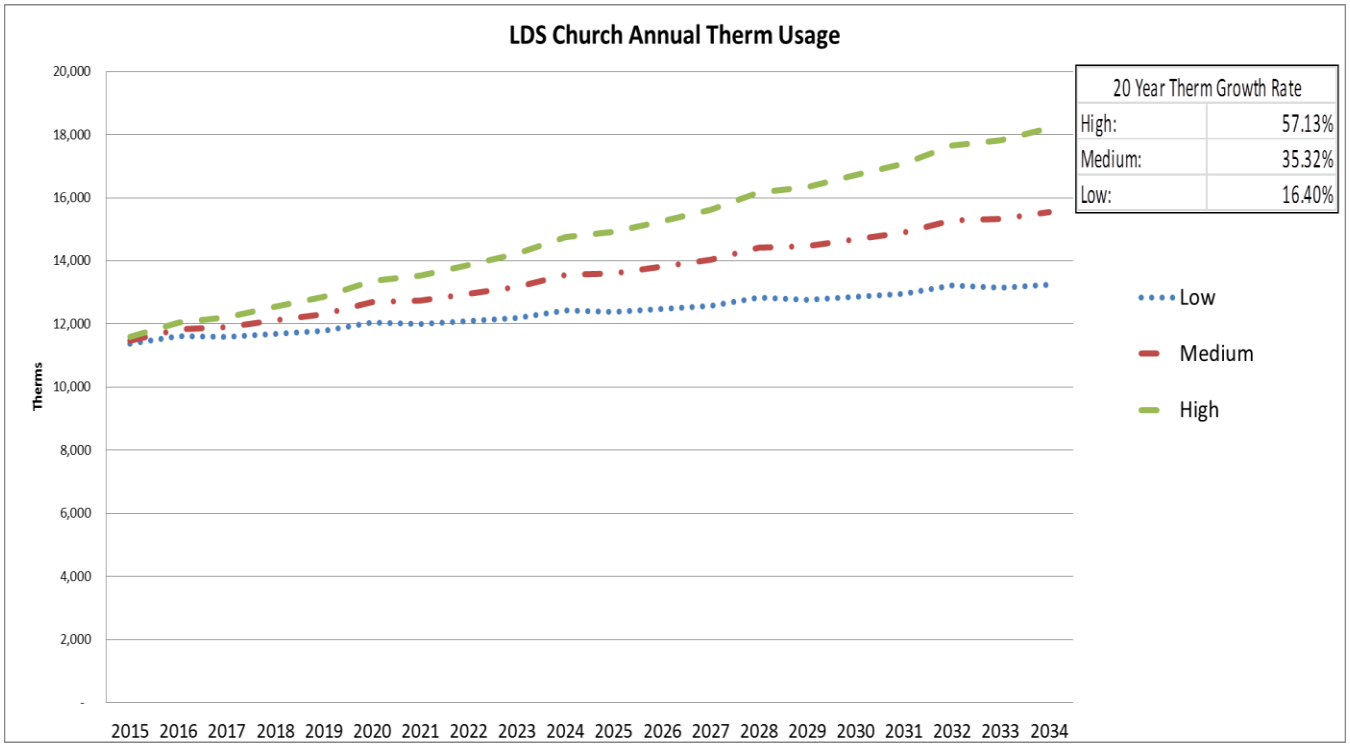
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	2.17%	2.14%	2.15%	3.09%	3.06%	3.07%	4.01%	3.97%	3.98%
2017	-0.36%	-0.33%	-0.34%	0.52%	0.55%	0.54%	1.40%	1.44%	1.43%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	2.13%	2.10%	2.10%	3.00%	2.96%	2.97%	3.86%	3.83%	3.84%
2021	-0.40%	-0.37%	-0.38%	0.43%	0.46%	0.46%	1.27%	1.30%	1.29%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	2.08%	2.05%	2.06%	2.90%	2.87%	2.88%	3.73%	3.70%	3.70%
2025	-0.45%	-0.42%	-0.43%	0.34%	0.37%	0.36%	1.13%	1.16%	1.15%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	2.03%	2.00%	2.01%	2.81%	2.78%	2.79%	3.59%	3.56%	3.56%
2029	-0.50%	-0.47%	-0.47%	0.25%	0.28%	0.27%	1.00%	1.03%	1.02%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	1.99%	1.96%	1.97%	2.72%	2.69%	2.70%	3.46%	3.43%	3.43%
2033	-0.53%	-0.50%	-0.51%	0.17%	0.20%	0.19%	0.88%	0.91%	0.90%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%

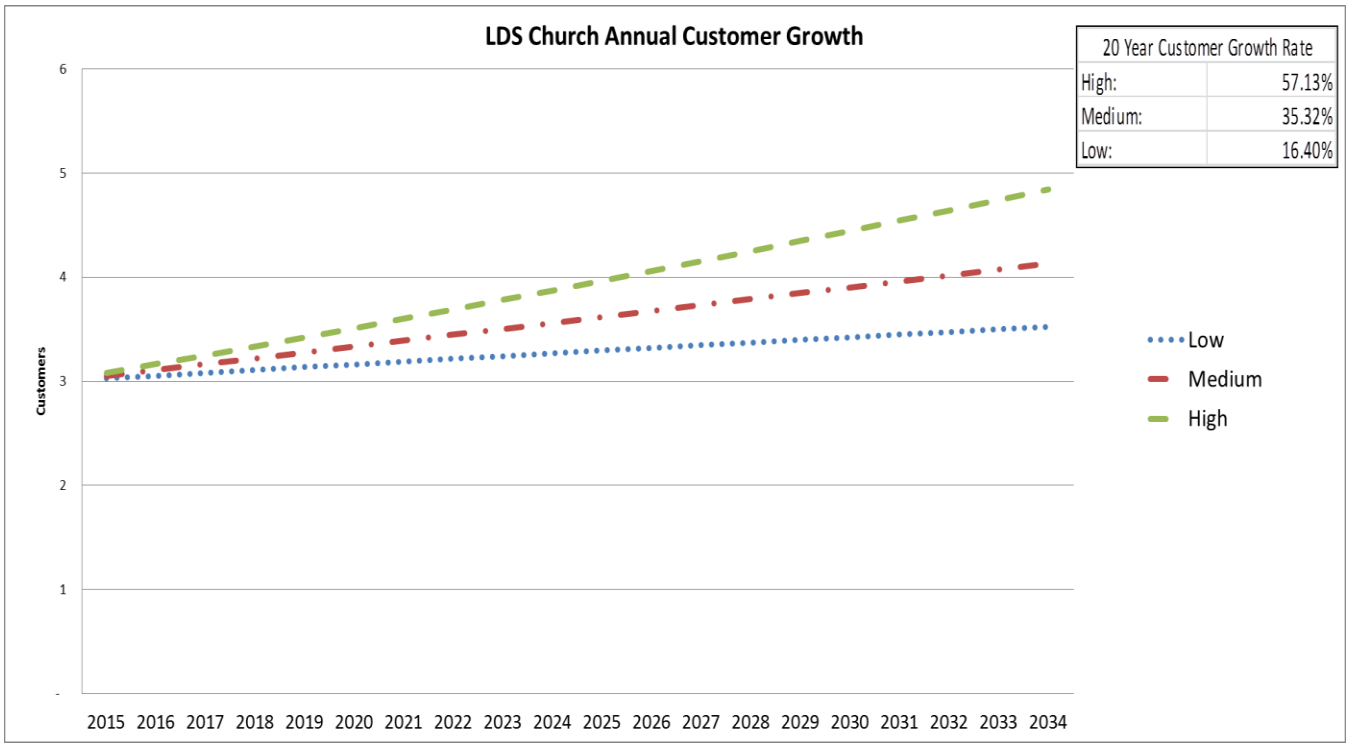
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	1	3	2	1	3	2	1	3
2016	2	1	3	2	1	3	2	1	3
2017	2	1	3	2	1	3	2	1	3
2018	2	1	3	2	1	3	2	1	3
2019	2	1	3	2	1	3	2	1	3
2020	2	1	3	2	1	3	2	1	4
2021	2	1	3	2	1	3	2	1	4
2022	2	1	3	2	1	3	2	1	4
2023	2	1	3	2	1	4	3	1	4
2024	2	1	3	2	1	4	3	1	4
2025	2	1	3	2	1	4	3	1	4
2026	2	1	3	2	1	4	3	1	4
2027	2	1	3	2	1	4	3	1	4
2028	2	1	3	3	1	4	3	1	4
2029	2	1	3	3	1	4	3	1	4
2030	2	1	3	3	1	4	3	1	4
2031	2	1	3	3	1	4	3	2	5
2032	2	1	3	3	1	4	3	2	5
2033	2	1	3	3	1	4	3	2	5
2034	2	1	4	3	1	4	3	2	5

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.90%	0.90%	0.90%	1.81%	1.81%	1.81%	2.71%	2.71%	2.71%
2017	0.89%	0.89%	0.89%	1.79%	1.79%	1.79%	2.68%	2.68%	2.68%
2018	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.65%	2.65%	2.65%
2019	0.87%	0.87%	0.87%	1.74%	1.74%	1.74%	2.61%	2.61%	2.61%
2020	0.86%	0.86%	0.86%	1.72%	1.72%	1.72%	2.58%	2.58%	2.58%
2021	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.54%	2.54%	2.54%
2022	0.84%	0.84%	0.84%	1.67%	1.67%	1.67%	2.51%	2.51%	2.51%
2023	0.82%	0.82%	0.82%	1.65%	1.65%	1.65%	2.47%	2.47%	2.47%
2024	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2025	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2026	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.37%	2.37%	2.37%
2027	0.78%	0.78%	0.78%	1.56%	1.56%	1.56%	2.33%	2.33%	2.33%
2028	0.77%	0.77%	0.77%	1.53%	1.53%	1.53%	2.30%	2.30%	2.30%
2029	0.76%	0.76%	0.76%	1.51%	1.51%	1.51%	2.27%	2.27%	2.27%
2030	0.74%	0.74%	0.74%	1.49%	1.49%	1.49%	2.23%	2.23%	2.23%
2031	0.74%	0.74%	0.74%	1.47%	1.47%	1.47%	2.21%	2.21%	2.21%
2032	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2033	0.72%	0.72%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%
2034	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%


LDS Church Annual Therm Usage
Therms
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 57.13%
Medium: 35.32%
Low: 16.40%
Low
Medium
High


LDS Church Annual Customer Growth
Customers
6
5
4
3
2
1
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 57.13%
Medium: 35.32%
Low: 16.40%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kalama #1

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	774	98	872	776	98	874	778	98	876
2016	776	98	874	779	99	878	783	99	882
2017	777	99	876	783	99	882	788	99	888
2018	779	99	878	787	99	886	794	100	894
2019	781	99	880	790	100	890	800	101	901
2020	783	99	882	794	100	895	806	102	907
2021	785	99	884	798	101	899	811	102	914
2022	787	100	887	802	101	903	817	103	920
2023	789	100	889	806	102	908	823	104	927
2024	791	100	891	810	102	912	830	105	934
2025	793	100	893	814	103	917	836	105	941
2026	795	101	895	818	103	921	842	106	948
2027	797	101	898	822	104	926	848	107	955
2028	799	101	900	826	104	930	854	108	962
2029	800	101	902	830	105	935	860	109	969
2030	802	102	904	834	105	939	867	109	976
2031	804	102	906	838	106	944	873	110	983
2032	806	102	908	842	106	948	879	111	990
2033	808	102	911	846	107	953	886	112	997
2034	810	103	913	850	107	958	892	112	1,004

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2017	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2022	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2023	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2024	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2025	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2026	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2027	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2028	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2029	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2030	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2031	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	0	17	17	0	17	17	0	17	17
2016	0	17	17	0	17	17	0	17	17
2017	0	17	17	0	17	17	0	17	17
2018	0	17	17	0	17	17	0	17	17
2019	0	17	17	0	17	17	0	17	17
2020	0	17	17	0	17	17	0	17	18
2021	0	17	17	0	17	17	0	17	18
2022	0	17	17	0	17	17	0	18	18
2023	0	17	17	0	17	18	0	18	18
2024	0	17	17	0	17	18	0	18	18
2025	0	17	17	0	17	18	0	18	18
2026	0	17	17	0	18	18	0	18	18
2027	0	17	17	0	18	18	0	18	18
2028	0	17	17	0	18	18	0	18	19
2029	0	17	17	0	18	18	0	18	19
2030	0	17	17	0	18	18	0	19	19
2031	0	17	18	0	18	18	0	19	19
2032	0	17	18	0	18	18	0	19	19
2033	0	17	18	0	18	18	0	19	19
2034	0	17	18	0	18	19	0	19	19

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	0.23%	0.23%	0.45%	0.45%	0.45%	0.68%	0.68%	0.68%
2017	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2020	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2021	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2022	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2023	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2024	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2025	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2026	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2027	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2028	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2029	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2030	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2031	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	872	-	872	874	-	874	876	-	876
2016	874	-	874	878	-	878	882	-	882
2017	876	-	876	882	-	882	888	-	888
2018	878	-	878	886	-	886	894	-	894
2019	880	-	880	890	-	890	901	-	901
2020	882	-	882	895	-	895	907	-	907
2021	884	-	884	899	-	899	914	-	914
2022	887	-	887	903	-	903	920	-	920
2023	889	-	889	908	-	908	927	-	927
2024	891	-	891	912	-	912	934	-	934
2025	893	-	893	917	-	917	941	-	941
2026	895	-	895	921	-	921	948	-	948
2027	898	-	898	926	-	926	955	-	955
2028	900	-	900	930	-	930	962	-	962
2029	902	-	902	935	-	935	969	-	969
2030	904	-	904	939	-	939	976	-	976
2031	906	-	906	944	-	944	983	-	983
2032	908	-	908	948	-	948	990	-	990
2033	911	-	911	953	-	953	997	-	997
2034	913	-	913	958	-	958	1,004	-	1,004

Annual Change

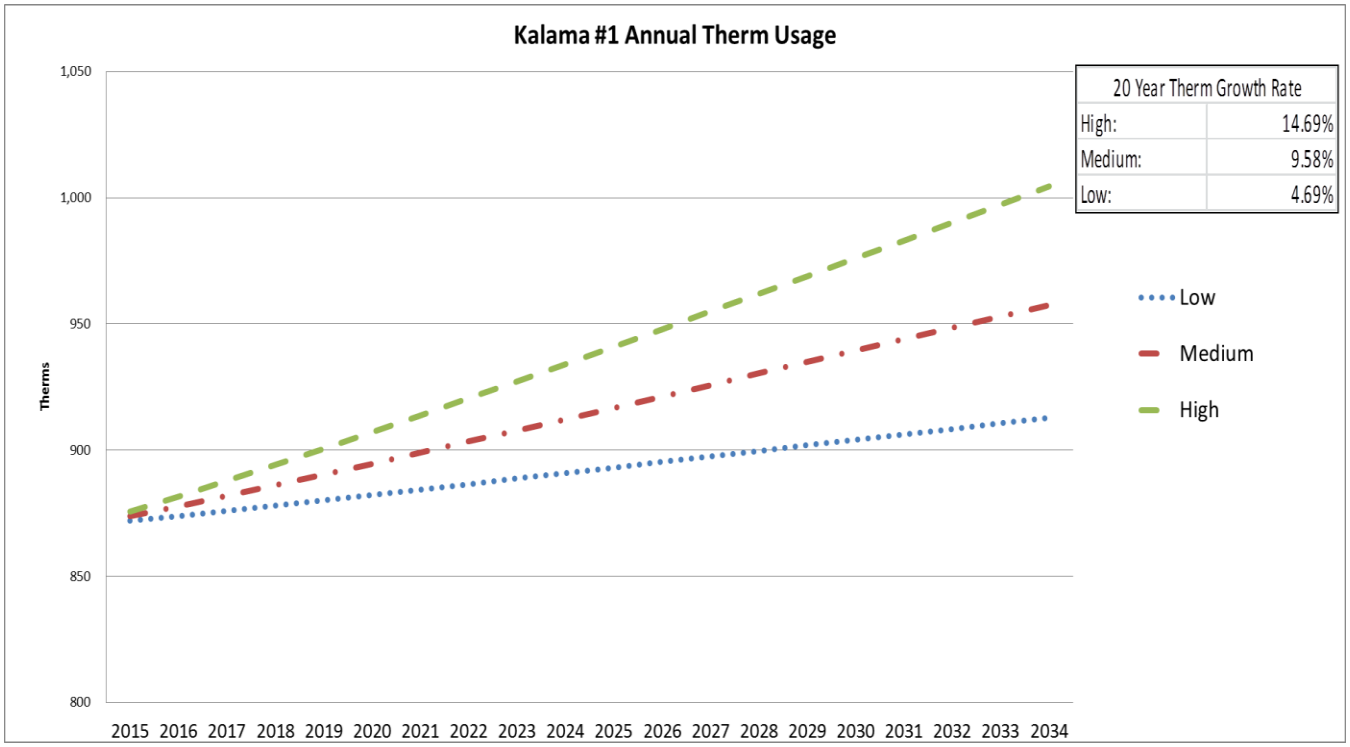
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	#DIV/0!	0.23%	0.45%	#DIV/0!	0.45%	0.68%	#DIV/0!	0.68%
2017	0.23%	#DIV/0!	0.23%	0.46%	#DIV/0!	0.46%	0.69%	#DIV/0!	0.69%
2018	0.24%	#DIV/0!	0.24%	0.47%	#DIV/0!	0.47%	0.71%	#DIV/0!	0.71%
2019	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2020	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2021	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2022	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2023	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2024	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2025	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2026	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2027	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2028	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2029	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2030	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2031	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2032	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2033	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2034	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%

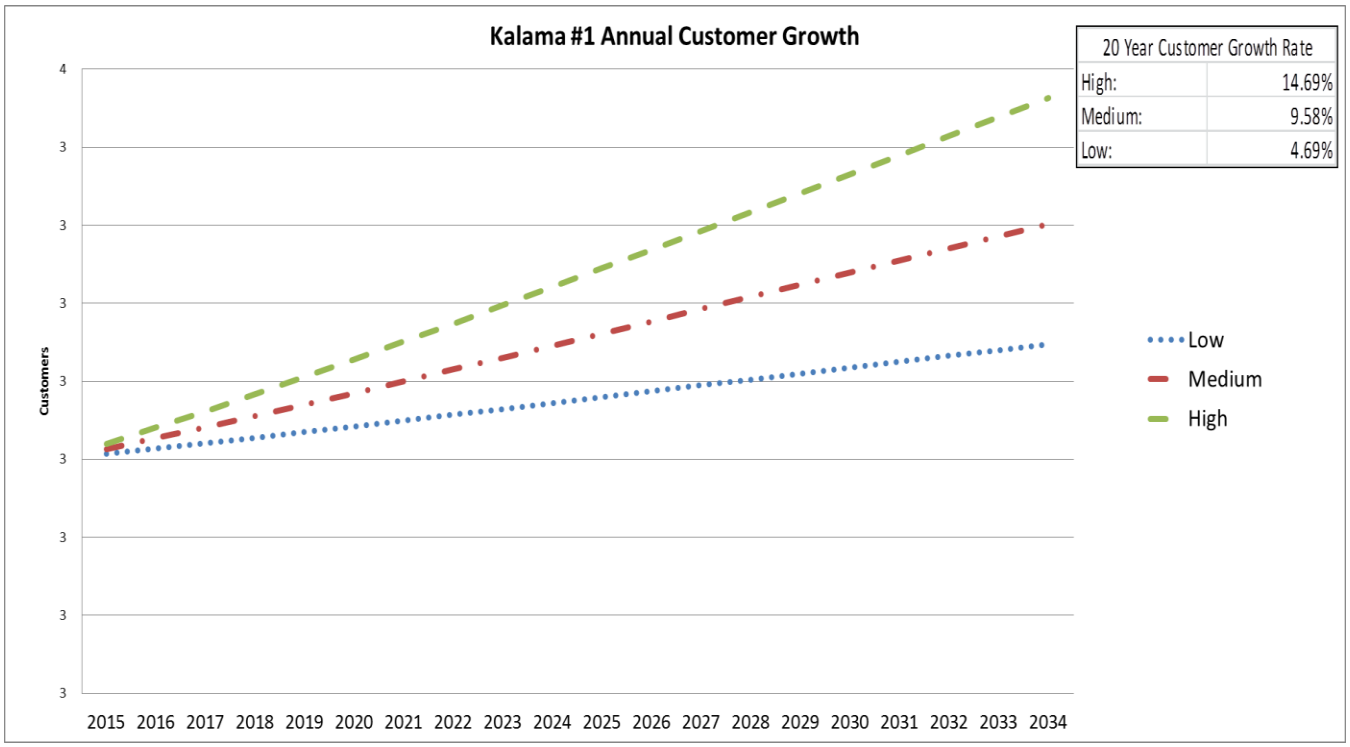
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3	-	3	3	-	3	3	-	3
2016	3	-	3	3	-	3	3	-	3
2017	3	-	3	3	-	3	3	-	3
2018	3	-	3	3	-	3	3	-	3
2019	3	-	3	3	-	3	3	-	3
2020	3	-	3	3	-	3	3	-	3
2021	3	-	3	3	-	3	3	-	3
2022	3	-	3	3	-	3	3	-	3
2023	3	-	3	3	-	3	3	-	3
2024	3	-	3	3	-	3	3	-	3
2025	3	-	3	3	-	3	3	-	3
2026	3	-	3	3	-	3	3	-	3
2027	3	-	3	3	-	3	3	-	3
2028	3	-	3	3	-	3	3	-	3
2029	3	-	3	3	-	3	3	-	3
2030	3	-	3	3	-	3	3	-	3
2031	3	-	3	3	-	3	3	-	3
2032	3	-	3	3	-	3	3	-	3
2033	3	-	3	3	-	3	3	-	3
2034	3	-	3	3	-	3	3	-	3

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.23%	#DIV/0!	0.23%	0.45%	#DIV/0!	0.45%	0.68%	#DIV/0!	0.68%
2017	0.23%	#DIV/0!	0.23%	0.46%	#DIV/0!	0.46%	0.69%	#DIV/0!	0.69%
2018	0.24%	#DIV/0!	0.24%	0.47%	#DIV/0!	0.47%	0.71%	#DIV/0!	0.71%
2019	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2020	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2021	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2022	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2023	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2024	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2025	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2026	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2027	0.25%	#DIV/0!	0.25%	0.49%	#DIV/0!	0.49%	0.74%	#DIV/0!	0.74%
2028	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2029	0.24%	#DIV/0!	0.24%	0.49%	#DIV/0!	0.49%	0.73%	#DIV/0!	0.73%
2030	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2031	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2032	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2033	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%
2034	0.24%	#DIV/0!	0.24%	0.48%	#DIV/0!	0.48%	0.72%	#DIV/0!	0.72%


Kalama #1 Annual Therm Usage
20 Year Therm Growth Rate
High: 14.69%
Medium: 9.58%
Low: 4.69%
Low
Medium
High
Therms
1,050
1,000
950
900
850
800
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034


Kalama #1 Annual Customer Growth
20 Year Customer Growth Rate
High: 14.69%
Medium: 9.58%
Low: 4.69%
Low
Medium
High
Customers
4
3
3
3
3
3
3
3
3
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Dehawn Dairy

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	1,276	192	1,468	1,277	192	1,469	1,278	192	1,469
2016	1,283	193	1,476	1,284	193	1,477	1,286	193	1,479
2017	1,278	192	1,470	1,280	192	1,473	1,283	193	1,476
2018	1,279	192	1,471	1,282	193	1,475	1,286	193	1,479
2019	1,280	192	1,472	1,284	193	1,477	1,289	194	1,483
2020	1,287	193	1,480	1,293	194	1,487	1,299	195	1,493
2021	1,282	193	1,474	1,289	194	1,482	1,296	195	1,490
2022	1,283	193	1,476	1,291	194	1,485	1,299	195	1,494
2023	1,284	193	1,477	1,293	194	1,488	1,303	196	1,498
2024	1,291	194	1,485	1,302	196	1,497	1,312	197	1,509
2025	1,286	193	1,480	1,298	195	1,493	1,310	197	1,506
2026	1,287	194	1,481	1,300	195	1,496	1,313	197	1,510
2027	1,289	194	1,482	1,303	196	1,498	1,317	198	1,514
2028	1,296	195	1,491	1,311	197	1,508	1,327	199	1,526
2029	1,291	194	1,485	1,307	196	1,504	1,324	199	1,523
2030	1,292	194	1,486	1,310	197	1,506	1,327	199	1,527
2031	1,293	194	1,488	1,312	197	1,509	1,331	200	1,531
2032	1,301	196	1,496	1,320	198	1,519	1,341	201	1,542
2033	1,295	195	1,490	1,317	198	1,514	1,338	201	1,539
2034	1,297	195	1,492	1,319	198	1,517	1,341	201	1,543

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	0.61%	0.61%	0.61%	0.68%	0.68%	0.68%
2017	-0.40%	-0.40%	-0.40%	-0.33%	-0.33%	-0.33%	-0.25%	-0.25%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.56%	0.56%	0.56%	0.64%	0.64%	0.64%	0.73%	0.73%	0.73%
2021	-0.39%	-0.39%	-0.39%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.57%	0.57%	0.57%	0.66%	0.66%	0.66%	0.75%	0.75%	0.75%
2025	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.57%	0.57%	0.57%	0.66%	0.66%	0.66%	0.75%	0.75%	0.75%
2029	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2033	-0.38%	-0.38%	-0.38%	-0.30%	-0.30%	-0.30%	-0.21%	-0.21%	-0.21%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1	18	19	1	18	19	1	18	19
2016	1	18	19	1	18	19	1	18	19
2017	1	18	19	1	18	19	1	19	19
2018	1	18	19	1	19	19	1	19	19
2019	1	18	19	1	19	19	1	19	19
2020	1	18	19	1	19	19	1	19	19
2021	1	19	19	1	19	19	1	19	19
2022	1	19	19	1	19	19	1	19	19
2023	1	19	19	1	19	19	1	19	19
2024	1	19	19	1	19	19	1	19	19
2025	1	19	19	1	19	19	1	19	19
2026	1	19	19	1	19	19	1	19	20
2027	1	19	19	1	19	19	1	19	20
2028	1	19	19	1	19	19	1	19	20
2029	1	19	19	1	19	19	1	19	20
2030	1	19	19	1	19	19	1	19	20
2031	1	19	19	1	19	19	1	19	20
2032	1	19	19	1	19	20	1	19	20
2033	1	19	19	1	19	20	1	19	20
2034	1	19	19	1	19	20	1	19	20

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.05%	0.07%	0.61%	0.12%	0.14%	0.68%	0.19%	0.21%
2017	-0.40%	0.09%	0.07%	-0.33%	0.16%	0.15%	-0.25%	0.23%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.56%	0.07%	0.08%	0.64%	0.15%	0.17%	0.73%	0.24%	0.25%
2021	-0.39%	0.10%	0.09%	-0.30%	0.19%	0.17%	-0.21%	0.27%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.57%	0.08%	0.09%	0.66%	0.17%	0.18%	0.75%	0.26%	0.27%
2025	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.57%	0.08%	0.09%	0.66%	0.17%	0.18%	0.75%	0.26%	0.27%
2029	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.26%
2033	-0.38%	0.10%	0.09%	-0.30%	0.19%	0.18%	-0.21%	0.28%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,468	-	1,468	1,469	-	1,469	1,469	-	1,469
2016	1,476	-	1,476	1,477	-	1,477	1,479	-	1,479
2017	1,470	-	1,470	1,473	-	1,473	1,476	-	1,476
2018	1,471	-	1,471	1,475	-	1,475	1,479	-	1,479
2019	1,472	-	1,472	1,477	-	1,477	1,483	-	1,483
2020	1,480	-	1,480	1,487	-	1,487	1,493	-	1,493
2021	1,474	-	1,474	1,482	-	1,482	1,490	-	1,490
2022	1,476	-	1,476	1,485	-	1,485	1,494	-	1,494
2023	1,477	-	1,477	1,488	-	1,488	1,498	-	1,498
2024	1,485	-	1,485	1,497	-	1,497	1,509	-	1,509
2025	1,480	-	1,480	1,493	-	1,493	1,506	-	1,506
2026	1,481	-	1,481	1,496	-	1,496	1,510	-	1,510
2027	1,482	-	1,482	1,498	-	1,498	1,514	-	1,514
2028	1,491	-	1,491	1,508	-	1,508	1,526	-	1,526
2029	1,485	-	1,485	1,504	-	1,504	1,523	-	1,523
2030	1,486	-	1,486	1,506	-	1,506	1,527	-	1,527
2031	1,488	-	1,488	1,509	-	1,509	1,531	-	1,531
2032	1,496	-	1,496	1,519	-	1,519	1,542	-	1,542
2033	1,490	-	1,490	1,514	-	1,514	1,539	-	1,539
2034	1,492	-	1,492	1,517	-	1,517	1,543	-	1,543

Annual Change

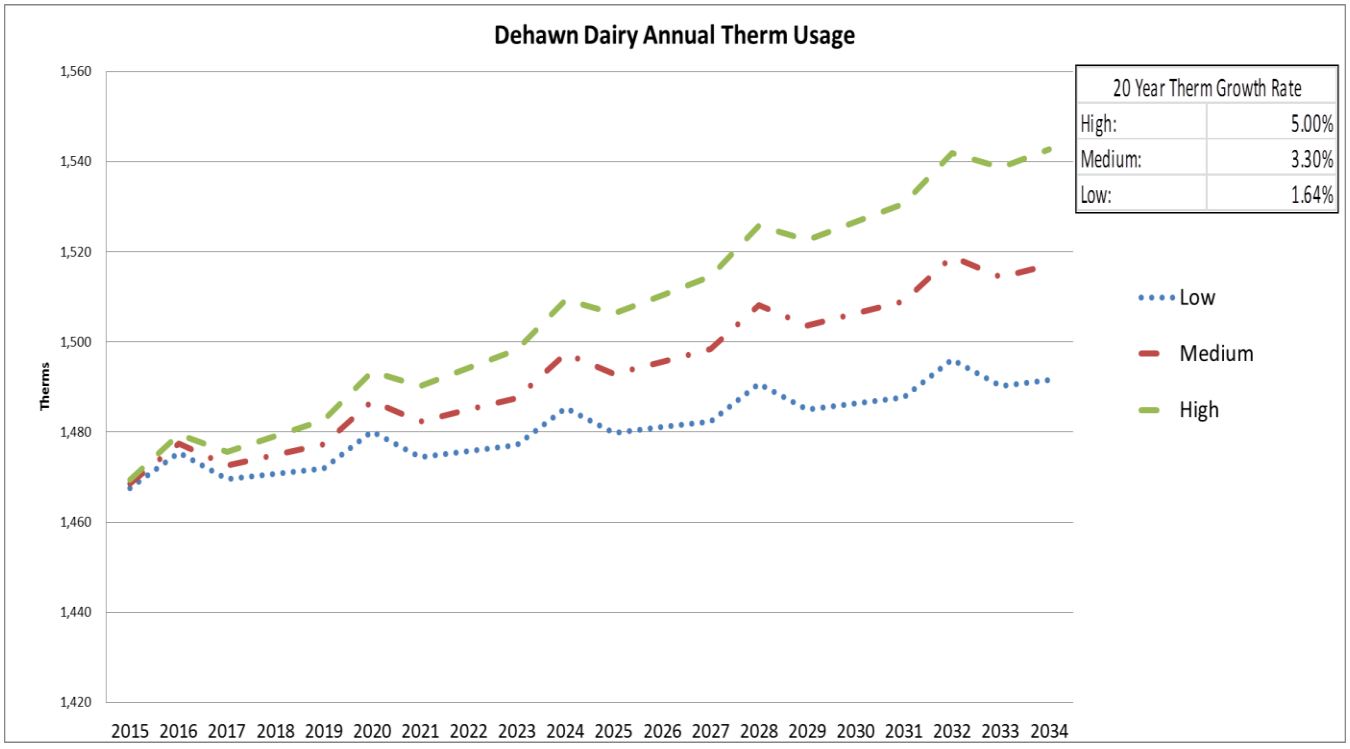
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	#DIV/0!	0.54%	0.61%	#DIV/0!	0.61%	0.68%	#DIV/0!	0.68%
2017	-0.40%	#DIV/0!	-0.40%	-0.33%	#DIV/0!	-0.33%	-0.25%	#DIV/0!	-0.25%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.56%	#DIV/0!	0.56%	0.64%	#DIV/0!	0.64%	0.73%	#DIV/0!	0.73%
2021	-0.39%	#DIV/0!	-0.39%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.57%	#DIV/0!	0.57%	0.66%	#DIV/0!	0.66%	0.75%	#DIV/0!	0.75%
2025	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.57%	#DIV/0!	0.57%	0.66%	#DIV/0!	0.66%	0.75%	#DIV/0!	0.75%
2029	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.56%	#DIV/0!	0.56%	0.65%	#DIV/0!	0.65%	0.74%	#DIV/0!	0.74%
2033	-0.38%	#DIV/0!	-0.38%	-0.30%	#DIV/0!	-0.30%	-0.21%	#DIV/0!	-0.21%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%

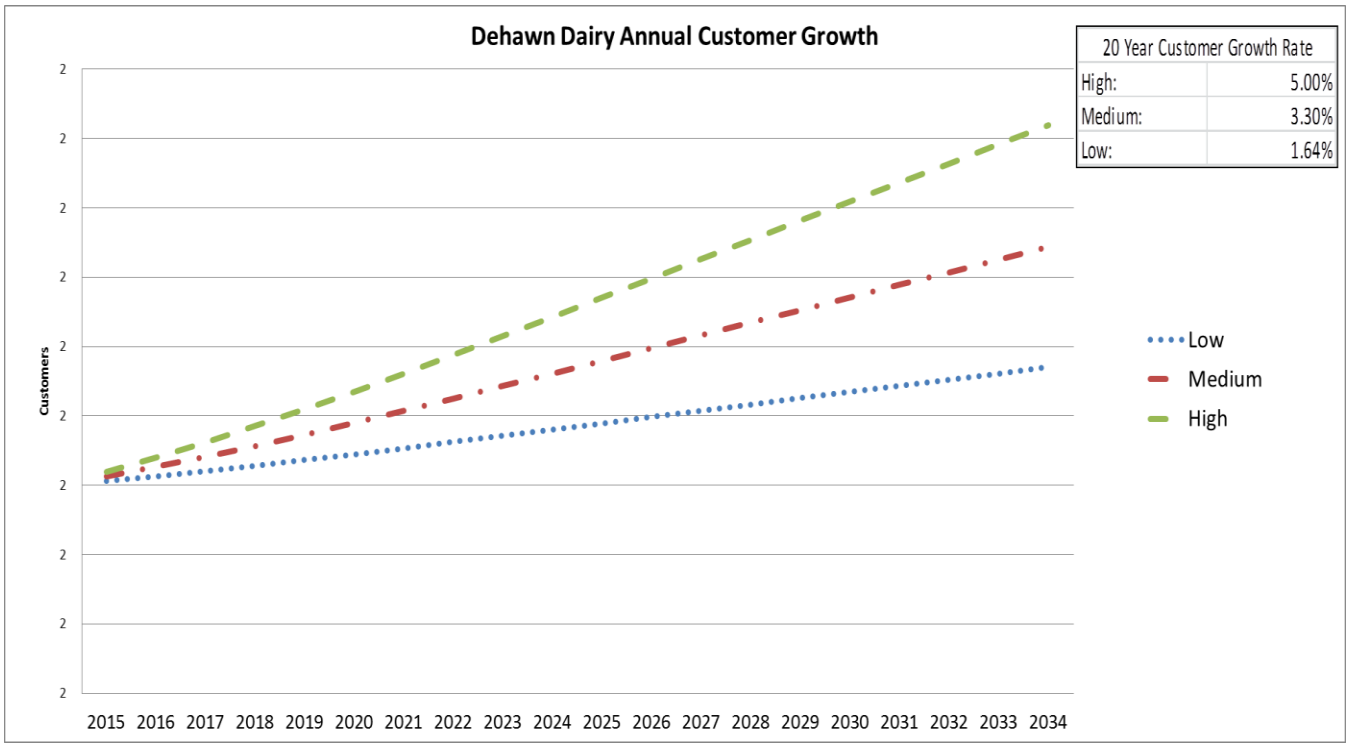
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	-	2	2	-	2	2	-	2
2016	2	-	2	2	-	2	2	-	2
2017	2	-	2	2	-	2	2	-	2
2018	2	-	2	2	-	2	2	-	2
2019	2	-	2	2	-	2	2	-	2
2020	2	-	2	2	-	2	2	-	2
2021	2	-	2	2	-	2	2	-	2
2022	2	-	2	2	-	2	2	-	2
2023	2	-	2	2	-	2	2	-	2
2024	2	-	2	2	-	2	2	-	2
2025	2	-	2	2	-	2	2	-	2
2026	2	-	2	2	-	2	2	-	2
2027	2	-	2	2	-	2	2	-	2
2028	2	-	2	2	-	2	2	-	2
2029	2	-	2	2	-	2	2	-	2
2030	2	-	2	2	-	2	2	-	2
2031	2	-	2	2	-	2	2	-	2
2032	2	-	2	2	-	2	2	-	2
2033	2	-	2	2	-	2	2	-	2
2034	2	-	2	2	-	2	2	-	2

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%


Dehawn Dairy Annual Therm Usage
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Therms
1,560
1,540
1,520
1,500
1,480
1,460
1,440
1,420
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Dehawn Dairy Annual Customer Growth
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Customers
2
2
2
2
2
2
2
2
2
2
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Chief Ranch

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	735	(104)	630	735	(104)	631	736	(104)	631
2016	735	(104)	631	736	(105)	632	737	(105)	633
2017	736	(105)	631	737	(105)	633	739	(105)	634
2018	736	(105)	632	738	(105)	634	740	(105)	635
2019	737	(105)	632	740	(105)	635	742	(105)	637
2020	738	(105)	633	741	(105)	636	744	(106)	639
2021	738	(105)	633	742	(105)	637	746	(106)	640
2022	739	(105)	634	743	(106)	638	748	(106)	642
2023	740	(105)	634	745	(106)	639	750	(106)	644
2024	740	(105)	635	746	(106)	640	752	(107)	645
2025	741	(105)	636	747	(106)	641	754	(107)	647
2026	742	(105)	636	749	(106)	642	756	(107)	649
2027	742	(105)	637	750	(107)	644	758	(108)	651
2028	743	(106)	637	752	(107)	645	760	(108)	652
2029	744	(106)	638	753	(107)	646	762	(108)	654
2030	744	(106)	638	754	(107)	647	764	(108)	656
2031	745	(106)	639	755	(107)	648	766	(109)	658
2032	746	(106)	640	757	(107)	649	768	(109)	659
2033	746	(106)	640	758	(108)	650	770	(109)	661
2034	747	(106)	641	759	(108)	652	772	(110)	663

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	(0)	11	11	(0)	11	11	(0)	11	11
2016	(0)	11	11	(0)	11	11	(0)	11	11
2017	(0)	11	11	(0)	11	11	(0)	11	11
2018	(0)	11	11	(0)	11	11	(0)	11	11
2019	(0)	11	11	(0)	11	11	(0)	11	11
2020	(0)	11	11	(0)	11	11	(0)	11	11
2021	(0)	11	11	(0)	11	11	(0)	11	11
2022	(0)	11	11	(0)	11	11	(0)	11	11
2023	(0)	11	11	(0)	11	11	(0)	11	11
2024	(0)	11	11	(0)	11	11	(0)	11	11
2025	(0)	11	11	(0)	11	11	(0)	12	11
2026	(0)	11	11	(0)	11	11	(0)	12	11
2027	(0)	11	11	(0)	11	11	(0)	12	11
2028	(0)	11	11	(0)	11	11	(0)	12	11
2029	(0)	11	11	(0)	12	11	(0)	12	11
2030	(0)	11	11	(0)	12	11	(0)	12	11
2031	(0)	11	11	(0)	12	11	(0)	12	11
2032	(0)	11	11	(0)	12	11	(0)	12	11
2033	(0)	11	11	(0)	12	11	(0)	12	11
2034	(0)	11	11	(0)	12	11	(0)	12	12

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	630	-	630	631	-	631	631	-	631
2016	631	-	631	632	-	632	633	-	633
2017	631	-	631	633	-	633	634	-	634
2018	632	-	632	634	-	634	635	-	635
2019	632	-	632	635	-	635	637	-	637
2020	633	-	633	636	-	636	639	-	639
2021	633	-	633	637	-	637	640	-	640
2022	634	-	634	638	-	638	642	-	642
2023	634	-	634	639	-	639	644	-	644
2024	635	-	635	640	-	640	645	-	645
2025	636	-	636	641	-	641	647	-	647
2026	636	-	636	642	-	642	649	-	649
2027	637	-	637	644	-	644	651	-	651
2028	637	-	637	645	-	645	652	-	652
2029	638	-	638	646	-	646	654	-	654
2030	638	-	638	647	-	647	656	-	656
2031	639	-	639	648	-	648	658	-	658
2032	640	-	640	649	-	649	659	-	659
2033	640	-	640	650	-	650	661	-	661
2034	641	-	641	652	-	652	663	-	663

Annual Change

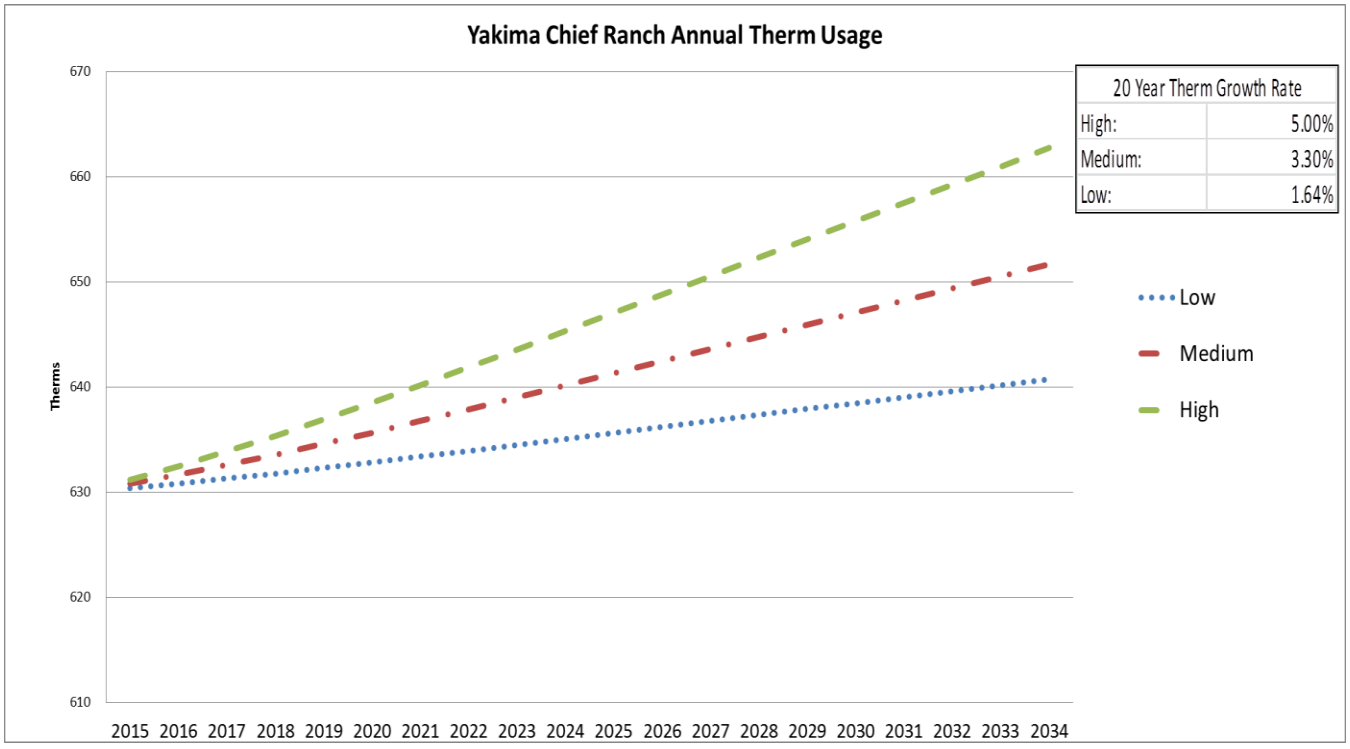
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%

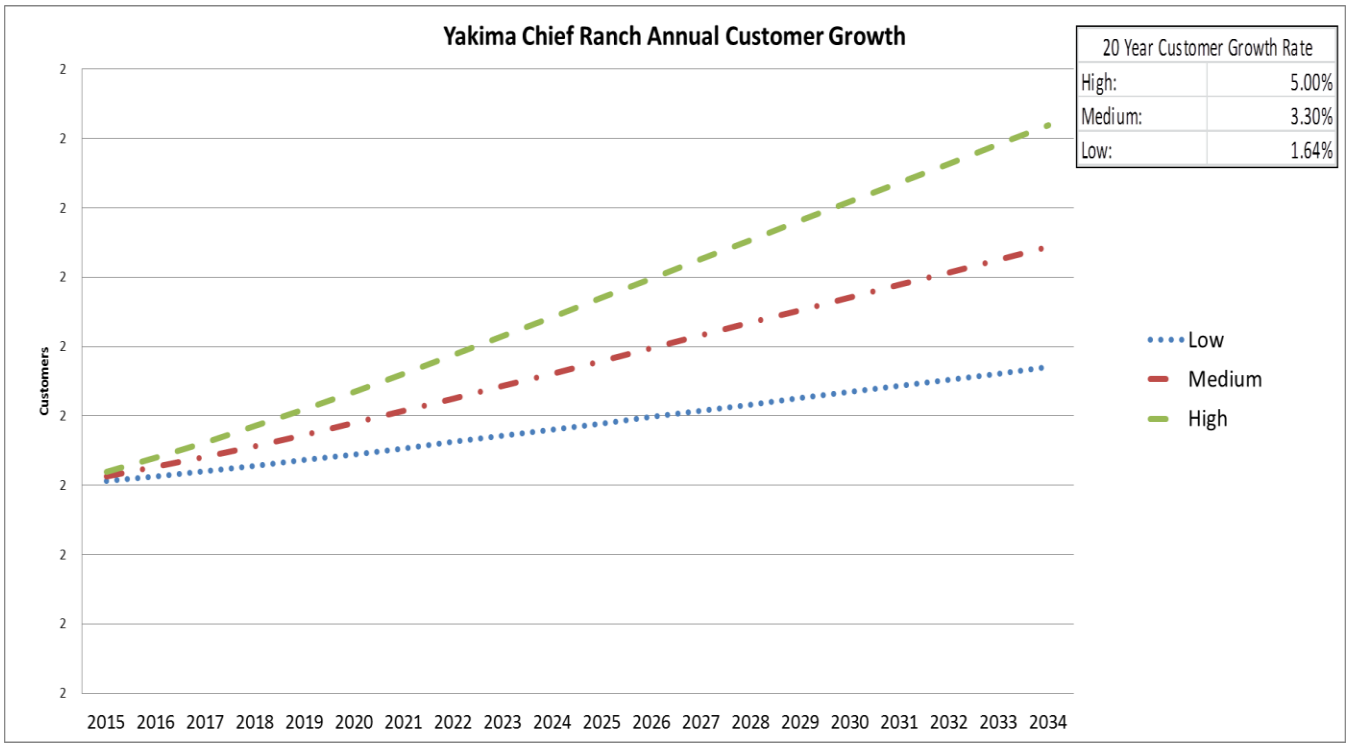
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2	-	2	2	-	2	2	-	2
2016	2	-	2	2	-	2	2	-	2
2017	2	-	2	2	-	2	2	-	2
2018	2	-	2	2	-	2	2	-	2
2019	2	-	2	2	-	2	2	-	2
2020	2	-	2	2	-	2	2	-	2
2021	2	-	2	2	-	2	2	-	2
2022	2	-	2	2	-	2	2	-	2
2023	2	-	2	2	-	2	2	-	2
2024	2	-	2	2	-	2	2	-	2
2025	2	-	2	2	-	2	2	-	2
2026	2	-	2	2	-	2	2	-	2
2027	2	-	2	2	-	2	2	-	2
2028	2	-	2	2	-	2	2	-	2
2029	2	-	2	2	-	2	2	-	2
2030	2	-	2	2	-	2	2	-	2
2031	2	-	2	2	-	2	2	-	2
2032	2	-	2	2	-	2	2	-	2
2033	2	-	2	2	-	2	2	-	2
2034	2	-	2	2	-	2	2	-	2

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	#DIV/0!	0.07%	0.14%	#DIV/0!	0.14%	0.21%	#DIV/0!	0.21%
2017	0.07%	#DIV/0!	0.07%	0.15%	#DIV/0!	0.15%	0.22%	#DIV/0!	0.22%
2018	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.23%	#DIV/0!	0.23%
2019	0.08%	#DIV/0!	0.08%	0.16%	#DIV/0!	0.16%	0.24%	#DIV/0!	0.24%
2020	0.08%	#DIV/0!	0.08%	0.17%	#DIV/0!	0.17%	0.25%	#DIV/0!	0.25%
2021	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2022	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2023	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2024	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2025	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2026	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2027	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2028	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2029	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2030	0.09%	#DIV/0!	0.09%	0.17%	#DIV/0!	0.17%	0.26%	#DIV/0!	0.26%
2031	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%
2032	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2033	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.26%	#DIV/0!	0.26%
2034	0.09%	#DIV/0!	0.09%	0.18%	#DIV/0!	0.18%	0.27%	#DIV/0!	0.27%


Yakima Chief Ranch Annual Therm Usage
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Therms
670
660
650
640
630
620
610
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Yakima Chief Ranch Annual Customer Growth
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Customers
2
2
2
2
2
2
2
2
2
2
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

7th Day School

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	17,635	497	18,132	17,647	497	18,143	17,658	497	18,155
2016	17,647	497	18,144	17,671	497	18,168	17,695	498	18,192
2017	17,660	497	18,157	17,697	498	18,195	17,733	499	18,232
2018	17,674	498	18,171	17,724	499	18,223	17,775	500	18,275
2019	17,688	498	18,186	17,753	499	18,253	17,818	501	18,319
2020	17,703	498	18,201	17,783	500	18,283	17,863	502	18,365
2021	17,718	499	18,217	17,813	501	18,315	17,909	504	18,413
2022	17,734	499	18,233	17,845	502	18,347	17,956	505	18,461
2023	17,750	500	18,249	17,876	503	18,379	18,004	506	18,510
2024	17,766	500	18,266	17,909	504	18,413	18,053	508	18,561
2025	17,781	501	18,282	17,941	505	18,446	18,101	509	18,610
2026	17,798	501	18,299	17,973	506	18,479	18,151	510	18,661
2027	17,814	502	18,315	18,006	507	18,512	18,200	512	18,711
2028	17,830	502	18,332	18,038	508	18,546	18,249	513	18,762
2029	17,845	502	18,348	18,070	508	18,578	18,297	514	18,812
2030	17,861	503	18,364	18,102	509	18,611	18,345	516	18,861
2031	17,877	503	18,380	18,134	510	18,644	18,394	517	18,911
2032	17,893	504	18,396	18,166	511	18,677	18,442	519	18,961
2033	17,908	504	18,413	18,198	512	18,710	18,491	520	19,011
2034	17,924	505	18,429	18,230	513	18,743	18,540	521	19,062

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	1	162	163	1	162	163	1	162	164
2016	1	162	163	1	162	164	1	163	164
2017	1	162	164	1	163	164	1	163	164
2018	1	162	164	1	163	164	1	163	165
2019	1	162	164	1	163	164	1	164	165
2020	1	163	164	1	163	165	1	164	165
2021	1	163	164	1	164	165	1	164	166
2022	1	163	164	1	164	165	1	165	166
2023	1	163	164	1	164	166	1	165	167
2024	1	163	165	1	164	166	1	166	167
2025	1	163	165	1	165	166	1	166	168
2026	1	163	165	1	165	166	1	167	168
2027	1	164	165	1	165	167	1	167	169
2028	1	164	165	1	166	167	1	168	169
2029	1	164	165	1	166	167	1	168	169
2030	1	164	165	1	166	168	1	168	170
2031	1	164	166	1	167	168	1	169	170
2032	1	164	166	1	167	168	1	169	171
2033	1	164	166	1	167	169	1	170	171
2034	1	165	166	1	167	169	1	170	172

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	12,357	5,775	18,132	12,365	5,779	18,143	12,373	5,782	18,155
2016	12,365	5,779	18,144	12,382	5,786	18,168	12,398	5,794	18,192
2017	12,374	5,783	18,157	12,400	5,795	18,195	12,425	5,807	18,232
2018	12,384	5,787	18,171	12,419	5,804	18,223	12,454	5,820	18,275
2019	12,394	5,792	18,186	12,439	5,813	18,253	12,485	5,835	18,319
2020	12,404	5,797	18,201	12,460	5,823	18,283	12,516	5,849	18,365
2021	12,415	5,802	18,217	12,482	5,833	18,315	12,548	5,864	18,413
2022	12,426	5,807	18,233	12,503	5,843	18,347	12,581	5,880	18,461
2023	12,437	5,812	18,249	12,526	5,854	18,379	12,615	5,895	18,510
2024	12,448	5,818	18,266	12,548	5,864	18,413	12,649	5,911	18,561
2025	12,459	5,823	18,282	12,571	5,875	18,446	12,683	5,927	18,610
2026	12,471	5,828	18,299	12,594	5,885	18,479	12,718	5,943	18,661
2027	12,482	5,833	18,315	12,616	5,896	18,512	12,752	5,959	18,711
2028	12,493	5,839	18,332	12,639	5,907	18,546	12,786	5,976	18,762
2029	12,504	5,844	18,348	12,661	5,917	18,578	12,820	5,991	18,812
2030	12,515	5,849	18,364	12,683	5,927	18,611	12,854	6,007	18,861
2031	12,526	5,854	18,380	12,706	5,938	18,644	12,888	6,023	18,911
2032	12,537	5,859	18,396	12,728	5,948	18,677	12,922	6,039	18,961
2033	12,548	5,864	18,413	12,751	5,959	18,710	12,956	6,055	19,011
2034	12,559	5,869	18,429	12,773	5,969	18,743	12,991	6,071	19,062

Annual Change

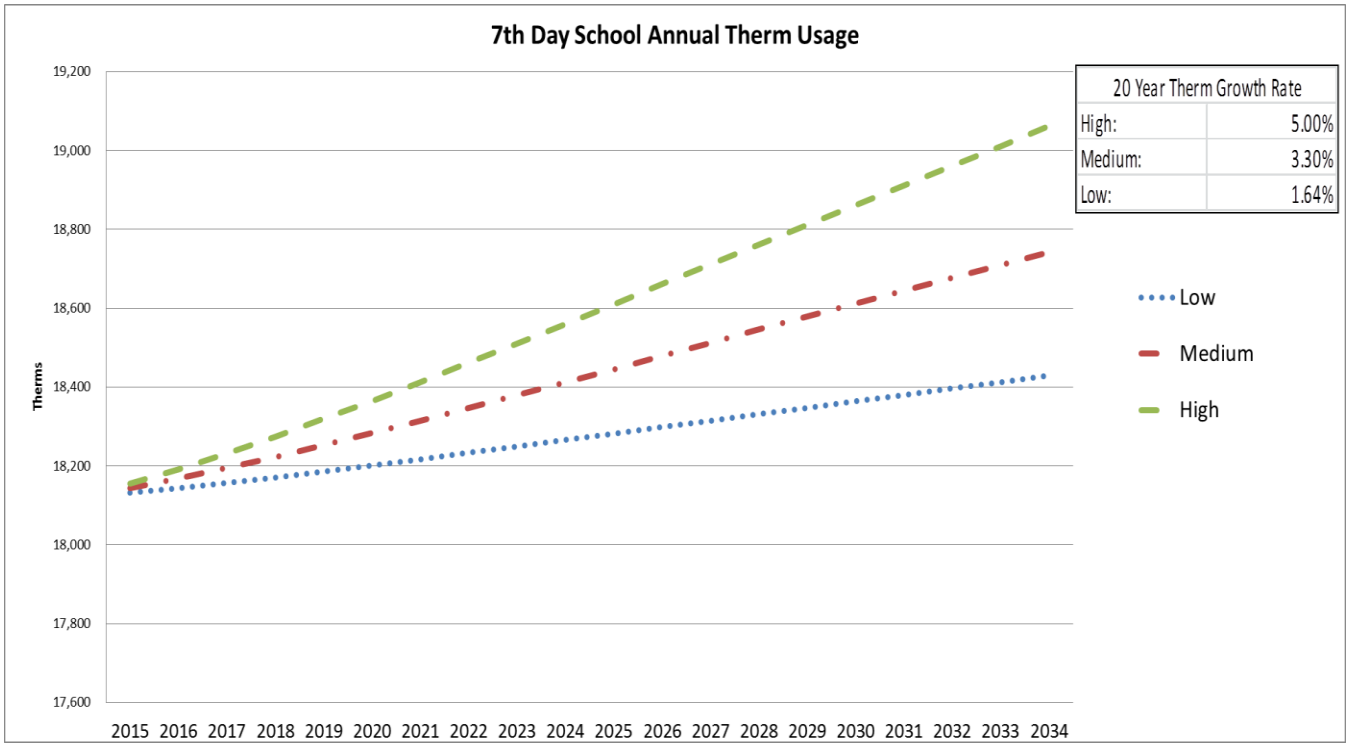
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

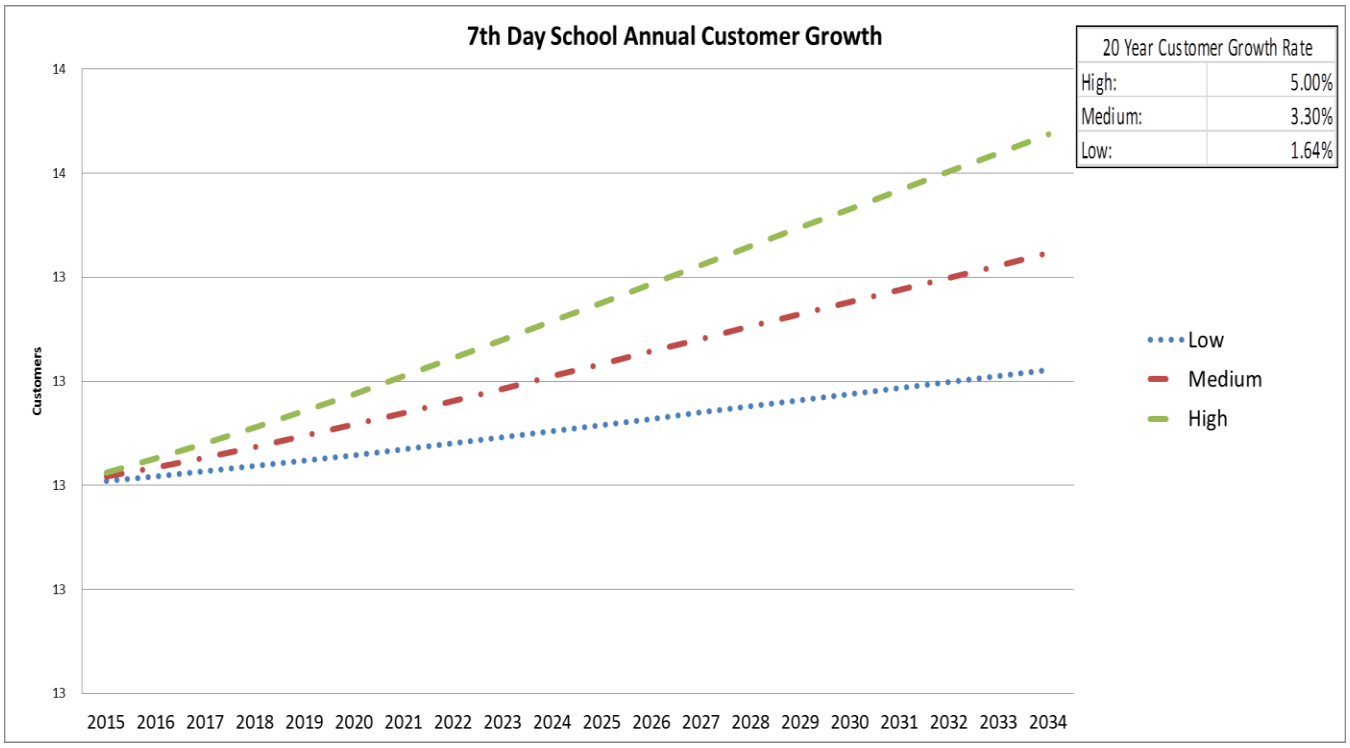
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	11	2	13	11	2	13	11	2	13
2016	11	2	13	11	2	13	11	2	13
2017	11	2	13	11	2	13	11	2	13
2018	11	2	13	11	2	13	11	2	13
2019	11	2	13	11	2	13	11	2	13
2020	11	2	13	11	2	13	11	2	13
2021	11	2	13	11	2	13	11	2	13
2022	11	2	13	11	2	13	11	2	13
2023	11	2	13	11	2	13	11	2	13
2024	11	2	13	11	2	13	11	2	13
2025	11	2	13	11	2	13	11	2	13
2026	11	2	13	11	2	13	11	2	13
2027	11	2	13	11	2	13	11	2	13
2028	11	2	13	11	2	13	11	2	13
2029	11	2	13	11	2	13	11	2	13
2030	11	2	13	11	2	13	11	2	14
2031	11	2	13	11	2	13	11	2	14
2032	11	2	13	11	2	13	12	2	14
2033	11	2	13	11	2	13	12	2	14
2034	11	2	13	11	2	13	12	2	14

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


7th Day School Annual Therm Usage
Therms
19,200
19,000
18,800
18,600
18,400
18,200
18,000
17,800
17,600
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


7th Day School Annual Customer Growth
Customers
14
14
13
13
13
13
13
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Training Center

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	310,351	71,641	381,992	310,826	71,641	382,467	311,301	71,641	382,943
2016	312,331	72,098	384,430	313,209	72,191	385,400	314,089	72,283	386,371
2017	311,157	71,828	382,985	312,443	72,014	384,457	313,732	72,201	385,932
2018	311,579	71,925	383,504	313,289	72,209	385,498	315,006	72,494	387,500
2019	312,010	72,024	384,034	314,155	72,409	386,564	316,313	72,795	389,108
2020	314,035	72,492	386,527	316,634	72,980	389,614	319,251	73,471	392,722
2021	312,887	72,227	385,114	315,924	72,816	388,741	318,986	73,410	392,396
2022	313,333	72,330	385,663	316,824	73,024	389,848	320,350	73,724	394,073
2023	313,780	72,433	386,213	317,728	73,232	390,960	321,720	74,039	395,759
2024	315,833	72,907	388,739	320,266	73,817	394,084	324,756	74,738	399,494
2025	314,678	72,640	387,319	319,549	73,652	393,201	324,488	74,676	399,164
2026	315,129	72,744	387,873	320,464	73,863	394,327	325,882	74,997	400,878
2027	315,577	72,848	388,425	321,375	74,073	395,448	327,271	75,317	402,588
2028	317,633	73,322	390,956	323,926	74,661	398,587	330,335	76,022	406,357
2029	316,464	73,052	389,516	323,182	74,489	397,672	330,034	75,952	405,986
2030	316,901	73,153	390,054	324,075	74,695	398,770	331,402	76,267	407,669
2031	317,341	73,255	390,596	324,976	74,903	399,878	332,783	76,585	409,368
2032	319,396	73,729	393,125	327,529	75,491	403,020	335,857	77,293	413,150
2033	318,214	73,457	391,671	326,765	75,315	402,080	335,533	77,218	412,751
2034	318,651	73,557	392,209	327,663	75,522	403,185	336,917	77,536	414,453

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	0.77%	0.77%	0.77%	0.90%	0.90%	0.90%
2017	-0.38%	-0.38%	-0.38%	-0.24%	-0.24%	-0.24%	-0.11%	-0.11%	-0.11%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.93%	0.93%	0.93%
2021	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.65%	0.65%	0.80%	0.80%	0.80%	0.94%	0.94%	0.94%
2025	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.94%	0.94%	0.94%
2029	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.09%	-0.09%	-0.09%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.92%	0.92%	0.92%
2033	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.10%	-0.10%	-0.10%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	196	4,628	4,825	196	4,634	4,831	196	4,640	4,837
2016	198	4,633	4,831	198	4,645	4,843	198	4,657	4,855
2017	197	4,640	4,837	197	4,659	4,856	198	4,677	4,874
2018	197	4,647	4,844	198	4,671	4,869	199	4,696	4,894
2019	197	4,653	4,850	198	4,684	4,882	199	4,715	4,915
2020	199	4,659	4,857	200	4,696	4,896	201	4,734	4,935
2021	198	4,666	4,864	199	4,710	4,910	201	4,755	4,956
2022	198	4,673	4,871	200	4,724	4,924	202	4,775	4,977
2023	198	4,680	4,878	201	4,737	4,938	203	4,796	4,999
2024	200	4,685	4,885	202	4,750	4,952	205	4,815	5,020
2025	199	4,693	4,892	202	4,764	4,966	205	4,837	5,042
2026	199	4,700	4,899	202	4,778	4,980	205	4,858	5,063
2027	200	4,706	4,906	203	4,792	4,995	206	4,878	5,085
2028	201	4,712	4,913	205	4,804	5,009	208	4,898	5,106
2029	200	4,720	4,920	204	4,819	5,023	208	4,920	5,128
2030	200	4,726	4,926	205	4,832	5,037	209	4,940	5,149
2031	201	4,733	4,933	205	4,845	5,051	210	4,961	5,170
2032	202	4,738	4,940	207	4,858	5,064	212	4,980	5,192
2033	201	4,746	4,947	206	4,872	5,078	212	5,002	5,213
2034	202	4,752	4,954	207	4,885	5,092	212	5,022	5,235

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.11%	0.13%	0.77%	0.23%	0.26%	0.90%	0.36%	0.38%
2017	-0.38%	0.15%	0.13%	-0.24%	0.29%	0.26%	-0.11%	0.42%	0.40%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.12%	0.14%	0.79%	0.26%	0.28%	0.93%	0.40%	0.42%
2021	-0.37%	0.16%	0.14%	-0.22%	0.31%	0.28%	-0.08%	0.45%	0.43%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.12%	0.14%	0.80%	0.27%	0.29%	0.94%	0.41%	0.43%
2025	-0.37%	0.16%	0.14%	-0.22%	0.31%	0.28%	-0.08%	0.45%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.12%	0.14%	0.79%	0.26%	0.28%	0.94%	0.40%	0.42%
2029	-0.37%	0.16%	0.14%	-0.23%	0.30%	0.28%	-0.09%	0.44%	0.42%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.12%	0.14%	0.79%	0.25%	0.27%	0.92%	0.39%	0.41%
2033	-0.37%	0.16%	0.14%	-0.23%	0.30%	0.28%	-0.10%	0.43%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	4,822	377,170	381,992	4,828	377,639	382,467	4,834	378,109	382,943
2016	4,853	379,577	384,430	4,865	380,535	385,400	4,877	381,494	386,371
2017	4,835	378,150	382,985	4,853	379,603	384,457	4,872	381,060	385,932
2018	4,841	378,662	383,504	4,866	380,632	385,498	4,892	382,609	387,500
2019	4,848	379,186	384,034	4,880	381,684	386,564	4,912	384,196	389,108
2020	4,879	381,648	386,527	4,918	384,696	389,614	4,958	387,764	392,722
2021	4,861	380,253	385,114	4,907	383,833	388,741	4,953	387,443	392,396
2022	4,868	380,794	385,663	4,921	384,927	389,848	4,975	389,099	394,073
2023	4,875	381,337	386,213	4,935	386,024	390,960	4,996	390,763	395,759
2024	4,907	383,832	388,739	4,975	389,109	394,084	5,043	394,451	399,494
2025	4,889	382,430	387,319	4,964	388,237	393,201	5,039	394,125	399,164
2026	4,896	382,977	387,873	4,978	389,349	394,327	5,060	395,818	400,878
2027	4,903	383,521	388,425	4,992	390,456	395,448	5,082	397,506	402,588
2028	4,935	386,021	390,956	5,032	393,556	398,587	5,130	401,227	406,357
2029	4,917	384,599	389,516	5,020	392,652	397,672	5,125	400,861	405,986
2030	4,924	385,130	390,054	5,034	393,736	398,770	5,146	402,523	407,669
2031	4,931	385,665	390,596	5,048	394,830	399,878	5,168	404,200	409,368
2032	4,963	388,163	393,125	5,088	397,933	403,020	5,215	407,934	413,150
2033	4,944	386,726	391,671	5,076	397,004	402,080	5,210	407,541	412,751
2034	4,951	387,258	392,209	5,090	398,096	403,185	5,232	409,221	414,453

Annual Change

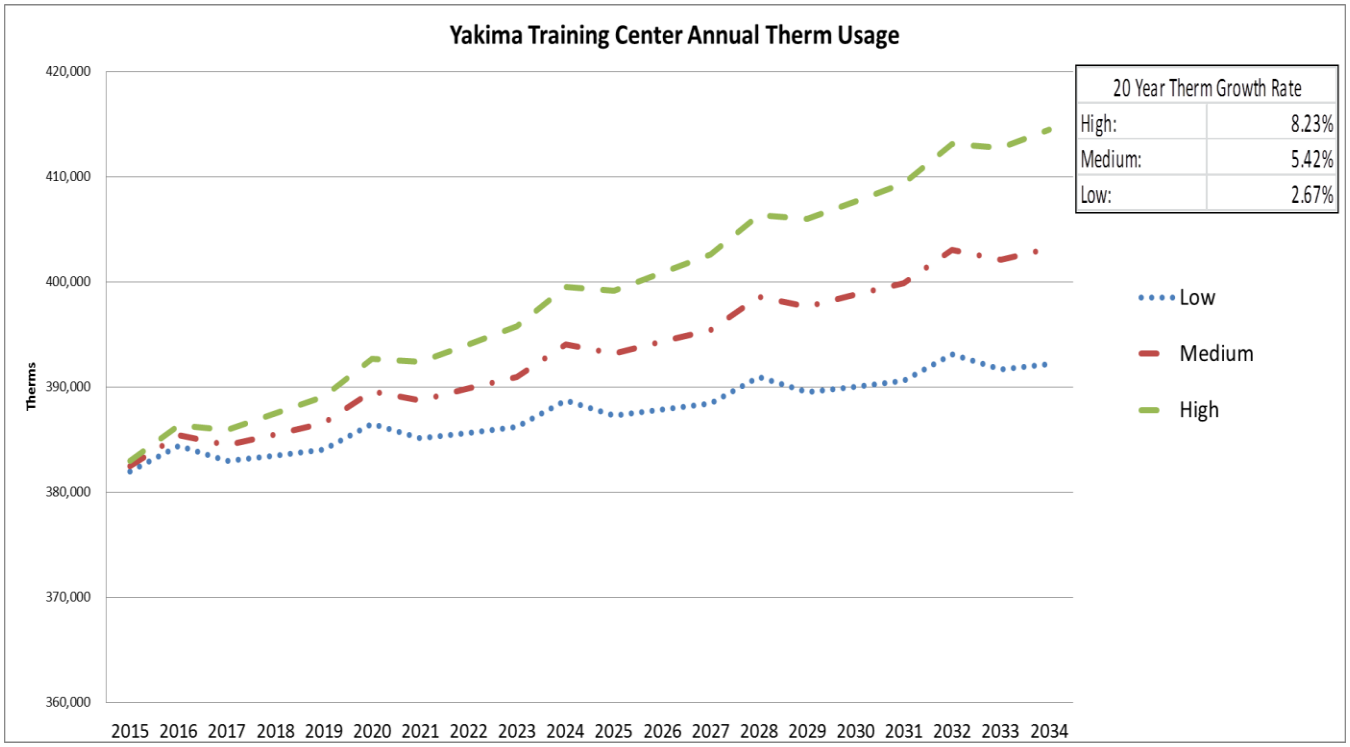
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.64%	0.64%	0.64%	0.77%	0.77%	0.77%	0.89%	0.90%	0.90%
2017	-0.38%	-0.38%	-0.38%	-0.24%	-0.24%	-0.24%	-0.11%	-0.11%	-0.11%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.93%	0.93%	0.93%
2021	-0.37%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.65%	0.65%	0.65%	0.80%	0.80%	0.80%	0.94%	0.94%	0.94%
2025	-0.36%	-0.37%	-0.37%	-0.22%	-0.22%	-0.22%	-0.08%	-0.08%	-0.08%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.94%	0.94%	0.94%
2029	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.09%	-0.09%	-0.09%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.65%	0.65%	0.65%	0.79%	0.79%	0.79%	0.92%	0.92%	0.92%
2033	-0.37%	-0.37%	-0.37%	-0.23%	-0.23%	-0.23%	-0.10%	-0.10%	-0.10%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%

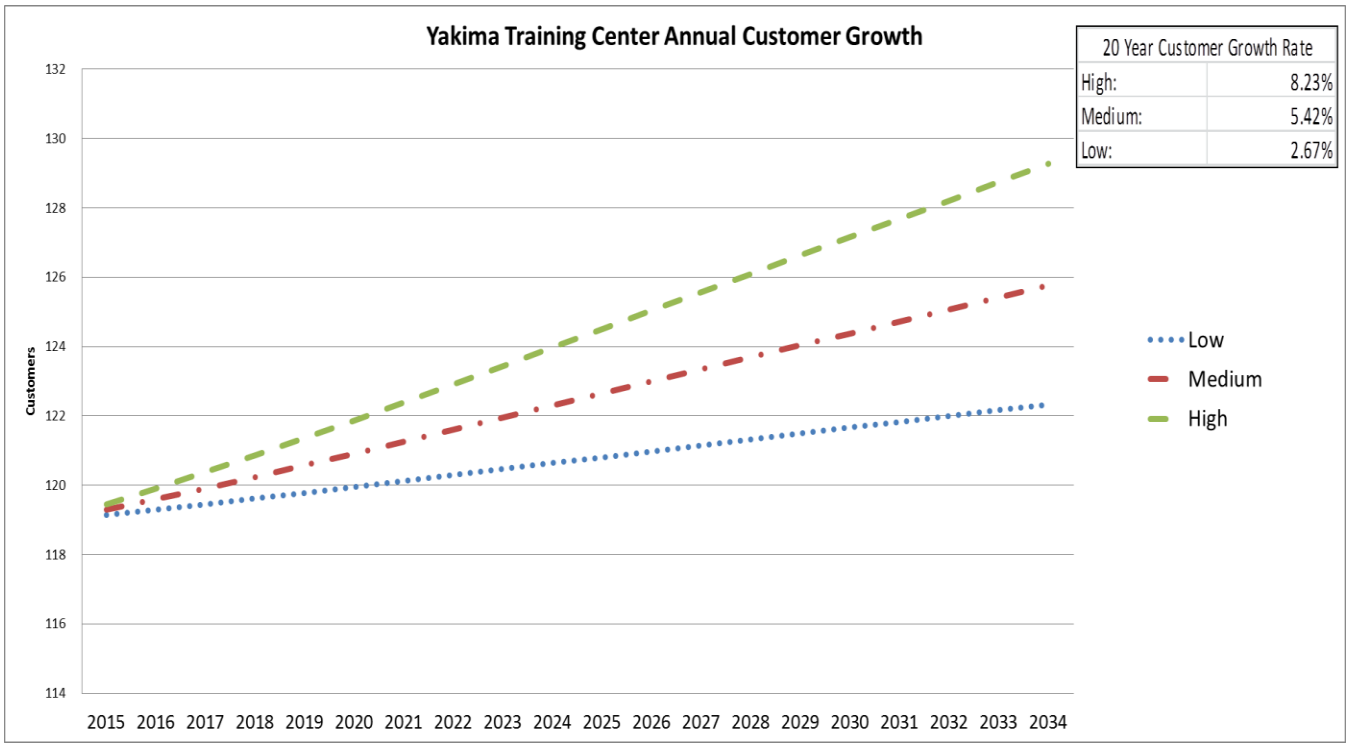
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25	94	119	25	94	119	25	95	119
2016	25	94	119	25	95	120	25	95	120
2017	25	95	119	25	95	120	25	95	120
2018	25	95	120	25	95	120	25	96	121
2019	25	95	120	25	95	121	25	96	121
2020	25	95	120	25	96	121	25	97	122
2021	25	95	120	25	96	121	25	97	122
2022	25	95	120	25	96	122	26	97	123
2023	25	95	120	25	97	122	26	98	123
2024	25	96	121	25	97	122	26	98	124
2025	25	96	121	26	97	123	26	99	125
2026	25	96	121	26	97	123	26	99	125
2027	25	96	121	26	98	123	26	99	126
2028	25	96	121	26	98	124	26	100	126
2029	25	96	121	26	98	124	26	100	127
2030	25	96	122	26	99	124	26	101	127
2031	25	96	122	26	99	125	27	101	128
2032	25	97	122	26	99	125	27	102	128
2033	25	97	122	26	99	125	27	102	129
2034	25	97	122	26	100	126	27	102	129

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.38%	0.38%	0.38%
2017	0.13%	0.13%	0.13%	0.26%	0.26%	0.26%	0.40%	0.40%	0.40%
2018	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2019	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2020	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2021	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2022	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2023	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2024	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2025	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2026	0.14%	0.14%	0.14%	0.29%	0.29%	0.29%	0.43%	0.43%	0.43%
2027	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.43%	0.43%	0.43%
2028	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2029	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2030	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2031	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.42%	0.42%	0.42%
2032	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%
2033	0.14%	0.14%	0.14%	0.28%	0.28%	0.28%	0.41%	0.41%	0.41%
2034	0.14%	0.14%	0.14%	0.27%	0.27%	0.27%	0.41%	0.41%	0.41%


Yakima Training Center Annual Therm Usage
20 Year Therm Growth Rate
High: 8.23%
Medium: 5.42%
Low: 2.67%
Therms
420,000
410,000
400,000
390,000
380,000
370,000
360,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Yakima Training Center Annual Customer Growth
20 Year Customer Growth Rate
High: 8.23%
Medium: 5.42%
Low: 2.67%
Customers
132
130
128
126
124
122
120
118
116
114
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Burbank Heights Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,833,145	1,272,975	5,106,120	3,855,155	1,272,975	5,128,130	3,877,164	1,272,975	5,150,140
2016	3,867,976	1,284,543	5,152,518	3,906,939	1,290,074	5,197,014	3,946,094	1,295,606	5,241,700
2017	3,866,346	1,284,001	5,150,347	3,922,082	1,295,075	5,217,156	3,978,346	1,306,196	5,284,541
2018	3,883,035	1,289,544	5,172,579	3,955,942	1,306,255	5,262,197	4,029,865	1,323,111	5,352,975
2019	3,899,741	1,295,092	5,194,833	3,989,981	1,317,495	5,307,476	4,081,878	1,340,188	5,422,066
2020	3,934,957	1,306,787	5,241,743	4,043,125	1,335,043	5,378,168	4,153,753	1,363,786	5,517,539
2021	3,933,090	1,306,167	5,239,256	4,058,367	1,340,076	5,398,443	4,187,042	1,374,716	5,561,758
2022	3,949,708	1,311,685	5,261,393	4,092,662	1,351,400	5,444,063	4,240,116	1,392,142	5,632,257
2023	3,966,232	1,317,173	5,283,405	4,126,906	1,362,708	5,489,614	4,293,332	1,409,614	5,702,946
2024	4,001,644	1,328,933	5,330,577	4,181,033	1,380,581	5,561,614	4,367,619	1,434,004	5,801,624
2025	3,999,136	1,328,100	5,327,237	4,195,522	1,385,365	5,580,887	4,400,627	1,444,842	5,845,469
2026	4,015,457	1,333,520	5,348,977	4,229,766	1,396,672	5,626,438	4,454,505	1,462,531	5,917,036
2027	4,031,663	1,338,902	5,370,565	4,263,908	1,407,946	5,671,854	4,508,438	1,480,239	5,988,677
2028	4,066,959	1,350,624	5,417,583	4,318,350	1,425,923	5,744,273	4,584,097	1,505,080	6,089,177
2029	4,063,700	1,349,542	5,413,241	4,331,807	1,430,366	5,762,173	4,616,340	1,515,666	6,132,006
2030	4,079,510	1,354,792	5,434,302	4,365,513	1,441,496	5,807,009	4,670,221	1,533,356	6,203,577
2031	4,095,283	1,360,030	5,455,313	4,399,271	1,452,643	5,851,914	4,724,392	1,551,142	6,275,534
2032	4,130,414	1,371,697	5,502,112	4,453,892	1,470,679	5,924,571	4,801,178	1,576,353	6,377,532
2033	4,126,493	1,370,395	5,496,889	4,466,453	1,474,826	5,941,279	4,832,817	1,586,741	6,419,558
2034	4,141,993	1,375,543	5,517,536	4,500,006	1,485,906	5,985,911	4,887,275	1,604,621	6,491,895

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.91%	0.91%	0.91%	1.34%	1.34%	1.34%	1.78%	1.78%	1.78%
2017	-0.04%	-0.04%	-0.04%	0.39%	0.39%	0.39%	0.82%	0.82%	0.82%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.90%	0.90%	0.90%	1.33%	1.33%	1.33%	1.76%	1.76%	1.76%
2021	-0.05%	-0.05%	-0.05%	0.38%	0.38%	0.38%	0.80%	0.80%	0.80%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.89%	0.89%	0.89%	1.31%	1.31%	1.31%	1.73%	1.73%	1.73%
2025	-0.06%	-0.06%	-0.06%	0.35%	0.35%	0.35%	0.76%	0.76%	0.76%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.88%	0.88%	0.88%	1.28%	1.28%	1.28%	1.68%	1.68%	1.68%
2029	-0.08%	-0.08%	-0.08%	0.31%	0.31%	0.31%	0.70%	0.70%	0.70%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.86%	0.86%	0.86%	1.24%	1.24%	1.24%	1.63%	1.63%	1.63%
2033	-0.09%	-0.09%	-0.09%	0.28%	0.28%	0.28%	0.66%	0.66%	0.66%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	3,488	66,804	70,292	3,488	67,107	70,595	3,488	67,410	70,898
2016	3,519	67,077	70,596	3,534	67,671	71,206	3,550	68,268	71,818
2017	3,518	67,383	70,901	3,548	68,272	71,821	3,579	69,170	72,748
2018	3,533	67,674	71,207	3,579	68,862	72,441	3,625	70,065	73,690
2019	3,548	67,965	71,513	3,610	69,454	73,064	3,672	70,970	74,641
2020	3,580	68,238	71,819	3,658	70,030	73,688	3,736	71,861	75,597
2021	3,579	68,546	72,125	3,671	70,645	74,316	3,766	72,798	76,564
2022	3,594	68,836	72,430	3,702	71,242	74,944	3,814	73,721	77,535
2023	3,609	69,124	72,733	3,733	71,838	75,571	3,862	74,646	78,508
2024	3,641	69,395	73,036	3,782	72,419	76,201	3,929	75,561	79,490
2025	3,639	69,697	73,336	3,796	73,032	76,828	3,958	76,512	80,470
2026	3,653	69,982	73,635	3,826	73,628	77,455	4,007	77,448	81,455
2027	3,668	70,264	73,932	3,857	74,223	78,080	4,055	78,386	82,442
2028	3,700	70,527	74,228	3,907	74,797	78,704	4,124	79,306	83,429
2029	3,697	70,823	74,520	3,919	75,405	79,323	4,153	80,262	84,415
2030	3,712	71,098	74,810	3,949	75,991	79,941	4,201	81,199	85,400
2031	3,726	71,373	75,099	3,980	76,579	80,559	4,250	82,141	86,390
2032	3,758	71,628	75,386	4,029	77,145	81,174	4,319	83,062	87,380
2033	3,755	71,917	75,671	4,041	77,748	81,789	4,347	84,026	88,373
2034	3,769	72,187	75,956	4,071	78,332	82,403	4,396	84,973	89,369

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.91%	0.41%	0.43%	1.34%	0.84%	0.87%	1.78%	1.27%	1.30%
2017	-0.04%	0.46%	0.43%	0.39%	0.89%	0.86%	0.82%	1.32%	1.30%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.90%	0.40%	0.43%	1.33%	0.83%	0.85%	1.76%	1.26%	1.28%
2021	-0.05%	0.45%	0.43%	0.38%	0.88%	0.85%	0.80%	1.30%	1.28%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.89%	0.39%	0.42%	1.31%	0.81%	0.83%	1.73%	1.23%	1.25%
2025	-0.06%	0.44%	0.41%	0.35%	0.85%	0.82%	0.76%	1.26%	1.23%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.88%	0.37%	0.40%	1.28%	0.77%	0.80%	1.68%	1.17%	1.20%
2029	-0.08%	0.42%	0.39%	0.31%	0.81%	0.79%	0.70%	1.21%	1.18%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.86%	0.36%	0.38%	1.24%	0.74%	0.76%	1.63%	1.12%	1.15%
2033	-0.09%	0.40%	0.38%	0.28%	0.78%	0.76%	0.66%	1.16%	1.14%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,811,624	2,294,496	5,106,120	2,823,744	2,304,386	5,128,130	2,835,863	2,314,276	5,150,140
2016	2,837,449	2,315,070	5,152,518	2,861,952	2,335,062	5,197,014	2,886,560	2,355,140	5,241,700
2017	2,835,977	2,314,369	5,150,347	2,872,765	2,344,391	5,217,156	2,909,870	2,374,671	5,284,541
2018	2,848,219	2,324,360	5,172,579	2,897,567	2,364,631	5,262,197	2,947,552	2,405,423	5,352,975
2019	2,860,473	2,334,360	5,194,833	2,922,499	2,384,977	5,307,476	2,985,596	2,436,469	5,422,066
2020	2,886,584	2,355,159	5,241,743	2,961,712	2,416,456	5,378,168	3,038,462	2,479,077	5,517,539
2021	2,884,934	2,354,322	5,239,256	2,972,589	2,425,854	5,398,443	3,062,516	2,499,242	5,561,758
2022	2,897,124	2,364,270	5,261,393	2,997,708	2,446,354	5,444,063	3,101,336	2,530,922	5,632,257
2023	2,909,244	2,374,161	5,283,405	3,022,791	2,466,823	5,489,614	3,140,260	2,562,686	5,702,946
2024	2,935,504	2,395,073	5,330,577	3,062,734	2,498,880	5,561,614	3,194,905	2,606,718	5,801,624
2025	2,933,380	2,393,857	5,327,237	3,073,049	2,507,838	5,580,887	3,218,738	2,626,731	5,845,469
2026	2,945,351	2,403,626	5,348,977	3,098,132	2,528,307	5,626,438	3,258,146	2,658,890	5,917,036
2027	2,957,238	2,413,327	5,370,565	3,123,139	2,548,715	5,671,854	3,297,594	2,691,083	5,988,677
2028	2,983,417	2,434,165	5,417,583	3,163,323	2,580,950	5,744,273	3,353,259	2,735,918	6,089,177
2029	2,980,737	2,432,504	5,413,241	3,172,872	2,589,301	5,762,173	3,376,517	2,755,490	6,132,006
2030	2,992,334	2,441,968	5,434,302	3,197,561	2,609,449	5,807,009	3,415,926	2,787,651	6,203,577
2031	3,003,903	2,451,410	5,455,313	3,222,287	2,629,627	5,851,914	3,455,548	2,819,985	6,275,534
2032	3,029,967	2,472,145	5,502,112	3,262,611	2,661,959	5,924,571	3,512,053	2,865,479	6,377,532
2033	3,026,797	2,470,092	5,496,889	3,271,495	2,669,784	5,941,279	3,534,854	2,884,705	6,419,558
2034	3,038,166	2,479,370	5,517,536	3,296,071	2,689,840	5,985,911	3,574,685	2,917,210	6,491,895

Annual Change

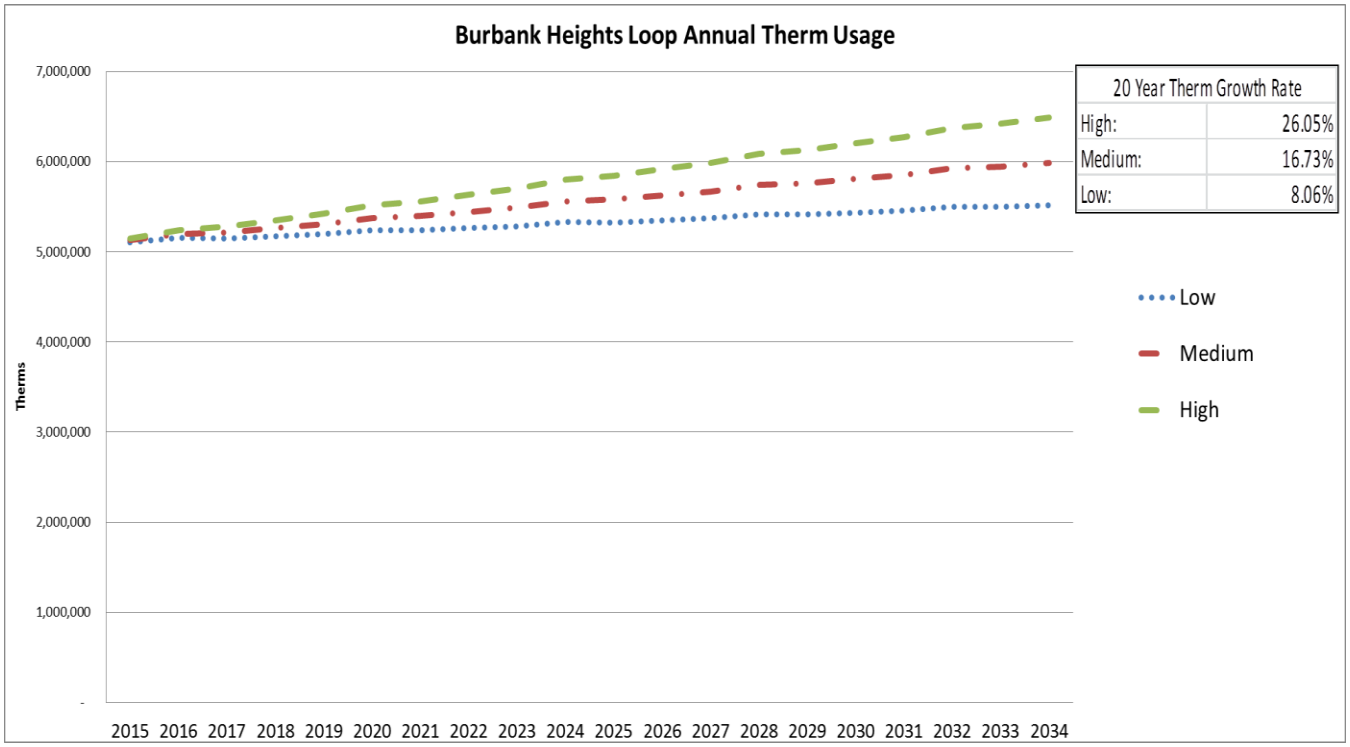
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.92%	0.90%	0.91%	1.35%	1.33%	1.34%	1.79%	1.77%	1.78%
2017	-0.05%	-0.03%	-0.04%	0.38%	0.40%	0.39%	0.81%	0.83%	0.82%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.91%	0.89%	0.90%	1.34%	1.32%	1.33%	1.77%	1.75%	1.76%
2021	-0.06%	-0.04%	-0.05%	0.37%	0.39%	0.38%	0.79%	0.81%	0.80%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.90%	0.88%	0.89%	1.32%	1.30%	1.31%	1.74%	1.72%	1.73%
2025	-0.07%	-0.05%	-0.06%	0.34%	0.36%	0.35%	0.75%	0.77%	0.76%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.89%	0.86%	0.88%	1.29%	1.26%	1.28%	1.69%	1.67%	1.68%
2029	-0.09%	-0.07%	-0.08%	0.30%	0.32%	0.31%	0.69%	0.72%	0.70%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.87%	0.85%	0.86%	1.25%	1.23%	1.24%	1.64%	1.61%	1.63%
2033	-0.10%	-0.08%	-0.09%	0.27%	0.29%	0.28%	0.65%	0.67%	0.66%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%

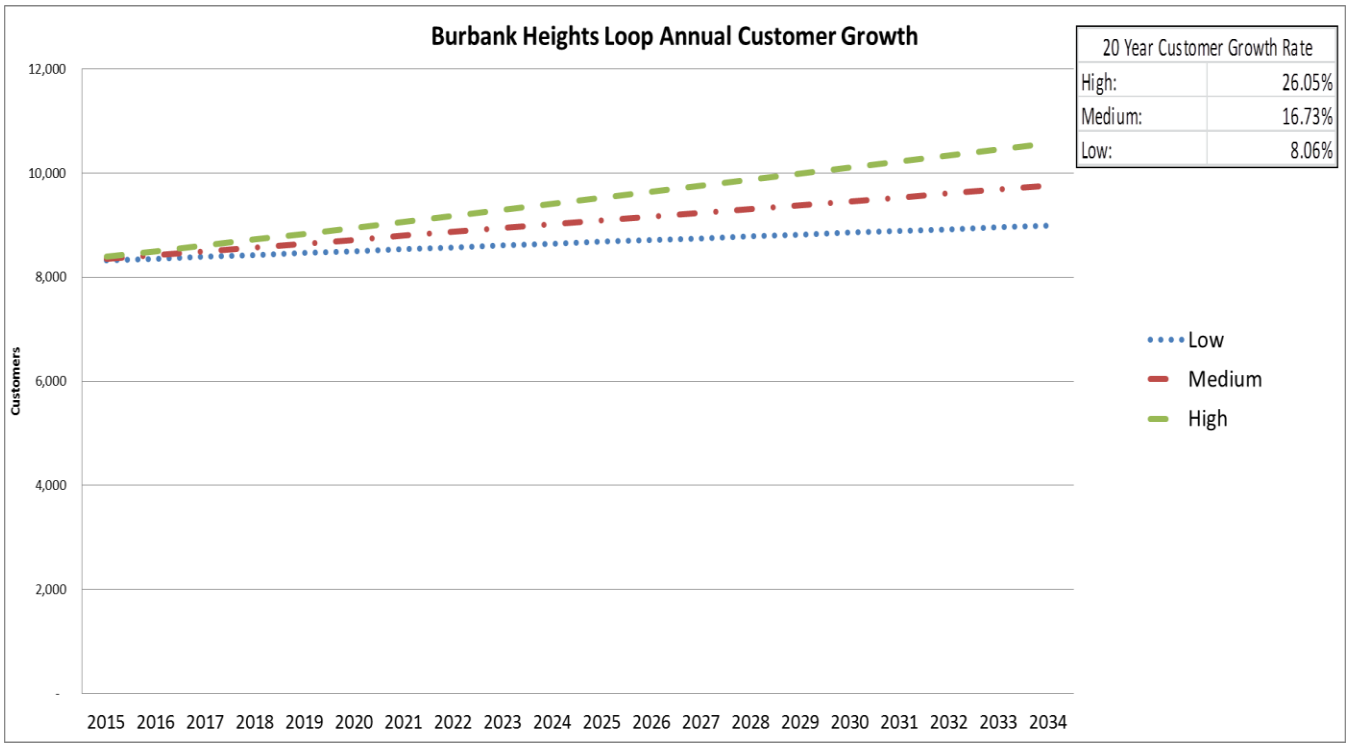
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	7,510	812	8,322	7,542	816	8,358	7,575	819	8,394
2016	7,542	816	8,358	7,607	823	8,430	7,673	830	8,503
2017	7,575	819	8,394	7,673	830	8,503	7,772	841	8,613
2018	7,608	823	8,430	7,739	837	8,577	7,873	852	8,724
2019	7,640	826	8,467	7,806	844	8,650	7,975	863	8,837
2020	7,673	830	8,503	7,873	851	8,724	8,077	874	8,950
2021	7,706	833	8,539	7,940	859	8,799	8,180	885	9,065
2022	7,738	837	8,575	8,007	866	8,873	8,284	896	9,180
2023	7,771	840	8,611	8,074	873	8,947	8,388	907	9,295
2024	7,803	844	8,647	8,141	881	9,022	8,493	919	9,411
2025	7,835	847	8,683	8,208	888	9,096	8,597	930	9,527
2026	7,867	851	8,718	8,275	895	9,170	8,703	941	9,644
2027	7,899	854	8,753	8,342	902	9,244	8,808	953	9,761
2028	7,930	858	8,788	8,409	909	9,318	8,913	964	9,878
2029	7,962	861	8,823	8,475	917	9,391	9,019	975	9,994
2030	7,993	864	8,857	8,541	924	9,464	9,124	987	10,111
2031	8,023	868	8,891	8,607	931	9,538	9,230	998	10,228
2032	8,054	871	8,925	8,672	938	9,610	9,336	1,010	10,345
2033	8,085	874	8,959	8,738	945	9,683	9,442	1,021	10,463
2034	8,115	878	8,993	8,804	952	9,756	9,548	1,033	10,581

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.43%	0.43%	0.43%	0.87%	0.87%	0.87%	1.30%	1.30%	1.30%
2017	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.30%	1.30%	1.30%
2018	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2019	0.43%	0.43%	0.43%	0.86%	0.86%	0.86%	1.29%	1.29%	1.29%
2020	0.43%	0.43%	0.43%	0.85%	0.85%	0.85%	1.28%	1.28%	1.28%
2021	0.43%	0.43%	0.43%	0.85%	0.85%	0.85%	1.28%	1.28%	1.28%
2022	0.42%	0.42%	0.42%	0.85%	0.85%	0.85%	1.27%	1.27%	1.27%
2023	0.42%	0.42%	0.42%	0.84%	0.84%	0.84%	1.26%	1.26%	1.26%
2024	0.42%	0.42%	0.42%	0.83%	0.83%	0.83%	1.25%	1.25%	1.25%
2025	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.23%	1.23%	1.23%
2026	0.41%	0.41%	0.41%	0.82%	0.82%	0.82%	1.22%	1.22%	1.22%
2027	0.40%	0.40%	0.40%	0.81%	0.81%	0.81%	1.21%	1.21%	1.21%
2028	0.40%	0.40%	0.40%	0.80%	0.80%	0.80%	1.20%	1.20%	1.20%
2029	0.39%	0.39%	0.39%	0.79%	0.79%	0.79%	1.18%	1.18%	1.18%
2030	0.39%	0.39%	0.39%	0.78%	0.78%	0.78%	1.17%	1.17%	1.17%
2031	0.39%	0.39%	0.39%	0.77%	0.77%	0.77%	1.16%	1.16%	1.16%
2032	0.38%	0.38%	0.38%	0.76%	0.76%	0.76%	1.15%	1.15%	1.15%
2033	0.38%	0.38%	0.38%	0.76%	0.76%	0.76%	1.14%	1.14%	1.14%
2034	0.38%	0.38%	0.38%	0.75%	0.75%	0.75%	1.13%	1.13%	1.13%


Burbank Heights Loop Annual Therm Usage
Therms
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 26.05%
Medium: 16.73%
Low: 8.06%
Low
Medium
High


Burbank Heights Loop Annual Customer Growth
Customers
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 26.05%
Medium: 16.73%
Low: 8.06%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

East Stanwood Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	6,882,973	2,607,913	9,490,885	6,953,982	2,607,913	9,561,895	7,024,991	2,607,913	9,632,904
2016	6,964,429	2,638,776	9,603,205	7,088,364	2,658,309	9,746,673	7,213,363	2,677,842	9,891,205
2017	6,985,513	2,646,765	9,632,278	7,161,945	2,685,904	9,847,849	7,341,282	2,725,330	10,066,612
2018	7,036,606	2,666,123	9,702,729	7,266,711	2,725,193	9,991,904	7,502,365	2,785,130	10,287,495
2019	7,087,541	2,685,422	9,772,963	7,371,912	2,764,647	10,136,559	7,665,285	2,845,611	10,510,896
2020	7,169,177	2,716,353	9,885,530	7,509,709	2,816,324	10,326,032	7,863,555	2,919,215	10,782,770
2021	7,188,669	2,723,739	9,912,407	7,583,028	2,843,820	10,426,848	7,995,723	2,968,281	10,964,004
2022	7,238,853	2,742,753	9,981,606	7,688,903	2,883,526	10,572,428	8,163,178	3,030,446	11,193,624
2023	7,288,692	2,761,637	10,050,329	7,794,777	2,923,231	10,718,009	8,331,786	3,093,039	11,424,825
2024	7,370,210	2,792,524	10,162,734	7,935,271	2,975,920	10,911,190	8,538,946	3,169,944	11,708,890
2025	7,387,501	2,799,075	10,186,576	8,006,828	3,002,756	11,009,584	8,672,917	3,219,678	11,892,594
2026	7,436,413	2,817,607	10,254,020	8,112,854	3,042,518	11,155,371	8,845,185	3,283,630	12,128,815
2027	7,484,951	2,835,998	10,320,949	8,218,760	3,082,235	11,300,995	9,018,385	3,347,927	12,366,312
2028	7,565,842	2,866,647	10,432,489	8,360,697	3,135,465	11,496,162	9,232,414	3,427,382	12,659,796
2029	7,580,815	2,872,320	10,453,135	8,429,954	3,161,438	11,591,392	9,367,100	3,477,382	12,844,481
2030	7,628,131	2,890,248	10,518,379	8,535,186	3,200,903	11,736,089	9,542,495	3,542,495	13,084,990
2031	7,675,198	2,908,081	10,583,279	8,640,513	3,240,403	11,880,916	9,719,132	3,608,068	13,327,200
2032	7,755,426	2,938,479	10,693,906	8,783,613	3,294,069	12,077,682	9,939,465	3,689,863	13,629,328
2033	7,768,290	2,943,354	10,711,644	8,850,747	3,319,246	12,169,992	10,074,914	3,740,146	13,815,061
2034	7,814,405	2,960,826	10,775,231	8,955,828	3,358,654	12,314,482	10,254,337	3,806,754	14,061,091

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	1.18%	1.18%	1.93%	1.93%	1.93%	2.68%	2.68%	2.68%
2017	0.30%	0.30%	0.30%	1.04%	1.04%	1.04%	1.77%	1.77%	1.77%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.15%	1.15%	1.15%	1.87%	1.87%	1.87%	2.59%	2.59%	2.59%
2021	0.27%	0.27%	0.27%	0.98%	0.98%	0.98%	1.68%	1.68%	1.68%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.12%	1.12%	1.12%	1.80%	1.80%	1.80%	2.49%	2.49%	2.49%
2025	0.23%	0.23%	0.23%	0.90%	0.90%	0.90%	1.57%	1.57%	1.57%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.08%	1.08%	1.08%	1.73%	1.73%	1.73%	2.37%	2.37%	2.37%
2029	0.20%	0.20%	0.20%	0.83%	0.83%	0.83%	1.46%	1.46%	1.46%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.05%	1.05%	1.05%	1.66%	1.66%	1.66%	2.27%	2.27%	2.27%
2033	0.17%	0.17%	0.17%	0.76%	0.76%	0.76%	1.36%	1.36%	1.36%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	7,145	93,721	100,866	7,145	94,476	101,621	7,145	95,230	102,375
2016	7,230	94,389	101,618	7,283	95,853	103,136	7,337	97,329	104,666
2017	7,251	95,117	102,369	7,359	97,301	104,660	7,467	99,518	106,984
2018	7,304	95,813	103,117	7,466	98,724	106,191	7,630	101,701	109,332
2019	7,357	96,506	103,864	7,574	100,153	107,728	7,796	103,910	111,706
2020	7,442	97,164	104,606	7,716	101,551	109,267	7,998	106,102	114,100
2021	7,462	97,883	105,346	7,791	103,022	110,813	8,132	108,389	116,522
2022	7,514	98,567	106,081	7,900	104,460	112,360	8,303	110,659	118,962
2023	7,566	99,245	106,811	8,009	105,898	113,907	8,474	112,945	121,419
2024	7,651	99,888	107,539	8,153	107,306	115,459	8,685	115,215	123,900
2025	7,669	100,591	108,259	8,227	108,779	117,006	8,821	117,569	126,390
2026	7,719	101,257	108,976	8,336	110,220	118,555	8,996	119,905	128,901
2027	7,770	101,918	109,688	8,444	111,659	120,103	9,172	122,253	131,425
2028	7,854	102,539	110,393	8,590	113,058	121,649	9,390	124,572	133,962
2029	7,869	103,223	111,092	8,661	114,528	123,189	9,527	126,980	136,507
2030	7,918	103,867	111,786	8,770	115,958	124,727	9,705	129,357	139,063
2031	7,967	104,508	112,475	8,878	117,388	126,266	9,885	131,752	141,637
2032	8,051	105,109	113,160	9,025	118,777	127,802	10,109	134,112	144,221
2033	8,064	105,776	113,840	9,094	120,245	129,339	10,247	136,575	146,822
2034	8,112	106,404	114,515	9,202	121,672	130,874	10,429	139,007	149,436

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	0.71%	0.75%	1.93%	1.46%	1.49%	2.68%	2.20%	2.24%
2017	0.30%	0.77%	0.74%	1.04%	1.51%	1.48%	1.77%	2.25%	2.22%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.15%	0.68%	0.71%	1.87%	1.40%	1.43%	2.59%	2.11%	2.14%
2021	0.27%	0.74%	0.71%	0.98%	1.45%	1.42%	1.68%	2.16%	2.12%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.12%	0.65%	0.68%	1.80%	1.33%	1.36%	2.49%	2.01%	2.04%
2025	0.23%	0.70%	0.67%	0.90%	1.37%	1.34%	1.57%	2.04%	2.01%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.08%	0.61%	0.64%	1.73%	1.25%	1.29%	2.37%	1.90%	1.93%
2029	0.20%	0.67%	0.63%	0.83%	1.30%	1.27%	1.46%	1.93%	1.90%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.05%	0.57%	0.61%	1.66%	1.18%	1.22%	2.27%	1.79%	1.82%
2033	0.17%	0.63%	0.60%	0.76%	1.24%	1.20%	1.36%	1.84%	1.80%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,397,466	4,093,419	9,490,885	5,437,849	4,124,045	9,561,895	5,478,232	4,154,672	9,632,904
2016	5,462,058	4,141,146	9,603,205	5,543,660	4,203,013	9,746,673	5,625,866	4,265,339	9,891,205
2017	5,477,876	4,154,402	9,632,278	5,600,471	4,247,377	9,847,849	5,724,882	4,341,730	10,066,612
2018	5,517,942	4,184,787	9,702,729	5,682,396	4,309,509	9,991,904	5,850,498	4,436,997	10,287,495
2019	5,557,884	4,215,079	9,772,963	5,764,661	4,371,898	10,136,559	5,977,546	4,533,350	10,510,896
2020	5,622,638	4,262,892	9,885,530	5,873,184	4,452,848	10,326,032	6,132,965	4,649,805	10,782,770
2021	5,637,186	4,275,222	9,912,407	5,929,748	4,497,100	10,426,848	6,235,229	4,728,775	10,964,004
2022	5,676,539	4,305,067	9,981,606	6,012,540	4,559,889	10,572,428	6,365,814	4,827,810	11,193,624
2023	5,715,622	4,334,707	10,050,329	6,095,331	4,622,677	10,718,009	6,497,298	4,927,527	11,424,825
2024	5,780,304	4,382,429	10,162,734	6,206,007	4,705,183	10,911,190	6,659,719	5,049,171	11,708,890
2025	5,793,105	4,393,470	10,186,576	6,261,150	4,748,434	11,009,584	6,763,318	5,129,276	11,892,594
2026	5,831,461	4,422,559	10,254,020	6,344,059	4,811,312	11,155,371	6,897,657	5,231,158	12,128,815
2027	5,869,524	4,451,426	10,320,949	6,426,876	4,874,119	11,300,995	7,032,721	5,333,591	12,366,312
2028	5,933,734	4,498,755	10,432,489	6,538,724	4,957,438	11,496,162	7,200,570	5,459,226	12,659,796
2029	5,944,698	4,508,437	10,453,135	6,592,024	4,999,368	11,591,392	7,304,656	5,539,825	12,844,481
2030	5,981,802	4,536,577	10,518,379	6,674,313	5,061,775	11,736,089	7,441,433	5,643,556	13,084,990
2031	6,018,711	4,564,569	10,583,279	6,756,677	5,124,239	11,880,916	7,579,178	5,748,022	13,327,200
2032	6,082,421	4,611,484	10,693,906	6,869,478	5,208,204	12,077,682	7,752,015	5,877,313	13,629,328
2033	6,091,712	4,619,932	10,711,644	6,921,074	5,248,918	12,169,992	7,856,625	5,958,436	13,815,061
2034	6,127,874	4,647,358	10,775,231	7,003,245	5,311,236	12,314,482	7,996,542	6,064,549	14,061,091

Annual Change

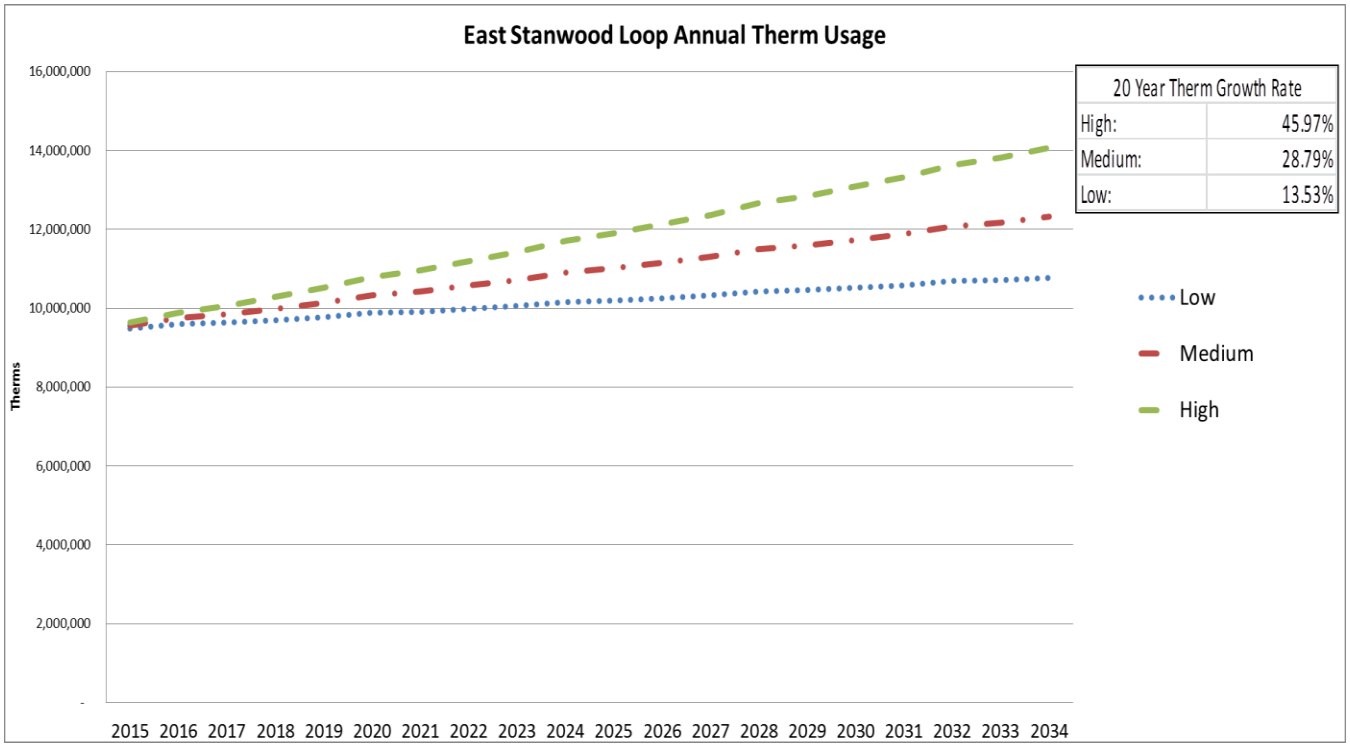
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.20%	1.17%	1.18%	1.95%	1.91%	1.93%	2.69%	2.66%	2.68%
2017	0.29%	0.32%	0.30%	1.02%	1.06%	1.04%	1.76%	1.79%	1.77%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	1.17%	1.13%	1.15%	1.88%	1.85%	1.87%	2.60%	2.57%	2.59%
2021	0.26%	0.29%	0.27%	0.96%	0.99%	0.98%	1.67%	1.70%	1.68%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	1.13%	1.10%	1.12%	1.82%	1.78%	1.80%	2.50%	2.47%	2.49%
2025	0.22%	0.25%	0.23%	0.89%	0.92%	0.90%	1.56%	1.59%	1.57%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	1.09%	1.06%	1.08%	1.74%	1.71%	1.73%	2.39%	2.36%	2.37%
2029	0.18%	0.22%	0.20%	0.82%	0.85%	0.83%	1.45%	1.48%	1.46%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	1.06%	1.03%	1.05%	1.67%	1.64%	1.66%	2.28%	2.25%	2.27%
2033	0.15%	0.18%	0.17%	0.75%	0.78%	0.76%	1.35%	1.38%	1.36%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%

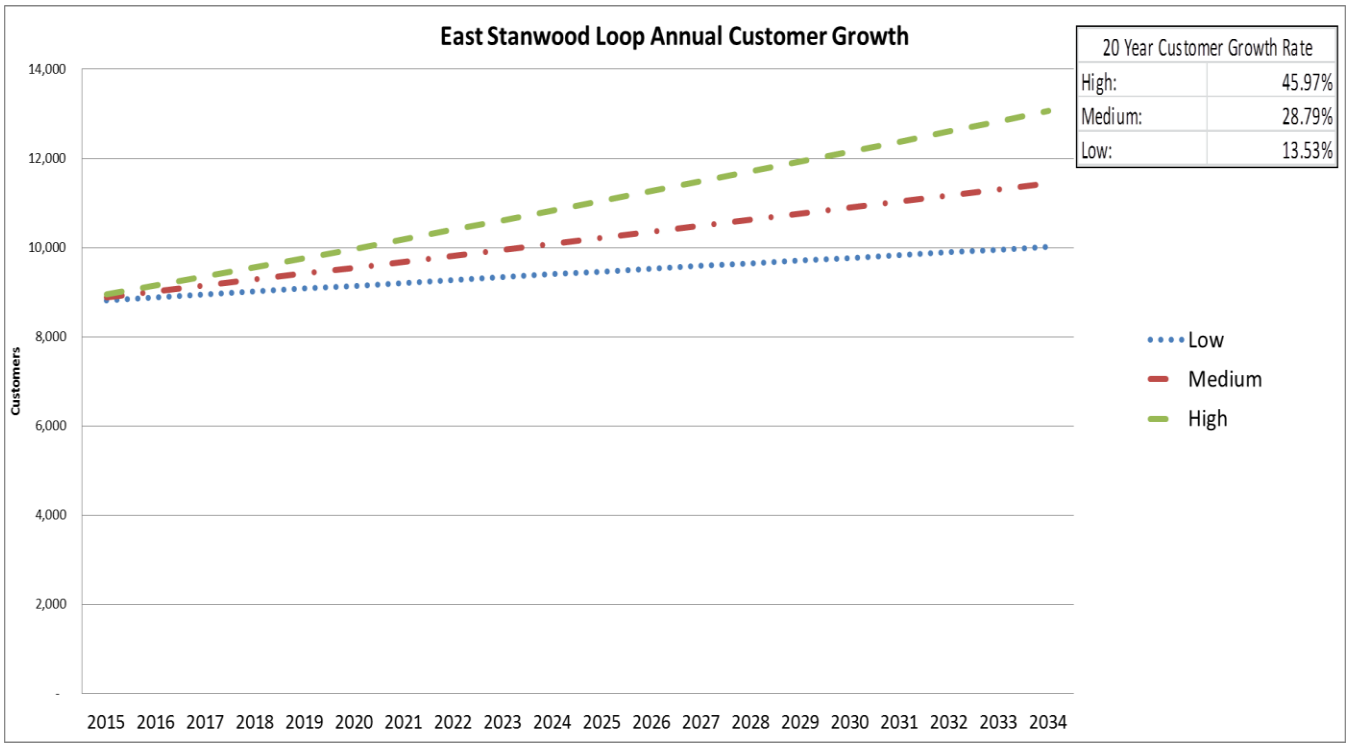
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	7,896	922	8,817	7,955	928	8,883	8,014	935	8,949
2016	7,954	928	8,883	8,073	942	9,016	8,193	956	9,149
2017	8,013	935	8,948	8,193	956	9,149	8,375	977	9,352
2018	8,072	942	9,014	8,312	970	9,283	8,558	999	9,557
2019	8,130	949	9,079	8,433	984	9,417	8,744	1,021	9,765
2020	8,188	956	9,144	8,553	998	9,551	8,932	1,042	9,974
2021	8,246	962	9,209	8,674	1,012	9,687	9,121	1,065	10,186
2022	8,304	969	9,273	8,795	1,027	9,822	9,312	1,087	10,399
2023	8,361	976	9,337	8,916	1,041	9,957	9,504	1,109	10,614
2024	8,418	982	9,400	9,038	1,055	10,093	9,699	1,132	10,831
2025	8,474	989	9,463	9,159	1,069	10,228	9,894	1,155	11,048
2026	8,530	996	9,526	9,280	1,083	10,363	10,090	1,178	11,268
2027	8,586	1,002	9,588	9,401	1,097	10,499	10,288	1,201	11,488
2028	8,641	1,009	9,650	9,522	1,111	10,634	10,486	1,224	11,710
2029	8,696	1,015	9,711	9,643	1,125	10,768	10,685	1,247	11,933
2030	8,750	1,021	9,772	9,763	1,140	10,903	10,886	1,270	12,156
2031	8,804	1,028	9,832	9,884	1,154	11,037	11,087	1,294	12,381
2032	8,858	1,034	9,892	10,004	1,168	11,172	11,289	1,318	12,607
2033	8,911	1,040	9,951	10,124	1,182	11,306	11,493	1,341	12,834
2034	8,964	1,046	10,010	10,245	1,196	11,440	11,698	1,365	13,063

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.75%	0.75%	0.75%	1.49%	1.49%	1.49%	2.24%	2.24%	2.24%
2017	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2018	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2019	0.72%	0.72%	0.72%	1.45%	1.45%	1.45%	2.17%	2.17%	2.17%
2020	0.71%	0.71%	0.71%	1.43%	1.43%	1.43%	2.14%	2.14%	2.14%
2021	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.12%	2.12%	2.12%
2022	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.09%	2.09%	2.09%
2023	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.07%	2.07%	2.07%
2024	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2025	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2026	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.99%	1.99%
2027	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2028	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2029	0.63%	0.63%	0.63%	1.27%	1.27%	1.27%	1.90%	1.90%	1.90%
2030	0.62%	0.62%	0.62%	1.25%	1.25%	1.25%	1.87%	1.87%	1.87%
2031	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2032	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2033	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2034	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%


East Stanwood Loop Annual Therm Usage
Therms
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 45.97%
Medium: 28.79%
Low: 13.53%
Low
Medium
High


East Stanwood Loop Annual Customer Growth
Customers
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 45.97%
Medium: 28.79%
Low: 13.53%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kennewick Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	13,757,749	5,099,577	18,857,326	13,874,511	5,099,577	18,974,089	13,991,274	5,099,577	19,090,851
2016	13,909,133	5,155,691	19,064,823	14,113,257	5,187,328	19,300,585	14,318,829	5,218,966	19,537,795
2017	13,927,471	5,162,488	19,089,959	14,217,886	5,225,785	19,443,671	14,512,258	5,289,467	19,801,724
2018	14,012,120	5,193,865	19,205,984	14,390,713	5,289,307	19,680,020	14,776,865	5,385,912	20,162,777
2019	14,096,468	5,225,130	19,321,598	14,563,967	5,352,987	19,916,954	15,043,721	5,483,176	20,526,896
2020	14,248,374	5,281,437	19,529,811	14,807,954	5,442,664	20,250,618	15,385,655	5,607,805	20,993,460
2021	14,264,011	5,287,233	19,551,244	14,911,189	5,480,608	20,391,797	15,583,294	5,679,841	21,263,135
2022	14,347,117	5,318,038	19,665,154	15,084,942	5,544,471	20,629,413	15,855,671	5,779,118	21,634,789
2023	14,429,608	5,348,615	19,778,223	15,258,410	5,608,229	20,866,639	16,129,167	5,878,802	22,007,970
2024	14,581,450	5,404,898	19,986,348	15,506,302	5,699,342	21,205,645	16,483,520	6,007,958	22,491,477
2025	14,593,092	5,409,214	20,002,306	15,605,132	5,735,667	21,340,799	16,680,474	6,079,744	22,760,218
2026	14,673,968	5,439,192	20,113,160	15,778,101	5,799,242	21,577,343	16,957,806	6,180,827	23,138,634
2027	14,754,202	5,468,932	20,223,133	15,950,642	5,862,659	21,813,301	17,235,969	6,282,213	23,518,182
2028	14,904,933	5,524,803	20,429,736	16,199,994	5,954,309	22,154,303	17,598,774	6,414,449	24,013,223
2029	14,912,422	5,527,579	20,440,001	16,293,656	5,988,734	22,282,389	17,793,429	6,485,397	24,278,826
2030	14,990,400	5,556,483	20,546,883	16,464,056	6,051,365	22,515,421	18,072,557	6,587,135	24,659,692
2031	15,067,974	5,585,238	20,653,212	16,634,457	6,113,996	22,748,453	18,353,130	6,689,399	25,042,529
2032	15,217,582	5,640,693	20,858,274	16,884,941	6,206,061	23,091,001	18,723,632	6,824,440	25,548,071
2033	15,221,294	5,642,069	20,863,362	16,973,831	6,238,733	23,212,564	18,916,206	6,894,630	25,810,836
2034	15,297,217	5,670,211	20,967,428	17,143,162	6,300,970	23,444,131	19,199,266	6,997,801	26,197,067

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	1.10%	1.10%	1.72%	1.72%	1.72%	2.34%	2.34%	2.34%
2017	0.13%	0.13%	0.13%	0.74%	0.74%	0.74%	1.35%	1.35%	1.35%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.08%	1.08%	1.08%	1.68%	1.68%	1.68%	2.27%	2.27%	2.27%
2021	0.11%	0.11%	0.11%	0.70%	0.70%	0.70%	1.28%	1.28%	1.28%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.05%	1.05%	1.05%	1.62%	1.62%	1.62%	2.20%	2.20%	2.20%
2025	0.08%	0.08%	0.08%	0.64%	0.64%	0.64%	1.19%	1.19%	1.19%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.02%	1.02%	1.02%	1.56%	1.56%	1.56%	2.10%	2.10%	2.10%
2029	0.05%	0.05%	0.05%	0.58%	0.58%	0.58%	1.11%	1.11%	1.11%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.99%	0.99%	0.99%	1.51%	1.51%	1.51%	2.02%	2.02%	2.02%
2033	0.02%	0.02%	0.02%	0.53%	0.53%	0.53%	1.03%	1.03%	1.03%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	13,971	248,367	262,339	13,971	249,992	263,963	13,971	251,616	265,588
2016	14,125	249,834	263,959	14,212	253,011	267,223	14,299	256,209	270,507
2017	14,144	251,431	265,575	14,317	256,179	270,496	14,492	260,985	275,477
2018	14,230	252,960	267,189	14,491	259,293	273,784	14,756	265,744	280,500
2019	14,315	254,482	268,798	14,666	262,415	277,080	15,022	270,543	285,566
2020	14,470	255,927	270,397	14,911	265,465	280,376	15,364	275,297	290,661
2021	14,486	257,507	271,993	15,015	268,671	283,686	15,561	280,247	295,808
2022	14,570	259,007	273,577	15,190	271,801	286,992	15,833	285,145	300,978
2023	14,654	260,497	275,150	15,365	274,927	290,292	16,106	290,064	306,170
2024	14,808	261,910	276,718	15,615	277,984	293,599	16,460	294,942	311,402
2025	14,820	263,448	278,268	15,714	281,174	296,888	16,657	299,978	316,635
2026	14,902	264,908	279,810	15,888	284,291	300,179	16,934	304,966	321,900
2027	14,983	266,356	281,340	16,062	287,400	303,462	17,212	309,968	327,180
2028	15,136	267,720	282,856	16,313	290,420	306,734	17,574	314,897	332,471
2029	15,144	269,213	284,357	16,407	293,580	309,988	17,768	319,993	337,762
2030	15,223	270,620	285,844	16,579	296,650	313,230	18,047	325,013	343,060
2031	15,302	272,021	287,323	16,751	299,721	316,471	18,327	330,059	348,386
2032	15,454	273,336	288,790	17,003	302,700	319,702	18,697	335,024	353,721
2033	15,458	274,789	290,246	17,092	305,836	322,928	18,889	340,185	359,075
2034	15,535	276,159	291,694	17,263	308,887	326,150	19,172	345,276	364,448

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.59%	0.62%	1.72%	1.21%	1.23%	2.34%	1.83%	1.85%
2017	0.13%	0.64%	0.61%	0.74%	1.25%	1.22%	1.35%	1.86%	1.84%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.08%	0.57%	0.59%	1.68%	1.16%	1.19%	2.27%	1.76%	1.78%
2021	0.11%	0.62%	0.59%	0.70%	1.21%	1.18%	1.28%	1.80%	1.77%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.05%	0.54%	0.57%	1.62%	1.11%	1.14%	2.20%	1.68%	1.71%
2025	0.08%	0.59%	0.56%	0.64%	1.15%	1.12%	1.19%	1.71%	1.68%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.02%	0.51%	0.54%	1.56%	1.05%	1.08%	2.10%	1.59%	1.62%
2029	0.05%	0.56%	0.53%	0.58%	1.09%	1.06%	1.11%	1.62%	1.59%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.99%	0.48%	0.51%	1.51%	0.99%	1.02%	2.02%	1.50%	1.53%
2033	0.02%	0.53%	0.50%	0.53%	1.04%	1.01%	1.03%	1.54%	1.51%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	8,466,953	10,390,373	18,857,326	8,519,380	10,454,709	18,974,089	8,571,806	10,519,045	19,090,851
2016	8,562,306	10,502,517	19,064,823	8,668,190	10,632,395	19,300,585	8,774,725	10,763,070	19,537,795
2017	8,571,406	10,518,554	19,089,959	8,730,222	10,713,448	19,443,671	8,890,989	10,910,736	19,801,724
2018	8,623,501	10,582,483	19,205,984	8,836,343	10,843,677	19,680,020	9,053,102	11,109,676	20,162,777
2019	8,675,412	10,646,186	19,321,598	8,942,727	10,974,227	19,916,954	9,216,591	11,310,305	20,526,896
2020	8,771,139	10,758,672	19,529,811	9,094,865	11,155,754	20,250,618	9,428,486	11,564,974	20,993,460
2021	8,778,523	10,772,721	19,551,244	9,155,932	11,235,865	20,391,797	9,547,163	11,715,972	21,263,135
2022	8,829,669	10,835,486	19,665,154	9,262,621	11,366,791	20,629,413	9,714,036	11,920,753	21,634,789
2023	8,880,437	10,897,787	19,778,223	9,369,136	11,497,503	20,866,639	9,881,595	12,126,375	22,007,970
2024	8,976,177	11,010,171	19,986,348	9,523,782	11,681,863	21,205,645	10,101,269	12,390,208	22,491,477
2025	8,981,050	11,021,256	20,002,306	9,582,034	11,758,765	21,340,799	10,219,355	12,540,864	22,760,218
2026	9,030,823	11,082,336	20,113,160	9,688,243	11,889,100	21,577,343	10,389,263	12,749,370	23,138,634
2027	9,080,202	11,142,932	20,223,133	9,794,188	12,019,113	21,813,301	10,559,681	12,958,501	23,518,182
2028	9,175,309	11,254,427	20,429,736	9,949,839	12,204,464	22,154,303	10,784,709	13,228,515	24,013,223
2029	9,177,575	11,262,426	20,440,001	10,004,809	12,277,580	22,282,389	10,901,211	13,377,615	24,278,826
2030	9,225,566	11,321,318	20,546,883	10,109,441	12,405,981	22,515,421	11,072,220	13,587,472	24,659,692
2031	9,273,307	11,379,905	20,653,212	10,214,072	12,534,381	22,748,453	11,244,114	13,798,415	25,042,529
2032	9,367,772	11,490,502	20,858,274	10,370,525	12,720,477	23,091,001	11,474,033	14,074,039	25,548,071
2033	9,367,665	11,495,697	20,863,362	10,422,458	12,790,106	23,212,564	11,589,084	14,221,752	25,810,836
2034	9,414,391	11,553,038	20,967,428	10,526,432	12,917,699	23,444,131	11,762,502	14,434,565	26,197,067

Annual Change

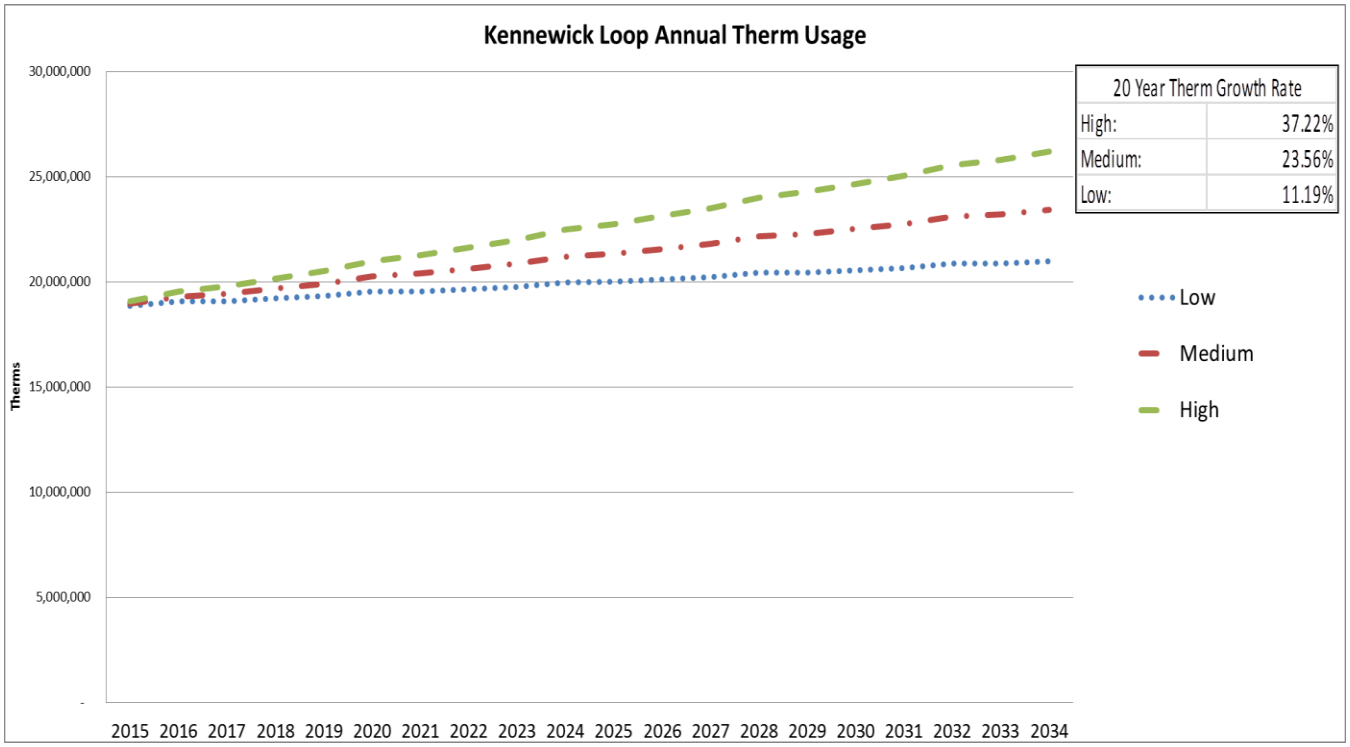
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.13%	1.08%	1.10%	1.75%	1.70%	1.72%	2.37%	2.32%	2.34%
2017	0.11%	0.15%	0.13%	0.72%	0.76%	0.74%	1.32%	1.37%	1.35%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	1.10%	1.06%	1.08%	1.70%	1.65%	1.68%	2.30%	2.25%	2.27%
2021	0.08%	0.13%	0.11%	0.67%	0.72%	0.70%	1.26%	1.31%	1.28%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	1.08%	1.03%	1.05%	1.65%	1.60%	1.62%	2.22%	2.18%	2.20%
2025	0.05%	0.10%	0.08%	0.61%	0.66%	0.64%	1.17%	1.22%	1.19%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	1.05%	1.00%	1.02%	1.59%	1.54%	1.56%	2.13%	2.08%	2.10%
2029	0.02%	0.07%	0.05%	0.55%	0.60%	0.58%	1.08%	1.13%	1.11%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	1.02%	0.97%	0.99%	1.53%	1.48%	1.51%	2.04%	2.00%	2.02%
2033	0.00%	0.05%	0.02%	0.50%	0.55%	0.53%	1.00%	1.05%	1.03%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%

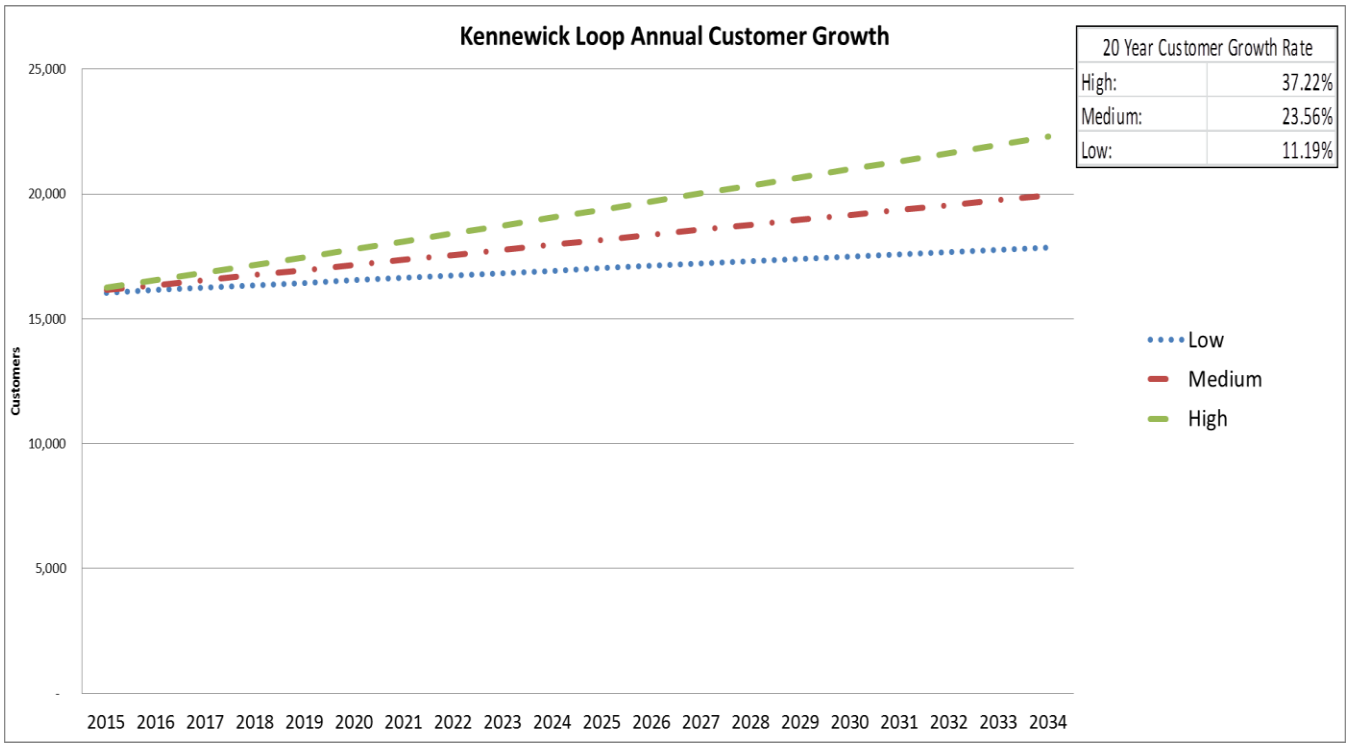
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,802	2,253	16,055	13,887	2,267	16,154	13,973	2,281	16,254
2016	13,887	2,267	16,154	14,059	2,295	16,354	14,232	2,323	16,555
2017	13,972	2,281	16,253	14,231	2,323	16,554	14,493	2,366	16,859
2018	14,057	2,295	16,352	14,404	2,351	16,755	14,757	2,409	17,166
2019	14,142	2,309	16,450	14,578	2,380	16,957	15,024	2,453	17,476
2020	14,226	2,322	16,548	14,751	2,408	17,159	15,292	2,496	17,788
2021	14,310	2,336	16,646	14,925	2,436	17,361	15,563	2,540	18,103
2022	14,393	2,350	16,743	15,099	2,465	17,564	15,835	2,585	18,420
2023	14,476	2,363	16,839	15,273	2,493	17,766	16,108	2,629	18,737
2024	14,558	2,377	16,935	15,447	2,522	17,968	16,383	2,674	19,058
2025	14,640	2,390	17,030	15,620	2,550	18,169	16,659	2,719	19,378
2026	14,721	2,403	17,124	15,793	2,578	18,371	16,936	2,765	19,700
2027	14,802	2,416	17,218	15,965	2,606	18,572	17,213	2,810	20,023
2028	14,881	2,429	17,311	16,138	2,634	18,772	17,492	2,855	20,347
2029	14,960	2,442	17,402	16,309	2,662	18,971	17,770	2,901	20,671
2030	15,039	2,455	17,493	16,479	2,690	19,169	18,049	2,946	20,995
2031	15,116	2,468	17,584	16,650	2,718	19,368	18,329	2,992	21,321
2032	15,194	2,480	17,674	16,820	2,746	19,566	18,610	3,038	21,648
2033	15,270	2,493	17,763	16,990	2,773	19,763	18,891	3,084	21,975
2034	15,346	2,505	17,852	17,159	2,801	19,960	19,174	3,130	22,304

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2017	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.84%	1.84%	1.84%
2018	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.82%	1.82%	1.82%
2019	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.81%	1.81%	1.81%
2020	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2021	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2022	0.58%	0.58%	0.58%	1.17%	1.17%	1.17%	1.75%	1.75%	1.75%
2023	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2024	0.57%	0.57%	0.57%	1.14%	1.14%	1.14%	1.71%	1.71%	1.71%
2025	0.56%	0.56%	0.56%	1.12%	1.12%	1.12%	1.68%	1.68%	1.68%
2026	0.55%	0.55%	0.55%	1.11%	1.11%	1.11%	1.66%	1.66%	1.66%
2027	0.55%	0.55%	0.55%	1.09%	1.09%	1.09%	1.64%	1.64%	1.64%
2028	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2029	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.59%	1.59%	1.59%
2030	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2031	0.52%	0.52%	0.52%	1.03%	1.03%	1.03%	1.55%	1.55%	1.55%
2032	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.53%	1.53%	1.53%
2033	0.50%	0.50%	0.50%	1.01%	1.01%	1.01%	1.51%	1.51%	1.51%
2034	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%


Kennewick Loop Annual Therm Usage
Therms
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 37.22%
Medium: 23.56%
Low: 11.19%
Low
Medium
High


Kennewick Loop Annual Customer Growth
Customers
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 37.22%
Medium: 23.56%
Low: 11.19%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Longview South Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	2,858,187	1,152,178	4,010,365	2,868,042	1,152,178	4,020,220	2,877,898	1,152,178	4,030,076
2016	2,881,327	1,161,506	4,042,833	2,898,444	1,164,391	4,062,836	2,915,611	1,167,277	4,082,887
2017	2,872,513	1,157,953	4,030,466	2,896,829	1,163,743	4,060,572	2,921,281	1,169,546	4,090,827
2018	2,879,813	1,160,896	4,040,709	2,911,553	1,169,657	4,081,210	2,943,552	1,178,463	4,122,016
2019	2,887,180	1,163,866	4,051,046	2,926,450	1,175,642	4,102,093	2,966,144	1,187,508	4,153,652
2020	2,910,757	1,173,370	4,084,126	2,957,880	1,188,268	4,146,148	3,005,635	1,203,318	4,208,953
2021	2,902,016	1,169,846	4,071,862	2,956,563	1,187,739	4,144,303	3,011,985	1,205,860	4,217,845
2022	2,909,472	1,172,852	4,082,324	2,971,756	1,193,843	4,165,599	3,035,201	1,215,155	4,250,356
2023	2,916,916	1,175,853	4,092,769	2,986,963	1,199,952	4,186,914	3,058,498	1,224,482	4,282,980
2024	2,940,734	1,185,454	4,126,188	3,019,039	1,212,838	4,231,877	3,099,214	1,240,783	4,339,997
2025	2,931,789	1,181,848	4,113,638	3,017,462	1,212,204	4,229,667	3,105,403	1,243,261	4,348,663
2026	2,939,207	1,184,838	4,124,045	3,032,731	1,218,338	4,251,069	3,128,973	1,252,697	4,381,670
2027	2,946,590	1,187,815	4,134,404	3,047,966	1,224,459	4,272,425	3,152,552	1,262,137	4,414,689
2028	2,970,445	1,197,431	4,167,876	3,080,274	1,237,438	4,317,712	3,193,862	1,278,675	4,472,538
2029	2,961,196	1,193,703	4,154,898	3,078,221	1,236,613	4,314,834	3,199,549	1,280,952	4,480,501
2030	2,968,409	1,196,610	4,165,019	3,093,217	1,242,637	4,335,854	3,222,930	1,290,313	4,513,242
2031	2,975,619	1,199,517	4,175,136	3,108,244	1,248,674	4,356,918	3,246,415	1,299,715	4,546,130
2032	2,999,452	1,209,124	4,208,576	3,140,652	1,261,694	4,402,346	3,288,112	1,316,409	4,604,521
2033	2,989,901	1,205,274	4,195,175	3,138,116	1,260,675	4,398,791	3,293,271	1,318,474	4,611,745
2034	2,997,004	1,208,137	4,205,141	3,153,026	1,266,664	4,419,691	3,316,742	1,327,871	4,644,613

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.81%	0.81%	1.06%	1.06%	1.06%	1.31%	1.31%	1.31%
2017	-0.31%	-0.31%	-0.31%	-0.06%	-0.06%	-0.06%	0.19%	0.19%	0.19%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.82%	0.82%	0.82%	1.07%	1.07%	1.07%	1.33%	1.33%	1.33%
2021	-0.30%	-0.30%	-0.30%	-0.04%	-0.04%	-0.04%	0.21%	0.21%	0.21%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.82%	0.82%	0.82%	1.07%	1.07%	1.07%	1.33%	1.33%	1.33%
2025	-0.30%	-0.30%	-0.30%	-0.05%	-0.05%	-0.05%	0.20%	0.20%	0.20%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.81%	0.81%	0.81%	1.06%	1.06%	1.06%	1.31%	1.31%	1.31%
2029	-0.31%	-0.31%	-0.31%	-0.07%	-0.07%	-0.07%	0.18%	0.18%	0.18%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.80%	0.80%	0.80%	1.04%	1.04%	1.04%	1.28%	1.28%	1.28%
2033	-0.32%	-0.32%	-0.32%	-0.08%	-0.08%	-0.08%	0.16%	0.16%	0.16%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	3,157	39,609	42,766	3,157	39,714	42,871	3,157	39,819	42,976
2016	3,182	39,690	42,872	3,190	39,894	43,084	3,198	40,099	43,297
2017	3,172	39,808	42,980	3,188	40,113	43,301	3,204	40,420	43,624
2018	3,181	39,909	43,089	3,205	40,317	43,521	3,229	40,728	43,956
2019	3,189	40,011	43,200	3,221	40,523	43,744	3,253	41,040	44,294
2020	3,215	40,096	43,310	3,256	40,712	43,968	3,297	41,337	44,634
2021	3,205	40,217	43,422	3,254	40,940	44,194	3,304	41,675	44,978
2022	3,213	40,320	43,533	3,271	41,150	44,421	3,329	41,996	45,325
2023	3,222	40,423	43,645	3,288	41,361	44,649	3,355	42,318	45,673
2024	3,248	40,508	43,756	3,323	41,554	44,877	3,399	42,624	46,024
2025	3,238	40,629	43,867	3,321	41,783	45,104	3,406	42,967	46,373
2026	3,246	40,732	43,978	3,338	41,995	45,333	3,432	43,293	46,725
2027	3,254	40,834	44,089	3,355	42,206	45,560	3,458	43,620	47,078
2028	3,281	40,918	44,198	3,390	42,397	45,787	3,503	43,926	47,429
2029	3,270	41,037	44,307	3,388	42,625	46,013	3,509	44,270	47,779
2030	3,278	41,137	44,415	3,404	42,832	46,237	3,535	44,593	48,128
2031	3,286	41,237	44,523	3,421	43,040	46,461	3,561	44,918	48,479
2032	3,313	41,317	44,630	3,457	43,228	46,685	3,607	45,222	48,829
2033	3,302	41,435	44,737	3,454	43,454	46,908	3,612	45,567	49,179
2034	3,310	41,533	44,843	3,470	43,661	47,131	3,638	45,891	49,529

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.20%	0.25%	1.06%	0.45%	0.50%	1.31%	0.70%	0.75%
2017	-0.31%	0.30%	0.25%	-0.06%	0.55%	0.50%	0.19%	0.80%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.82%	0.21%	0.26%	1.07%	0.47%	0.51%	1.33%	0.72%	0.77%
2021	-0.30%	0.30%	0.26%	-0.04%	0.56%	0.51%	0.21%	0.82%	0.77%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.82%	0.21%	0.26%	1.07%	0.47%	0.51%	1.33%	0.72%	0.77%
2025	-0.30%	0.30%	0.25%	-0.05%	0.55%	0.51%	0.20%	0.80%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.81%	0.20%	0.25%	1.06%	0.45%	0.50%	1.31%	0.70%	0.75%
2029	-0.31%	0.29%	0.25%	-0.07%	0.54%	0.49%	0.18%	0.78%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.80%	0.20%	0.24%	1.04%	0.44%	0.48%	1.28%	0.68%	0.72%
2033	-0.32%	0.28%	0.24%	-0.08%	0.52%	0.48%	0.16%	0.76%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	742,794	3,267,571	4,010,365	744,620	3,275,601	4,020,220	746,445	3,283,631	4,030,076
2016	748,901	3,293,932	4,042,833	752,606	3,310,229	4,062,836	756,321	3,326,567	4,082,887
2017	746,517	3,283,948	4,030,466	752,094	3,308,478	4,060,572	757,697	3,333,130	4,090,827
2018	748,415	3,292,294	4,040,709	755,916	3,325,294	4,081,210	763,474	3,358,541	4,122,016
2019	750,329	3,300,717	4,051,046	759,784	3,342,309	4,102,093	769,334	3,384,318	4,153,652
2020	756,550	3,327,576	4,084,126	768,039	3,378,109	4,146,148	779,673	3,429,279	4,208,953
2021	754,185	3,317,677	4,071,862	767,602	3,376,700	4,144,303	781,224	3,436,622	4,217,845
2022	756,122	3,326,201	4,082,324	771,547	3,394,052	4,165,599	787,245	3,463,111	4,250,356
2023	758,057	3,334,712	4,092,769	775,495	3,411,420	4,186,914	793,288	3,489,692	4,282,980
2024	764,342	3,361,846	4,126,188	783,920	3,447,957	4,231,877	803,948	3,536,049	4,339,997
2025	761,922	3,351,715	4,113,638	783,413	3,446,254	4,229,667	805,454	3,543,210	4,348,663
2026	763,850	3,360,195	4,124,045	787,377	3,463,692	4,251,069	811,567	3,570,103	4,381,670
2027	765,769	3,368,635	4,134,404	791,333	3,481,092	4,272,425	817,683	3,597,006	4,414,689
2028	772,064	3,395,812	4,167,876	799,820	3,517,892	4,317,712	828,500	3,644,037	4,472,538
2029	769,565	3,385,334	4,154,898	799,188	3,515,646	4,314,834	829,872	3,650,629	4,480,501
2030	771,439	3,393,580	4,165,019	803,081	3,532,773	4,335,854	835,937	3,677,306	4,513,242
2031	773,313	3,401,823	4,175,136	806,982	3,549,935	4,356,918	842,028	3,704,102	4,546,130
2032	779,603	3,428,972	4,208,576	815,498	3,586,848	4,402,346	852,949	3,751,572	4,604,521
2033	777,025	3,418,150	4,195,175	814,738	3,584,053	4,398,791	854,181	3,757,564	4,611,745
2034	778,870	3,426,270	4,205,141	818,609	3,601,082	4,419,691	860,269	3,784,344	4,644,613

Annual Change

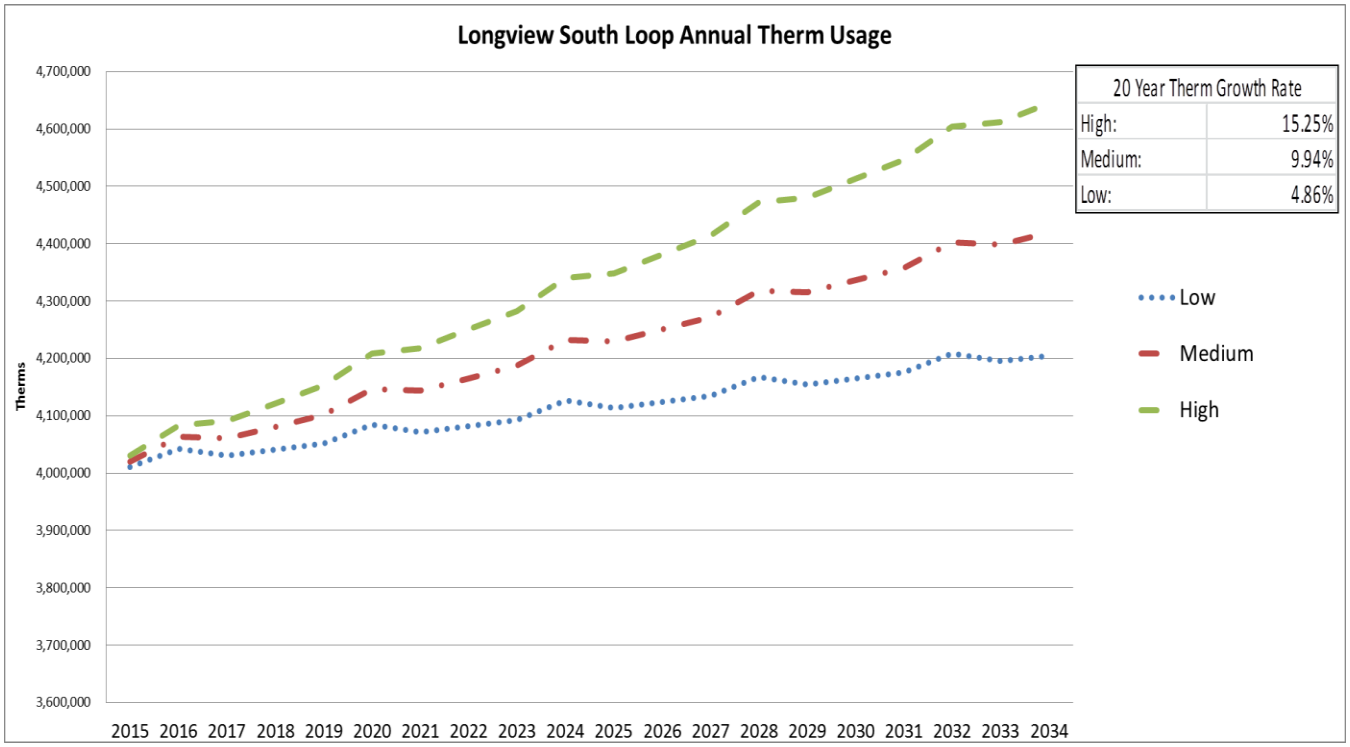
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.82%	0.81%	0.81%	1.07%	1.06%	1.06%	1.32%	1.31%	1.31%
2017	-0.32%	-0.30%	-0.31%	-0.07%	-0.05%	-0.06%	0.18%	0.20%	0.19%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.83%	0.81%	0.82%	1.09%	1.07%	1.07%	1.34%	1.33%	1.33%
2021	-0.31%	-0.30%	-0.30%	-0.06%	-0.04%	-0.04%	0.20%	0.21%	0.21%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.83%	0.81%	0.82%	1.09%	1.07%	1.07%	1.34%	1.33%	1.33%
2025	-0.32%	-0.30%	-0.30%	-0.06%	-0.05%	-0.05%	0.19%	0.20%	0.20%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.82%	0.81%	0.81%	1.07%	1.06%	1.06%	1.32%	1.31%	1.31%
2029	-0.32%	-0.31%	-0.31%	-0.08%	-0.06%	-0.07%	0.17%	0.18%	0.18%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.81%	0.80%	0.80%	1.06%	1.04%	1.04%	1.30%	1.28%	1.28%
2033	-0.33%	-0.32%	-0.32%	-0.09%	-0.08%	-0.08%	0.14%	0.16%	0.16%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%

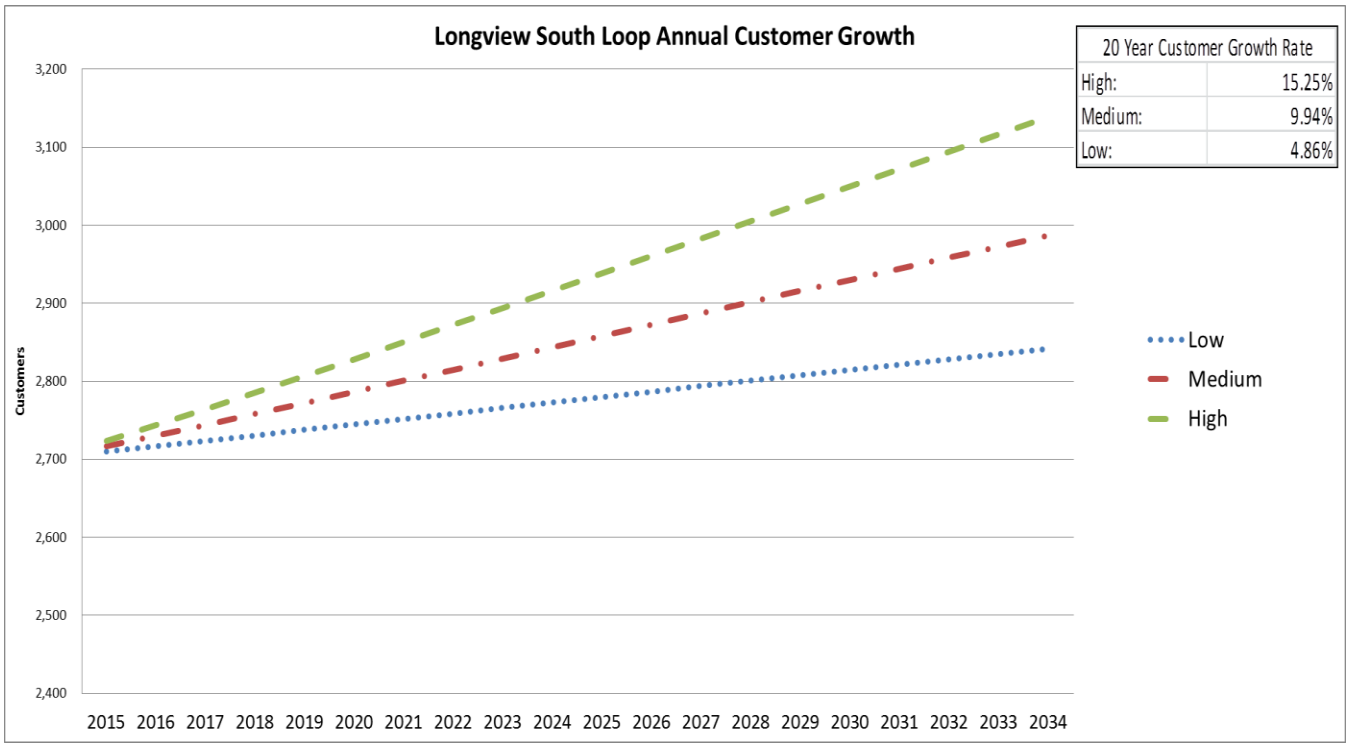
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,829	881	2,710	1,834	883	2,717	1,838	885	2,723
2016	1,834	883	2,717	1,843	887	2,730	1,852	892	2,744
2017	1,838	885	2,724	1,852	892	2,744	1,866	899	2,765
2018	1,843	888	2,731	1,862	896	2,758	1,880	905	2,786
2019	1,848	890	2,738	1,871	901	2,772	1,895	912	2,807
2020	1,853	892	2,745	1,881	906	2,786	1,909	919	2,829
2021	1,857	894	2,752	1,890	910	2,801	1,924	926	2,850
2022	1,862	897	2,759	1,900	915	2,815	1,939	934	2,872
2023	1,867	899	2,766	1,910	920	2,829	1,954	941	2,894
2024	1,872	901	2,773	1,920	924	2,844	1,969	948	2,917
2025	1,876	904	2,780	1,929	929	2,858	1,984	955	2,939
2026	1,881	906	2,787	1,939	934	2,873	1,999	962	2,961
2027	1,886	908	2,794	1,949	938	2,887	2,014	970	2,983
2028	1,891	910	2,801	1,958	943	2,902	2,029	977	3,006
2029	1,895	913	2,808	1,968	948	2,916	2,044	984	3,028
2030	1,900	915	2,815	1,978	952	2,930	2,059	991	3,050
2031	1,904	917	2,822	1,987	957	2,944	2,074	999	3,072
2032	1,909	919	2,828	1,997	962	2,959	2,089	1,006	3,094
2033	1,914	922	2,835	2,006	966	2,973	2,104	1,013	3,117
2034	1,918	924	2,842	2,016	971	2,987	2,119	1,020	3,139

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2017	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2018	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2019	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2020	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2021	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2022	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2023	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2024	0.26%	0.26%	0.26%	0.51%	0.51%	0.51%	0.77%	0.77%	0.77%
2025	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2026	0.25%	0.25%	0.25%	0.51%	0.51%	0.51%	0.76%	0.76%	0.76%
2027	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2028	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%	0.75%	0.75%	0.75%
2029	0.25%	0.25%	0.25%	0.49%	0.49%	0.49%	0.74%	0.74%	0.74%
2030	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2031	0.24%	0.24%	0.24%	0.49%	0.49%	0.49%	0.73%	0.73%	0.73%
2032	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2033	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.72%	0.72%	0.72%
2034	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%


Longview South Loop Annual Therm Usage
Therms
4,700,000
4,600,000
4,500,000
4,400,000
4,300,000
4,200,000
4,100,000
4,000,000
3,900,000
3,800,000
3,700,000
3,600,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 15.25%
Medium: 9.94%
Low: 4.86%
Low
Medium
High


Longview South Loop Annual Customer Growth
Customers
3,200
3,100
3,000
2,900
2,800
2,700
2,600
2,500
2,400
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 15.25%
Medium: 9.94%
Low: 4.86%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sedro-Woolley Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,962,098	5,501,602	27,463,700	22,156,453	5,501,602	27,658,055	22,350,808	5,501,602	27,852,409
2016	22,217,388	5,565,553	27,782,940	22,571,093	5,604,560	28,175,653	22,927,555	5,643,567	28,571,122
2017	22,271,719	5,579,163	27,850,882	22,783,361	5,657,267	28,440,629	23,302,727	5,735,914	29,038,642
2018	22,426,189	5,617,858	28,044,047	23,099,397	5,735,741	28,835,138	23,787,587	5,855,262	29,642,849
2019	22,580,102	5,656,414	28,236,517	23,416,465	5,814,471	29,230,937	24,277,359	5,975,818	30,253,177
2020	22,836,295	5,720,592	28,556,886	23,841,659	5,920,050	29,761,709	24,883,562	6,125,033	31,008,595
2021	22,885,979	5,733,038	28,619,017	24,053,012	5,972,530	30,025,542	25,270,601	6,220,302	31,490,904
2022	23,037,804	5,771,071	28,808,875	24,372,146	6,051,774	30,423,920	25,773,535	6,344,098	32,117,633
2023	23,188,554	5,808,834	28,997,388	24,691,108	6,130,974	30,822,082	26,279,488	6,468,637	32,748,125
2024	23,444,632	5,872,983	29,317,615	25,124,503	6,238,589	31,363,092	26,911,825	6,624,286	33,536,111
2025	23,487,552	5,883,734	29,371,287	25,329,893	6,289,589	31,619,482	27,302,561	6,720,464	34,023,025
2026	23,635,673	5,920,839	29,556,512	25,649,372	6,368,917	32,018,289	27,819,100	6,847,609	34,666,709
2027	23,782,554	5,957,634	29,740,188	25,968,161	6,448,075	32,416,236	28,337,734	6,975,270	35,313,004
2028	24,036,866	6,021,340	30,058,205	26,405,788	6,556,741	32,962,529	28,989,833	7,135,783	36,125,616
2029	24,072,764	6,030,333	30,103,097	26,603,844	6,605,920	33,209,763	29,381,412	7,232,169	36,613,581
2030	24,215,980	6,066,209	30,282,189	26,920,392	6,684,521	33,604,913	29,905,808	7,361,248	37,267,056
2031	24,358,509	6,101,913	30,460,422	27,237,285	6,763,207	34,000,493	30,433,862	7,491,227	37,925,089
2032	24,610,905	6,165,139	30,776,044	27,678,241	6,872,700	34,550,941	31,103,930	7,656,163	38,760,093
2033	24,640,404	6,172,529	30,812,933	27,869,519	6,920,196	34,789,715	31,496,551	7,752,806	39,249,357
2034	24,780,035	6,207,507	30,987,542	28,185,378	6,998,625	35,184,003	32,031,999	7,884,605	39,916,604

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.16%	1.16%	1.16%	1.87%	1.87%	1.87%	2.58%	2.58%	2.58%
2017	0.24%	0.24%	0.24%	0.94%	0.94%	0.94%	1.64%	1.64%	1.64%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.13%	1.13%	1.13%	1.82%	1.82%	1.82%	2.50%	2.50%	2.50%
2021	0.22%	0.22%	0.22%	0.89%	0.89%	0.89%	1.56%	1.56%	1.56%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.10%	1.10%	1.10%	1.76%	1.76%	1.76%	2.41%	2.41%	2.41%
2025	0.18%	0.18%	0.18%	0.82%	0.82%	0.82%	1.45%	1.45%	1.45%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.07%	1.07%	1.07%	1.69%	1.69%	1.69%	2.30%	2.30%	2.30%
2029	0.15%	0.15%	0.15%	0.75%	0.75%	0.75%	1.35%	1.35%	1.35%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.04%	1.04%	1.04%	1.62%	1.62%	1.62%	2.20%	2.20%	2.20%
2033	0.12%	0.12%	0.12%	0.69%	0.69%	0.69%	1.26%	1.26%	1.26%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	15,073	304,090	319,162	15,073	306,348	321,421	15,073	308,607	323,680
2016	15,248	306,167	321,415	15,355	310,603	325,958	15,462	315,072	330,533
2017	15,285	308,377	323,662	15,499	315,016	330,516	15,715	321,750	337,465
2018	15,391	310,515	325,907	15,714	319,386	335,100	16,042	328,445	344,487
2019	15,497	312,646	328,144	15,930	323,770	339,700	16,372	335,208	351,580
2020	15,673	314,696	330,369	16,219	328,088	344,307	16,781	341,951	358,732
2021	15,707	316,882	332,589	16,363	332,571	348,934	17,042	348,922	365,964
2022	15,811	318,984	334,795	16,580	336,984	353,564	17,381	355,866	373,247
2023	15,915	321,071	336,986	16,797	341,394	358,191	17,722	362,852	380,574
2024	16,090	323,079	339,169	17,092	345,741	362,833	18,149	369,824	387,972
2025	16,120	325,211	341,331	17,232	350,226	367,458	18,412	376,978	395,390
2026	16,221	327,262	343,484	17,449	354,643	372,092	18,761	384,110	402,870
2027	16,322	329,296	345,618	17,666	359,051	376,717	19,110	391,271	410,381
2028	16,497	331,240	347,737	17,964	363,373	381,337	19,550	398,380	417,930
2029	16,521	333,314	349,836	18,098	367,840	385,939	19,814	405,681	425,495
2030	16,620	335,297	351,917	18,314	372,217	390,531	20,168	412,922	433,090
2031	16,718	337,270	353,988	18,529	376,599	395,128	20,524	420,213	440,737
2032	16,891	339,151	356,042	18,829	380,883	399,713	20,976	427,432	448,408
2033	16,911	341,174	358,085	18,959	385,340	404,300	21,241	434,886	456,126
2034	17,007	343,107	360,114	19,174	389,708	408,882	21,602	442,279	463,881

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.16%	0.68%	0.71%	1.87%	1.39%	1.41%	2.58%	2.09%	2.12%
2017	0.24%	0.72%	0.70%	0.94%	1.42%	1.40%	1.64%	2.12%	2.10%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.13%	0.66%	0.68%	1.82%	1.33%	1.36%	2.50%	2.01%	2.03%
2021	0.22%	0.69%	0.67%	0.89%	1.37%	1.34%	1.56%	2.04%	2.02%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.10%	0.63%	0.65%	1.76%	1.27%	1.30%	2.41%	1.92%	1.94%
2025	0.18%	0.66%	0.64%	0.82%	1.30%	1.27%	1.45%	1.93%	1.91%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.07%	0.59%	0.61%	1.69%	1.20%	1.23%	2.30%	1.82%	1.84%
2029	0.15%	0.63%	0.60%	0.75%	1.23%	1.21%	1.35%	1.83%	1.81%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.04%	0.56%	0.58%	1.62%	1.14%	1.16%	2.20%	1.72%	1.74%
2033	0.12%	0.60%	0.57%	0.69%	1.17%	1.15%	1.26%	1.74%	1.72%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	16,809,606	10,654,094	27,463,700	16,928,564	10,729,491	27,658,055	17,047,521	10,804,888	27,852,409
2016	17,006,649	10,776,291	27,782,940	17,247,038	10,928,615	28,175,653	17,489,115	11,082,007	28,571,122
2017	17,046,587	10,804,295	27,850,882	17,407,551	11,033,078	28,440,629	17,773,574	11,265,067	29,038,642
2018	17,164,816	10,879,230	28,044,047	17,649,017	11,186,121	28,835,138	18,143,389	11,499,460	29,642,849
2019	17,282,621	10,953,896	28,236,517	17,891,272	11,339,665	29,230,937	18,516,951	11,736,226	30,253,177
2020	17,480,401	11,076,485	28,556,886	18,217,904	11,543,805	29,761,709	18,981,155	12,027,440	31,008,595
2021	17,516,736	11,102,281	28,619,017	18,377,623	11,647,919	30,025,542	19,274,521	12,216,382	31,490,904
2022	17,632,942	11,175,933	28,808,875	18,621,456	11,802,463	30,423,920	19,658,121	12,459,512	32,117,633
2023	17,748,324	11,249,064	28,997,388	18,865,158	11,956,924	30,822,082	20,044,024	12,704,101	32,748,125
2024	17,946,062	11,371,552	29,317,615	19,198,151	12,164,941	31,363,092	20,528,312	13,007,799	33,536,111
2025	17,977,175	11,394,111	29,371,287	19,353,220	12,266,262	31,619,482	20,824,347	13,198,677	34,023,025
2026	18,090,546	11,465,967	29,556,512	19,597,316	12,420,973	32,018,289	21,218,325	13,448,384	34,666,709
2027	18,202,967	11,537,221	29,740,188	19,840,886	12,575,350	32,416,236	21,613,900	13,699,104	35,313,004
2028	18,399,397	11,658,809	30,058,205	20,177,208	12,785,321	32,962,529	22,113,414	14,012,202	36,125,616
2029	18,425,092	11,678,005	30,103,097	20,326,577	12,883,186	33,209,763	22,409,939	14,203,641	36,613,581
2030	18,534,708	11,747,481	30,282,189	20,568,435	13,036,478	33,604,913	22,809,910	14,457,146	37,267,056
2031	18,643,798	11,816,624	30,460,422	20,810,556	13,189,936	34,000,493	23,212,670	14,712,420	37,925,089
2032	18,838,804	11,937,240	30,776,044	21,149,516	13,401,426	34,550,941	23,726,045	15,034,048	38,760,093
2033	18,859,559	11,953,375	30,812,933	21,293,613	13,496,102	34,789,715	24,023,209	15,226,148	39,249,357
2034	18,966,431	12,021,111	30,987,542	21,534,943	13,649,060	35,184,003	24,431,609	15,484,995	39,916,604

Annual Change

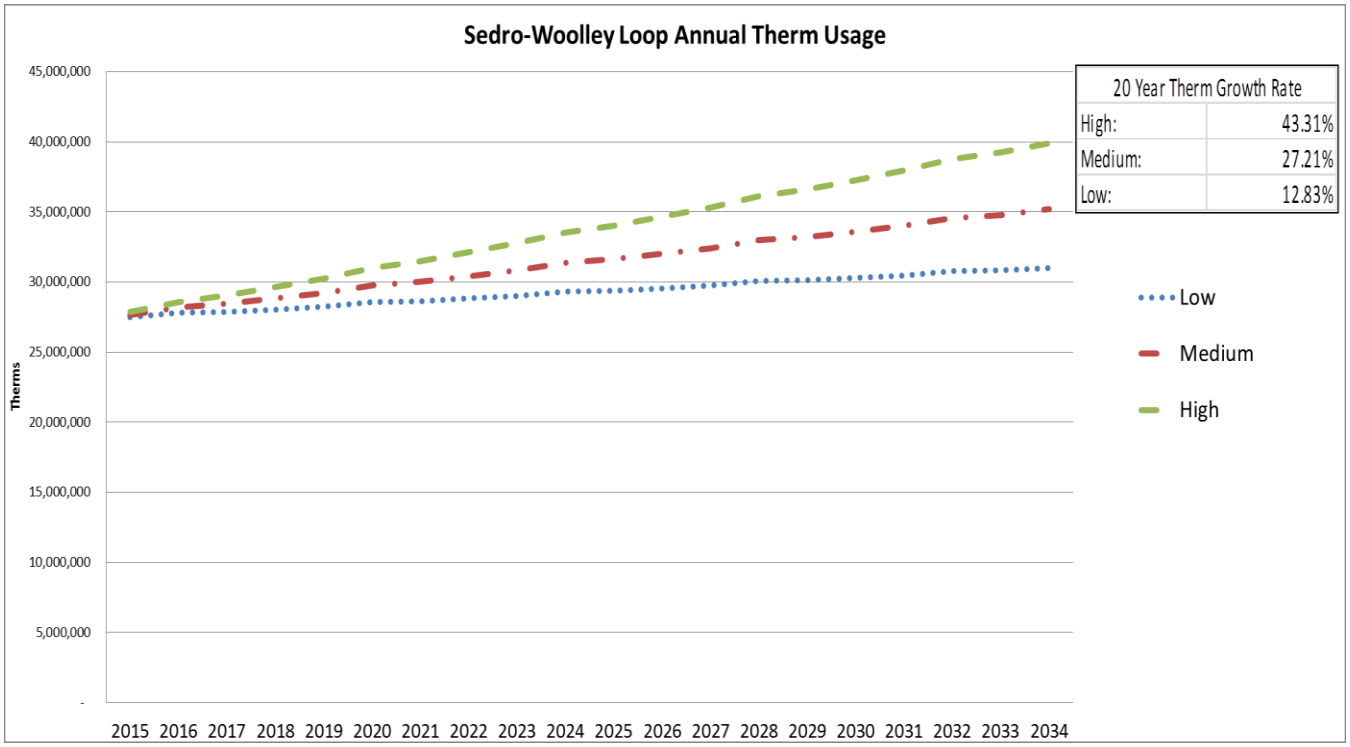
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.17%	1.15%	1.16%	1.88%	1.86%	1.87%	2.59%	2.56%	2.58%
2017	0.23%	0.26%	0.24%	0.93%	0.96%	0.94%	1.63%	1.65%	1.64%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	1.14%	1.12%	1.13%	1.83%	1.80%	1.82%	2.51%	2.48%	2.50%
2021	0.21%	0.23%	0.22%	0.88%	0.90%	0.89%	1.55%	1.57%	1.56%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	1.11%	1.09%	1.10%	1.77%	1.74%	1.76%	2.42%	2.39%	2.41%
2025	0.17%	0.20%	0.18%	0.81%	0.83%	0.82%	1.44%	1.47%	1.45%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	1.08%	1.05%	1.07%	1.70%	1.67%	1.69%	2.31%	2.29%	2.30%
2029	0.14%	0.16%	0.15%	0.74%	0.77%	0.75%	1.34%	1.37%	1.35%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	1.05%	1.02%	1.04%	1.63%	1.60%	1.62%	2.21%	2.19%	2.20%
2033	0.11%	0.14%	0.12%	0.68%	0.71%	0.69%	1.25%	1.28%	1.26%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%

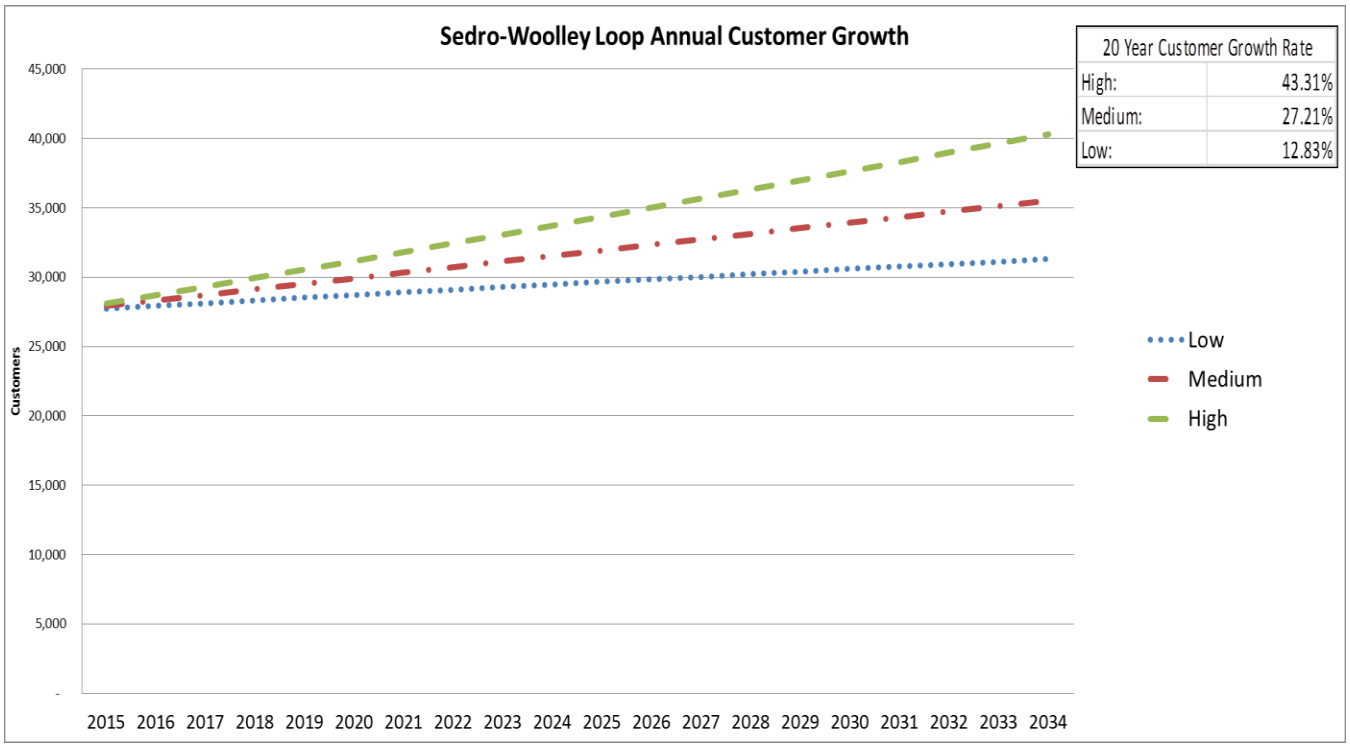
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,469	3,277	27,746	24,642	3,300	27,942	24,815	3,324	28,139
2016	24,642	3,300	27,942	24,990	3,347	28,337	25,341	3,394	28,735
2017	24,814	3,323	28,137	25,339	3,394	28,733	25,872	3,465	29,337
2018	24,986	3,347	28,332	25,691	3,441	29,132	26,410	3,537	29,948
2019	25,157	3,369	28,527	26,043	3,488	29,532	26,954	3,610	30,564
2020	25,328	3,392	28,720	26,397	3,535	29,932	27,502	3,684	31,186
2021	25,498	3,415	28,913	26,751	3,583	30,334	28,057	3,758	31,815
2022	25,667	3,438	29,105	27,106	3,631	30,737	28,615	3,833	32,448
2023	25,835	3,460	29,296	27,461	3,678	31,139	29,177	3,908	33,085
2024	26,003	3,483	29,485	27,817	3,726	31,543	29,744	3,984	33,728
2025	26,168	3,505	29,673	28,171	3,773	31,945	30,313	4,060	34,373
2026	26,333	3,527	29,860	28,527	3,821	32,348	30,886	4,137	35,023
2027	26,497	3,549	30,046	28,881	3,868	32,750	31,462	4,214	35,676
2028	26,660	3,571	30,230	29,235	3,916	33,151	32,041	4,291	36,332
2029	26,820	3,592	30,413	29,588	3,963	33,551	32,621	4,369	36,990
2030	26,980	3,614	30,594	29,940	4,010	33,950	33,203	4,447	37,650
2031	27,139	3,635	30,774	30,293	4,057	34,350	33,789	4,526	38,315
2032	27,296	3,656	30,952	30,644	4,104	34,749	34,378	4,604	38,982
2033	27,453	3,677	31,130	30,996	4,151	35,147	34,969	4,684	39,653
2034	27,608	3,698	31,306	31,347	4,199	35,546	35,564	4,763	40,327

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	0.71%	0.71%	1.41%	1.41%	1.41%	2.12%	2.12%	2.12%
2017	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.10%	2.10%	2.10%
2018	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2019	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2020	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.03%	2.03%	2.03%
2021	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.02%	2.02%	2.02%
2022	0.66%	0.66%	0.66%	1.33%	1.33%	1.33%	1.99%	1.99%	1.99%
2023	0.65%	0.65%	0.65%	1.31%	1.31%	1.31%	1.96%	1.96%	1.96%
2024	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.94%	1.94%	1.94%
2025	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2026	0.63%	0.63%	0.63%	1.26%	1.26%	1.26%	1.89%	1.89%	1.89%
2027	0.62%	0.62%	0.62%	1.24%	1.24%	1.24%	1.86%	1.86%	1.86%
2028	0.61%	0.61%	0.61%	1.23%	1.23%	1.23%	1.84%	1.84%	1.84%
2029	0.60%	0.60%	0.60%	1.21%	1.21%	1.21%	1.81%	1.81%	1.81%
2030	0.59%	0.59%	0.59%	1.19%	1.19%	1.19%	1.78%	1.78%	1.78%
2031	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.77%	1.77%	1.77%
2032	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%
2033	0.57%	0.57%	0.57%	1.15%	1.15%	1.15%	1.72%	1.72%	1.72%
2034	0.57%	0.57%	0.57%	1.13%	1.13%	1.13%	1.70%	1.70%	1.70%


Sedro-Woolley Loop Annual Therm Usage
20 Year Therm Growth Rate
High: 43.31%
Medium: 27.21%
Low: 12.83%
Therms
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Sedro-Woolley Loop Annual Customer Growth
20 Year Customer Growth Rate
High: 43.31%
Medium: 27.21%
Low: 12.83%
Customers
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Sumas SPE Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	35,576,040	10,623,702	46,199,742	36,015,078	10,623,702	46,638,780	36,454,117	10,623,702	47,077,819
2016	36,073,102	10,772,134	46,845,236	36,860,323	10,873,032	47,733,355	37,655,885	10,973,929	48,629,814
2017	36,247,207	10,824,125	47,071,333	37,380,328	11,026,422	48,406,750	38,536,595	11,230,591	49,767,186
2018	36,580,615	10,923,687	47,504,302	38,067,988	11,229,267	49,297,255	39,599,991	11,540,493	51,140,485
2019	36,912,296	11,022,734	47,935,030	38,758,323	11,432,902	50,191,225	40,677,167	11,854,411	52,531,579
2020	37,408,333	11,170,860	48,579,194	39,626,591	11,689,023	51,315,615	41,953,046	12,226,236	54,179,282
2021	37,569,625	11,219,025	48,788,650	40,144,819	11,841,890	51,986,709	42,869,465	12,493,305	55,362,770
2022	37,895,230	11,316,257	49,211,487	40,840,666	12,047,150	52,887,816	43,984,075	12,818,132	56,802,207
2023	38,218,280	11,412,726	49,631,006	41,536,985	12,252,550	53,789,534	45,108,944	13,145,949	58,254,894
2024	38,712,006	11,560,163	50,272,169	42,424,330	12,514,298	54,938,629	46,453,506	13,537,790	59,991,296
2025	38,857,761	11,603,688	50,461,449	42,932,773	12,664,278	55,597,052	47,392,066	13,811,312	61,203,378
2026	39,173,945	11,698,107	50,872,051	43,631,456	12,870,375	56,501,831	48,548,945	14,148,457	62,697,402
2027	39,487,526	11,791,748	51,279,273	44,329,981	13,076,426	57,406,407	49,714,824	14,488,225	64,203,049
2028	39,976,641	11,937,807	51,914,448	45,229,824	13,341,861	58,571,685	51,117,324	14,896,951	66,014,275
2029	40,106,496	11,976,585	52,083,081	45,725,138	13,487,968	59,213,106	52,070,857	15,174,836	67,245,694
2030	40,411,804	12,067,756	52,479,560	46,421,297	13,693,320	60,114,617	53,260,014	15,521,388	68,781,402
2031	40,715,303	12,158,386	52,873,690	47,118,560	13,898,999	61,017,559	54,459,989	15,871,093	70,331,081
2032	41,199,671	12,303,028	53,502,699	48,028,820	14,167,506	62,196,326	55,916,278	16,295,494	72,211,772
2033	41,315,073	12,337,489	53,652,562	48,511,824	14,309,983	62,821,806	56,884,304	16,577,603	73,461,907
2034	41,611,850	12,426,113	54,037,963	49,208,771	14,515,568	63,724,339	58,110,151	16,934,848	75,044,999

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.40%	1.40%	2.35%	2.35%	2.35%	3.30%	3.30%	3.30%
2017	0.48%	0.48%	0.48%	1.41%	1.41%	1.41%	2.34%	2.34%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.34%	1.34%	1.34%	2.24%	2.24%	2.24%	3.14%	3.14%	3.14%
2021	0.43%	0.43%	0.43%	1.31%	1.31%	1.31%	2.18%	2.18%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.29%	1.29%	1.29%	2.14%	2.14%	2.14%	2.98%	2.98%	2.98%
2025	0.38%	0.38%	0.38%	1.20%	1.20%	1.20%	2.02%	2.02%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	1.24%	1.24%	2.03%	2.03%	2.03%	2.82%	2.82%	2.82%
2029	0.32%	0.32%	0.32%	1.10%	1.10%	1.10%	1.87%	1.87%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	1.19%	1.19%	1.93%	1.93%	1.93%	2.67%	2.67%	2.67%
2033	0.28%	0.28%	0.28%	1.01%	1.01%	1.01%	1.73%	1.73%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	29,106	497,848	526,954	29,106	502,855	531,961	29,106	507,863	536,969
2016	29,513	502,423	531,936	29,789	512,232	542,021	30,066	522,135	552,200
2017	29,655	507,240	536,895	30,209	521,917	552,127	30,769	536,875	567,644
2018	29,928	511,906	541,834	30,765	531,519	562,284	31,618	551,690	583,308
2019	30,199	516,547	546,746	31,323	541,158	572,481	32,478	566,697	599,175
2020	30,605	521,020	551,626	32,025	550,673	582,698	33,497	581,719	615,216
2021	30,737	525,746	556,483	32,444	560,516	592,960	34,228	597,239	631,467
2022	31,003	530,302	561,306	33,006	570,232	603,238	35,118	612,767	647,885
2023	31,268	534,823	566,091	33,569	579,954	613,523	36,016	628,438	664,455
2024	31,672	539,178	570,850	34,286	589,552	623,838	37,090	644,122	681,212
2025	31,791	543,772	575,563	34,697	599,443	634,139	37,839	660,246	698,085
2026	32,050	548,196	580,246	35,261	609,198	644,459	38,763	676,363	715,126
2027	32,306	552,585	584,891	35,826	618,951	654,777	39,694	692,606	732,299
2028	32,706	556,792	589,498	36,553	628,539	665,092	40,814	708,791	749,604
2029	32,813	561,246	594,059	36,953	638,431	675,384	41,575	725,429	767,004
2030	33,062	565,519	598,581	37,516	648,151	685,667	42,524	741,996	784,520
2031	33,311	569,766	603,077	38,079	657,886	695,966	43,482	758,713	802,196
2032	33,707	573,826	607,533	38,815	667,435	706,251	44,645	775,333	819,978
2033	33,801	578,159	611,961	39,205	677,339	716,545	45,418	792,488	837,906
2034	34,044	582,312	616,356	39,769	687,070	726,839	46,397	809,566	855,962

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	0.92%	0.95%	2.35%	1.86%	1.89%	3.30%	2.81%	2.84%
2017	0.48%	0.96%	0.93%	1.41%	1.89%	1.86%	2.34%	2.82%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.34%	0.87%	0.89%	2.24%	1.76%	1.78%	3.14%	2.65%	2.68%
2021	0.43%	0.91%	0.88%	1.31%	1.79%	1.76%	2.18%	2.67%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.29%	0.81%	0.84%	2.14%	1.65%	1.68%	2.98%	2.50%	2.52%
2025	0.38%	0.85%	0.83%	1.20%	1.68%	1.65%	2.02%	2.50%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.24%	0.76%	0.79%	2.03%	1.55%	1.58%	2.82%	2.34%	2.36%
2029	0.32%	0.80%	0.77%	1.10%	1.57%	1.55%	1.87%	2.35%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.19%	0.71%	0.74%	1.93%	1.45%	1.48%	2.67%	2.19%	2.22%
2033	0.28%	0.76%	0.73%	1.01%	1.48%	1.46%	1.73%	2.21%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,305,124	15,894,618	46,199,742	30,593,115	16,045,665	46,638,780	30,881,106	16,196,713	47,077,819
2016	30,730,914	16,114,321	46,845,236	31,313,529	16,419,826	47,733,355	31,901,614	16,728,200	48,629,814
2017	30,876,852	16,194,481	47,071,333	31,752,830	16,653,920	48,406,750	32,645,220	17,121,966	49,767,186
2018	31,160,862	16,343,440	47,504,302	32,336,965	16,960,290	49,297,255	33,546,047	17,594,437	51,140,485
2019	31,443,401	16,491,629	47,935,030	32,923,372	17,267,853	50,191,225	34,458,548	18,073,031	52,531,579
2020	31,868,407	16,710,787	48,579,194	33,663,525	17,652,090	51,315,615	35,542,118	18,637,165	54,179,282
2021	32,003,341	16,785,309	48,788,650	34,101,136	17,885,573	51,986,709	36,315,692	19,047,078	55,362,770
2022	32,280,704	16,930,782	49,211,487	34,692,224	18,195,591	52,887,816	37,259,904	19,542,304	56,802,207
2023	32,555,892	17,075,114	49,631,006	35,283,714	18,505,820	53,789,534	38,212,806	20,042,088	58,254,894
2024	32,979,015	17,293,154	50,272,169	36,040,256	18,898,373	54,938,629	39,354,853	20,636,443	59,991,296
2025	33,100,628	17,360,821	50,461,449	36,469,371	19,127,680	55,597,052	40,146,890	21,056,488	61,203,378
2026	33,369,966	17,502,085	50,872,051	37,062,869	19,438,962	56,501,831	41,126,908	21,570,494	62,697,402
2027	33,637,087	17,642,186	51,279,273	37,656,234	19,750,173	57,406,407	42,114,550	22,088,499	64,203,049
2028	34,056,365	17,858,083	51,914,448	38,423,575	20,148,110	58,571,685	43,305,984	22,708,291	66,014,275
2029	34,164,352	17,918,729	52,083,081	38,841,354	20,371,752	59,213,106	44,110,400	23,135,294	67,245,694
2030	34,424,425	18,055,134	52,479,560	39,432,708	20,681,909	60,114,617	45,117,761	23,663,641	68,781,402
2031	34,682,958	18,190,731	52,873,690	40,025,000	20,992,558	61,017,559	46,134,287	24,196,795	70,331,081
2032	35,098,273	18,404,426	53,502,699	40,801,374	21,394,952	62,196,326	47,371,600	24,840,172	72,211,772
2033	35,193,866	18,458,696	53,652,562	41,208,512	21,613,294	62,821,806	48,187,979	25,273,928	73,461,907
2034	35,446,674	18,591,290	54,037,963	41,800,536	21,923,803	63,724,339	49,226,422	25,818,577	75,044,999

Annual Change

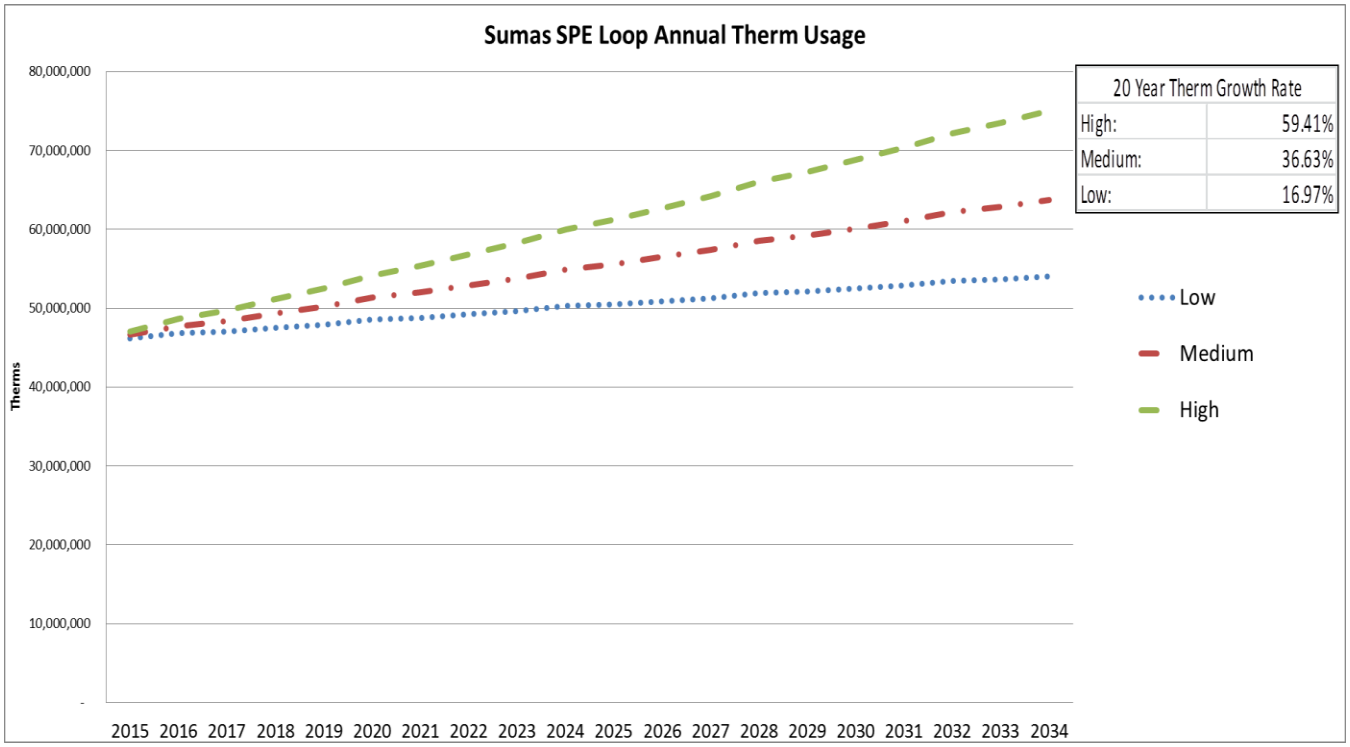
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	1.38%	1.40%	2.35%	2.33%	2.35%	3.30%	3.28%	3.30%
2017	0.47%	0.50%	0.48%	1.40%	1.43%	1.41%	2.33%	2.35%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.33%	1.34%	2.25%	2.23%	2.24%	3.14%	3.12%	3.14%
2021	0.42%	0.45%	0.43%	1.30%	1.32%	1.31%	2.18%	2.20%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.28%	1.29%	2.14%	2.12%	2.14%	2.99%	2.97%	2.98%
2025	0.37%	0.39%	0.38%	1.19%	1.21%	1.20%	2.01%	2.04%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.25%	1.22%	1.24%	2.04%	2.01%	2.03%	2.83%	2.81%	2.82%
2029	0.32%	0.34%	0.32%	1.09%	1.11%	1.10%	1.86%	1.88%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.20%	1.17%	1.19%	1.94%	1.92%	1.93%	2.68%	2.66%	2.67%
2033	0.27%	0.29%	0.28%	1.00%	1.02%	1.01%	1.72%	1.75%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

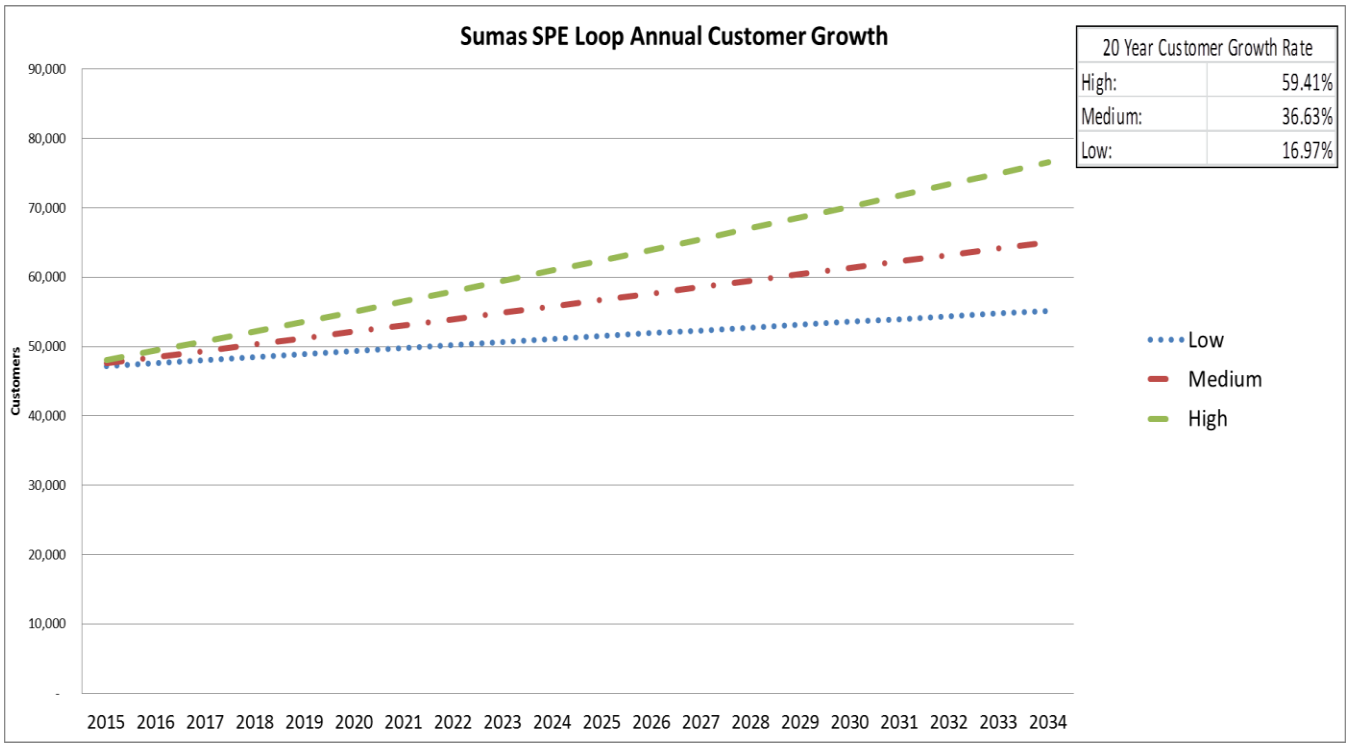
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	42,161	5,001	47,163	42,562	5,049	47,611	42,963	5,096	48,059
2016	42,560	5,049	47,608	43,367	5,144	48,511	44,181	5,241	49,422
2017	42,957	5,096	48,052	44,175	5,240	49,416	45,417	5,387	50,804
2018	43,352	5,143	48,494	44,988	5,337	50,325	46,670	5,536	52,206
2019	43,745	5,189	48,934	45,804	5,433	51,237	47,940	5,687	53,626
2020	44,135	5,235	49,371	46,621	5,530	52,152	49,223	5,839	55,062
2021	44,524	5,282	49,805	47,442	5,628	53,070	50,523	5,993	56,517
2022	44,910	5,327	50,237	48,265	5,725	53,990	51,837	6,149	57,986
2023	45,293	5,373	50,665	49,088	5,823	54,910	53,163	6,306	59,469
2024	45,673	5,418	51,091	49,913	5,921	55,834	54,503	6,465	60,969
2025	46,050	5,463	51,513	50,737	6,019	56,756	55,853	6,625	62,479
2026	46,425	5,507	51,932	51,563	6,117	57,679	57,217	6,787	64,004
2027	46,797	5,551	52,348	52,388	6,214	58,603	58,591	6,950	65,541
2028	47,165	5,595	52,760	53,214	6,312	59,526	59,975	7,114	67,090
2029	47,530	5,638	53,168	54,037	6,410	60,447	61,367	7,280	68,647
2030	47,892	5,681	53,573	54,860	6,508	61,367	62,769	7,446	70,215
2031	48,252	5,724	53,976	55,684	6,605	62,289	64,183	7,614	71,797
2032	48,608	5,766	54,374	56,507	6,703	63,210	65,606	7,782	73,388
2033	48,963	5,808	54,771	57,330	6,801	64,131	67,040	7,952	74,993
2034	49,314	5,850	55,164	58,154	6,898	65,052	68,485	8,124	76,609

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Sumas SPE Loop Annual Therm Usage
Therms
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Sumas SPE Loop Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.41%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima Loop

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,533,234	5,603,834	27,137,068	21,550,609	5,603,834	27,154,443	21,567,984	5,603,834	27,171,818
2016	21,648,325	5,633,785	27,282,110	21,680,603	5,637,637	27,318,240	21,712,905	5,641,488	27,354,393
2017	21,563,722	5,611,768	27,175,490	21,611,655	5,619,708	27,231,362	21,659,658	5,627,653	27,287,311
2018	21,580,504	5,616,136	27,196,640	21,645,294	5,628,455	27,273,749	21,710,230	5,640,793	27,351,023
2019	21,598,093	5,620,713	27,218,806	21,680,579	5,637,630	27,318,209	21,763,315	5,654,585	27,417,901
2020	21,716,691	5,651,577	27,368,268	21,817,701	5,673,286	27,490,988	21,919,102	5,695,062	27,614,165
2021	21,634,780	5,630,260	27,265,040	21,754,263	5,656,790	27,411,053	21,874,310	5,683,424	27,557,734
2022	21,653,788	5,635,207	27,288,995	21,792,489	5,666,730	27,459,220	21,931,967	5,698,405	27,630,371
2023	21,672,952	5,640,194	27,313,146	21,831,062	5,676,761	27,507,823	21,990,196	5,713,534	27,703,730
2024	21,793,648	5,671,605	27,465,253	21,972,537	5,713,549	27,686,086	22,152,745	5,755,768	27,908,513
2025	21,711,958	5,650,345	27,362,303	21,909,679	5,697,203	27,606,882	22,109,034	5,744,411	27,853,444
2026	21,731,670	5,655,475	27,387,146	21,949,463	5,707,548	27,657,011	22,169,253	5,760,057	27,929,310
2027	21,751,279	5,660,578	27,411,858	21,989,074	5,717,849	27,706,922	22,229,264	5,775,649	28,004,914
2028	21,872,270	5,692,065	27,564,335	22,131,285	5,754,828	27,886,112	22,393,144	5,818,229	28,211,372
2029	21,790,060	5,670,671	27,460,730	22,067,517	5,738,246	27,805,763	22,348,268	5,806,569	28,154,836
2030	21,809,103	5,675,627	27,484,730	22,106,090	5,748,276	27,854,366	22,406,863	5,821,793	28,228,656
2031	21,828,472	5,680,667	27,509,139	22,145,355	5,758,487	27,903,841	22,466,562	5,837,304	28,303,866
2032	21,949,367	5,712,129	27,661,496	22,287,511	5,795,452	28,082,963	22,630,570	5,879,917	28,510,487
2033	21,866,903	5,690,668	27,557,571	22,223,366	5,778,772	28,002,137	22,585,327	5,868,162	28,453,489
2034	21,886,305	5,695,718	27,582,023	22,262,804	5,789,027	28,051,831	22,645,448	5,883,783	28,529,231

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.53%	0.53%	0.60%	0.60%	0.60%	0.67%	0.67%	0.67%
2017	-0.39%	-0.39%	-0.39%	-0.32%	-0.32%	-0.32%	-0.25%	-0.25%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.55%	0.55%	0.55%	0.63%	0.63%	0.63%	0.72%	0.72%	0.72%
2021	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2025	-0.37%	-0.37%	-0.37%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.56%	0.56%	0.56%	0.65%	0.65%	0.65%	0.74%	0.74%	0.74%
2029	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.55%	0.55%	0.55%	0.64%	0.64%	0.64%	0.73%	0.73%	0.73%
2033	-0.38%	-0.38%	-0.38%	-0.29%	-0.29%	-0.29%	-0.20%	-0.20%	-0.20%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	15,353	317,482	332,835	15,353	317,695	333,048	15,353	317,908	333,261
2016	15,435	317,628	333,063	15,446	318,058	333,504	15,456	318,489	333,945
2017	15,375	317,931	333,306	15,396	318,595	333,991	15,418	319,259	334,678
2018	15,387	318,179	333,566	15,420	319,091	334,511	15,454	320,005	335,459
2019	15,399	318,438	333,837	15,446	319,611	335,057	15,492	320,787	336,279
2020	15,484	318,631	334,114	15,543	320,069	335,613	15,603	321,513	337,116
2021	15,425	318,979	334,404	15,498	320,697	336,195	15,571	322,423	337,994
2022	15,439	319,259	334,698	15,525	321,261	336,786	15,612	323,273	338,885
2023	15,453	319,542	334,995	15,553	321,829	337,382	15,654	324,131	339,785
2024	15,539	319,760	335,298	15,654	322,341	337,994	15,769	324,941	340,710
2025	15,480	320,117	335,597	15,609	322,988	338,597	15,738	325,883	341,621
2026	15,494	320,408	335,902	15,637	323,575	339,212	15,781	326,771	342,552
2027	15,508	320,697	336,205	15,665	324,159	339,824	15,824	327,655	343,479
2028	15,595	320,913	336,508	15,767	324,670	340,436	15,940	328,467	344,407
2029	15,536	321,269	336,805	15,721	325,315	341,036	15,908	329,409	345,318
2030	15,550	321,549	337,099	15,749	325,884	341,633	15,950	330,273	346,223
2031	15,563	321,835	337,398	15,777	326,463	342,239	15,993	331,153	347,146
2032	15,650	322,045	337,694	15,878	326,962	342,839	16,109	331,949	348,059
2033	15,591	322,402	337,992	15,832	327,613	343,445	16,077	332,904	348,981
2034	15,605	322,688	338,292	15,860	328,194	344,054	16,120	333,790	349,910

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.53%	0.05%	0.07%	0.60%	0.11%	0.14%	0.67%	0.18%	0.21%
2017	-0.39%	0.10%	0.07%	-0.32%	0.17%	0.15%	-0.25%	0.24%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.55%	0.06%	0.08%	0.63%	0.14%	0.17%	0.72%	0.23%	0.25%
2021	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.17%	-0.20%	0.28%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.27%
2025	-0.37%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.56%	0.07%	0.09%	0.65%	0.16%	0.18%	0.74%	0.25%	0.27%
2029	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.55%	0.07%	0.09%	0.64%	0.15%	0.18%	0.73%	0.24%	0.26%
2033	-0.38%	0.11%	0.09%	-0.29%	0.20%	0.18%	-0.20%	0.29%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	12,366,278	14,770,790	27,137,068	12,374,195	14,780,248	27,154,443	12,382,113	14,789,705	27,171,818
2016	12,435,057	14,847,054	27,282,110	12,451,524	14,866,716	27,318,240	12,468,003	14,886,391	27,354,393
2017	12,383,786	14,791,703	27,175,490	12,409,247	14,822,115	27,231,362	12,434,743	14,852,568	27,287,311
2018	12,393,424	14,803,215	27,196,640	12,428,563	14,845,186	27,273,749	12,463,776	14,887,246	27,351,023
2019	12,403,526	14,815,281	27,218,806	12,448,823	14,869,386	27,318,209	12,494,252	14,923,648	27,417,901
2020	12,474,327	14,893,941	27,368,268	12,530,262	14,960,726	27,490,988	12,586,405	15,027,759	27,614,165
2021	12,424,594	14,840,446	27,265,040	12,491,132	14,919,921	27,411,053	12,557,974	14,999,760	27,557,734
2022	12,435,510	14,853,485	27,288,995	12,513,081	14,946,139	27,459,220	12,591,074	15,039,297	27,630,371
2023	12,446,516	14,866,630	27,313,146	12,535,229	14,972,593	27,507,823	12,624,504	15,079,226	27,703,730
2024	12,518,532	14,946,721	27,465,253	12,619,186	15,066,899	27,686,086	12,720,568	15,187,945	27,908,513
2025	12,468,917	14,893,386	27,362,303	12,580,370	15,026,511	27,606,882	12,692,728	15,160,716	27,853,444
2026	12,480,237	14,906,908	27,387,146	12,603,214	15,053,797	27,657,011	12,727,300	15,202,010	27,929,310
2027	12,491,498	14,920,359	27,411,858	12,625,959	15,080,964	27,706,922	12,761,752	15,243,161	28,004,914
2028	12,563,693	15,000,642	27,564,335	12,710,358	15,175,755	27,886,112	12,858,610	15,352,763	28,211,372
2029	12,513,770	14,946,961	27,460,730	12,671,000	15,134,763	27,805,763	12,830,072	15,324,765	28,154,836
2030	12,524,706	14,960,024	27,484,730	12,693,148	15,161,218	27,854,366	12,863,711	15,364,945	28,228,656
2031	12,535,829	14,973,310	27,509,139	12,715,694	15,188,147	27,903,841	12,897,984	15,405,882	28,303,866
2032	12,607,979	15,053,517	27,661,496	12,800,081	15,282,882	28,082,963	12,994,945	15,515,542	28,510,487
2033	12,557,900	14,999,671	27,557,571	12,760,487	15,241,650	28,002,137	12,966,167	15,487,323	28,453,489
2034	12,569,042	15,012,981	27,582,023	12,783,132	15,268,698	28,051,831	13,000,682	15,528,549	28,529,231

Annual Change

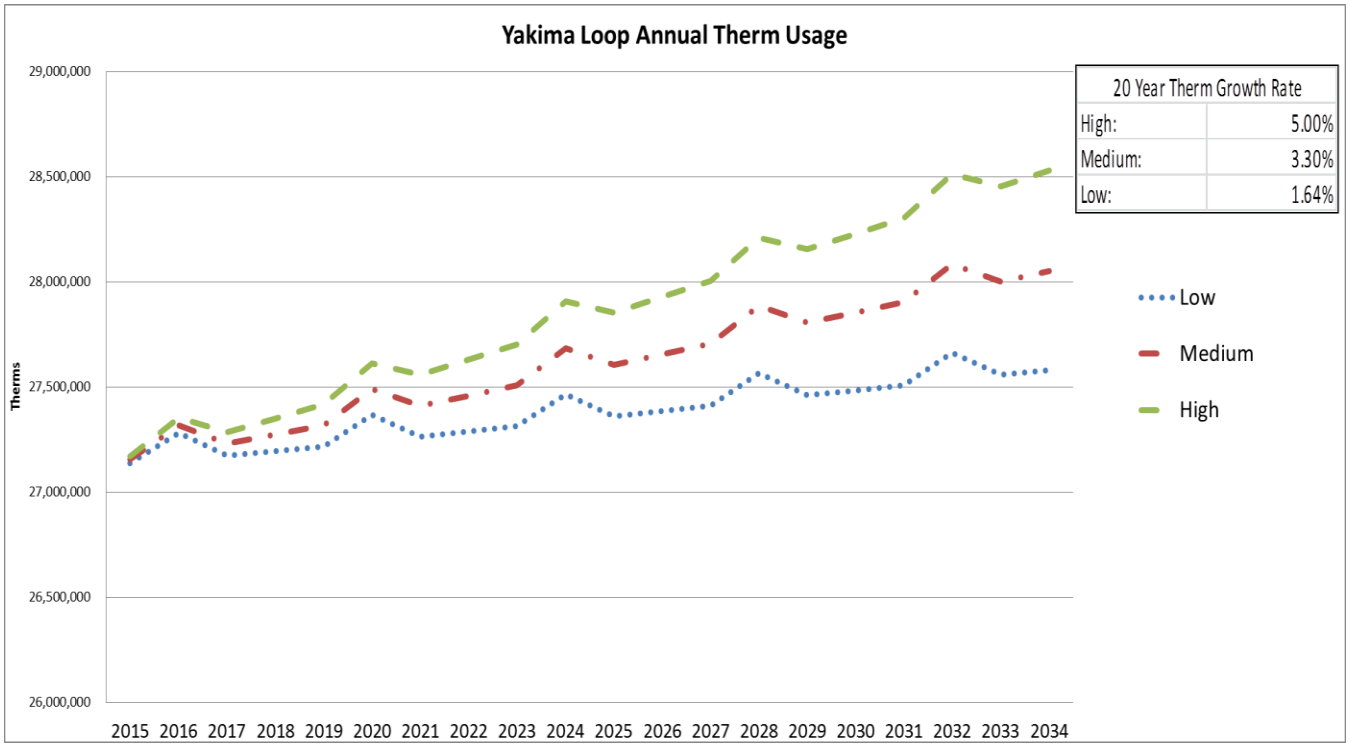
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.52%	0.53%	0.62%	0.59%	0.60%	0.69%	0.65%	0.67%
2017	-0.41%	-0.37%	-0.39%	-0.34%	-0.30%	-0.32%	-0.27%	-0.23%	-0.25%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.57%	0.53%	0.55%	0.65%	0.61%	0.63%	0.74%	0.70%	0.72%
2021	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.23%	-0.19%	-0.20%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.58%	0.54%	0.56%	0.67%	0.63%	0.65%	0.76%	0.72%	0.74%
2025	-0.40%	-0.36%	-0.37%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.58%	0.54%	0.56%	0.67%	0.63%	0.65%	0.76%	0.72%	0.74%
2029	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.58%	0.54%	0.55%	0.66%	0.62%	0.64%	0.75%	0.71%	0.73%
2033	-0.40%	-0.36%	-0.38%	-0.31%	-0.27%	-0.29%	-0.22%	-0.18%	-0.20%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%

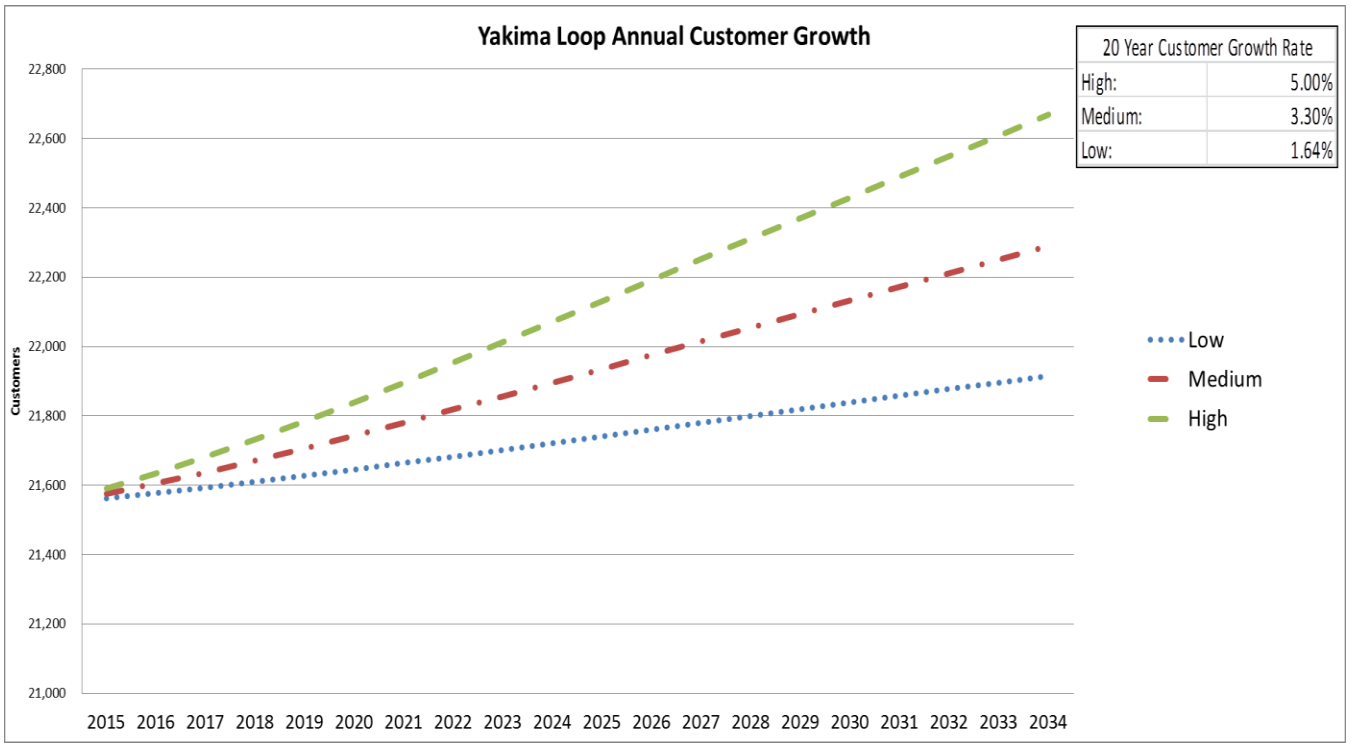
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	18,212	3,350	21,563	18,224	3,352	21,576	18,236	3,354	21,590
2016	18,225	3,352	21,577	18,249	3,357	21,606	18,273	3,361	21,634
2017	18,238	3,355	21,593	18,276	3,362	21,637	18,313	3,369	21,682
2018	18,252	3,357	21,610	18,304	3,367	21,671	18,356	3,376	21,733
2019	18,267	3,360	21,628	18,334	3,372	21,706	18,401	3,385	21,786
2020	18,283	3,363	21,645	18,364	3,378	21,743	18,447	3,393	21,840
2021	18,298	3,366	21,664	18,396	3,384	21,780	18,495	3,402	21,897
2022	18,314	3,369	21,683	18,429	3,390	21,819	18,544	3,411	21,955
2023	18,331	3,372	21,702	18,461	3,396	21,857	18,593	3,420	22,013
2024	18,347	3,375	21,722	18,495	3,402	21,897	18,643	3,429	22,073
2025	18,364	3,378	21,742	18,528	3,408	21,936	18,693	3,438	22,132
2026	18,380	3,381	21,761	18,561	3,414	21,976	18,744	3,448	22,192
2027	18,397	3,384	21,781	18,595	3,420	22,015	18,795	3,457	22,252
2028	18,413	3,387	21,801	18,628	3,427	22,055	18,846	3,467	22,312
2029	18,430	3,390	21,820	18,661	3,433	22,094	18,896	3,476	22,371
2030	18,446	3,393	21,839	18,694	3,439	22,133	18,945	3,485	22,430
2031	18,462	3,396	21,858	18,727	3,445	22,172	18,996	3,494	22,490
2032	18,478	3,399	21,877	18,760	3,451	22,211	19,046	3,503	22,549
2033	18,495	3,402	21,897	18,793	3,457	22,250	19,096	3,513	22,609
2034	18,511	3,405	21,916	18,826	3,463	22,289	19,147	3,522	22,669

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.07%	0.07%	0.07%	0.14%	0.14%	0.14%	0.21%	0.21%	0.21%
2017	0.07%	0.07%	0.07%	0.15%	0.15%	0.15%	0.22%	0.22%	0.22%
2018	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%
2019	0.08%	0.08%	0.08%	0.16%	0.16%	0.16%	0.24%	0.24%	0.24%
2020	0.08%	0.08%	0.08%	0.17%	0.17%	0.17%	0.25%	0.25%	0.25%
2021	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2022	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2023	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2024	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2025	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2026	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2027	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2028	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2029	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2030	0.09%	0.09%	0.09%	0.17%	0.17%	0.17%	0.26%	0.26%	0.26%
2031	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%
2032	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2033	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.26%	0.26%	0.26%
2034	0.09%	0.09%	0.09%	0.18%	0.18%	0.18%	0.27%	0.27%	0.27%


Yakima Loop Annual Therm Usage
Therms
29,000,000
28,500,000
28,000,000
27,500,000
27,000,000
26,500,000
26,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High


Yakima Loop Annual Customer Growth
Customers
22,800
22,600
22,400
22,200
22,000
21,800
21,600
21,400
21,200
21,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 5.00%
Medium: 3.30%
Low: 1.64%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 10

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,227,991	2,653,703	9,881,694	7,241,975	2,653,703	9,895,678	7,255,959	2,653,703	9,909,661
2016	7,285,567	2,653,703	9,939,270	7,314,091	2,653,703	9,967,794	7,342,703	2,653,703	9,996,406
2017	7,257,026	2,653,703	9,910,729	7,300,309	2,653,703	9,954,011	7,343,856	2,653,703	9,997,558
2018	7,272,118	2,653,703	9,925,821	7,330,759	2,653,703	9,984,462	7,389,935	2,653,703	10,043,638
2019	7,287,496	2,653,703	9,941,198	7,361,873	2,653,703	10,015,576	7,437,153	2,653,703	10,090,856
2020	7,346,477	2,653,703	10,000,180	7,437,168	2,653,703	10,090,871	7,529,231	2,653,703	10,182,934
2021	7,318,732	2,653,703	9,972,434	7,425,338	2,653,703	10,079,041	7,533,874	2,653,703	10,187,576
2022	7,334,549	2,653,703	9,988,252	7,457,607	2,653,703	10,111,310	7,583,256	2,653,703	10,236,959
2023	7,350,375	2,653,703	10,004,078	7,489,981	2,653,703	10,143,683	7,632,937	2,653,703	10,286,640
2024	7,410,166	2,653,703	10,063,869	7,567,272	2,653,703	10,220,975	7,728,610	2,653,703	10,382,313
2025	7,382,157	2,653,703	10,035,860	7,555,255	2,653,703	10,208,957	7,733,520	2,653,703	10,387,223
2026	7,398,054	2,653,703	10,051,757	7,588,034	2,653,703	10,241,737	7,784,238	2,653,703	10,437,940
2027	7,413,854	2,653,703	10,067,557	7,620,701	2,653,703	10,274,404	7,834,923	2,653,703	10,488,626
2028	7,473,670	2,653,703	10,127,373	7,698,394	2,653,703	10,352,097	7,931,779	2,653,703	10,585,482
2029	7,445,094	2,653,703	10,098,797	7,685,548	2,653,703	10,339,250	7,935,956	2,653,703	10,589,659
2030	7,460,482	2,653,703	10,114,185	7,717,617	2,653,703	10,371,320	7,986,131	2,653,703	10,639,834
2031	7,475,959	2,653,703	10,129,661	7,749,947	2,653,703	10,403,650	8,036,838	2,653,703	10,690,541
2032	7,535,642	2,653,703	10,189,345	7,827,701	2,653,703	10,481,403	8,134,338	2,653,703	10,788,041
2033	7,506,628	2,653,703	10,160,331	7,814,258	2,653,703	10,467,961	8,138,108	2,653,703	10,791,811
2034	7,521,968	2,653,703	10,175,671	7,846,539	2,653,703	10,500,242	8,189,131	2,653,703	10,842,834

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.80%	0.00%	0.58%	1.00%	0.00%	0.73%	1.20%	0.00%	0.88%
2017	-0.39%	0.00%	-0.29%	-0.19%	0.00%	-0.14%	0.02%	0.00%	0.01%
2018	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.46%
2019	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.64%	0.00%	0.47%
2020	0.81%	0.00%	0.59%	1.02%	0.00%	0.75%	1.24%	0.00%	0.91%
2021	-0.38%	0.00%	-0.28%	-0.16%	0.00%	-0.12%	0.06%	0.00%	0.05%
2022	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.48%
2023	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.49%
2024	0.81%	0.00%	0.60%	1.03%	0.00%	0.76%	1.25%	0.00%	0.93%
2025	-0.38%	0.00%	-0.28%	-0.16%	0.00%	-0.12%	0.06%	0.00%	0.05%
2026	0.22%	0.00%	0.16%	0.43%	0.00%	0.32%	0.66%	0.00%	0.49%
2027	0.21%	0.00%	0.16%	0.43%	0.00%	0.32%	0.65%	0.00%	0.49%
2028	0.81%	0.00%	0.59%	1.02%	0.00%	0.76%	1.24%	0.00%	0.92%
2029	-0.38%	0.00%	-0.28%	-0.17%	0.00%	-0.12%	0.05%	0.00%	0.04%
2030	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.47%
2031	0.21%	0.00%	0.15%	0.42%	0.00%	0.31%	0.63%	0.00%	0.48%
2032	0.80%	0.00%	0.59%	1.00%	0.00%	0.75%	1.21%	0.00%	0.91%
2033	-0.39%	0.00%	-0.28%	-0.17%	0.00%	-0.13%	0.05%	0.00%	0.03%
2034	0.20%	0.00%	0.15%	0.41%	0.00%	0.31%	0.63%	0.00%	0.47%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	7,270	103,725	110,995	7,270	103,887	111,157	7,270	104,049	111,319
2016	7,270	103,890	111,161	7,270	104,219	111,489	7,270	104,549	111,819
2017	7,270	104,060	111,331	7,270	104,561	111,831	7,270	105,065	112,335
2018	7,270	104,235	111,505	7,270	104,913	112,183	7,270	105,597	112,868
2019	7,270	104,412	111,682	7,270	105,272	112,542	7,270	106,142	113,413
2020	7,270	104,590	111,861	7,270	105,634	112,904	7,270	106,693	113,964
2021	7,270	104,772	112,042	7,270	106,003	113,274	7,270	107,258	114,528
2022	7,270	104,954	112,224	7,270	106,375	113,646	7,270	107,828	115,098
2023	7,270	105,136	112,407	7,270	106,748	114,019	7,270	108,400	115,671
2024	7,270	105,320	112,591	7,270	107,126	114,397	7,270	108,982	116,253
2025	7,270	105,502	112,772	7,270	107,500	114,771	7,270	109,560	116,831
2026	7,270	105,685	112,955	7,270	107,878	115,148	7,270	110,145	117,415
2027	7,270	105,867	113,137	7,270	108,254	115,525	7,270	110,729	118,000
2028	7,270	106,048	113,318	7,270	108,630	115,900	7,270	111,315	118,585
2029	7,270	106,226	113,497	7,270	109,001	116,271	7,270	111,895	119,165
2030	7,270	106,403	113,674	7,270	109,371	116,641	7,270	112,474	119,744
2031	7,270	106,581	113,852	7,270	109,743	117,013	7,270	113,058	120,329
2032	7,270	106,757	114,028	7,270	110,113	117,383	7,270	113,641	120,911
2033	7,270	106,934	114,204	7,270	110,484	117,754	7,270	114,227	121,497
2034	7,270	107,110	114,381	7,270	110,855	118,126	7,270	114,815	122,086

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.16%	0.15%	0.00%	0.32%	0.30%	0.00%	0.48%	0.45%
2017	0.00%	0.16%	0.15%	0.00%	0.33%	0.31%	0.00%	0.49%	0.46%
2018	0.00%	0.17%	0.16%	0.00%	0.34%	0.31%	0.00%	0.51%	0.47%
2019	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2020	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2021	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2022	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2023	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2024	0.00%	0.18%	0.16%	0.00%	0.35%	0.33%	0.00%	0.54%	0.50%
2025	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2026	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2027	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2028	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.50%
2029	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2030	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2031	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.52%	0.49%
2032	0.00%	0.17%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2033	0.00%	0.17%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%
2034	0.00%	0.16%	0.15%	0.00%	0.34%	0.32%	0.00%	0.52%	0.48%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,073,307	6,808,387	9,881,694	3,077,637	6,818,041	9,895,678	3,081,966	6,827,695	9,909,661
2016	3,092,779	6,846,491	9,939,270	3,101,615	6,866,179	9,967,794	3,110,478	6,885,928	9,996,406
2017	3,082,299	6,828,430	9,910,729	3,095,700	6,858,311	9,954,011	3,109,183	6,888,375	9,997,558
2018	3,086,973	6,838,847	9,925,821	3,105,131	6,879,330	9,984,462	3,123,453	6,920,185	10,043,638
2019	3,091,737	6,849,462	9,941,198	3,114,768	6,900,808	10,015,576	3,138,076	6,952,780	10,090,856
2020	3,111,655	6,888,525	10,000,180	3,139,753	6,951,118	10,090,871	3,168,270	7,014,663	10,182,934
2021	3,101,414	6,871,020	9,972,434	3,134,427	6,944,614	10,079,041	3,168,030	7,019,546	10,187,576
2022	3,106,315	6,881,937	9,988,252	3,144,423	6,966,887	10,111,310	3,183,324	7,053,634	10,236,959
2023	3,111,219	6,892,859	10,004,078	3,154,452	6,989,232	10,143,683	3,198,711	7,087,929	10,286,640
2024	3,131,399	6,932,470	10,063,869	3,180,076	7,040,899	10,220,975	3,230,049	7,152,264	10,382,313
2025	3,121,067	6,914,792	10,035,860	3,174,673	7,034,285	10,208,957	3,229,861	7,157,362	10,387,223
2026	3,125,994	6,925,763	10,051,757	3,184,827	7,056,909	10,241,737	3,245,567	7,192,373	10,437,940
2027	3,130,890	6,936,667	10,067,557	3,194,947	7,079,457	10,274,404	3,261,264	7,227,363	10,488,626
2028	3,151,088	6,976,285	10,127,373	3,220,716	7,131,381	10,352,097	3,292,997	7,292,485	10,585,482
2029	3,140,571	6,958,225	10,098,797	3,215,036	7,124,215	10,339,250	3,292,549	7,297,110	10,589,659
2030	3,145,340	6,968,844	10,114,185	3,224,970	7,146,350	10,371,320	3,308,085	7,331,749	10,639,834
2031	3,150,137	6,979,525	10,129,661	3,234,985	7,168,665	10,403,650	3,323,786	7,366,755	10,690,541
2032	3,170,304	7,019,041	10,189,345	3,260,792	7,220,612	10,481,403	3,355,747	7,432,293	10,788,041
2033	3,159,642	7,000,689	10,160,331	3,254,907	7,213,054	10,467,961	3,355,141	7,436,670	10,791,811
2034	3,164,397	7,011,274	10,175,671	3,264,907	7,235,335	10,500,242	3,370,938	7,471,896	10,842,834

Annual Change

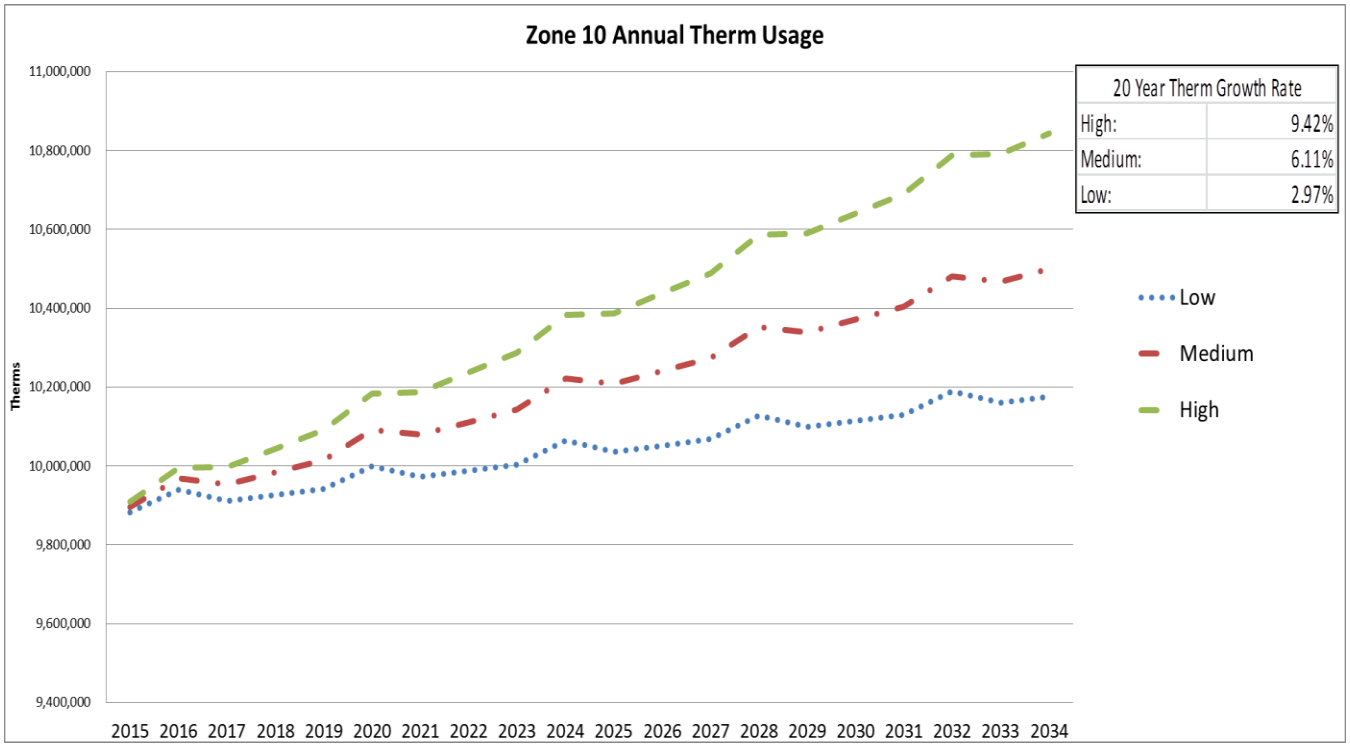
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.56%	0.58%	0.78%	0.71%	0.73%	0.93%	0.85%	0.88%
2017	-0.34%	-0.26%	-0.29%	-0.19%	-0.11%	-0.14%	-0.04%	0.04%	0.01%
2018	0.15%	0.15%	0.15%	0.30%	0.31%	0.31%	0.46%	0.46%	0.46%
2019	0.15%	0.16%	0.15%	0.31%	0.31%	0.31%	0.47%	0.47%	0.47%
2020	0.64%	0.57%	0.59%	0.80%	0.73%	0.75%	0.96%	0.89%	0.91%
2021	-0.33%	-0.25%	-0.28%	-0.17%	-0.09%	-0.12%	-0.01%	0.07%	0.05%
2022	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.48%
2023	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.49%
2024	0.65%	0.57%	0.60%	0.81%	0.74%	0.76%	0.98%	0.91%	0.93%
2025	-0.33%	-0.25%	-0.28%	-0.17%	-0.09%	-0.12%	-0.01%	0.07%	0.05%
2026	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.49%	0.49%	0.49%
2027	0.16%	0.16%	0.16%	0.32%	0.32%	0.32%	0.48%	0.49%	0.49%
2028	0.65%	0.57%	0.59%	0.81%	0.73%	0.76%	0.97%	0.90%	0.92%
2029	-0.33%	-0.26%	-0.28%	-0.18%	-0.10%	-0.12%	-0.01%	0.06%	0.04%
2030	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.47%	0.47%
2031	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.48%	0.48%
2032	0.64%	0.57%	0.59%	0.80%	0.72%	0.75%	0.96%	0.89%	0.91%
2033	-0.34%	-0.26%	-0.28%	-0.18%	-0.10%	-0.13%	-0.02%	0.06%	0.03%
2034	0.15%	0.15%	0.15%	0.31%	0.31%	0.31%	0.47%	0.47%	0.47%

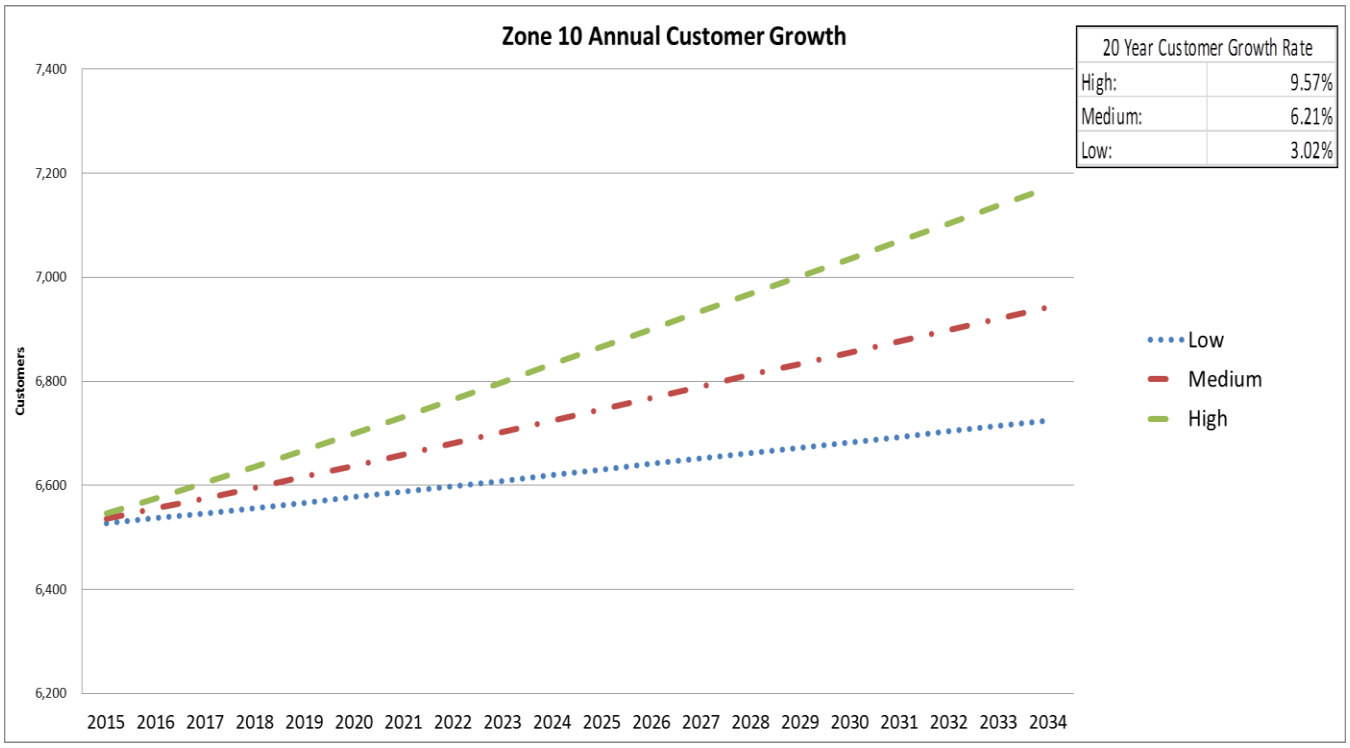
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,141	1,386	6,527	5,149	1,388	6,536	5,156	1,390	6,546
2016	5,149	1,388	6,537	5,164	1,392	6,556	5,178	1,396	6,575
2017	5,156	1,390	6,546	5,179	1,397	6,576	5,202	1,403	6,605
2018	5,164	1,392	6,557	5,195	1,401	6,596	5,226	1,410	6,636
2019	5,172	1,395	6,567	5,211	1,406	6,617	5,250	1,417	6,668
2020	5,180	1,397	6,577	5,228	1,410	6,638	5,275	1,424	6,700
2021	5,189	1,399	6,588	5,244	1,415	6,660	5,301	1,432	6,733
2022	5,197	1,402	6,599	5,261	1,420	6,681	5,327	1,439	6,766
2023	5,205	1,404	6,609	5,278	1,425	6,703	5,353	1,446	6,799
2024	5,214	1,406	6,620	5,295	1,430	6,725	5,379	1,454	6,833
2025	5,222	1,409	6,630	5,312	1,435	6,747	5,405	1,461	6,867
2026	5,230	1,411	6,641	5,329	1,440	6,769	5,432	1,469	6,901
2027	5,238	1,413	6,652	5,346	1,444	6,791	5,458	1,477	6,935
2028	5,247	1,416	6,662	5,363	1,449	6,813	5,484	1,484	6,969
2029	5,255	1,418	6,673	5,380	1,454	6,834	5,511	1,492	7,002
2030	5,263	1,420	6,683	5,397	1,459	6,856	5,537	1,499	7,036
2031	5,271	1,423	6,693	5,414	1,464	6,877	5,563	1,507	7,070
2032	5,279	1,425	6,704	5,430	1,468	6,899	5,590	1,514	7,104
2033	5,287	1,427	6,714	5,447	1,473	6,920	5,616	1,522	7,138
2034	5,295	1,429	6,724	5,464	1,478	6,942	5,643	1,530	7,172

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.15%	0.16%	0.15%	0.29%	0.31%	0.30%	0.44%	0.47%	0.44%
2017	0.15%	0.16%	0.15%	0.30%	0.32%	0.30%	0.45%	0.48%	0.46%
2018	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.46%	0.49%	0.47%
2019	0.16%	0.17%	0.16%	0.31%	0.33%	0.32%	0.47%	0.50%	0.48%
2020	0.16%	0.17%	0.16%	0.31%	0.33%	0.32%	0.47%	0.50%	0.48%
2021	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.48%	0.51%	0.49%
2022	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.49%
2023	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.49%
2024	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.50%
2025	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.49%	0.52%	0.49%
2026	0.16%	0.17%	0.16%	0.32%	0.34%	0.33%	0.49%	0.52%	0.50%
2027	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.49%	0.52%	0.49%
2028	0.16%	0.17%	0.16%	0.32%	0.34%	0.32%	0.48%	0.51%	0.49%
2029	0.15%	0.16%	0.16%	0.31%	0.33%	0.32%	0.48%	0.51%	0.48%
2030	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2031	0.15%	0.16%	0.16%	0.31%	0.33%	0.32%	0.48%	0.51%	0.48%
2032	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2033	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%
2034	0.15%	0.16%	0.15%	0.31%	0.33%	0.31%	0.47%	0.50%	0.48%


Zone 10 Annual Therm Usage
20 Year Therm Growth Rate
High: 9.42%
Medium: 6.11%
Low: 2.97%
Therms
11,000,000
10,800,000
10,600,000
10,400,000
10,200,000
10,000,000
9,800,000
9,600,000
9,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Zone 10 Annual Customer Growth
20 Year Customer Growth Rate
High: 9.57%
Medium: 6.21%
Low: 3.02%
Customers
7,400
7,200
7,000
6,800
6,600
6,400
6,200
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 11

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	26,835,445	7,718,555	34,553,999	26,889,757	7,718,555	34,608,312	26,944,069	7,718,555	34,662,624
2016	27,044,986	7,718,555	34,763,540	27,155,753	7,718,555	34,874,308	27,266,956	7,718,555	34,985,510
2017	26,947,987	7,718,555	34,666,542	27,116,149	7,718,555	34,834,703	27,285,625	7,718,555	35,004,179
2018	27,006,366	7,718,555	34,724,921	27,234,230	7,718,555	34,952,784	27,464,751	7,718,555	35,183,305
2019	27,065,802	7,718,555	34,784,357	27,354,876	7,718,555	35,073,430	27,648,426	7,718,555	35,366,980
2020	27,280,441	7,718,555	34,998,995	27,632,877	7,718,555	35,351,432	27,992,106	7,718,555	35,710,661
2021	27,186,446	7,718,555	34,905,001	27,601,067	7,718,555	35,319,621	28,025,245	7,718,555	35,743,800
2022	27,247,518	7,718,555	34,966,072	27,726,337	7,718,555	35,444,891	28,217,992	7,718,555	35,936,547
2023	27,308,633	7,718,555	35,027,188	27,852,135	7,718,555	35,570,689	28,412,239	7,718,555	36,130,793
2024	27,526,248	7,718,555	35,244,802	28,137,937	7,718,555	35,856,492	28,770,582	7,718,555	36,489,137
2025	27,431,444	7,718,555	35,149,999	28,106,215	7,718,555	35,824,769	28,806,619	7,718,555	36,525,173
2026	27,492,891	7,718,555	35,211,446	28,233,983	7,718,555	35,952,538	29,005,969	7,718,555	36,724,524
2027	27,554,023	7,718,555	35,272,577	28,361,535	7,718,555	36,080,090	29,205,692	7,718,555	36,924,247
2028	27,771,802	7,718,555	35,490,357	28,649,420	7,718,555	36,367,975	29,570,077	7,718,555	37,288,631
2029	27,675,049	7,718,555	35,393,603	28,615,362	7,718,555	36,333,917	29,605,257	7,718,555	37,323,811
2030	27,734,742	7,718,555	35,453,297	28,741,209	7,718,555	36,459,763	29,804,425	7,718,555	37,522,979
2031	27,794,794	7,718,555	35,513,348	28,868,189	7,718,555	36,586,744	30,006,021	7,718,555	37,724,576
2032	28,012,162	7,718,555	35,730,717	29,156,899	7,718,555	36,875,454	30,374,492	7,718,555	38,093,047
2033	27,913,970	7,718,555	35,632,524	29,121,441	7,718,555	36,839,995	30,410,167	7,718,555	38,128,721
2034	27,973,573	7,718,555	35,692,127	29,248,677	7,718,555	36,967,231	30,614,187	7,718,555	38,332,742

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.78%	0.00%	0.61%	0.99%	0.00%	0.77%	1.20%	0.00%	0.93%
2017	-0.36%	0.00%	-0.28%	-0.15%	0.00%	-0.11%	0.07%	0.00%	0.05%
2018	0.22%	0.00%	0.17%	0.44%	0.00%	0.34%	0.66%	0.00%	0.51%
2019	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.52%
2020	0.79%	0.00%	0.62%	1.02%	0.00%	0.79%	1.24%	0.00%	0.97%
2021	-0.34%	0.00%	-0.27%	-0.12%	0.00%	-0.09%	0.12%	0.00%	0.09%
2022	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2023	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2024	0.80%	0.00%	0.62%	1.03%	0.00%	0.80%	1.26%	0.00%	0.99%
2025	-0.34%	0.00%	-0.27%	-0.11%	0.00%	-0.09%	0.13%	0.00%	0.10%
2026	0.22%	0.00%	0.17%	0.45%	0.00%	0.36%	0.69%	0.00%	0.55%
2027	0.22%	0.00%	0.17%	0.45%	0.00%	0.35%	0.69%	0.00%	0.54%
2028	0.79%	0.00%	0.62%	1.02%	0.00%	0.80%	1.25%	0.00%	0.99%
2029	-0.35%	0.00%	-0.27%	-0.12%	0.00%	-0.09%	0.12%	0.00%	0.09%
2030	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.53%
2031	0.22%	0.00%	0.17%	0.44%	0.00%	0.35%	0.68%	0.00%	0.54%
2032	0.78%	0.00%	0.61%	1.00%	0.00%	0.79%	1.23%	0.00%	0.98%
2033	-0.35%	0.00%	-0.27%	-0.12%	0.00%	-0.10%	0.12%	0.00%	0.09%
2034	0.21%	0.00%	0.17%	0.44%	0.00%	0.35%	0.67%	0.00%	0.54%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	21,147	389,268	410,415	21,147	389,872	411,019	21,147	390,476	411,623
2016	21,147	389,888	411,034	21,147	391,116	412,262	21,147	392,348	413,495
2017	21,147	390,524	411,670	21,147	392,397	413,544	21,147	394,285	415,431
2018	21,147	391,177	412,324	21,147	393,718	414,865	21,147	396,287	417,434
2019	21,147	391,843	412,990	21,147	395,069	416,216	21,147	398,343	419,490
2020	21,147	392,513	413,660	21,147	396,433	417,580	21,147	400,426	421,573
2021	21,147	393,197	414,344	21,147	397,830	418,977	21,147	402,566	423,713
2022	21,147	393,883	415,030	21,147	399,237	420,383	21,147	404,728	425,875
2023	21,147	394,570	415,717	21,147	400,649	421,796	21,147	406,907	428,054
2024	21,147	395,265	416,412	21,147	402,082	423,229	21,147	409,125	430,272
2025	21,147	395,952	417,099	21,147	403,504	424,651	21,147	411,333	432,480
2026	21,147	396,644	417,791	21,147	404,941	426,087	21,147	413,571	434,718
2027	21,147	397,332	418,479	21,147	406,374	427,521	21,147	415,812	436,959
2028	21,147	398,018	419,165	21,147	407,808	428,955	21,147	418,061	439,208
2029	21,147	398,695	419,841	21,147	409,227	430,373	21,147	420,294	441,441
2030	21,147	399,367	420,513	21,147	410,640	431,787	21,147	422,527	443,674
2031	21,147	400,043	421,190	21,147	412,067	433,214	21,147	424,788	445,935
2032	21,147	400,713	421,860	21,147	413,487	434,634	21,147	427,045	448,192
2033	21,147	401,385	422,532	21,147	414,913	436,060	21,147	429,319	450,466
2034	21,147	402,057	423,203	21,147	416,343	437,490	21,147	431,607	452,754

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.16%	0.15%	0.00%	0.32%	0.30%	0.00%	0.48%	0.45%
2017	0.00%	0.16%	0.15%	0.00%	0.33%	0.31%	0.00%	0.49%	0.47%
2018	0.00%	0.17%	0.16%	0.00%	0.34%	0.32%	0.00%	0.51%	0.48%
2019	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.52%	0.49%
2020	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.52%	0.50%
2021	0.00%	0.17%	0.17%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2022	0.00%	0.17%	0.17%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2023	0.00%	0.17%	0.17%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2024	0.00%	0.18%	0.17%	0.00%	0.36%	0.34%	0.00%	0.54%	0.52%
2025	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2026	0.00%	0.17%	0.17%	0.00%	0.36%	0.34%	0.00%	0.54%	0.52%
2027	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.52%
2028	0.00%	0.17%	0.16%	0.00%	0.35%	0.34%	0.00%	0.54%	0.51%
2029	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2030	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.53%	0.51%
2031	0.00%	0.17%	0.16%	0.00%	0.35%	0.33%	0.00%	0.54%	0.51%
2032	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%
2033	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%
2034	0.00%	0.17%	0.16%	0.00%	0.34%	0.33%	0.00%	0.53%	0.51%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,332,492	21,221,507	34,553,999	13,345,185	21,263,127	34,608,312	13,357,877	21,304,747	34,662,624
2016	13,410,210	21,353,330	34,763,540	13,436,330	21,437,978	34,874,308	13,462,513	21,522,998	34,985,510
2017	13,359,579	21,306,963	34,666,542	13,399,549	21,435,155	34,834,703	13,439,710	21,564,469	35,004,179
2018	13,374,026	21,350,895	34,724,921	13,428,640	21,524,144	34,952,784	13,483,644	21,699,661	35,183,305
2019	13,388,941	21,395,416	34,784,357	13,458,735	21,614,695	35,073,430	13,529,192	21,837,788	35,366,980
2020	13,468,776	21,530,219	34,998,995	13,554,391	21,797,041	35,351,432	13,641,018	22,069,643	35,710,661
2021	13,419,615	21,485,386	34,905,001	13,520,828	21,798,793	35,319,621	13,623,472	22,120,328	35,743,800
2022	13,435,320	21,530,752	34,966,072	13,552,719	21,892,172	35,444,891	13,672,047	22,264,499	35,936,547
2023	13,451,093	21,576,094	35,027,188	13,584,815	21,985,874	35,570,689	13,721,042	22,409,751	36,130,793
2024	13,532,192	21,712,610	35,244,802	13,683,296	22,173,196	35,856,492	13,837,577	22,651,560	36,489,137
2025	13,482,989	21,667,010	35,149,999	13,649,921	22,174,849	35,824,769	13,820,745	22,704,429	36,525,173
2026	13,499,026	21,712,420	35,211,446	13,682,755	22,269,782	35,952,538	13,871,188	22,853,335	36,724,524
2027	13,514,978	21,757,600	35,272,577	13,715,486	22,364,604	36,080,090	13,921,585	23,002,662	36,924,247
2028	13,596,232	21,894,125	35,490,357	13,814,561	22,553,414	36,367,975	14,039,472	23,249,159	37,288,631
2029	13,546,535	21,847,068	35,393,603	13,780,445	22,553,472	36,333,917	14,021,938	23,301,873	37,323,811
2030	13,562,062	21,891,235	35,453,297	13,812,510	22,647,253	36,459,763	14,071,643	23,451,336	37,522,979
2031	13,577,767	21,935,581	35,513,348	13,845,003	22,741,741	36,586,744	14,122,108	23,602,468	37,724,576
2032	13,658,943	22,071,774	35,730,717	13,944,184	22,931,270	36,875,454	14,240,599	23,852,448	38,093,047
2033	13,608,927	22,023,597	35,632,524	13,909,666	22,930,329	36,839,995	14,222,865	23,905,857	38,128,721
2034	13,624,584	22,067,543	35,692,127	13,942,247	23,024,984	36,967,231	14,273,780	24,058,962	38,332,742

Annual Change

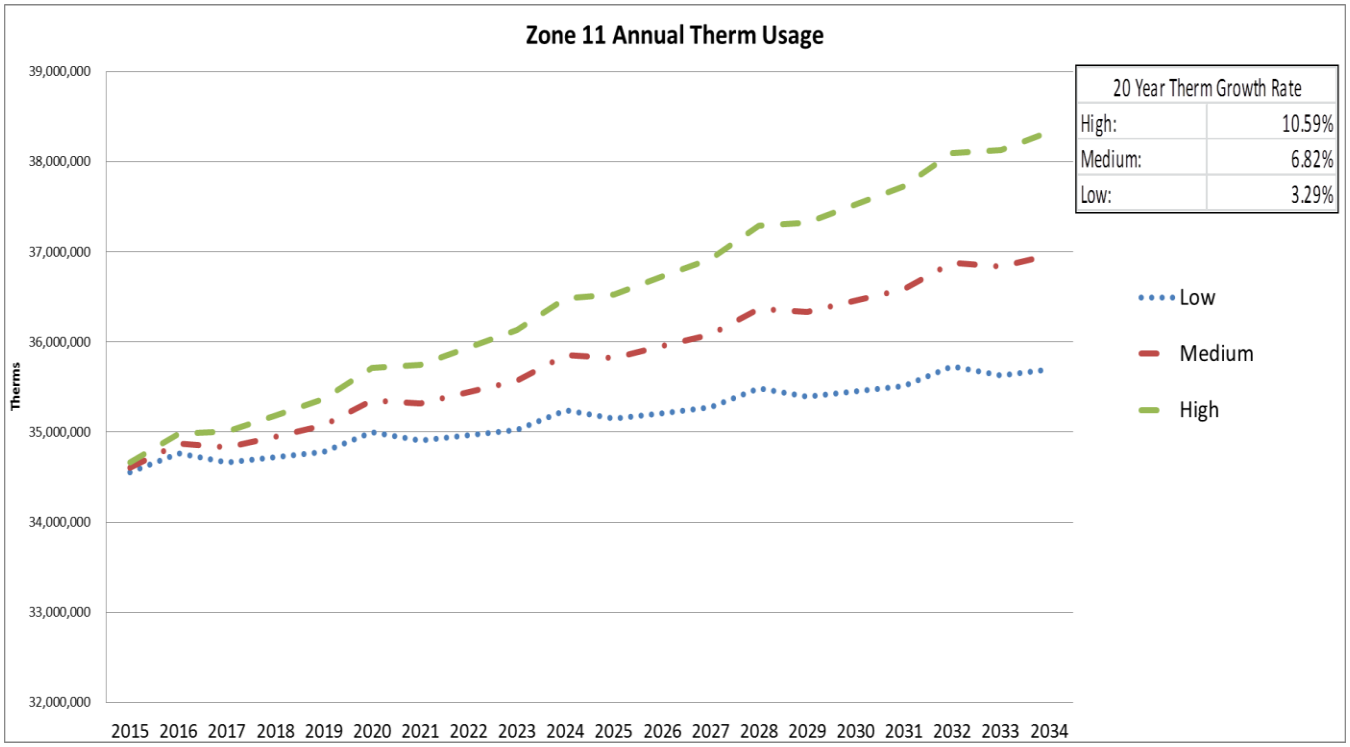
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.58%	0.62%	0.61%	0.68%	0.82%	0.77%	0.78%	1.02%	0.93%
2017	-0.38%	-0.22%	-0.28%	-0.27%	-0.01%	-0.11%	-0.17%	0.19%	0.05%
2018	0.11%	0.21%	0.17%	0.22%	0.42%	0.34%	0.33%	0.63%	0.51%
2019	0.11%	0.21%	0.17%	0.22%	0.42%	0.35%	0.34%	0.64%	0.52%
2020	0.60%	0.63%	0.62%	0.71%	0.84%	0.79%	0.83%	1.06%	0.97%
2021	-0.36%	-0.21%	-0.27%	-0.25%	0.01%	-0.09%	-0.13%	0.23%	0.09%
2022	0.12%	0.21%	0.17%	0.24%	0.43%	0.35%	0.36%	0.65%	0.54%
2023	0.12%	0.21%	0.17%	0.24%	0.43%	0.35%	0.36%	0.65%	0.54%
2024	0.60%	0.63%	0.62%	0.72%	0.85%	0.80%	0.85%	1.08%	0.99%
2025	-0.36%	-0.21%	-0.27%	-0.24%	0.01%	-0.09%	-0.12%	0.23%	0.10%
2026	0.12%	0.21%	0.17%	0.24%	0.43%	0.36%	0.36%	0.66%	0.55%
2027	0.12%	0.21%	0.17%	0.24%	0.43%	0.35%	0.36%	0.65%	0.54%
2028	0.60%	0.63%	0.62%	0.72%	0.84%	0.80%	0.85%	1.07%	0.99%
2029	-0.37%	-0.21%	-0.27%	-0.25%	0.00%	-0.09%	-0.12%	0.23%	0.09%
2030	0.11%	0.20%	0.17%	0.23%	0.42%	0.35%	0.35%	0.64%	0.53%
2031	0.12%	0.20%	0.17%	0.24%	0.42%	0.35%	0.36%	0.64%	0.54%
2032	0.60%	0.62%	0.61%	0.72%	0.83%	0.79%	0.84%	1.06%	0.98%
2033	-0.37%	-0.22%	-0.27%	-0.25%	0.00%	-0.10%	-0.12%	0.22%	0.09%
2034	0.12%	0.20%	0.17%	0.23%	0.41%	0.35%	0.36%	0.64%	0.54%

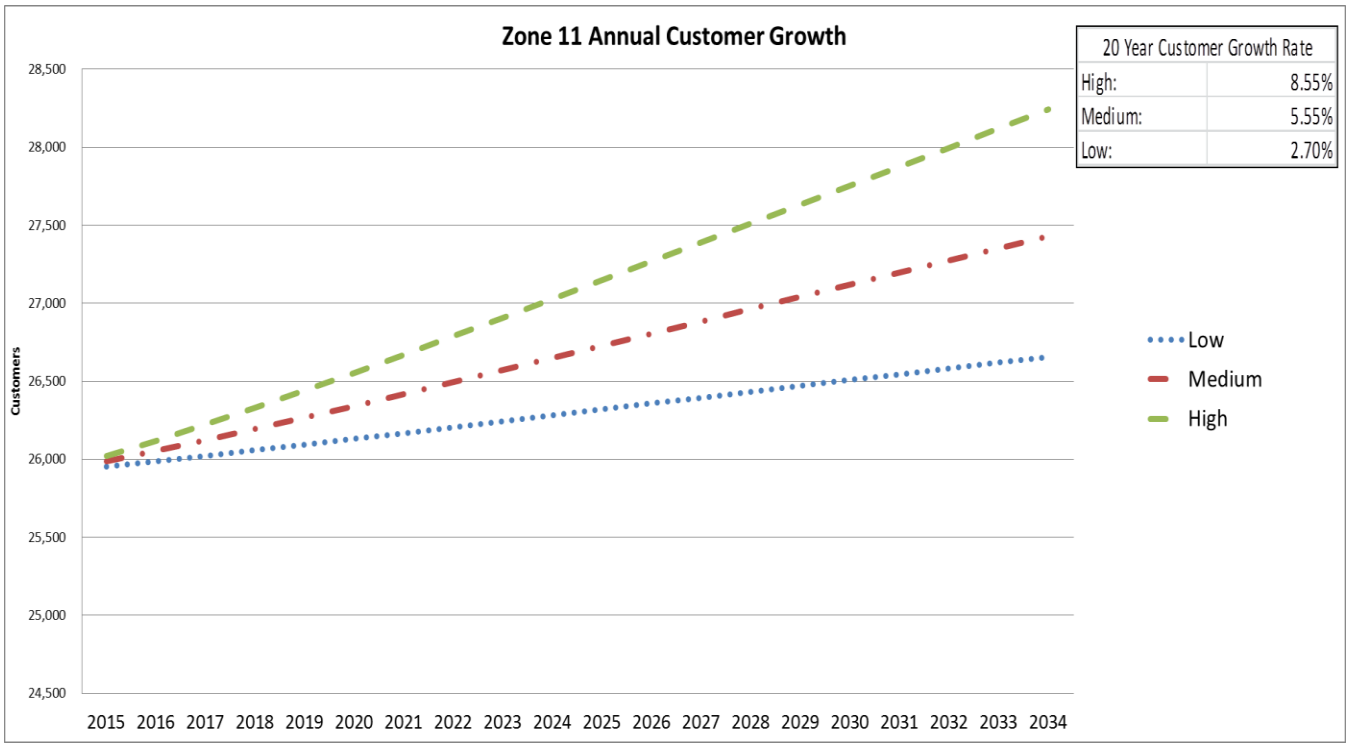
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	21,311	4,644	25,955	21,336	4,652	25,988	21,360	4,660	26,020
2016	21,337	4,652	25,989	21,386	4,668	26,054	21,436	4,684	26,120
2017	21,363	4,660	26,023	21,438	4,685	26,123	21,515	4,709	26,224
2018	21,390	4,669	26,058	21,493	4,702	26,194	21,597	4,735	26,332
2019	21,417	4,677	26,095	21,549	4,719	26,268	21,682	4,762	26,443
2020	21,445	4,686	26,131	21,605	4,737	26,342	21,768	4,788	26,556
2021	21,474	4,695	26,169	21,664	4,755	26,418	21,856	4,816	26,672
2022	21,503	4,703	26,206	21,722	4,773	26,495	21,946	4,844	26,790
2023	21,532	4,712	26,244	21,781	4,791	26,572	22,037	4,872	26,908
2024	21,561	4,721	26,282	21,842	4,809	26,650	22,129	4,900	27,029
2025	21,590	4,730	26,320	21,901	4,827	26,728	22,220	4,928	27,148
2026	21,619	4,739	26,358	21,961	4,845	26,807	22,313	4,957	27,270
2027	21,649	4,747	26,396	22,021	4,864	26,885	22,406	4,985	27,392
2028	21,678	4,756	26,434	22,082	4,882	26,964	22,499	5,014	27,513
2029	21,706	4,765	26,471	22,141	4,900	27,041	22,591	5,043	27,634
2030	21,735	4,773	26,508	22,200	4,918	27,118	22,683	5,071	27,755
2031	21,763	4,782	26,545	22,260	4,936	27,196	22,777	5,100	27,877
2032	21,792	4,790	26,582	22,319	4,954	27,273	22,869	5,129	27,998
2033	21,820	4,799	26,619	22,378	4,973	27,351	22,963	5,158	28,121
2034	21,849	4,807	26,657	22,438	4,991	27,429	23,057	5,187	28,244

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.12%	0.17%	0.13%	0.24%	0.35%	0.26%	0.35%	0.52%	0.38%
2017	0.12%	0.18%	0.13%	0.24%	0.36%	0.26%	0.37%	0.54%	0.40%
2018	0.13%	0.18%	0.14%	0.25%	0.36%	0.27%	0.38%	0.55%	0.41%
2019	0.13%	0.18%	0.14%	0.26%	0.37%	0.28%	0.39%	0.56%	0.42%
2020	0.13%	0.18%	0.14%	0.26%	0.37%	0.28%	0.40%	0.56%	0.43%
2021	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.57%	0.44%
2022	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.58%	0.44%
2023	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.58%	0.44%
2024	0.14%	0.19%	0.15%	0.28%	0.38%	0.30%	0.42%	0.58%	0.45%
2025	0.13%	0.19%	0.14%	0.27%	0.38%	0.29%	0.41%	0.58%	0.44%
2026	0.14%	0.19%	0.14%	0.28%	0.38%	0.29%	0.42%	0.58%	0.45%
2027	0.13%	0.18%	0.14%	0.27%	0.38%	0.29%	0.42%	0.58%	0.45%
2028	0.13%	0.18%	0.14%	0.27%	0.38%	0.29%	0.42%	0.58%	0.44%
2029	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2030	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2031	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2032	0.13%	0.18%	0.14%	0.27%	0.37%	0.28%	0.41%	0.57%	0.44%
2033	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%
2034	0.13%	0.18%	0.14%	0.27%	0.37%	0.29%	0.41%	0.57%	0.44%


Zone 11 Annual Therm Usage
Therms
39,000,000
38,000,000
37,000,000
36,000,000
35,000,000
34,000,000
33,000,000
32,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 10.59%
Medium: 6.82%
Low: 3.29%
Low
Medium
High


Zone 11 Annual Customer Growth
Customers
28,500
28,000
27,500
27,000
26,500
26,000
25,500
25,000
24,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 8.55%
Medium: 5.55%
Low: 2.70%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 20

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	25,381,241	8,613,491	33,994,733	25,595,412	8,613,491	34,208,903	25,809,582	8,613,491	34,423,073
2016	25,751,142	8,613,491	34,364,633	26,184,243	8,613,491	34,797,735	26,620,219	8,613,491	35,233,710
2017	25,809,381	8,613,491	34,422,872	26,460,274	8,613,491	35,073,765	27,119,811	8,613,491	35,733,302
2018	26,023,534	8,613,491	34,637,025	26,897,172	8,613,491	35,510,663	27,788,228	8,613,491	36,401,719
2019	26,237,467	8,613,491	34,850,959	27,336,491	8,613,491	35,949,982	28,464,748	8,613,491	37,078,239
2020	26,610,439	8,613,491	35,223,930	27,943,070	8,613,491	36,556,561	29,320,023	8,613,491	37,933,514
2021	26,663,860	8,613,491	35,277,352	28,220,690	8,613,491	36,834,182	29,839,681	8,613,491	38,453,173
2022	26,876,147	8,613,491	35,489,639	28,665,186	8,613,491	37,278,677	30,537,577	8,613,491	39,151,068
2023	27,087,435	8,613,491	35,700,926	29,110,433	8,613,491	37,723,924	31,241,147	8,613,491	39,854,638
2024	27,462,253	8,613,491	36,075,744	29,732,302	8,613,491	38,345,794	32,138,352	8,613,491	40,751,843
2025	27,507,942	8,613,491	36,121,434	30,005,035	8,613,491	38,618,526	32,668,306	8,613,491	41,281,797
2026	27,716,886	8,613,491	36,330,377	30,453,763	8,613,491	39,067,254	33,390,963	8,613,491	42,004,454
2027	27,924,704	8,613,491	36,538,196	30,902,876	8,613,491	39,516,368	34,118,795	8,613,491	42,732,286
2028	28,299,033	8,613,491	36,912,524	31,534,975	8,613,491	40,148,466	35,050,704	8,613,491	43,664,195
2029	28,336,611	8,613,491	36,950,102	31,801,356	8,613,491	40,414,847	35,588,565	8,613,491	44,202,057
2030	28,540,653	8,613,491	37,154,145	32,250,551	8,613,491	40,864,042	36,330,233	8,613,491	44,943,724
2031	28,744,143	8,613,491	37,357,634	32,701,250	8,613,491	41,314,741	37,078,947	8,613,491	45,692,438
2032	29,117,962	8,613,491	37,731,453	33,343,254	8,613,491	41,956,745	38,045,580	8,613,491	46,659,072
2033	29,148,175	8,613,491	37,761,667	33,604,259	8,613,491	42,217,750	38,592,872	8,613,491	47,206,363
2034	29,349,147	8,613,491	37,962,639	34,057,475	8,613,491	42,670,966	39,359,635	8,613,491	47,973,127

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.46%	0.00%	1.09%	2.30%	0.00%	1.72%	3.14%	0.00%	2.35%
2017	0.23%	0.00%	0.17%	1.05%	0.00%	0.79%	1.88%	0.00%	1.42%
2018	0.83%	0.00%	0.62%	1.65%	0.00%	1.25%	2.46%	0.00%	1.87%
2019	0.82%	0.00%	0.62%	1.63%	0.00%	1.24%	2.43%	0.00%	1.86%
2020	1.42%	0.00%	1.07%	2.22%	0.00%	1.69%	3.00%	0.00%	2.31%
2021	0.20%	0.00%	0.15%	0.99%	0.00%	0.76%	1.77%	0.00%	1.37%
2022	0.80%	0.00%	0.60%	1.58%	0.00%	1.21%	2.34%	0.00%	1.81%
2023	0.79%	0.00%	0.60%	1.55%	0.00%	1.19%	2.30%	0.00%	1.80%
2024	1.38%	0.00%	1.05%	2.14%	0.00%	1.65%	2.87%	0.00%	2.25%
2025	0.17%	0.00%	0.13%	0.92%	0.00%	0.71%	1.65%	0.00%	1.30%
2026	0.76%	0.00%	0.58%	1.50%	0.00%	1.16%	2.21%	0.00%	1.75%
2027	0.75%	0.00%	0.57%	1.47%	0.00%	1.15%	2.18%	0.00%	1.73%
2028	1.34%	0.00%	1.02%	2.05%	0.00%	1.60%	2.73%	0.00%	2.18%
2029	0.13%	0.00%	0.10%	0.84%	0.00%	0.66%	1.53%	0.00%	1.23%
2030	0.72%	0.00%	0.55%	1.41%	0.00%	1.11%	2.08%	0.00%	1.68%
2031	0.71%	0.00%	0.55%	1.40%	0.00%	1.10%	2.06%	0.00%	1.67%
2032	1.30%	0.00%	1.00%	1.96%	0.00%	1.55%	2.61%	0.00%	2.12%
2033	0.10%	0.00%	0.08%	0.78%	0.00%	0.62%	1.44%	0.00%	1.17%
2034	0.69%	0.00%	0.53%	1.35%	0.00%	1.07%	1.99%	0.00%	1.62%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	23,599	444,662	468,260	23,599	447,610	471,209	23,599	450,558	474,157
2016	23,599	447,607	471,206	23,599	453,540	477,139	23,599	459,512	483,111
2017	23,599	450,552	474,151	23,599	459,507	483,106	23,599	468,581	492,180
2018	23,599	453,497	477,095	23,599	465,514	489,113	23,599	477,769	501,368
2019	23,599	456,437	480,036	23,599	471,551	495,150	23,599	487,064	510,663
2020	23,599	459,365	482,964	23,599	477,602	501,201	23,599	496,441	520,040
2021	23,599	462,294	485,893	23,599	483,693	507,292	23,599	505,939	529,538
2022	23,599	465,208	488,807	23,599	489,792	513,391	23,599	515,512	539,111
2023	23,599	468,107	491,706	23,599	495,899	519,497	23,599	525,157	548,756
2024	23,599	471,002	494,600	23,599	502,034	525,633	23,599	534,908	558,507
2025	23,599	473,873	497,472	23,599	508,158	531,757	23,599	544,703	568,302
2026	23,599	476,736	500,335	23,599	514,303	537,901	23,599	554,591	578,190
2027	23,599	479,582	503,181	23,599	520,449	544,047	23,599	564,543	588,142
2028	23,599	482,412	506,010	23,599	526,596	550,195	23,599	574,558	598,157
2029	23,599	485,219	508,818	23,599	532,733	556,331	23,599	584,618	608,217
2030	23,599	488,009	511,608	23,599	538,868	562,467	23,599	594,737	618,336
2031	23,599	490,791	514,389	23,599	545,022	568,620	23,599	604,946	628,545
2032	23,599	493,556	517,154	23,599	551,175	574,773	23,599	615,216	638,814
2033	23,599	496,309	519,908	23,599	557,338	580,937	23,599	625,565	649,163
2034	23,599	499,052	522,651	23,599	563,514	587,113	23,599	635,996	659,595

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.66%	0.63%	0.00%	1.32%	1.26%	0.00%	1.99%	1.89%
2017	0.00%	0.66%	0.62%	0.00%	1.32%	1.25%	0.00%	1.97%	1.88%
2018	0.00%	0.65%	0.62%	0.00%	1.31%	1.24%	0.00%	1.96%	1.87%
2019	0.00%	0.65%	0.62%	0.00%	1.30%	1.23%	0.00%	1.95%	1.85%
2020	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.93%	1.84%
2021	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.91%	1.83%
2022	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.89%	1.81%
2023	0.00%	0.62%	0.59%	0.00%	1.25%	1.19%	0.00%	1.87%	1.79%
2024	0.00%	0.62%	0.59%	0.00%	1.24%	1.18%	0.00%	1.86%	1.78%
2025	0.00%	0.61%	0.58%	0.00%	1.22%	1.17%	0.00%	1.83%	1.75%
2026	0.00%	0.60%	0.58%	0.00%	1.21%	1.16%	0.00%	1.82%	1.74%
2027	0.00%	0.60%	0.57%	0.00%	1.20%	1.14%	0.00%	1.79%	1.72%
2028	0.00%	0.59%	0.56%	0.00%	1.18%	1.13%	0.00%	1.77%	1.70%
2029	0.00%	0.58%	0.55%	0.00%	1.17%	1.12%	0.00%	1.75%	1.68%
2030	0.00%	0.58%	0.55%	0.00%	1.15%	1.10%	0.00%	1.73%	1.66%
2031	0.00%	0.57%	0.54%	0.00%	1.14%	1.09%	0.00%	1.72%	1.65%
2032	0.00%	0.56%	0.54%	0.00%	1.13%	1.08%	0.00%	1.70%	1.63%
2033	0.00%	0.56%	0.53%	0.00%	1.12%	1.07%	0.00%	1.68%	1.62%
2034	0.00%	0.55%	0.53%	0.00%	1.11%	1.06%	0.00%	1.67%	1.61%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	14,433,316	19,561,417	33,994,733	14,518,811	19,690,092	34,208,903	14,604,307	19,818,766	34,423,073
2016	14,588,763	19,775,870	34,364,633	14,761,470	20,036,265	34,797,735	14,935,224	20,298,486	35,233,710
2017	14,603,823	19,819,049	34,422,872	14,862,949	20,210,816	35,073,765	15,125,217	20,608,085	35,733,302
2018	14,688,922	19,948,103	34,637,025	15,036,258	20,474,405	35,510,663	15,389,907	21,011,812	36,401,719
2019	14,773,777	20,077,181	34,850,959	15,210,101	20,739,881	35,949,982	15,656,984	21,421,255	37,078,239
2020	14,929,933	20,293,998	35,223,930	15,458,331	21,098,230	36,556,561	16,002,686	21,930,829	37,933,514
2021	14,942,394	20,334,957	35,277,352	15,558,593	21,275,588	36,834,182	16,197,085	22,256,087	38,453,173
2022	15,026,074	20,463,565	35,489,639	15,733,046	21,545,631	37,278,677	16,469,796	22,681,273	39,151,068
2023	15,109,145	20,591,781	35,700,926	15,907,216	21,816,709	37,723,924	16,743,612	23,111,026	39,854,638
2024	15,265,411	20,810,333	36,075,744	16,159,672	22,186,121	38,345,794	17,102,140	23,649,703	40,751,843
2025	15,273,908	20,847,525	36,121,434	16,255,573	22,362,953	38,618,526	17,295,868	23,985,929	41,281,797
2026	15,355,463	20,974,914	36,330,377	16,429,433	22,637,822	39,067,254	17,573,765	24,430,688	42,004,454
2027	15,436,351	21,101,844	36,538,196	16,602,808	22,913,560	39,516,368	17,852,389	24,879,897	42,732,286
2028	15,591,620	21,320,904	36,912,524	16,856,934	23,291,532	40,148,466	18,219,637	25,444,558	43,664,195
2029	15,595,966	21,354,136	36,950,102	16,947,659	23,467,188	40,414,847	18,411,006	25,791,051	44,202,057
2030	15,674,661	21,479,484	37,154,145	17,119,015	23,745,027	40,864,042	18,690,755	26,252,969	44,943,724
2031	15,752,970	21,604,665	37,357,634	17,290,403	24,024,338	41,314,741	18,971,986	26,720,453	45,692,438
2032	15,907,201	21,824,252	37,731,453	17,545,825	24,410,920	41,956,745	19,347,134	27,311,938	46,659,072
2033	15,907,775	21,853,892	37,761,667	17,631,777	24,585,973	42,217,750	19,536,380	27,669,983	47,206,363
2034	15,984,481	21,978,157	37,962,639	17,802,188	24,868,779	42,670,966	19,820,213	28,152,914	47,973,127

Annual Change

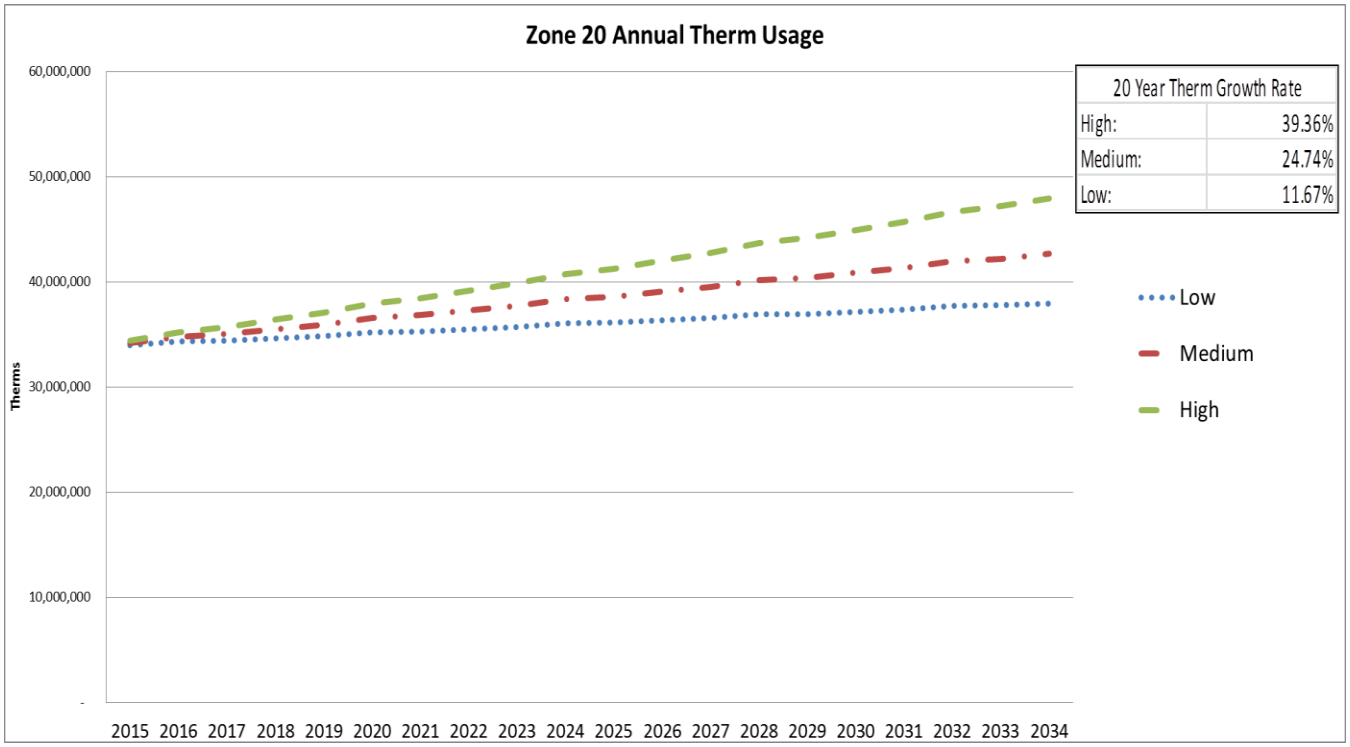
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.08%	1.10%	1.09%	1.67%	1.76%	1.72%	2.27%	2.42%	2.35%
2017	0.10%	0.22%	0.17%	0.69%	0.87%	0.79%	1.27%	1.53%	1.42%
2018	0.58%	0.65%	0.62%	1.17%	1.30%	1.25%	1.75%	1.96%	1.87%
2019	0.58%	0.65%	0.62%	1.16%	1.30%	1.24%	1.74%	1.95%	1.86%
2020	1.06%	1.08%	1.07%	1.63%	1.73%	1.69%	2.21%	2.38%	2.31%
2021	0.08%	0.20%	0.15%	0.65%	0.84%	0.76%	1.21%	1.48%	1.37%
2022	0.56%	0.63%	0.60%	1.12%	1.27%	1.21%	1.68%	1.91%	1.81%
2023	0.55%	0.63%	0.60%	1.11%	1.26%	1.19%	1.66%	1.89%	1.80%
2024	1.03%	1.06%	1.05%	1.59%	1.69%	1.65%	2.14%	2.33%	2.25%
2025	0.06%	0.18%	0.13%	0.59%	0.80%	0.71%	1.13%	1.42%	1.30%
2026	0.53%	0.61%	0.58%	1.07%	1.23%	1.16%	1.61%	1.85%	1.75%
2027	0.53%	0.61%	0.57%	1.06%	1.22%	1.15%	1.59%	1.84%	1.73%
2028	1.01%	1.04%	1.02%	1.53%	1.65%	1.60%	2.06%	2.27%	2.18%
2029	0.03%	0.16%	0.10%	0.54%	0.75%	0.66%	1.05%	1.36%	1.23%
2030	0.50%	0.59%	0.55%	1.01%	1.18%	1.11%	1.52%	1.79%	1.68%
2031	0.50%	0.58%	0.55%	1.00%	1.18%	1.10%	1.50%	1.78%	1.67%
2032	0.98%	1.02%	1.00%	1.48%	1.61%	1.55%	1.98%	2.21%	2.12%
2033	0.00%	0.14%	0.08%	0.49%	0.72%	0.62%	0.98%	1.31%	1.17%
2034	0.48%	0.57%	0.53%	0.97%	1.15%	1.07%	1.45%	1.75%	1.62%

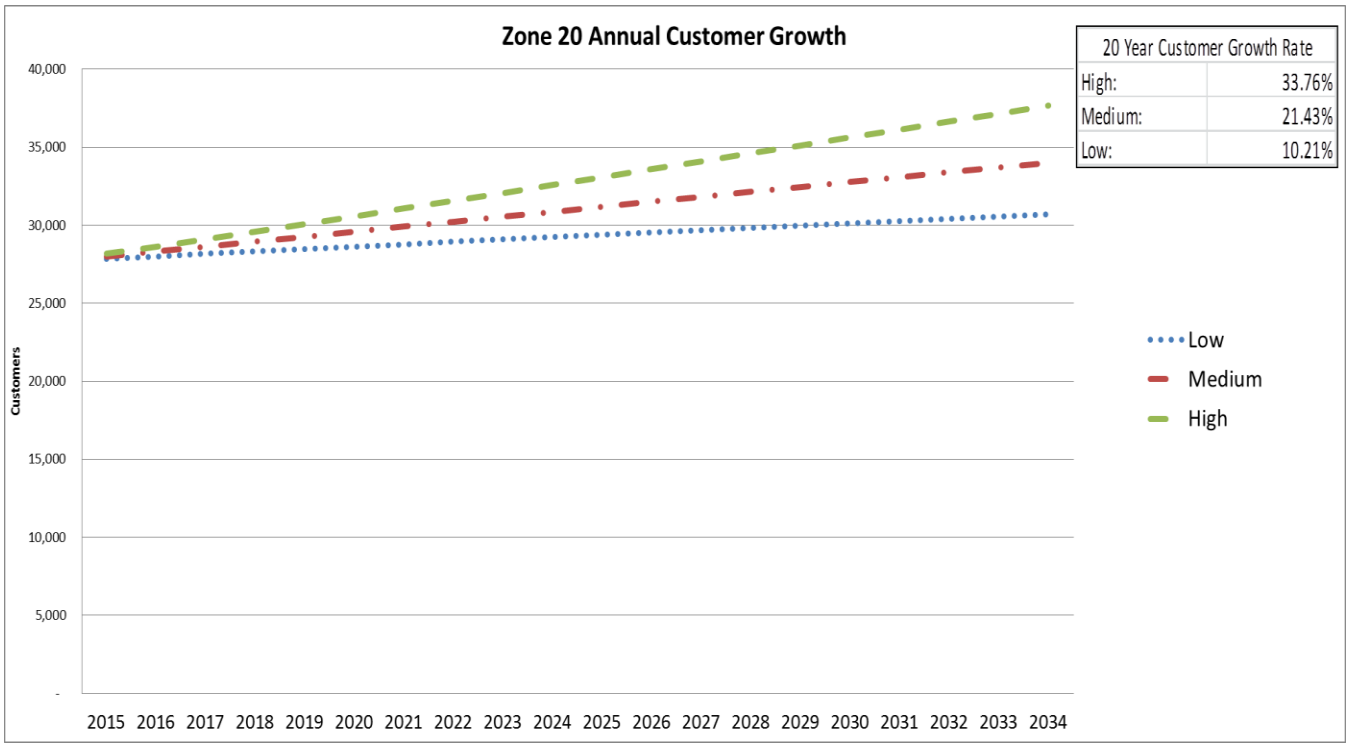
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,272	3,585	27,857	24,408	3,605	28,013	24,543	3,625	28,168
2016	24,408	3,605	28,012	24,680	3,646	28,326	24,954	3,686	28,641
2017	24,543	3,625	28,168	24,954	3,686	28,640	25,370	3,748	29,118
2018	24,678	3,645	28,323	25,229	3,727	28,957	25,790	3,811	29,601
2019	24,813	3,665	28,479	25,506	3,769	29,274	26,214	3,874	30,088
2020	24,948	3,685	28,633	25,782	3,810	29,592	26,641	3,938	30,578
2021	25,082	3,705	28,787	26,060	3,851	29,911	27,072	4,002	31,073
2022	25,215	3,725	28,940	26,337	3,892	30,230	27,504	4,066	31,571
2023	25,348	3,745	29,093	26,614	3,934	30,548	27,939	4,131	32,070
2024	25,480	3,765	29,245	26,892	3,975	30,868	28,377	4,197	32,574
2025	25,611	3,784	29,395	27,169	4,017	31,185	28,815	4,262	33,078
2026	25,741	3,804	29,544	27,446	4,058	31,503	29,256	4,328	33,584
2027	25,870	3,823	29,693	27,721	4,099	31,820	29,698	4,394	34,092
2028	25,998	3,842	29,840	27,997	4,140	32,137	30,141	4,460	34,601
2029	26,125	3,861	29,986	28,270	4,181	32,451	30,584	4,526	35,110
2030	26,251	3,880	30,130	28,543	4,222	32,765	31,027	4,593	35,620
2031	26,376	3,898	30,274	28,816	4,262	33,078	31,473	4,659	36,132
2032	26,500	3,917	30,417	29,088	4,303	33,391	31,919	4,726	36,645
2033	26,623	3,935	30,559	29,359	4,344	33,703	32,367	4,793	37,160
2034	26,746	3,954	30,700	29,630	4,384	34,015	32,817	4,860	37,677

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.56%	0.56%	0.56%	1.12%	1.13%	1.12%	1.68%	1.69%	1.68%
2017	0.55%	0.56%	0.56%	1.11%	1.12%	1.11%	1.67%	1.68%	1.67%
2018	0.55%	0.56%	0.55%	1.10%	1.11%	1.10%	1.66%	1.67%	1.66%
2019	0.55%	0.55%	0.55%	1.10%	1.10%	1.10%	1.64%	1.66%	1.65%
2020	0.54%	0.55%	0.54%	1.08%	1.09%	1.08%	1.63%	1.64%	1.63%
2021	0.54%	0.54%	0.54%	1.08%	1.09%	1.08%	1.62%	1.63%	1.62%
2022	0.53%	0.54%	0.53%	1.06%	1.07%	1.07%	1.60%	1.61%	1.60%
2023	0.53%	0.53%	0.53%	1.05%	1.06%	1.05%	1.58%	1.59%	1.58%
2024	0.52%	0.53%	0.52%	1.04%	1.05%	1.05%	1.57%	1.58%	1.57%
2025	0.51%	0.52%	0.51%	1.03%	1.04%	1.03%	1.54%	1.56%	1.55%
2026	0.51%	0.51%	0.51%	1.02%	1.03%	1.02%	1.53%	1.54%	1.53%
2027	0.50%	0.51%	0.50%	1.01%	1.02%	1.01%	1.51%	1.53%	1.51%
2028	0.50%	0.50%	0.50%	0.99%	1.00%	0.99%	1.49%	1.51%	1.49%
2029	0.49%	0.49%	0.49%	0.98%	0.99%	0.98%	1.47%	1.48%	1.47%
2030	0.48%	0.49%	0.48%	0.96%	0.97%	0.97%	1.45%	1.46%	1.45%
2031	0.48%	0.48%	0.48%	0.96%	0.97%	0.96%	1.44%	1.45%	1.44%
2032	0.47%	0.48%	0.47%	0.94%	0.95%	0.94%	1.42%	1.43%	1.42%
2033	0.47%	0.47%	0.47%	0.93%	0.94%	0.93%	1.40%	1.42%	1.41%
2034	0.46%	0.47%	0.46%	0.92%	0.93%	0.93%	1.39%	1.40%	1.39%


Zone 20 Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 39.36%
Medium: 24.74%
Low: 11.67%
Low
Medium
High


Zone 20 Annual Customer Growth
Customers
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 33.76%
Medium: 21.43%
Low: 10.21%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 24

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,991,022	1,075,348	9,066,370	8,000,458	1,075,348	9,075,805	8,009,893	1,075,348	9,085,241
2016	8,044,830	1,075,348	9,120,178	8,064,159	1,075,348	9,139,506	8,083,510	1,075,348	9,158,857
2017	8,010,710	1,075,348	9,086,058	8,039,905	1,075,348	9,115,253	8,069,170	1,075,348	9,144,518
2018	8,021,103	1,075,348	9,096,451	8,060,764	1,075,348	9,136,112	8,100,570	1,075,348	9,175,918
2019	8,031,635	1,075,348	9,106,983	8,081,929	1,075,348	9,157,277	8,132,470	1,075,348	9,207,817
2020	8,086,374	1,075,348	9,161,722	8,147,598	1,075,348	9,222,946	8,209,199	1,075,348	9,284,547
2021	8,052,901	1,075,348	9,128,249	8,124,748	1,075,348	9,200,095	8,197,129	1,075,348	9,272,477
2022	8,063,637	1,075,348	9,138,985	8,146,406	1,075,348	9,221,754	8,229,897	1,075,348	9,305,245
2023	8,074,348	1,075,348	9,149,696	8,168,040	1,075,348	9,243,388	8,262,671	1,075,348	9,338,019
2024	8,129,672	1,075,348	9,205,020	8,234,997	1,075,348	9,310,345	8,341,513	1,075,348	9,416,861
2025	8,095,813	1,075,348	9,171,161	8,211,478	1,075,348	9,286,826	8,328,598	1,075,348	9,403,946
2026	8,106,458	1,075,348	9,181,806	8,233,061	1,075,348	9,308,409	8,361,418	1,075,348	9,436,766
2027	8,117,076	1,075,348	9,192,424	8,254,617	1,075,348	9,329,965	8,394,239	1,075,348	9,469,587
2028	8,172,046	1,075,348	9,247,394	8,320,967	1,075,348	9,396,315	8,472,328	1,075,348	9,547,676
2029	8,137,621	1,075,348	9,212,969	8,296,405	1,075,348	9,371,753	8,457,985	1,075,348	9,533,333
2030	8,147,629	1,075,348	9,222,977	8,316,800	1,075,348	9,392,148	8,489,156	1,075,348	9,564,504
2031	8,157,693	1,075,348	9,233,041	8,337,332	1,075,348	9,412,680	8,520,575	1,075,348	9,595,922
2032	8,212,421	1,075,348	9,287,769	8,403,289	1,075,348	9,478,637	8,598,214	1,075,348	9,673,562
2033	8,177,443	1,075,348	9,252,791	8,377,697	1,075,348	9,453,045	8,582,447	1,075,348	9,657,795
2034	8,187,364	1,075,348	9,262,712	8,398,009	1,075,348	9,473,357	8,613,638	1,075,348	9,688,986

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.00%	0.59%	0.80%	0.00%	0.70%	0.92%	0.00%	0.81%
2017	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2018	0.13%	0.00%	0.11%	0.26%	0.00%	0.23%	0.39%	0.00%	0.34%
2019	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2020	0.68%	0.00%	0.60%	0.81%	0.00%	0.72%	0.94%	0.00%	0.83%
2021	-0.41%	0.00%	-0.37%	-0.28%	0.00%	-0.25%	-0.15%	0.00%	-0.13%
2022	0.13%	0.00%	0.12%	0.27%	0.00%	0.24%	0.40%	0.00%	0.35%
2023	0.13%	0.00%	0.12%	0.27%	0.00%	0.23%	0.40%	0.00%	0.35%
2024	0.69%	0.00%	0.60%	0.82%	0.00%	0.72%	0.95%	0.00%	0.84%
2025	-0.42%	0.00%	-0.37%	-0.29%	0.00%	-0.25%	-0.15%	0.00%	-0.14%
2026	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2027	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2028	0.68%	0.00%	0.60%	0.80%	0.00%	0.71%	0.93%	0.00%	0.82%
2029	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.26%	-0.17%	0.00%	-0.15%
2030	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2031	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2032	0.67%	0.00%	0.59%	0.79%	0.00%	0.70%	0.91%	0.00%	0.81%
2033	-0.43%	0.00%	-0.38%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2034	0.12%	0.00%	0.11%	0.24%	0.00%	0.21%	0.36%	0.00%	0.32%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,946	108,677	111,623	2,946	108,794	111,741	2,946	108,912	111,858
2016	2,946	108,799	111,745	2,946	109,038	111,984	2,946	109,277	112,223
2017	2,946	108,922	111,868	2,946	109,285	112,231	2,946	109,648	112,594
2018	2,946	109,051	111,997	2,946	109,544	112,490	2,946	110,038	112,984
2019	2,946	109,182	112,128	2,946	109,806	112,752	2,946	110,434	113,380
2020	2,946	109,312	112,258	2,946	110,069	113,015	2,946	110,830	113,777
2021	2,946	109,446	112,392	2,946	110,338	113,284	2,946	111,237	114,183
2022	2,946	109,579	112,525	2,946	110,607	113,553	2,946	111,644	114,590
2023	2,946	109,712	112,658	2,946	110,875	113,821	2,946	112,051	114,997
2024	2,946	109,847	112,793	2,946	111,148	114,095	2,946	112,465	115,411
2025	2,946	109,978	112,924	2,946	111,414	114,361	2,946	112,869	115,815
2026	2,946	110,110	113,056	2,946	111,682	114,628	2,946	113,276	116,222
2027	2,946	110,242	113,188	2,946	111,950	114,896	2,946	113,684	116,630
2028	2,946	110,370	113,316	2,946	112,210	115,157	2,946	114,081	117,027
2029	2,946	110,497	113,443	2,946	112,469	115,415	2,946	114,475	117,421
2030	2,946	110,621	113,567	2,946	112,722	115,668	2,946	114,862	117,808
2031	2,946	110,746	113,692	2,946	112,977	115,923	2,946	115,252	118,199
2032	2,946	110,869	113,815	2,946	113,228	116,174	2,946	115,637	118,583
2033	2,946	110,991	113,938	2,946	113,478	116,424	2,946	116,021	118,967
2034	2,946	111,115	114,061	2,946	113,730	116,676	2,946	116,408	119,354

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.34%	0.33%
2017	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2018	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2019	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2020	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2021	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2022	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2023	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.36%	0.36%
2024	0.00%	0.12%	0.12%	0.00%	0.25%	0.24%	0.00%	0.37%	0.36%
2025	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2026	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2028	0.00%	0.12%	0.11%	0.00%	0.23%	0.23%	0.00%	0.35%	0.34%
2029	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2031	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2032	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%
2033	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.32%
2034	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,949,646	5,116,724	9,066,370	3,953,392	5,122,413	9,075,805	3,957,139	5,128,103	9,085,241
2016	3,973,740	5,146,438	9,120,178	3,981,424	5,158,082	9,139,506	3,989,117	5,169,741	9,158,857
2017	3,957,471	5,128,587	9,086,058	3,969,069	5,146,184	9,115,253	3,980,693	5,163,824	9,144,518
2018	3,961,649	5,134,802	9,096,451	3,977,452	5,158,660	9,136,112	3,993,309	5,182,608	9,175,918
2019	3,965,874	5,141,109	9,106,983	3,985,941	5,171,336	9,157,277	4,006,099	5,201,718	9,207,817
2020	3,990,381	5,171,341	9,161,722	4,014,838	5,208,108	9,222,946	4,039,436	5,245,111	9,284,547
2021	3,974,419	5,153,830	9,128,249	4,003,138	5,196,958	9,200,095	4,032,057	5,240,420	9,272,477
2022	3,978,739	5,160,247	9,138,985	4,011,847	5,209,906	9,221,754	4,045,228	5,260,017	9,305,245
2023	3,983,049	5,166,647	9,149,696	4,020,549	5,222,839	9,243,388	4,058,402	5,279,617	9,338,019
2024	4,007,824	5,197,195	9,205,020	4,050,028	5,260,317	9,310,345	4,092,680	5,324,182	9,416,861
2025	3,991,709	5,179,452	9,171,161	4,038,061	5,248,765	9,286,826	4,084,961	5,318,985	9,403,946
2026	3,995,996	5,185,810	9,181,806	4,046,745	5,261,664	9,308,409	4,098,155	5,338,611	9,436,766
2027	4,000,273	5,192,151	9,192,424	4,055,419	5,274,545	9,329,965	4,111,351	5,358,236	9,469,587
2028	4,024,890	5,222,503	9,247,394	4,084,622	5,311,694	9,396,315	4,145,273	5,402,403	9,547,676
2029	4,008,536	5,204,433	9,212,969	4,072,209	5,299,543	9,371,753	4,136,937	5,396,396	9,533,333
2030	4,012,550	5,210,427	9,222,977	4,080,381	5,311,767	9,392,148	4,149,413	5,415,092	9,564,504
2031	4,016,583	5,216,457	9,233,041	4,088,600	5,324,080	9,412,680	4,161,975	5,433,948	9,595,922
2032	4,041,107	5,246,662	9,287,769	4,117,648	5,360,989	9,478,637	4,195,719	5,477,843	9,673,562
2033	4,024,518	5,228,273	9,252,791	4,104,796	5,348,249	9,453,045	4,186,769	5,471,026	9,657,795
2034	4,028,501	5,234,211	9,262,712	4,112,939	5,360,418	9,473,357	4,199,256	5,489,730	9,688,986

Annual Change

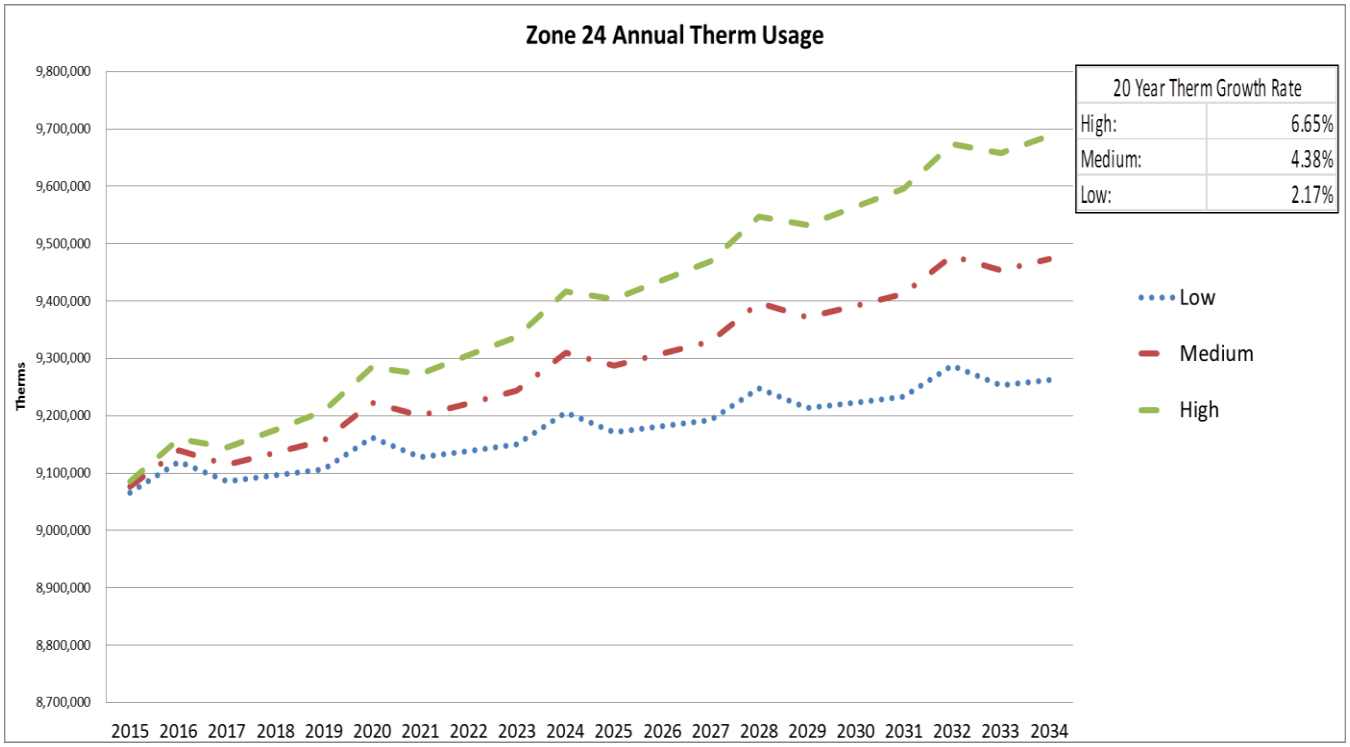
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.61%	0.58%	0.59%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2017	-0.41%	-0.35%	-0.37%	-0.31%	-0.23%	-0.27%	-0.21%	-0.11%	-0.16%
2018	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2019	0.11%	0.12%	0.12%	0.21%	0.25%	0.23%	0.32%	0.37%	0.35%
2020	0.62%	0.59%	0.60%	0.72%	0.71%	0.72%	0.83%	0.83%	0.83%
2021	-0.40%	-0.34%	-0.37%	-0.29%	-0.21%	-0.25%	-0.18%	-0.09%	-0.13%
2022	0.11%	0.12%	0.12%	0.22%	0.25%	0.24%	0.33%	0.37%	0.35%
2023	0.11%	0.12%	0.12%	0.22%	0.25%	0.23%	0.33%	0.37%	0.35%
2024	0.62%	0.59%	0.60%	0.73%	0.72%	0.72%	0.84%	0.84%	0.84%
2025	-0.40%	-0.34%	-0.37%	-0.30%	-0.22%	-0.25%	-0.19%	-0.10%	-0.14%
2026	0.11%	0.12%	0.12%	0.22%	0.25%	0.23%	0.32%	0.37%	0.35%
2027	0.11%	0.12%	0.12%	0.21%	0.24%	0.23%	0.32%	0.37%	0.35%
2028	0.62%	0.58%	0.60%	0.72%	0.70%	0.71%	0.83%	0.82%	0.82%
2029	-0.41%	-0.35%	-0.37%	-0.30%	-0.23%	-0.26%	-0.20%	-0.11%	-0.15%
2030	0.10%	0.12%	0.11%	0.20%	0.23%	0.22%	0.30%	0.35%	0.33%
2031	0.10%	0.12%	0.11%	0.20%	0.23%	0.22%	0.30%	0.35%	0.33%
2032	0.61%	0.58%	0.59%	0.71%	0.69%	0.70%	0.81%	0.81%	0.81%
2033	-0.41%	-0.35%	-0.38%	-0.31%	-0.24%	-0.27%	-0.21%	-0.12%	-0.16%
2034	0.10%	0.11%	0.11%	0.20%	0.23%	0.21%	0.30%	0.34%	0.32%

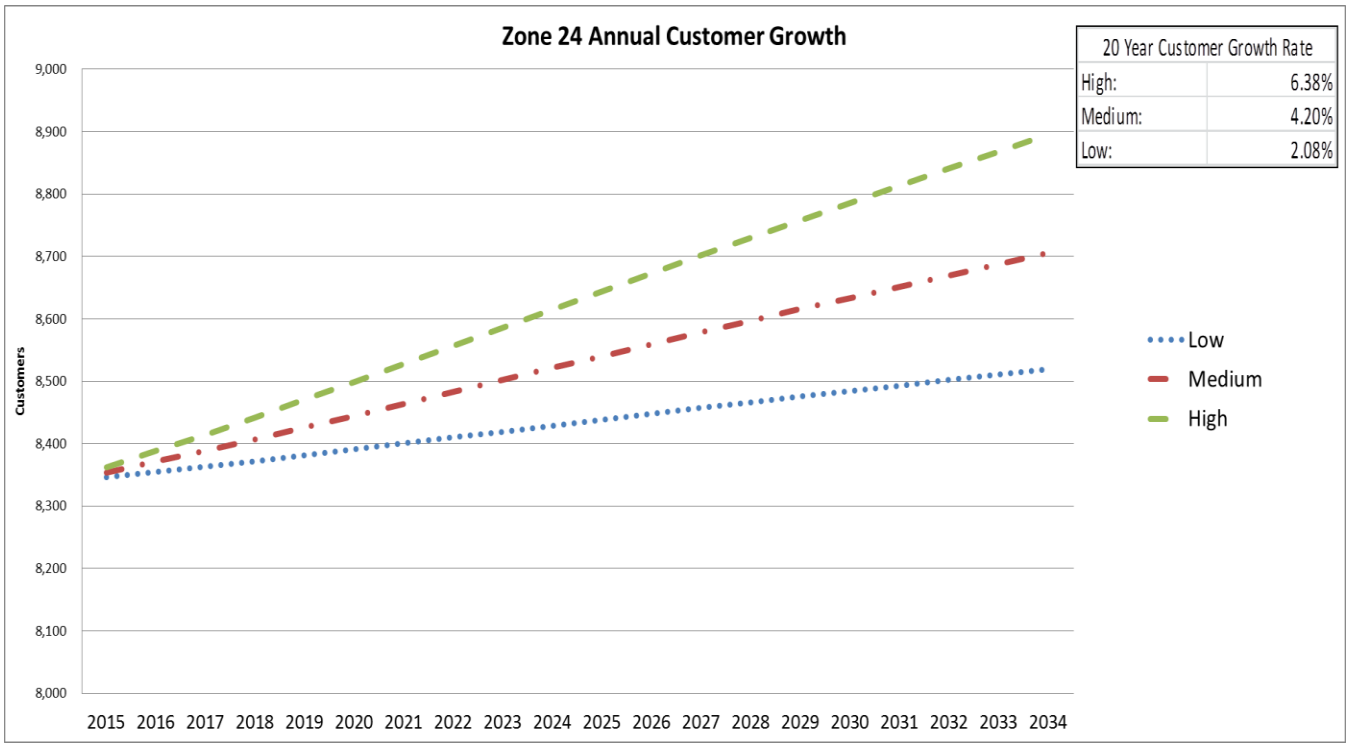
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,918	1,428	8,346	6,924	1,430	8,354	6,931	1,431	8,362
2016	6,925	1,430	8,354	6,938	1,433	8,371	6,952	1,436	8,388
2017	6,932	1,432	8,363	6,953	1,436	8,389	6,974	1,441	8,415
2018	6,939	1,433	8,372	6,968	1,440	8,407	6,996	1,446	8,442
2019	6,947	1,435	8,382	6,983	1,443	8,426	7,019	1,451	8,471
2020	6,954	1,437	8,391	6,998	1,447	8,445	7,042	1,456	8,499
2021	6,962	1,438	8,400	7,014	1,450	8,464	7,066	1,462	8,528
2022	6,970	1,440	8,410	7,029	1,454	8,483	7,090	1,467	8,557
2023	6,978	1,442	8,419	7,045	1,457	8,502	7,113	1,472	8,586
2024	6,985	1,444	8,429	7,061	1,461	8,522	7,137	1,478	8,615
2025	6,993	1,445	8,438	7,077	1,464	8,541	7,161	1,483	8,644
2026	7,001	1,447	8,448	7,092	1,468	8,560	7,185	1,488	8,673
2027	7,009	1,449	8,457	7,108	1,471	8,579	7,208	1,494	8,702
2028	7,016	1,450	8,466	7,123	1,474	8,597	7,231	1,499	8,730
2029	7,023	1,452	8,475	7,138	1,478	8,616	7,254	1,504	8,758
2030	7,031	1,454	8,484	7,153	1,481	8,634	7,277	1,509	8,786
2031	7,038	1,455	8,493	7,167	1,484	8,652	7,299	1,514	8,814
2032	7,045	1,457	8,502	7,182	1,488	8,670	7,322	1,519	8,841
2033	7,052	1,459	8,511	7,197	1,491	8,687	7,344	1,524	8,868
2034	7,059	1,460	8,519	7,211	1,494	8,705	7,367	1,529	8,896

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2017	0.10%	0.11%	0.10%	0.21%	0.23%	0.21%	0.31%	0.34%	0.31%
2018	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.33%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2021	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2024	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.34%
2025	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2026	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2027	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2028	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.32%
2029	0.11%	0.11%	0.11%	0.21%	0.23%	0.21%	0.32%	0.34%	0.32%
2030	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.31%
2031	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.32%
2032	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%
2033	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%


Zone 24 Annual Therm Usage
Therms
9,800,000
9,700,000
9,600,000
9,500,000
9,400,000
9,300,000
9,200,000
9,100,000
9,000,000
8,900,000
8,800,000
8,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.65%
Medium: 4.38%
Low: 2.17%
Low
Medium
High


Zone 24 Annual Customer Growth
Customers
9,000
8,900
8,800
8,700
8,600
8,500
8,400
8,300
8,200
8,100
8,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.38%
Medium: 4.20%
Low: 2.08%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 26

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,359,555	1,975,361	6,334,916	4,392,506	1,975,361	6,367,867	4,425,458	1,975,361	6,400,819
2016	4,421,406	1,975,361	6,396,766	4,488,098	1,975,361	6,463,459	4,555,421	1,975,361	6,530,782
2017	4,425,119	1,975,361	6,400,479	4,525,499	1,975,361	6,500,860	4,627,767	1,975,361	6,603,128
2018	4,457,764	1,975,361	6,433,125	4,592,620	1,975,361	6,567,980	4,731,260	1,975,361	6,706,621
2019	4,490,291	1,975,361	6,465,652	4,660,079	1,975,361	6,635,439	4,836,188	1,975,361	6,811,549
2020	4,552,179	1,975,361	6,527,540	4,758,111	1,975,361	6,733,472	4,973,581	1,975,361	6,948,941
2021	4,554,822	1,975,361	6,530,183	4,795,607	1,975,361	6,770,968	5,049,712	1,975,361	7,025,073
2022	4,586,825	1,975,361	6,562,186	4,863,645	1,975,361	6,839,006	5,158,248	1,975,361	7,133,609
2023	4,618,587	1,975,361	6,593,947	4,931,706	1,975,361	6,907,067	5,267,709	1,975,361	7,243,070
2024	4,680,301	1,975,361	6,655,662	5,031,540	1,975,361	7,006,901	5,411,528	1,975,361	7,386,888
2025	4,681,484	1,975,361	6,656,845	5,068,049	1,975,361	7,043,410	5,489,621	1,975,361	7,464,982
2026	4,712,605	1,975,361	6,687,966	5,136,272	1,975,361	7,111,633	5,601,963	1,975,361	7,577,324
2027	4,743,470	1,975,361	6,718,831	5,204,430	1,975,361	7,179,791	5,715,062	1,975,361	7,690,423
2028	4,804,697	1,975,361	6,780,058	5,305,216	1,975,361	7,280,577	5,863,915	1,975,361	7,839,276
2029	4,804,353	1,975,361	6,779,714	5,340,339	1,975,361	7,315,699	5,943,155	1,975,361	7,918,516
2030	4,834,361	1,975,361	6,809,722	5,408,037	1,975,361	7,383,398	6,058,046	1,975,361	8,033,407
2031	4,864,210	1,975,361	6,839,571	5,475,831	1,975,361	7,451,192	6,173,920	1,975,361	8,149,280
2032	4,924,924	1,975,361	6,900,285	5,577,334	1,975,361	7,552,695	6,327,350	1,975,361	8,302,711
2033	4,923,180	1,975,361	6,898,541	5,611,120	1,975,361	7,586,481	6,407,640	1,975,361	8,383,001
2034	4,952,376	1,975,361	6,927,737	5,678,756	1,975,361	7,654,117	6,525,704	1,975,361	8,501,065

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.42%	0.00%	0.98%	2.18%	0.00%	1.50%	2.94%	0.00%	2.03%
2017	0.08%	0.00%	0.06%	0.83%	0.00%	0.58%	1.59%	0.00%	1.11%
2018	0.74%	0.00%	0.51%	1.48%	0.00%	1.03%	2.24%	0.00%	1.57%
2019	0.73%	0.00%	0.51%	1.47%	0.00%	1.03%	2.22%	0.00%	1.56%
2020	1.38%	0.00%	0.96%	2.10%	0.00%	1.48%	2.84%	0.00%	2.02%
2021	0.06%	0.00%	0.04%	0.79%	0.00%	0.56%	1.53%	0.00%	1.10%
2022	0.70%	0.00%	0.49%	1.42%	0.00%	1.00%	2.15%	0.00%	1.54%
2023	0.69%	0.00%	0.48%	1.40%	0.00%	1.00%	2.12%	0.00%	1.53%
2024	1.34%	0.00%	0.94%	2.02%	0.00%	1.45%	2.73%	0.00%	1.99%
2025	0.03%	0.00%	0.02%	0.73%	0.00%	0.52%	1.44%	0.00%	1.06%
2026	0.66%	0.00%	0.47%	1.35%	0.00%	0.97%	2.05%	0.00%	1.50%
2027	0.65%	0.00%	0.46%	1.33%	0.00%	0.96%	2.02%	0.00%	1.49%
2028	1.29%	0.00%	0.91%	1.94%	0.00%	1.40%	2.60%	0.00%	1.94%
2029	-0.01%	0.00%	-0.01%	0.66%	0.00%	0.48%	1.35%	0.00%	1.01%
2030	0.62%	0.00%	0.44%	1.27%	0.00%	0.93%	1.93%	0.00%	1.45%
2031	0.62%	0.00%	0.44%	1.25%	0.00%	0.92%	1.91%	0.00%	1.44%
2032	1.25%	0.00%	0.89%	1.85%	0.00%	1.36%	2.49%	0.00%	1.88%
2033	-0.04%	0.00%	-0.03%	0.61%	0.00%	0.45%	1.27%	0.00%	0.97%
2034	0.59%	0.00%	0.42%	1.21%	0.00%	0.89%	1.84%	0.00%	1.41%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	5,412	60,573	65,985	5,412	60,904	66,316	5,412	61,235	66,647
2016	5,412	60,903	66,315	5,412	61,570	66,982	5,412	62,243	67,655
2017	5,412	61,232	66,644	5,412	62,241	67,652	5,412	63,267	68,679
2018	5,412	61,561	66,973	5,412	62,915	68,327	5,412	64,307	69,719
2019	5,412	61,888	67,300	5,412	63,594	69,006	5,412	65,361	70,773
2020	5,412	62,214	67,626	5,412	64,273	69,685	5,412	66,426	71,838
2021	5,412	62,538	67,950	5,412	64,957	70,369	5,412	67,505	72,917
2022	5,412	62,861	68,273	5,412	65,641	71,053	5,412	68,596	74,008
2023	5,412	63,181	68,593	5,412	66,326	71,738	5,412	69,695	75,107
2024	5,412	63,500	68,912	5,412	67,013	72,425	5,412	70,806	76,218
2025	5,412	63,815	69,227	5,412	67,698	73,110	5,412	71,923	77,335
2026	5,412	64,129	69,541	5,412	68,385	73,796	5,412	73,051	78,463
2027	5,412	64,441	69,853	5,412	69,070	74,482	5,412	74,186	79,598
2028	5,412	64,749	70,161	5,412	69,755	75,167	5,412	75,328	80,740
2029	5,412	65,055	70,467	5,412	70,438	75,850	5,412	76,475	81,887
2030	5,412	65,358	70,770	5,412	71,119	76,531	5,412	77,627	83,039
2031	5,412	65,659	71,071	5,412	71,802	77,214	5,412	78,790	84,202
2032	5,412	65,958	71,370	5,412	72,482	77,894	5,412	79,958	85,370
2033	5,412	66,255	71,667	5,412	73,163	78,575	5,412	81,134	86,545
2034	5,412	66,550	71,962	5,412	73,844	79,256	5,412	82,317	87,729

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.54%	0.50%	0.00%	1.09%	1.00%	0.00%	1.65%	1.51%
2017	0.00%	0.54%	0.50%	0.00%	1.09%	1.00%	0.00%	1.64%	1.51%
2018	0.00%	0.54%	0.49%	0.00%	1.08%	1.00%	0.00%	1.64%	1.51%
2019	0.00%	0.53%	0.49%	0.00%	1.08%	0.99%	0.00%	1.64%	1.51%
2020	0.00%	0.53%	0.48%	0.00%	1.07%	0.99%	0.00%	1.63%	1.51%
2021	0.00%	0.52%	0.48%	0.00%	1.06%	0.98%	0.00%	1.63%	1.50%
2022	0.00%	0.52%	0.47%	0.00%	1.05%	0.97%	0.00%	1.61%	1.49%
2023	0.00%	0.51%	0.47%	0.00%	1.04%	0.96%	0.00%	1.60%	1.49%
2024	0.00%	0.50%	0.46%	0.00%	1.04%	0.96%	0.00%	1.59%	1.48%
2025	0.00%	0.50%	0.46%	0.00%	1.02%	0.95%	0.00%	1.58%	1.47%
2026	0.00%	0.49%	0.45%	0.00%	1.01%	0.94%	0.00%	1.57%	1.46%
2027	0.00%	0.49%	0.45%	0.00%	1.00%	0.93%	0.00%	1.55%	1.45%
2028	0.00%	0.48%	0.44%	0.00%	0.99%	0.92%	0.00%	1.54%	1.43%
2029	0.00%	0.47%	0.44%	0.00%	0.98%	0.91%	0.00%	1.52%	1.42%
2030	0.00%	0.47%	0.43%	0.00%	0.97%	0.90%	0.00%	1.51%	1.41%
2031	0.00%	0.46%	0.43%	0.00%	0.96%	0.89%	0.00%	1.50%	1.40%
2032	0.00%	0.45%	0.42%	0.00%	0.95%	0.88%	0.00%	1.48%	1.39%
2033	0.00%	0.45%	0.42%	0.00%	0.94%	0.87%	0.00%	1.47%	1.38%
2034	0.00%	0.45%	0.41%	0.00%	0.93%	0.87%	0.00%	1.46%	1.37%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,317,337	5,017,579	6,334,916	1,324,694	5,043,173	6,367,867	1,332,050	5,068,768	6,400,819
2016	1,330,712	5,066,054	6,396,766	1,345,601	5,117,857	6,463,459	1,360,641	5,170,140	6,530,782
2017	1,331,931	5,068,549	6,400,479	1,354,325	5,146,535	6,500,860	1,377,169	5,225,959	6,603,128
2018	1,339,176	5,093,949	6,433,125	1,369,251	5,198,729	6,567,980	1,400,227	5,306,394	6,706,621
2019	1,346,383	5,119,269	6,465,652	1,384,235	5,251,204	6,635,439	1,423,590	5,387,959	6,811,549
2020	1,359,725	5,167,815	6,527,540	1,405,636	5,327,837	6,733,472	1,453,813	5,495,128	6,948,941
2021	1,360,648	5,169,535	6,530,183	1,414,292	5,356,676	6,770,968	1,471,098	5,553,975	7,025,073
2022	1,367,706	5,194,480	6,562,186	1,429,359	5,409,648	6,839,006	1,495,228	5,638,381	7,133,609
2023	1,374,701	5,219,246	6,593,947	1,444,417	5,462,650	6,907,067	1,519,555	5,723,515	7,243,070
2024	1,387,974	5,267,688	6,655,662	1,466,181	5,540,720	7,006,901	1,551,199	5,835,690	7,386,888
2025	1,388,527	5,268,318	6,656,845	1,474,544	5,568,867	7,043,410	1,568,841	5,896,141	7,464,982
2026	1,395,355	5,292,611	6,687,966	1,489,599	5,622,034	7,111,633	1,593,776	5,983,548	7,577,324
2027	1,402,119	5,316,712	6,718,831	1,504,629	5,675,162	7,179,791	1,618,869	6,071,554	7,690,423
2028	1,415,262	5,364,797	6,780,058	1,526,578	5,753,999	7,280,577	1,651,630	6,187,646	7,839,276
2029	1,415,439	5,364,275	6,779,714	1,534,565	5,781,135	7,315,699	1,669,447	6,249,069	7,918,516
2030	1,421,993	5,387,728	6,809,722	1,549,460	5,833,938	7,383,398	1,694,908	6,338,499	8,033,407
2031	1,428,506	5,411,065	6,839,571	1,564,365	5,886,827	7,451,192	1,720,576	6,428,705	8,149,280
2032	1,441,519	5,458,766	6,900,285	1,586,451	5,966,244	7,552,695	1,754,352	6,548,359	8,302,711
2033	1,441,354	5,457,187	6,898,541	1,594,078	5,992,403	7,586,481	1,772,317	6,610,684	8,383,001
2034	1,447,705	5,480,032	6,927,737	1,608,916	6,045,201	7,654,117	1,798,437	6,702,628	8,501,065

Annual Change

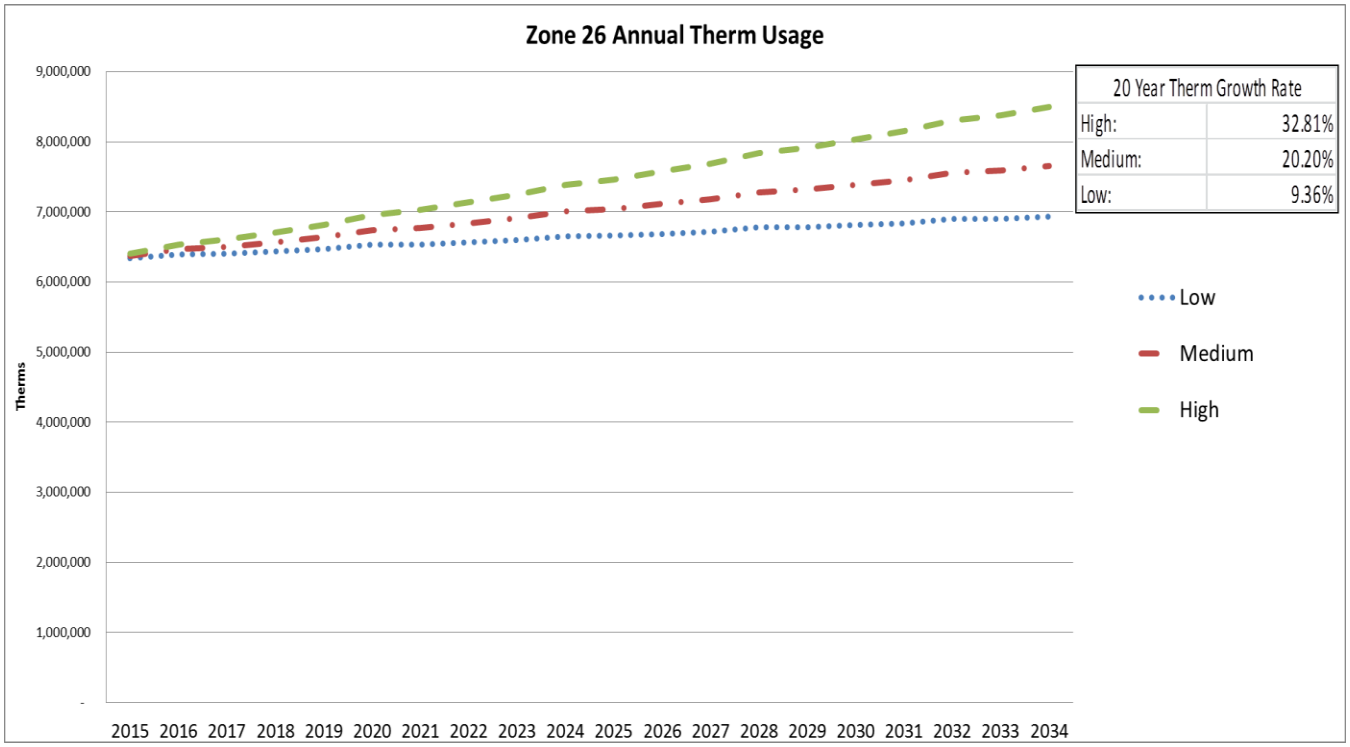
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.97%	0.98%	1.58%	1.48%	1.50%	2.15%	2.00%	2.03%
2017	0.09%	0.05%	0.06%	0.65%	0.56%	0.58%	1.21%	1.08%	1.11%
2018	0.54%	0.50%	0.51%	1.10%	1.01%	1.03%	1.67%	1.54%	1.57%
2019	0.54%	0.50%	0.51%	1.09%	1.01%	1.03%	1.67%	1.54%	1.56%
2020	0.99%	0.95%	0.96%	1.55%	1.46%	1.48%	2.12%	1.99%	2.02%
2021	0.07%	0.03%	0.04%	0.62%	0.54%	0.56%	1.19%	1.07%	1.10%
2022	0.52%	0.48%	0.49%	1.07%	0.99%	1.00%	1.64%	1.52%	1.54%
2023	0.51%	0.48%	0.48%	1.05%	0.98%	1.00%	1.63%	1.51%	1.53%
2024	0.97%	0.93%	0.94%	1.51%	1.43%	1.45%	2.08%	1.96%	1.99%
2025	0.04%	0.01%	0.02%	0.57%	0.51%	0.52%	1.14%	1.04%	1.06%
2026	0.49%	0.46%	0.47%	1.02%	0.95%	0.97%	1.59%	1.48%	1.50%
2027	0.48%	0.46%	0.46%	1.01%	0.95%	0.96%	1.57%	1.47%	1.49%
2028	0.94%	0.90%	0.91%	1.46%	1.39%	1.40%	2.02%	1.91%	1.94%
2029	0.01%	-0.01%	-0.01%	0.52%	0.47%	0.48%	1.08%	0.99%	1.01%
2030	0.46%	0.44%	0.44%	0.97%	0.91%	0.93%	1.53%	1.43%	1.45%
2031	0.46%	0.43%	0.44%	0.96%	0.91%	0.92%	1.51%	1.42%	1.44%
2032	0.91%	0.88%	0.89%	1.41%	1.35%	1.36%	1.96%	1.86%	1.88%
2033	-0.01%	-0.03%	-0.03%	0.48%	0.44%	0.45%	1.02%	0.95%	0.97%
2034	0.44%	0.42%	0.42%	0.93%	0.88%	0.89%	1.47%	1.39%	1.41%

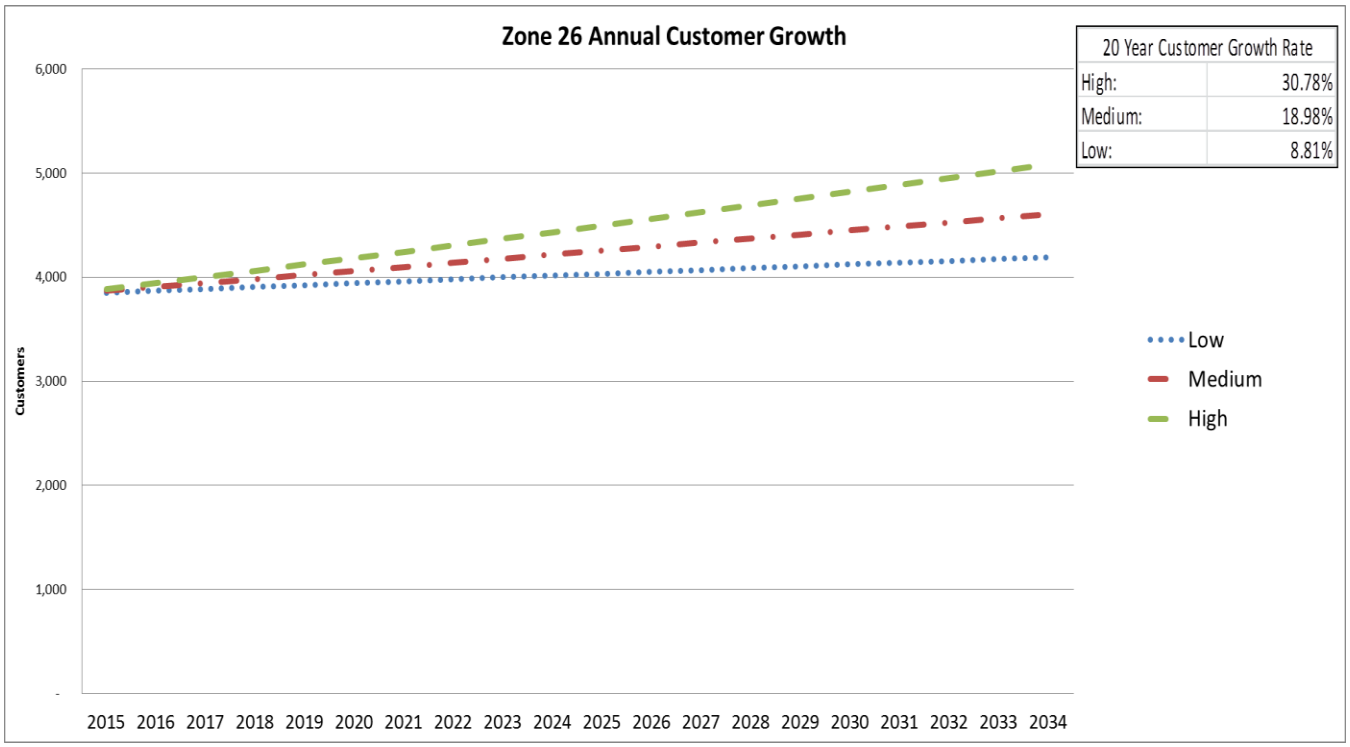
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,654	1,197	3,851	2,667	1,202	3,870	2,681	1,208	3,889
2016	2,667	1,202	3,870	2,694	1,213	3,908	2,722	1,224	3,946
2017	2,681	1,208	3,888	2,721	1,224	3,946	2,763	1,241	4,004
2018	2,694	1,213	3,907	2,749	1,236	3,984	2,805	1,258	4,064
2019	2,707	1,219	3,926	2,776	1,247	4,023	2,848	1,276	4,124
2020	2,720	1,224	3,944	2,804	1,258	4,062	2,891	1,293	4,184
2021	2,733	1,229	3,963	2,831	1,269	4,101	2,935	1,311	4,246
2022	2,746	1,235	3,981	2,859	1,281	4,139	2,979	1,329	4,308
2023	2,759	1,240	3,999	2,887	1,292	4,178	3,023	1,347	4,370
2024	2,772	1,245	4,017	2,914	1,303	4,217	3,068	1,365	4,434
2025	2,785	1,251	4,035	2,942	1,315	4,256	3,113	1,384	4,497
2026	2,797	1,256	4,053	2,969	1,326	4,295	3,159	1,402	4,561
2027	2,810	1,261	4,071	2,997	1,337	4,334	3,205	1,421	4,625
2028	2,822	1,266	4,088	3,025	1,348	4,373	3,251	1,440	4,690
2029	2,834	1,271	4,106	3,052	1,360	4,412	3,297	1,458	4,755
2030	2,847	1,276	4,123	3,079	1,371	4,450	3,343	1,477	4,820
2031	2,859	1,281	4,140	3,107	1,382	4,489	3,390	1,496	4,886
2032	2,871	1,286	4,157	3,134	1,393	4,527	3,437	1,515	4,952
2033	2,882	1,291	4,173	3,161	1,404	4,566	3,484	1,534	5,018
2034	2,894	1,296	4,190	3,189	1,416	4,604	3,532	1,554	5,085

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.45%	0.49%	1.01%	0.91%	0.98%	1.52%	1.38%	1.48%
2017	0.50%	0.45%	0.48%	1.01%	0.91%	0.98%	1.52%	1.38%	1.48%
2018	0.50%	0.45%	0.48%	1.00%	0.91%	0.97%	1.52%	1.38%	1.48%
2019	0.49%	0.45%	0.48%	1.00%	0.91%	0.97%	1.52%	1.38%	1.48%
2020	0.49%	0.44%	0.47%	0.99%	0.90%	0.96%	1.51%	1.38%	1.47%
2021	0.48%	0.44%	0.47%	0.98%	0.90%	0.96%	1.51%	1.37%	1.47%
2022	0.48%	0.43%	0.46%	0.98%	0.89%	0.95%	1.50%	1.37%	1.46%
2023	0.47%	0.43%	0.46%	0.97%	0.88%	0.94%	1.49%	1.36%	1.45%
2024	0.46%	0.43%	0.45%	0.96%	0.88%	0.93%	1.49%	1.36%	1.45%
2025	0.46%	0.42%	0.45%	0.95%	0.87%	0.92%	1.47%	1.34%	1.43%
2026	0.45%	0.42%	0.44%	0.94%	0.86%	0.92%	1.46%	1.34%	1.42%
2027	0.45%	0.41%	0.44%	0.93%	0.85%	0.91%	1.45%	1.33%	1.41%
2028	0.44%	0.41%	0.43%	0.92%	0.84%	0.90%	1.44%	1.32%	1.40%
2029	0.43%	0.40%	0.42%	0.91%	0.83%	0.88%	1.42%	1.30%	1.38%
2030	0.43%	0.39%	0.42%	0.90%	0.82%	0.87%	1.41%	1.29%	1.37%
2031	0.42%	0.39%	0.41%	0.89%	0.82%	0.87%	1.40%	1.28%	1.36%
2032	0.42%	0.39%	0.41%	0.88%	0.81%	0.86%	1.39%	1.27%	1.35%
2033	0.41%	0.38%	0.40%	0.87%	0.80%	0.85%	1.37%	1.26%	1.34%
2034	0.41%	0.38%	0.40%	0.86%	0.79%	0.84%	1.36%	1.25%	1.33%


Zone 26 Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.81%
Medium: 20.20%
Low: 9.36%
Low
Medium
High


Zone 26 Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.78%
Medium: 18.98%
Low: 8.81%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 30-S

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	27,831,131	11,293,777	39,124,909	28,024,937	11,293,777	39,318,714	28,218,742	11,293,777	39,512,520
2016	28,199,334	11,293,777	39,493,111	28,590,688	11,293,777	39,884,465	28,984,063	11,293,777	40,277,841
2017	28,218,695	11,293,777	39,512,473	28,806,102	11,293,777	40,099,879	29,399,577	11,293,777	40,693,354
2018	28,412,614	11,293,777	39,706,391	29,199,978	11,293,777	40,493,755	29,999,545	11,293,777	41,293,322
2019	28,606,412	11,293,777	39,900,190	29,595,621	11,293,777	40,889,398	30,605,270	11,293,777	41,899,048
2020	28,976,998	11,293,777	40,270,775	30,174,255	11,293,777	41,468,032	31,402,411	11,293,777	42,696,189
2021	28,991,944	11,293,777	40,285,721	30,388,683	11,293,777	41,682,461	31,828,655	11,293,777	43,122,433
2022	29,183,581	11,293,777	40,477,358	30,785,860	11,293,777	42,079,637	32,445,934	11,293,777	43,739,712
2023	29,374,004	11,293,777	40,667,781	31,182,478	11,293,777	42,476,255	33,065,391	11,293,777	44,359,169
2024	29,745,168	11,293,777	41,038,945	31,770,198	11,293,777	43,063,975	33,888,864	11,293,777	45,182,641
2025	29,751,888	11,293,777	41,045,665	31,975,320	11,293,777	43,269,097	34,312,755	11,293,777	45,606,532
2026	29,939,073	11,293,777	41,232,851	32,370,901	11,293,777	43,664,678	34,939,607	11,293,777	46,233,385
2027	30,124,767	11,293,777	41,418,544	32,765,200	11,293,777	44,058,978	35,567,403	11,293,777	46,861,180
2028	30,493,551	11,293,777	41,787,328	33,355,457	11,293,777	44,649,234	36,406,853	11,293,777	47,700,630
2029	30,491,235	11,293,777	41,785,012	33,548,827	11,293,777	44,842,604	36,823,836	11,293,777	48,117,614
2030	30,671,865	11,293,777	41,965,643	33,937,752	11,293,777	45,231,529	37,451,735	11,293,777	48,745,512
2031	30,851,798	11,293,777	42,145,575	34,326,918	11,293,777	45,620,696	38,082,849	11,293,777	49,376,626
2032	31,217,919	11,293,777	42,511,697	34,918,564	11,293,777	46,212,341	38,936,016	11,293,777	50,229,794
2033	31,207,531	11,293,777	42,501,309	35,101,483	11,293,777	46,395,260	39,347,394	11,293,777	50,641,172
2034	31,383,811	11,293,777	42,677,588	35,487,843	11,293,777	46,781,620	39,982,319	11,293,777	51,276,097

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	0.00%	0.94%	2.02%	0.00%	1.44%	2.71%	0.00%	1.94%
2017	0.07%	0.00%	0.05%	0.75%	0.00%	0.54%	1.43%	0.00%	1.03%
2018	0.69%	0.00%	0.49%	1.37%	0.00%	0.98%	2.04%	0.00%	1.47%
2019	0.68%	0.00%	0.49%	1.35%	0.00%	0.98%	2.02%	0.00%	1.47%
2020	1.30%	0.00%	0.93%	1.96%	0.00%	1.42%	2.60%	0.00%	1.90%
2021	0.05%	0.00%	0.04%	0.71%	0.00%	0.52%	1.36%	0.00%	1.00%
2022	0.66%	0.00%	0.48%	1.31%	0.00%	0.95%	1.94%	0.00%	1.43%
2023	0.65%	0.00%	0.47%	1.29%	0.00%	0.94%	1.91%	0.00%	1.42%
2024	1.26%	0.00%	0.91%	1.88%	0.00%	1.38%	2.49%	0.00%	1.86%
2025	0.02%	0.00%	0.02%	0.65%	0.00%	0.48%	1.25%	0.00%	0.94%
2026	0.63%	0.00%	0.46%	1.24%	0.00%	0.91%	1.83%	0.00%	1.37%
2027	0.62%	0.00%	0.45%	1.22%	0.00%	0.90%	1.80%	0.00%	1.36%
2028	1.22%	0.00%	0.89%	1.80%	0.00%	1.34%	2.36%	0.00%	1.79%
2029	-0.01%	0.00%	-0.01%	0.58%	0.00%	0.43%	1.15%	0.00%	0.87%
2030	0.59%	0.00%	0.43%	1.16%	0.00%	0.87%	1.71%	0.00%	1.30%
2031	0.59%	0.00%	0.43%	1.15%	0.00%	0.86%	1.69%	0.00%	1.29%
2032	1.19%	0.00%	0.87%	1.72%	0.00%	1.30%	2.24%	0.00%	1.73%
2033	-0.03%	0.00%	-0.02%	0.52%	0.00%	0.40%	1.06%	0.00%	0.82%
2034	0.56%	0.00%	0.41%	1.10%	0.00%	0.83%	1.61%	0.00%	1.25%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	30,942	349,676	380,618	30,942	351,572	382,514	30,942	353,469	384,411
2016	30,942	351,572	382,514	30,942	355,386	386,328	30,942	359,219	390,161
2017	30,942	353,469	384,411	30,942	359,218	390,160	30,942	365,026	395,968
2018	30,942	355,366	386,308	30,942	363,073	394,015	30,942	370,899	401,840
2019	30,942	357,263	388,205	30,942	366,945	397,887	30,942	376,827	407,769
2020	30,942	359,149	390,091	30,942	370,816	401,757	30,942	382,784	413,726
2021	30,942	361,036	391,978	30,942	374,707	405,649	30,942	388,802	419,744
2022	30,942	362,912	393,853	30,942	378,594	409,536	30,942	394,844	425,786
2023	30,942	364,775	395,717	30,942	382,476	413,418	30,942	400,908	431,850
2024	30,942	366,634	397,576	30,942	386,367	417,309	30,942	407,015	437,957
2025	30,942	368,474	399,415	30,942	390,237	421,179	30,942	413,119	444,061
2026	30,942	370,306	401,247	30,942	394,109	425,051	30,942	419,256	450,198
2027	30,942	372,123	403,065	30,942	397,969	428,911	30,942	425,403	456,345
2028	30,942	373,926	404,868	30,942	401,817	432,758	30,942	431,559	462,501
2029	30,942	375,710	406,652	30,942	405,641	436,583	30,942	437,706	468,648
2030	30,942	377,478	408,420	30,942	409,449	440,390	30,942	443,855	474,796
2031	30,942	379,240	410,181	30,942	413,259	444,201	30,942	450,035	480,977
2032	30,942	380,985	411,927	30,942	417,053	447,995	30,942	456,217	487,158
2033	30,942	382,722	413,664	30,942	420,843	451,785	30,942	462,419	493,361
2034	30,942	384,447	415,389	30,942	424,626	455,568	30,942	468,638	499,580

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.54%	0.50%	0.00%	1.08%	1.00%	0.00%	1.63%	1.50%
2017	0.00%	0.54%	0.50%	0.00%	1.08%	0.99%	0.00%	1.62%	1.49%
2018	0.00%	0.54%	0.49%	0.00%	1.07%	0.99%	0.00%	1.61%	1.48%
2019	0.00%	0.53%	0.49%	0.00%	1.07%	0.98%	0.00%	1.60%	1.48%
2020	0.00%	0.53%	0.49%	0.00%	1.05%	0.97%	0.00%	1.58%	1.46%
2021	0.00%	0.53%	0.48%	0.00%	1.05%	0.97%	0.00%	1.57%	1.45%
2022	0.00%	0.52%	0.48%	0.00%	1.04%	0.96%	0.00%	1.55%	1.44%
2023	0.00%	0.51%	0.47%	0.00%	1.03%	0.95%	0.00%	1.54%	1.42%
2024	0.00%	0.51%	0.47%	0.00%	1.02%	0.94%	0.00%	1.52%	1.41%
2025	0.00%	0.50%	0.46%	0.00%	1.00%	0.93%	0.00%	1.50%	1.39%
2026	0.00%	0.50%	0.46%	0.00%	0.99%	0.92%	0.00%	1.49%	1.38%
2027	0.00%	0.49%	0.45%	0.00%	0.98%	0.91%	0.00%	1.47%	1.37%
2028	0.00%	0.48%	0.45%	0.00%	0.97%	0.90%	0.00%	1.45%	1.35%
2029	0.00%	0.48%	0.44%	0.00%	0.95%	0.88%	0.00%	1.42%	1.33%
2030	0.00%	0.47%	0.43%	0.00%	0.94%	0.87%	0.00%	1.40%	1.31%
2031	0.00%	0.47%	0.43%	0.00%	0.93%	0.87%	0.00%	1.39%	1.30%
2032	0.00%	0.46%	0.43%	0.00%	0.92%	0.85%	0.00%	1.37%	1.29%
2033	0.00%	0.46%	0.42%	0.00%	0.91%	0.85%	0.00%	1.36%	1.27%
2034	0.00%	0.45%	0.42%	0.00%	0.90%	0.84%	0.00%	1.34%	1.26%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	22,631,918	16,492,991	39,124,909	22,747,125	16,571,590	39,318,714	22,862,332	16,650,188	39,512,520
2016	22,850,854	16,642,257	39,493,111	23,083,517	16,800,948	39,884,465	23,317,399	16,960,442	40,277,841
2017	22,862,267	16,650,206	39,512,473	23,211,459	16,888,420	40,099,879	23,564,307	17,129,047	40,693,354
2018	22,977,507	16,728,884	39,706,391	23,445,576	17,048,179	40,493,755	23,920,996	17,372,327	41,293,322
2019	23,092,665	16,807,525	39,900,190	23,680,737	17,208,661	40,889,398	24,281,121	17,617,926	41,899,048
2020	23,313,056	16,957,719	40,270,775	24,024,930	17,443,102	41,468,032	24,755,418	17,940,771	42,696,189
2021	23,321,774	16,963,947	40,285,721	24,152,205	17,530,256	41,682,461	25,008,676	18,113,757	43,122,433
2022	23,435,659	17,041,699	40,477,358	24,388,347	17,691,290	42,079,637	25,375,849	18,363,863	43,739,712
2023	23,548,835	17,118,946	40,667,781	24,624,198	17,852,057	42,476,255	25,744,401	18,614,768	44,359,169
2024	23,769,630	17,269,316	41,038,945	24,973,976	18,089,999	43,063,975	26,234,735	18,947,906	45,182,641
2025	23,773,449	17,272,216	41,045,665	25,095,756	18,173,342	43,269,097	26,486,740	19,119,792	45,606,532
2026	23,884,719	17,348,131	41,232,851	25,331,071	18,333,607	43,664,678	26,859,885	19,373,500	46,233,385
2027	23,995,126	17,423,418	41,418,544	25,565,686	18,493,292	44,058,978	27,233,709	19,627,471	46,861,180
2028	24,214,615	17,572,714	41,787,328	25,917,257	18,731,977	44,649,234	27,734,082	19,966,548	47,700,630
2029	24,213,062	17,571,950	41,785,012	26,032,097	18,810,507	44,842,604	27,982,138	20,135,476	48,117,614
2030	24,320,511	17,645,131	41,965,643	26,263,664	18,967,865	45,231,529	28,356,319	20,389,193	48,745,512
2031	24,427,541	17,718,034	42,145,575	26,495,378	19,125,318	45,620,696	28,732,441	20,644,185	49,376,626
2032	24,645,548	17,866,148	42,511,697	26,848,045	19,364,296	46,212,341	29,241,493	20,988,301	50,229,794
2033	24,639,192	17,862,117	42,501,309	26,956,704	19,438,556	46,395,260	29,486,347	21,154,825	50,641,172
2034	24,744,081	17,933,507	42,677,588	27,186,853	19,594,767	46,781,620	29,864,966	21,411,131	51,276,097

Annual Change

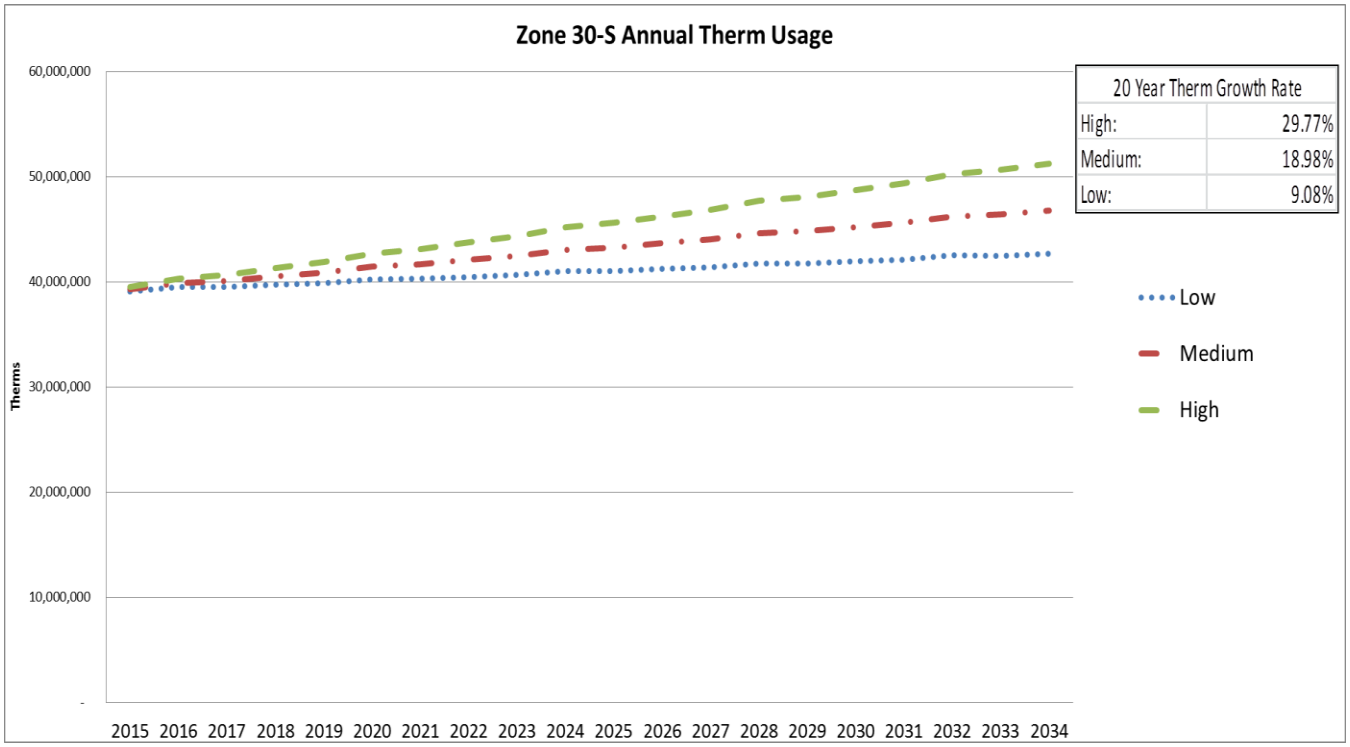
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.97%	0.91%	0.94%	1.48%	1.38%	1.44%	1.99%	1.86%	1.94%
2017	0.05%	0.05%	0.05%	0.55%	0.52%	0.54%	1.06%	0.99%	1.03%
2018	0.50%	0.47%	0.49%	1.01%	0.95%	0.98%	1.51%	1.42%	1.47%
2019	0.50%	0.47%	0.49%	1.00%	0.94%	0.98%	1.51%	1.41%	1.47%
2020	0.95%	0.89%	0.93%	1.45%	1.36%	1.42%	1.95%	1.83%	1.90%
2021	0.04%	0.04%	0.04%	0.53%	0.50%	0.52%	1.02%	0.96%	1.00%
2022	0.49%	0.46%	0.48%	0.98%	0.92%	0.95%	1.47%	1.38%	1.43%
2023	0.48%	0.45%	0.47%	0.97%	0.91%	0.94%	1.45%	1.37%	1.42%
2024	0.94%	0.88%	0.91%	1.42%	1.33%	1.38%	1.90%	1.79%	1.86%
2025	0.02%	0.02%	0.02%	0.49%	0.46%	0.48%	0.96%	0.91%	0.94%
2026	0.47%	0.44%	0.46%	0.94%	0.88%	0.91%	1.41%	1.33%	1.37%
2027	0.46%	0.43%	0.45%	0.93%	0.87%	0.90%	1.39%	1.31%	1.36%
2028	0.91%	0.86%	0.89%	1.38%	1.29%	1.34%	1.84%	1.73%	1.79%
2029	-0.01%	0.00%	-0.01%	0.44%	0.42%	0.43%	0.89%	0.85%	0.87%
2030	0.44%	0.42%	0.43%	0.89%	0.84%	0.87%	1.34%	1.26%	1.30%
2031	0.44%	0.41%	0.43%	0.88%	0.83%	0.86%	1.33%	1.25%	1.29%
2032	0.89%	0.84%	0.87%	1.33%	1.25%	1.30%	1.77%	1.67%	1.73%
2033	-0.03%	-0.02%	-0.02%	0.40%	0.38%	0.40%	0.84%	0.79%	0.82%
2034	0.43%	0.40%	0.41%	0.85%	0.80%	0.83%	1.28%	1.21%	1.25%

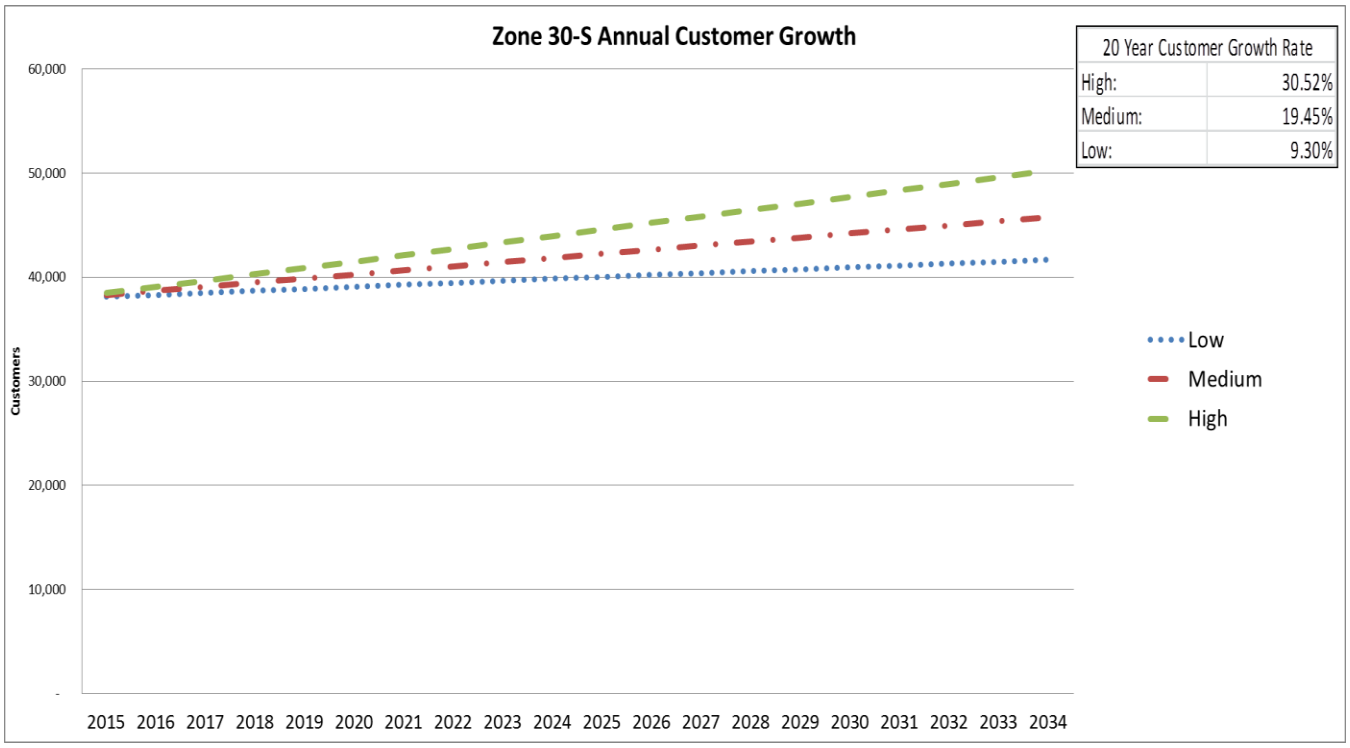
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	34,410	3,715	38,125	34,585	3,733	38,318	34,761	3,751	38,512
2016	34,585	3,733	38,318	34,938	3,769	38,707	35,293	3,805	39,098
2017	34,761	3,751	38,511	35,293	3,805	39,098	35,831	3,859	39,690
2018	34,936	3,768	38,705	35,650	3,841	39,491	36,374	3,914	40,289
2019	35,112	3,786	38,898	36,008	3,877	39,885	36,923	3,970	40,893
2020	35,287	3,804	39,091	36,367	3,913	40,280	37,475	4,026	41,500
2021	35,461	3,822	39,283	36,727	3,950	40,677	38,032	4,082	42,114
2022	35,635	3,839	39,474	37,087	3,986	41,073	38,592	4,139	42,730
2023	35,807	3,857	39,664	37,446	4,023	41,469	39,154	4,195	43,349
2024	35,979	3,874	39,853	37,807	4,059	41,866	39,720	4,253	43,972
2025	36,150	3,891	40,041	38,165	4,095	42,260	40,285	4,310	44,595
2026	36,319	3,909	40,228	38,524	4,132	42,655	40,854	4,367	45,221
2027	36,487	3,926	40,413	38,881	4,168	43,049	41,424	4,425	45,848
2028	36,654	3,943	40,597	39,238	4,204	43,442	41,995	4,482	46,477
2029	36,820	3,959	40,779	39,592	4,240	43,832	42,565	4,540	47,104
2030	36,983	3,976	40,959	39,945	4,275	44,221	43,135	4,597	47,732
2031	37,147	3,992	41,139	40,298	4,311	44,609	43,709	4,655	48,363
2032	37,308	4,009	41,317	40,650	4,346	44,997	44,282	4,713	48,995
2033	37,469	4,025	41,494	41,002	4,382	45,384	44,858	4,770	49,628
2034	37,629	4,041	41,670	41,353	4,417	45,770	45,435	4,829	50,264

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.51%	0.48%	0.51%	1.02%	0.96%	1.01%	1.53%	1.44%	1.52%
2017	0.51%	0.48%	0.50%	1.02%	0.95%	1.01%	1.52%	1.43%	1.51%
2018	0.51%	0.47%	0.50%	1.01%	0.95%	1.01%	1.52%	1.43%	1.51%
2019	0.50%	0.47%	0.50%	1.01%	0.95%	1.00%	1.51%	1.42%	1.50%
2020	0.50%	0.47%	0.49%	1.00%	0.94%	0.99%	1.49%	1.41%	1.49%
2021	0.49%	0.47%	0.49%	0.99%	0.93%	0.98%	1.49%	1.40%	1.48%
2022	0.49%	0.46%	0.49%	0.98%	0.92%	0.97%	1.47%	1.39%	1.46%
2023	0.48%	0.46%	0.48%	0.97%	0.91%	0.96%	1.46%	1.37%	1.45%
2024	0.48%	0.45%	0.48%	0.96%	0.91%	0.96%	1.45%	1.36%	1.44%
2025	0.47%	0.45%	0.47%	0.95%	0.89%	0.94%	1.42%	1.34%	1.42%
2026	0.47%	0.44%	0.47%	0.94%	0.89%	0.93%	1.41%	1.33%	1.40%
2027	0.46%	0.44%	0.46%	0.93%	0.87%	0.92%	1.39%	1.32%	1.39%
2028	0.46%	0.43%	0.45%	0.92%	0.86%	0.91%	1.38%	1.30%	1.37%
2029	0.45%	0.42%	0.45%	0.90%	0.85%	0.90%	1.36%	1.28%	1.35%
2030	0.44%	0.42%	0.44%	0.89%	0.84%	0.89%	1.34%	1.27%	1.33%
2031	0.44%	0.42%	0.44%	0.88%	0.83%	0.88%	1.33%	1.26%	1.32%
2032	0.44%	0.41%	0.43%	0.87%	0.82%	0.87%	1.31%	1.24%	1.31%
2033	0.43%	0.41%	0.43%	0.86%	0.82%	0.86%	1.30%	1.23%	1.29%
2034	0.43%	0.40%	0.42%	0.86%	0.81%	0.85%	1.29%	1.22%	1.28%


Zone 30-S Annual Therm Usage
Therms
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 29.77%
Medium: 18.98%
Low: 9.08%
Low
Medium
High


Zone 30-S Annual Customer Growth
Customers
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.52%
Medium: 19.45%
Low: 9.30%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone 30-W

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	68,397,741	21,225,799	89,623,539	69,153,837	21,225,799	90,379,636	69,909,934	21,225,799	91,135,733
2016	69,554,491	21,225,799	90,780,290	71,083,267	21,225,799	92,309,065	72,625,032	21,225,799	93,850,830
2017	69,900,761	21,225,799	91,126,560	72,198,517	21,225,799	93,424,315	74,535,243	21,225,799	95,761,042
2018	70,648,551	21,225,799	91,874,350	73,732,455	21,225,799	94,958,254	76,894,680	21,225,799	98,120,479
2019	71,393,005	21,225,799	92,618,803	75,272,181	21,225,799	96,497,980	79,282,463	21,225,799	100,508,262
2020	72,549,880	21,225,799	93,775,679	77,252,715	21,225,799	98,478,513	82,153,770	21,225,799	103,379,568
2021	72,869,820	21,225,799	94,095,618	78,363,929	21,225,799	99,589,728	84,135,326	21,225,799	105,361,125
2022	73,601,934	21,225,799	94,827,732	79,915,018	21,225,799	101,140,816	86,598,922	21,225,799	107,824,721
2023	74,328,553	21,225,799	95,554,352	81,466,529	21,225,799	102,692,328	89,082,383	21,225,799	110,308,181
2024	75,481,932	21,225,799	96,707,730	83,488,451	21,225,799	104,714,249	92,096,418	21,225,799	113,322,217
2025	75,767,962	21,225,799	96,993,761	84,575,475	21,225,799	105,801,273	94,115,927	21,225,799	115,341,726
2026	76,480,141	21,225,799	97,705,940	86,131,121	21,225,799	107,356,919	96,662,942	21,225,799	117,888,741
2027	77,186,491	21,225,799	98,412,289	87,685,442	21,225,799	108,911,240	99,226,512	21,225,799	120,452,311
2028	78,330,153	21,225,799	99,555,951	89,732,380	21,225,799	110,958,179	102,356,797	21,225,799	123,582,595
2029	78,581,224	21,225,799	99,807,022	90,787,909	21,225,799	112,013,707	104,398,889	21,225,799	125,624,688
2030	79,269,331	21,225,799	100,495,129	92,334,865	21,225,799	113,560,664	107,005,296	21,225,799	128,231,095
2031	79,953,630	21,225,799	101,179,429	93,883,934	21,225,799	115,109,732	109,633,290	21,225,799	130,859,088
2032	81,087,131	21,225,799	102,312,930	95,951,389	21,225,799	117,177,188	112,870,869	21,225,799	134,096,667
2033	81,306,395	21,225,799	102,532,194	96,977,577	21,225,799	118,203,376	114,935,249	21,225,799	136,161,047
2034	81,976,056	21,225,799	103,201,854	98,524,423	21,225,799	119,750,222	117,612,800	21,225,799	138,838,599

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.69%	0.00%	1.29%	2.79%	0.00%	2.13%	3.88%	0.00%	2.98%
2017	0.50%	0.00%	0.38%	1.57%	0.00%	1.21%	2.63%	0.00%	2.04%
2018	1.07%	0.00%	0.82%	2.12%	0.00%	1.64%	3.17%	0.00%	2.46%
2019	1.05%	0.00%	0.81%	2.09%	0.00%	1.62%	3.11%	0.00%	2.43%
2020	1.62%	0.00%	1.25%	2.63%	0.00%	2.05%	3.62%	0.00%	2.86%
2021	0.44%	0.00%	0.34%	1.44%	0.00%	1.13%	2.41%	0.00%	1.92%
2022	1.00%	0.00%	0.78%	1.98%	0.00%	1.56%	2.93%	0.00%	2.34%
2023	0.99%	0.00%	0.77%	1.94%	0.00%	1.53%	2.87%	0.00%	2.30%
2024	1.55%	0.00%	1.21%	2.48%	0.00%	1.97%	3.38%	0.00%	2.73%
2025	0.38%	0.00%	0.30%	1.30%	0.00%	1.04%	2.19%	0.00%	1.78%
2026	0.94%	0.00%	0.73%	1.84%	0.00%	1.47%	2.71%	0.00%	2.21%
2027	0.92%	0.00%	0.72%	1.80%	0.00%	1.45%	2.65%	0.00%	2.17%
2028	1.48%	0.00%	1.16%	2.33%	0.00%	1.88%	3.15%	0.00%	2.60%
2029	0.32%	0.00%	0.25%	1.18%	0.00%	0.95%	2.00%	0.00%	1.65%
2030	0.88%	0.00%	0.69%	1.70%	0.00%	1.38%	2.50%	0.00%	2.07%
2031	0.86%	0.00%	0.68%	1.68%	0.00%	1.36%	2.46%	0.00%	2.05%
2032	1.42%	0.00%	1.12%	2.20%	0.00%	1.80%	2.95%	0.00%	2.47%
2033	0.27%	0.00%	0.21%	1.07%	0.00%	0.88%	1.83%	0.00%	1.54%
2034	0.82%	0.00%	0.65%	1.60%	0.00%	1.31%	2.33%	0.00%	1.97%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	58,153	954,851	1,013,004	58,153	963,399	1,021,551	58,153	971,946	1,030,099
2016	58,153	963,363	1,021,516	58,153	980,568	1,038,721	58,153	997,920	1,056,073
2017	58,153	971,842	1,029,995	58,153	997,817	1,055,970	58,153	1,024,233	1,082,386
2018	58,153	980,295	1,038,448	58,153	1,015,158	1,073,310	58,153	1,050,905	1,109,058
2019	58,153	988,711	1,046,864	58,153	1,032,563	1,090,716	58,153	1,077,898	1,136,051
2020	58,153	997,073	1,055,226	58,153	1,050,000	1,108,153	58,153	1,105,159	1,163,312
2021	58,153	1,005,405	1,063,558	58,153	1,067,514	1,125,667	58,153	1,132,758	1,190,911
2022	58,153	1,013,682	1,071,834	58,153	1,085,048	1,143,201	58,153	1,160,608	1,218,761
2023	58,153	1,021,895	1,080,048	58,153	1,102,587	1,160,740	58,153	1,188,683	1,246,836
2024	58,153	1,030,071	1,088,224	58,153	1,120,179	1,178,332	58,153	1,217,058	1,275,210
2025	58,153	1,038,167	1,096,320	58,153	1,137,732	1,195,885	58,153	1,245,586	1,303,738
2026	58,153	1,046,218	1,104,370	58,153	1,155,318	1,213,471	58,153	1,274,379	1,332,532
2027	58,153	1,054,202	1,112,355	58,153	1,172,889	1,231,042	58,153	1,303,360	1,361,513
2028	58,153	1,062,125	1,120,278	58,153	1,190,449	1,248,602	58,153	1,332,533	1,390,686
2029	58,153	1,069,969	1,128,121	58,153	1,207,961	1,266,114	58,153	1,361,833	1,419,985
2030	58,153	1,077,747	1,135,900	58,153	1,225,448	1,283,601	58,153	1,391,298	1,449,450
2031	58,153	1,085,483	1,143,635	58,153	1,242,960	1,301,113	58,153	1,421,007	1,479,160
2032	58,153	1,093,151	1,151,304	58,153	1,260,440	1,318,593	58,153	1,450,865	1,509,018
2033	58,153	1,100,774	1,158,927	58,153	1,277,932	1,336,085	58,153	1,480,945	1,539,098
2034	58,153	1,108,344	1,166,497	58,153	1,295,419	1,353,571	58,153	1,511,215	1,569,368

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.89%	0.84%	0.00%	1.78%	1.68%	0.00%	2.67%	2.52%
2017	0.00%	0.88%	0.83%	0.00%	1.76%	1.66%	0.00%	2.64%	2.49%
2018	0.00%	0.87%	0.82%	0.00%	1.74%	1.64%	0.00%	2.60%	2.46%
2019	0.00%	0.86%	0.81%	0.00%	1.71%	1.62%	0.00%	2.57%	2.43%
2020	0.00%	0.85%	0.80%	0.00%	1.69%	1.60%	0.00%	2.53%	2.40%
2021	0.00%	0.84%	0.79%	0.00%	1.67%	1.58%	0.00%	2.50%	2.37%
2022	0.00%	0.82%	0.78%	0.00%	1.64%	1.56%	0.00%	2.46%	2.34%
2023	0.00%	0.81%	0.77%	0.00%	1.62%	1.53%	0.00%	2.42%	2.30%
2024	0.00%	0.80%	0.76%	0.00%	1.60%	1.52%	0.00%	2.39%	2.28%
2025	0.00%	0.79%	0.74%	0.00%	1.57%	1.49%	0.00%	2.34%	2.24%
2026	0.00%	0.78%	0.73%	0.00%	1.55%	1.47%	0.00%	2.31%	2.21%
2027	0.00%	0.76%	0.72%	0.00%	1.52%	1.45%	0.00%	2.27%	2.17%
2028	0.00%	0.75%	0.71%	0.00%	1.50%	1.43%	0.00%	2.24%	2.14%
2029	0.00%	0.74%	0.70%	0.00%	1.47%	1.40%	0.00%	2.20%	2.11%
2030	0.00%	0.73%	0.69%	0.00%	1.45%	1.38%	0.00%	2.16%	2.08%
2031	0.00%	0.72%	0.68%	0.00%	1.43%	1.36%	0.00%	2.14%	2.05%
2032	0.00%	0.71%	0.67%	0.00%	1.41%	1.34%	0.00%	2.10%	2.02%
2033	0.00%	0.70%	0.66%	0.00%	1.39%	1.33%	0.00%	2.07%	1.99%
2034	0.00%	0.69%	0.65%	0.00%	1.37%	1.31%	0.00%	2.04%	1.97%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	56,674,158	32,949,381	89,623,539	57,154,888	33,224,748	90,379,636	57,635,619	33,500,114	91,135,733
2016	57,413,161	33,367,129	90,780,290	58,385,268	33,923,797	92,309,065	59,365,677	34,485,154	93,850,830
2017	57,629,724	33,496,836	91,126,560	59,090,712	34,333,603	93,424,315	60,576,605	35,184,437	95,761,042
2018	58,105,107	33,769,243	91,874,350	60,065,989	34,892,265	94,958,254	62,076,922	36,043,557	98,120,479
2019	58,578,351	34,040,452	92,618,803	61,044,947	35,453,032	96,497,980	63,595,329	36,912,933	100,508,262
2020	59,317,518	34,458,161	93,775,679	62,308,154	36,170,359	98,478,513	65,425,476	37,954,092	103,379,568
2021	59,517,109	34,578,509	94,095,618	63,010,707	36,579,021	99,589,728	66,681,510	38,679,615	105,361,125
2022	59,982,469	34,845,263	94,827,732	63,996,920	37,143,897	101,140,816	68,248,349	39,576,372	107,824,721
2023	60,444,328	35,110,023	95,554,352	64,983,419	37,708,909	102,692,328	69,827,907	40,480,275	110,308,181
2024	61,181,375	35,526,355	96,707,730	66,273,304	38,440,945	104,714,249	71,749,636	41,572,581	113,322,217
2025	61,359,223	35,634,537	96,993,761	66,960,216	38,841,058	105,801,273	73,029,615	42,312,111	115,341,726
2026	61,811,873	35,894,067	97,705,940	67,949,379	39,407,540	107,356,919	74,649,817	43,238,924	117,888,741
2027	62,260,816	36,151,474	98,412,289	68,937,727	39,973,514	108,911,240	76,280,647	44,171,664	120,452,311
2028	62,991,816	36,564,135	99,555,951	70,243,935	40,714,243	110,958,179	78,277,216	45,305,379	123,582,595
2029	63,147,266	36,659,756	99,807,022	70,910,557	41,103,150	112,013,707	79,571,338	46,053,350	125,624,688
2030	63,584,601	36,910,528	100,495,129	71,894,285	41,666,379	113,560,664	81,229,676	47,001,419	128,231,095
2031	64,019,508	37,159,920	101,179,429	72,879,367	42,230,365	115,109,732	82,901,816	47,957,272	130,859,088
2032	64,744,179	37,568,750	102,312,930	74,199,030	42,978,157	117,177,188	84,967,534	49,129,133	134,096,667
2033	64,879,244	37,652,950	102,532,194	74,846,724	43,356,652	118,203,376	86,275,574	49,885,473	136,161,047
2034	65,304,830	37,897,025	103,201,854	75,830,437	43,919,785	119,750,222	87,979,464	50,859,135	138,838,599

Annual Change

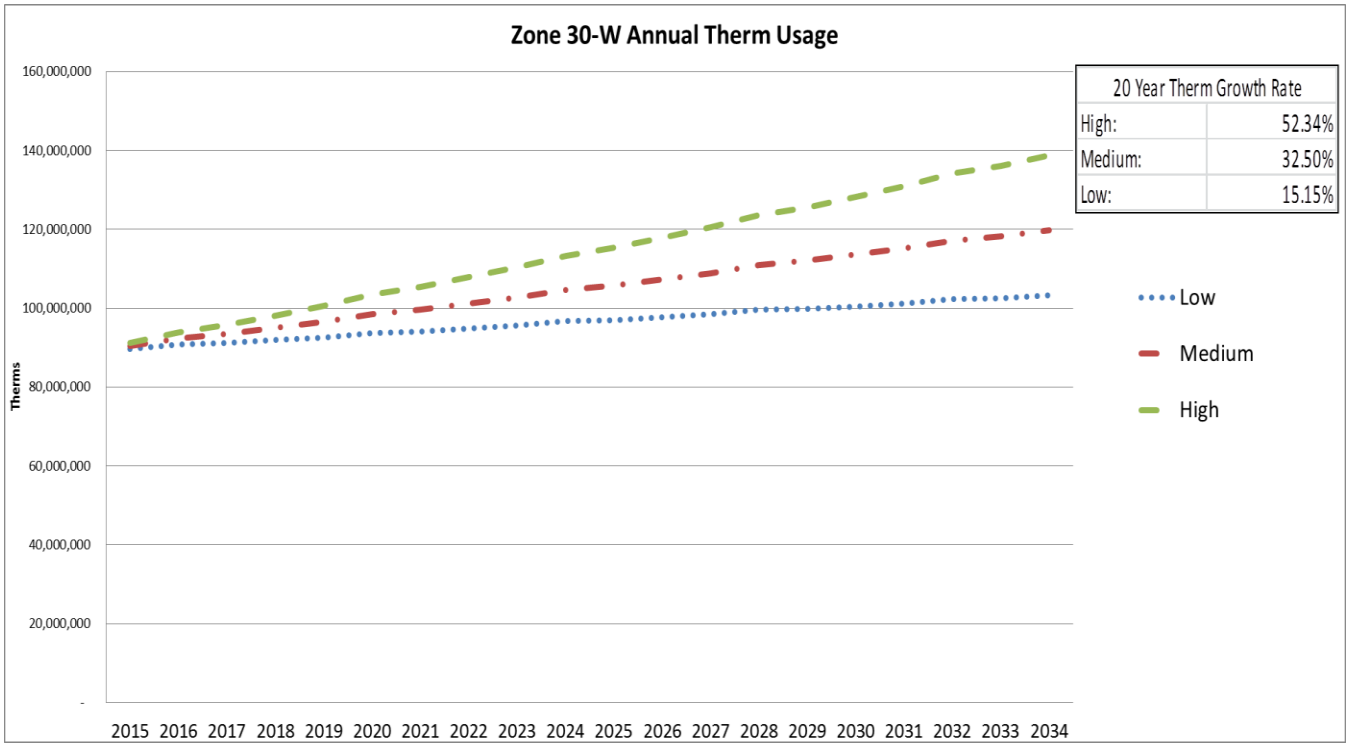
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.30%	1.27%	1.29%	2.15%	2.10%	2.13%	3.00%	2.94%	2.98%
2017	0.38%	0.39%	0.38%	1.21%	1.21%	1.21%	2.04%	2.03%	2.04%
2018	0.82%	0.81%	0.82%	1.65%	1.63%	1.64%	2.48%	2.44%	2.46%
2019	0.81%	0.80%	0.81%	1.63%	1.61%	1.62%	2.45%	2.41%	2.43%
2020	1.26%	1.23%	1.25%	2.07%	2.02%	2.05%	2.88%	2.82%	2.86%
2021	0.34%	0.35%	0.34%	1.13%	1.13%	1.13%	1.92%	1.91%	1.92%
2022	0.78%	0.77%	0.78%	1.57%	1.54%	1.56%	2.35%	2.32%	2.34%
2023	0.77%	0.76%	0.77%	1.54%	1.52%	1.53%	2.31%	2.28%	2.30%
2024	1.22%	1.19%	1.21%	1.98%	1.94%	1.97%	2.75%	2.70%	2.73%
2025	0.29%	0.30%	0.30%	1.04%	1.04%	1.04%	1.78%	1.78%	1.78%
2026	0.74%	0.73%	0.73%	1.48%	1.46%	1.47%	2.22%	2.19%	2.21%
2027	0.73%	0.72%	0.72%	1.45%	1.44%	1.45%	2.18%	2.16%	2.17%
2028	1.17%	1.14%	1.16%	1.89%	1.85%	1.88%	2.62%	2.57%	2.60%
2029	0.25%	0.26%	0.25%	0.95%	0.96%	0.95%	1.65%	1.65%	1.65%
2030	0.69%	0.68%	0.69%	1.39%	1.37%	1.38%	2.08%	2.06%	2.07%
2031	0.68%	0.68%	0.68%	1.37%	1.35%	1.36%	2.06%	2.03%	2.05%
2032	1.13%	1.10%	1.12%	1.81%	1.77%	1.80%	2.49%	2.44%	2.47%
2033	0.21%	0.22%	0.21%	0.87%	0.88%	0.88%	1.54%	1.54%	1.54%
2034	0.66%	0.65%	0.65%	1.31%	1.30%	1.31%	1.97%	1.95%	1.97%

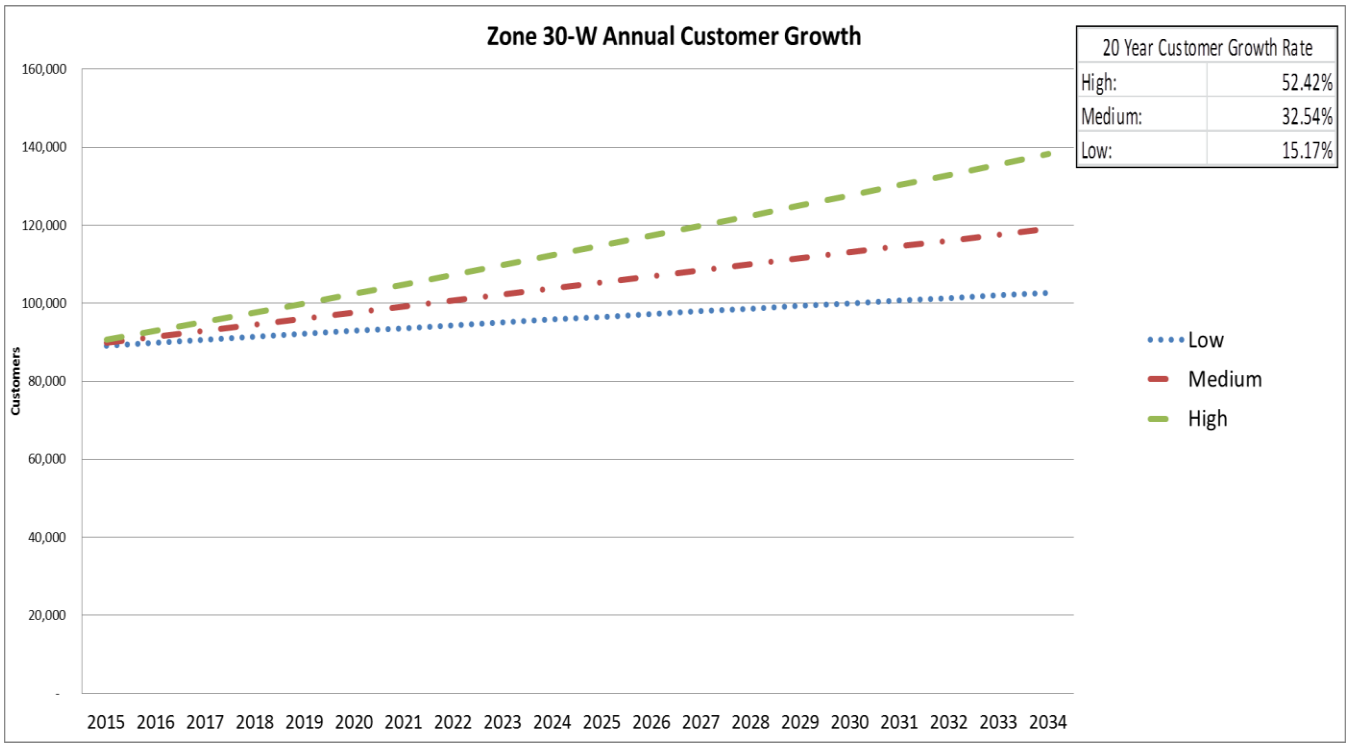
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	79,379	9,814	89,193	80,050	9,896	89,946	80,721	9,979	90,699
2016	80,047	9,896	89,943	81,398	10,062	91,460	82,760	10,229	92,989
2017	80,712	9,978	90,690	82,752	10,228	92,980	84,825	10,483	95,309
2018	81,376	10,059	91,435	84,113	10,396	94,509	86,920	10,741	97,660
2019	82,037	10,141	92,177	85,479	10,564	96,043	89,039	11,001	100,040
2020	82,693	10,221	92,914	86,848	10,732	97,580	91,179	11,264	102,443
2021	83,347	10,302	93,649	88,223	10,901	99,124	93,346	11,530	104,876
2022	83,997	10,382	94,378	89,600	11,070	100,670	95,532	11,799	107,331
2023	84,642	10,461	95,102	90,977	11,239	102,216	97,737	12,070	109,806
2024	85,283	10,540	95,823	92,358	11,409	103,767	99,965	12,343	112,308
2025	85,919	10,618	96,537	93,736	11,578	105,314	102,204	12,618	114,823
2026	86,551	10,696	97,246	95,116	11,748	106,864	104,465	12,896	117,361
2027	87,178	10,773	97,950	96,496	11,917	108,413	106,741	13,176	119,916
2028	87,799	10,849	98,648	97,874	12,087	109,961	109,032	13,457	122,488
2029	88,415	10,925	99,340	99,249	12,256	111,505	111,332	13,739	125,072
2030	89,026	11,000	100,026	100,622	12,425	113,047	113,646	14,024	127,670
2031	89,633	11,074	100,707	101,997	12,593	114,590	115,979	14,310	130,289
2032	90,235	11,148	101,383	103,369	12,762	116,131	118,323	14,598	132,921
2033	90,833	11,222	102,055	104,743	12,931	117,674	120,686	14,888	135,574
2034	91,427	11,295	102,723	106,116	13,099	119,215	123,063	15,180	138,242

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.84%	0.84%	0.84%	1.68%	1.67%	1.68%	2.53%	2.51%	2.52%
2017	0.83%	0.83%	0.83%	1.66%	1.65%	1.66%	2.50%	2.48%	2.49%
2018	0.82%	0.82%	0.82%	1.65%	1.64%	1.64%	2.47%	2.45%	2.47%
2019	0.81%	0.81%	0.81%	1.62%	1.62%	1.62%	2.44%	2.42%	2.44%
2020	0.80%	0.80%	0.80%	1.60%	1.59%	1.60%	2.40%	2.39%	2.40%
2021	0.79%	0.79%	0.79%	1.58%	1.57%	1.58%	2.38%	2.36%	2.38%
2022	0.78%	0.78%	0.78%	1.56%	1.55%	1.56%	2.34%	2.33%	2.34%
2023	0.77%	0.76%	0.77%	1.54%	1.53%	1.54%	2.31%	2.30%	2.31%
2024	0.76%	0.75%	0.76%	1.52%	1.51%	1.52%	2.28%	2.27%	2.28%
2025	0.75%	0.74%	0.74%	1.49%	1.48%	1.49%	2.24%	2.23%	2.24%
2026	0.74%	0.73%	0.74%	1.47%	1.47%	1.47%	2.21%	2.20%	2.21%
2027	0.72%	0.72%	0.72%	1.45%	1.44%	1.45%	2.18%	2.17%	2.18%
2028	0.71%	0.71%	0.71%	1.43%	1.42%	1.43%	2.15%	2.14%	2.14%
2029	0.70%	0.70%	0.70%	1.40%	1.40%	1.40%	2.11%	2.10%	2.11%
2030	0.69%	0.69%	0.69%	1.38%	1.38%	1.38%	2.08%	2.07%	2.08%
2031	0.68%	0.68%	0.68%	1.37%	1.36%	1.37%	2.05%	2.04%	2.05%
2032	0.67%	0.67%	0.67%	1.35%	1.34%	1.34%	2.02%	2.01%	2.02%
2033	0.66%	0.66%	0.66%	1.33%	1.32%	1.33%	2.00%	1.99%	2.00%
2034	0.65%	0.65%	0.65%	1.31%	1.30%	1.31%	1.97%	1.96%	1.97%


Zone 30-W Annual Therm Usage
Therms
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 52.34%
Medium: 32.50%
Low: 15.15%
Low
Medium
High


Zone 30-W Annual Customer Growth
Customers
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 52.42%
Medium: 32.54%
Low: 15.17%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone GTN

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	39,629,090	10,345,659	49,974,749	40,139,670	10,345,659	50,485,329	40,650,250	10,345,659	50,995,909
2016	40,359,771	10,345,659	50,705,430	41,391,944	10,345,659	51,737,603	42,435,355	10,345,659	52,781,014
2017	40,636,543	10,345,659	50,982,202	42,187,821	10,345,659	52,533,480	43,772,712	10,345,659	54,118,371
2018	41,134,263	10,345,659	51,479,922	43,215,910	10,345,659	53,561,569	45,364,896	10,345,659	55,710,555
2019	41,627,835	10,345,659	51,973,494	44,245,994	10,345,659	54,591,653	46,976,553	10,345,659	57,322,212
2020	42,349,964	10,345,659	52,695,623	45,523,500	10,345,659	55,869,159	48,866,502	10,345,659	59,212,161
2021	42,601,446	10,345,659	52,947,104	46,308,714	10,345,659	56,654,373	50,252,442	10,345,659	60,598,101
2022	43,081,593	10,345,659	53,427,251	47,340,983	10,345,659	57,686,642	51,915,809	10,345,659	62,261,468
2023	43,556,872	10,345,659	53,902,531	48,372,554	10,345,659	58,718,213	53,593,831	10,345,659	63,939,490
2024	44,270,364	10,345,659	54,616,022	49,671,186	10,345,659	60,016,845	55,581,297	10,345,659	65,926,956
2025	44,494,345	10,345,659	54,840,004	50,435,680	10,345,659	60,781,339	56,996,457	10,345,659	67,342,116
2026	44,956,284	10,345,659	55,301,943	51,466,140	10,345,659	61,811,799	58,718,958	10,345,659	69,064,616
2027	45,413,383	10,345,659	55,759,042	52,494,807	10,345,659	62,840,466	60,453,571	10,345,659	70,799,230
2028	46,116,182	10,345,659	56,461,841	53,806,236	10,345,659	64,151,894	62,523,344	10,345,659	72,869,003
2029	46,313,305	10,345,659	56,658,964	54,546,140	10,345,659	64,891,799	63,957,182	10,345,659	74,302,841
2030	46,756,101	10,345,659	57,101,760	55,568,192	10,345,659	65,913,851	65,724,700	10,345,659	76,070,359
2031	47,195,344	10,345,659	57,541,003	56,590,296	10,345,659	66,935,954	67,506,657	10,345,659	77,852,316
2032	47,888,125	10,345,659	58,233,783	57,912,291	10,345,659	68,257,950	69,652,752	10,345,659	79,998,410
2033	48,061,390	10,345,659	58,407,049	58,629,679	10,345,659	68,975,338	71,104,673	10,345,659	81,450,332
2034	48,488,823	10,345,659	58,834,482	59,647,958	10,345,659	69,993,617	72,922,098	10,345,659	83,267,757

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.84%	0.00%	1.46%	3.12%	0.00%	2.48%	4.39%	0.00%	3.50%
2017	0.69%	0.00%	0.55%	1.92%	0.00%	1.54%	3.15%	0.00%	2.53%
2018	1.22%	0.00%	0.98%	2.44%	0.00%	1.96%	3.64%	0.00%	2.94%
2019	1.20%	0.00%	0.96%	2.38%	0.00%	1.92%	3.55%	0.00%	2.89%
2020	1.73%	0.00%	1.39%	2.89%	0.00%	2.34%	4.02%	0.00%	3.30%
2021	0.59%	0.00%	0.48%	1.72%	0.00%	1.41%	2.84%	0.00%	2.34%
2022	1.13%	0.00%	0.91%	2.23%	0.00%	1.82%	3.31%	0.00%	2.74%
2023	1.10%	0.00%	0.89%	2.18%	0.00%	1.79%	3.23%	0.00%	2.70%
2024	1.64%	0.00%	1.32%	2.68%	0.00%	2.21%	3.71%	0.00%	3.11%
2025	0.51%	0.00%	0.41%	1.54%	0.00%	1.27%	2.55%	0.00%	2.15%
2026	1.04%	0.00%	0.84%	2.04%	0.00%	1.70%	3.02%	0.00%	2.56%
2027	1.02%	0.00%	0.83%	2.00%	0.00%	1.66%	2.95%	0.00%	2.51%
2028	1.55%	0.00%	1.26%	2.50%	0.00%	2.09%	3.42%	0.00%	2.92%
2029	0.43%	0.00%	0.35%	1.38%	0.00%	1.15%	2.29%	0.00%	1.97%
2030	0.96%	0.00%	0.78%	1.87%	0.00%	1.58%	2.76%	0.00%	2.38%
2031	0.94%	0.00%	0.77%	1.84%	0.00%	1.55%	2.71%	0.00%	2.34%
2032	1.47%	0.00%	1.20%	2.34%	0.00%	1.98%	3.18%	0.00%	2.76%
2033	0.36%	0.00%	0.30%	1.24%	0.00%	1.05%	2.08%	0.00%	1.81%
2034	0.89%	0.00%	0.73%	1.74%	0.00%	1.48%	2.56%	0.00%	2.23%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	28,344	584,217	612,561	28,344	590,417	618,761	28,344	596,617	624,961
2016	28,344	590,360	618,704	28,344	602,839	631,184	28,344	615,454	643,798
2017	28,344	596,453	624,797	28,344	615,292	643,636	28,344	634,538	662,882
2018	28,344	602,499	630,843	28,344	627,779	656,124	28,344	653,876	682,220
2019	28,344	608,495	636,839	28,344	640,292	668,636	28,344	673,451	701,796
2020	28,344	614,430	642,774	28,344	652,803	681,147	28,344	693,221	721,565
2021	28,344	620,324	648,669	28,344	665,351	693,695	28,344	713,243	741,587
2022	28,344	626,159	654,503	28,344	677,892	706,236	28,344	733,448	761,792
2023	28,344	631,934	660,279	28,344	690,425	718,769	28,344	753,831	782,175
2024	28,344	637,663	666,007	28,344	702,972	731,317	28,344	774,426	802,771
2025	28,344	643,328	671,672	28,344	715,492	743,837	28,344	795,164	823,509
2026	28,344	648,942	677,286	28,344	728,013	756,358	28,344	816,089	844,433
2027	28,344	654,498	682,842	28,344	740,512	768,857	28,344	837,160	865,504
2028	28,344	659,999	688,343	28,344	752,995	781,339	28,344	858,383	886,727
2029	28,344	665,437	693,781	28,344	765,439	793,783	28,344	879,720	908,064
2030	28,344	670,820	699,164	28,344	777,858	806,202	28,344	901,191	929,535
2031	28,344	676,159	704,504	28,344	790,279	818,623	28,344	922,837	951,181
2032	28,344	681,444	709,788	28,344	802,670	831,014	28,344	944,605	972,949
2033	28,344	686,688	715,032	28,344	815,061	843,406	28,344	966,544	994,888
2034	28,344	691,885	720,229	28,344	827,436	855,780	28,344	988,621	1,016,965

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.05%	1.00%	0.00%	2.10%	2.01%	0.00%	3.16%	3.01%
2017	0.00%	1.03%	0.98%	0.00%	2.07%	1.97%	0.00%	3.10%	2.96%
2018	0.00%	1.01%	0.97%	0.00%	2.03%	1.94%	0.00%	3.05%	2.92%
2019	0.00%	1.00%	0.95%	0.00%	1.99%	1.91%	0.00%	2.99%	2.87%
2020	0.00%	0.98%	0.93%	0.00%	1.95%	1.87%	0.00%	2.94%	2.82%
2021	0.00%	0.96%	0.92%	0.00%	1.92%	1.84%	0.00%	2.89%	2.77%
2022	0.00%	0.94%	0.90%	0.00%	1.88%	1.81%	0.00%	2.83%	2.72%
2023	0.00%	0.92%	0.88%	0.00%	1.85%	1.77%	0.00%	2.78%	2.68%
2024	0.00%	0.91%	0.87%	0.00%	1.82%	1.75%	0.00%	2.73%	2.63%
2025	0.00%	0.89%	0.85%	0.00%	1.78%	1.71%	0.00%	2.68%	2.58%
2026	0.00%	0.87%	0.84%	0.00%	1.75%	1.68%	0.00%	2.63%	2.54%
2027	0.00%	0.86%	0.82%	0.00%	1.72%	1.65%	0.00%	2.58%	2.50%
2028	0.00%	0.84%	0.81%	0.00%	1.69%	1.62%	0.00%	2.54%	2.45%
2029	0.00%	0.82%	0.79%	0.00%	1.65%	1.59%	0.00%	2.49%	2.41%
2030	0.00%	0.81%	0.78%	0.00%	1.62%	1.56%	0.00%	2.44%	2.36%
2031	0.00%	0.80%	0.76%	0.00%	1.60%	1.54%	0.00%	2.40%	2.33%
2032	0.00%	0.78%	0.75%	0.00%	1.57%	1.51%	0.00%	2.36%	2.29%
2033	0.00%	0.77%	0.74%	0.00%	1.54%	1.49%	0.00%	2.32%	2.25%
2034	0.00%	0.76%	0.73%	0.00%	1.52%	1.47%	0.00%	2.28%	2.22%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	29,254,809	20,719,940	49,974,749	29,567,843	20,917,486	50,485,329	29,880,877	21,115,032	50,995,909
2016	29,698,992	21,006,438	50,705,430	30,331,748	21,405,855	51,737,603	30,971,463	21,809,551	52,781,014
2017	29,871,945	21,110,257	50,982,202	30,822,696	21,710,784	52,533,480	31,794,257	22,324,114	54,118,371
2018	30,176,597	21,303,326	51,479,922	31,452,207	22,109,362	53,561,569	32,769,502	22,941,052	55,710,555
2019	30,478,568	21,494,926	51,973,494	32,082,723	22,508,931	54,591,653	33,756,451	23,565,761	57,322,212
2020	30,917,052	21,778,571	52,695,623	32,861,429	23,007,730	55,869,159	34,910,704	24,301,457	59,212,161
2021	31,073,873	21,873,231	52,947,104	33,344,790	23,309,583	56,654,373	35,762,049	24,836,052	60,598,101
2022	31,367,290	22,059,962	53,427,251	33,976,143	23,710,500	57,686,642	36,780,199	25,481,269	62,261,468
2023	31,657,656	22,244,874	53,902,531	34,606,979	24,111,234	58,718,213	37,807,282	26,132,208	63,939,490
2024	32,090,530	22,525,492	54,616,022	35,398,209	24,618,636	60,016,845	39,021,038	26,905,918	65,926,956
2025	32,230,088	22,609,917	54,840,004	35,868,199	24,913,140	60,781,339	39,889,564	27,452,551	67,342,116
2026	32,512,053	22,789,890	55,301,943	36,498,021	25,313,778	61,811,799	40,943,638	28,120,978	69,064,616
2027	32,791,001	22,968,041	55,759,042	37,126,676	25,713,790	62,840,466	42,005,105	28,794,125	70,799,230
2028	33,217,178	23,244,663	56,461,841	37,925,637	26,226,257	64,151,894	43,269,491	29,599,512	72,869,003
2029	33,339,991	23,318,973	56,658,964	38,380,087	26,511,711	64,891,799	44,148,985	30,153,856	74,302,841
2030	33,610,030	23,491,730	57,101,760	39,004,491	26,909,359	65,913,851	45,230,523	30,839,836	76,070,359
2031	33,877,845	23,663,158	57,541,003	39,628,860	27,307,095	66,935,954	46,320,873	31,531,442	77,852,316
2032	34,297,794	23,935,989	58,233,783	40,434,274	27,823,676	68,257,950	47,632,334	32,366,077	79,998,410
2033	34,405,732	24,001,317	58,407,049	40,874,474	28,100,864	68,975,338	48,522,410	32,927,922	81,450,332
2034	34,666,166	24,168,316	58,834,482	41,496,279	28,497,338	69,993,617	49,634,345	33,633,413	83,267,757

Annual Change

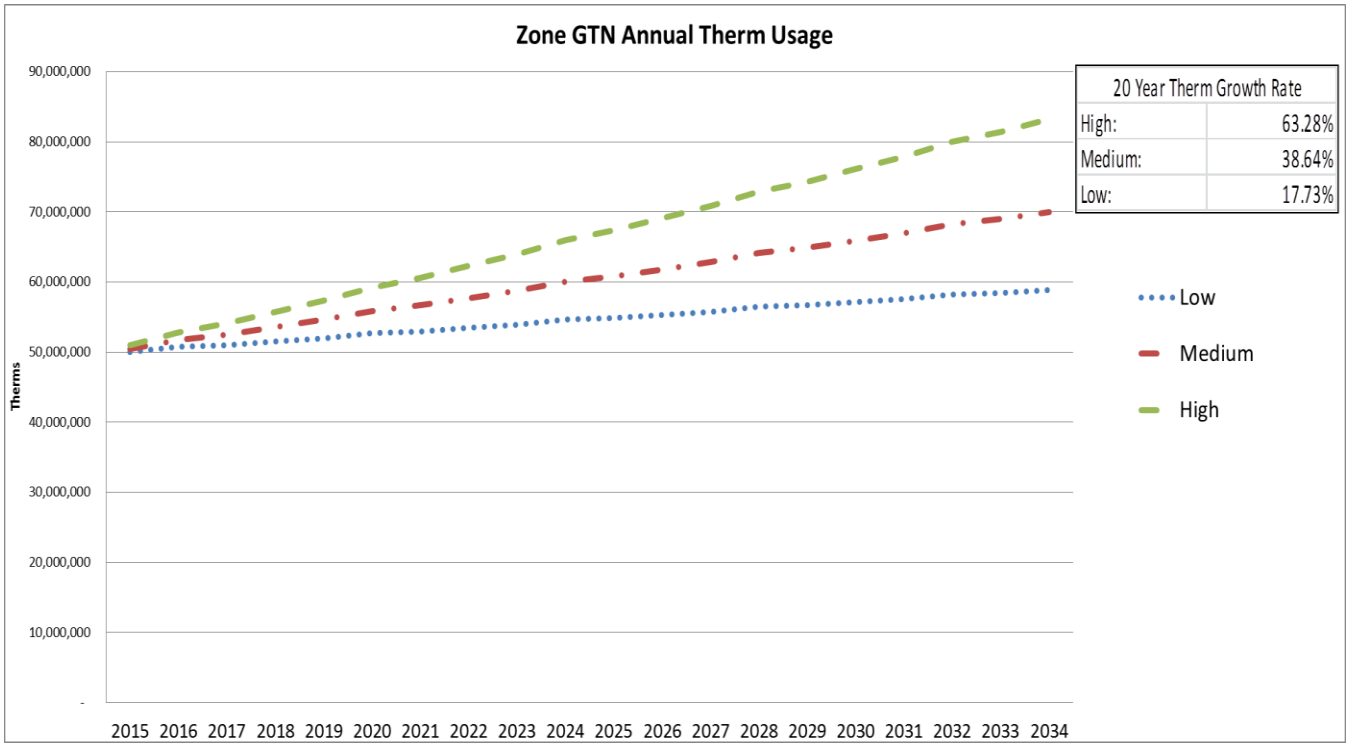
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.52%	1.38%	1.46%	2.58%	2.33%	2.48%	3.65%	3.29%	3.50%
2017	0.58%	0.49%	0.55%	1.62%	1.42%	1.54%	2.66%	2.36%	2.53%
2018	1.02%	0.91%	0.98%	2.04%	1.84%	1.96%	3.07%	2.76%	2.94%
2019	1.00%	0.90%	0.96%	2.00%	1.81%	1.92%	3.01%	2.72%	2.89%
2020	1.44%	1.32%	1.39%	2.43%	2.22%	2.34%	3.42%	3.12%	3.30%
2021	0.51%	0.43%	0.48%	1.47%	1.31%	1.41%	2.44%	2.20%	2.34%
2022	0.94%	0.85%	0.91%	1.89%	1.72%	1.82%	2.85%	2.60%	2.74%
2023	0.93%	0.84%	0.89%	1.86%	1.69%	1.79%	2.79%	2.55%	2.70%
2024	1.37%	1.26%	1.32%	2.29%	2.10%	2.21%	3.21%	2.96%	3.11%
2025	0.43%	0.37%	0.41%	1.33%	1.20%	1.27%	2.23%	2.03%	2.15%
2026	0.87%	0.80%	0.84%	1.76%	1.61%	1.70%	2.64%	2.43%	2.56%
2027	0.86%	0.78%	0.83%	1.72%	1.58%	1.66%	2.59%	2.39%	2.51%
2028	1.30%	1.20%	1.26%	2.15%	1.99%	2.09%	3.01%	2.80%	2.92%
2029	0.37%	0.32%	0.35%	1.20%	1.09%	1.15%	2.03%	1.87%	1.97%
2030	0.81%	0.74%	0.78%	1.63%	1.50%	1.58%	2.45%	2.27%	2.38%
2031	0.80%	0.73%	0.77%	1.60%	1.48%	1.55%	2.41%	2.24%	2.34%
2032	1.24%	1.15%	1.20%	2.03%	1.89%	1.98%	2.83%	2.65%	2.76%
2033	0.31%	0.27%	0.30%	1.09%	1.00%	1.05%	1.87%	1.74%	1.81%
2034	0.76%	0.70%	0.73%	1.52%	1.41%	1.48%	2.29%	2.14%	2.23%

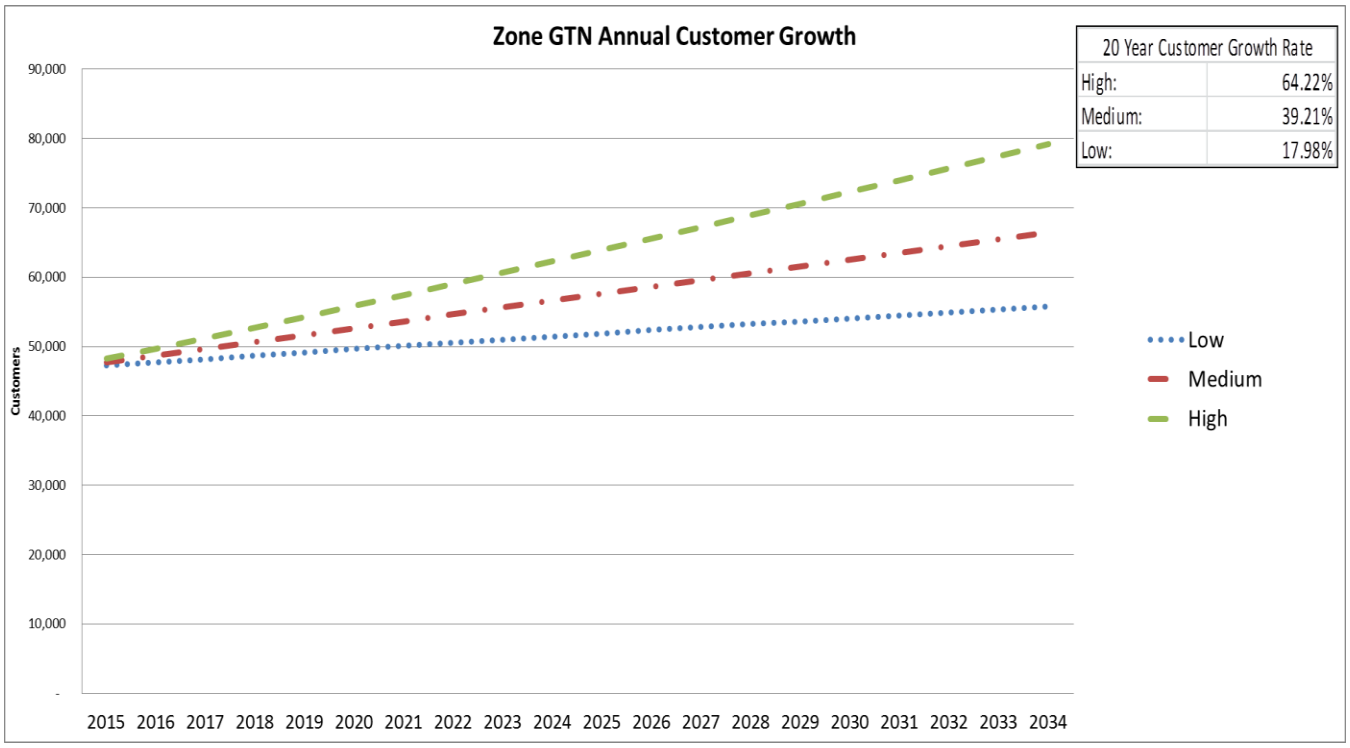
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	40,704	6,548	47,252	41,130	6,613	47,743	41,555	6,678	48,233
2016	41,126	6,612	47,738	41,982	6,743	48,725	42,847	6,875	49,723
2017	41,544	6,676	48,220	42,836	6,874	49,709	44,156	7,075	51,232
2018	41,958	6,740	48,697	43,692	7,005	50,696	45,482	7,278	52,760
2019	42,369	6,802	49,171	44,549	7,136	51,685	46,824	7,484	54,308
2020	42,775	6,865	49,640	45,407	7,267	52,674	48,179	7,691	55,870
2021	43,179	6,927	50,105	46,266	7,399	53,665	49,551	7,901	57,453
2022	43,578	6,988	50,566	47,125	7,531	54,656	50,936	8,113	59,049
2023	43,973	7,049	51,022	47,983	7,662	55,646	52,333	8,327	60,660
2024	44,365	7,109	51,474	48,843	7,794	56,636	53,744	8,543	62,287
2025	44,753	7,168	51,921	49,700	7,925	57,625	55,165	8,761	63,926
2026	45,137	7,227	52,364	50,557	8,057	58,614	56,598	8,980	65,579
2027	45,517	7,286	52,802	51,412	8,188	59,600	58,042	9,201	67,244
2028	45,893	7,343	53,236	52,267	8,319	60,586	59,496	9,424	68,920
2029	46,265	7,401	53,665	53,118	8,450	61,568	60,958	9,648	70,606
2030	46,633	7,457	54,090	53,968	8,580	62,549	62,429	9,873	72,302
2031	46,997	7,513	54,511	54,818	8,711	63,529	63,912	10,101	74,012
2032	47,359	7,569	54,927	55,666	8,841	64,507	65,403	10,329	75,732
2033	47,717	7,624	55,341	56,514	8,971	65,485	66,906	10,559	77,465
2034	48,072	7,679	55,750	57,360	9,101	66,461	68,418	10,791	79,209

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.98%	1.03%	2.07%	1.97%	2.06%	3.11%	2.96%	3.09%
2017	1.02%	0.97%	1.01%	2.03%	1.94%	2.02%	3.05%	2.91%	3.03%
2018	1.00%	0.95%	0.99%	2.00%	1.91%	1.99%	3.00%	2.87%	2.98%
2019	0.98%	0.93%	0.97%	1.96%	1.87%	1.95%	2.95%	2.82%	2.93%
2020	0.96%	0.92%	0.95%	1.92%	1.84%	1.91%	2.89%	2.77%	2.88%
2021	0.94%	0.90%	0.94%	1.89%	1.81%	1.88%	2.85%	2.73%	2.83%
2022	0.92%	0.88%	0.92%	1.86%	1.78%	1.85%	2.79%	2.68%	2.78%
2023	0.91%	0.87%	0.90%	1.82%	1.75%	1.81%	2.74%	2.64%	2.73%
2024	0.89%	0.85%	0.89%	1.79%	1.72%	1.78%	2.70%	2.60%	2.68%
2025	0.87%	0.84%	0.87%	1.75%	1.69%	1.75%	2.64%	2.55%	2.63%
2026	0.86%	0.82%	0.85%	1.72%	1.66%	1.72%	2.60%	2.51%	2.59%
2027	0.84%	0.81%	0.84%	1.69%	1.63%	1.68%	2.55%	2.46%	2.54%
2028	0.83%	0.79%	0.82%	1.66%	1.60%	1.65%	2.51%	2.42%	2.49%
2029	0.81%	0.78%	0.81%	1.63%	1.57%	1.62%	2.46%	2.38%	2.45%
2030	0.80%	0.76%	0.79%	1.60%	1.54%	1.59%	2.41%	2.34%	2.40%
2031	0.78%	0.75%	0.78%	1.57%	1.52%	1.57%	2.38%	2.30%	2.37%
2032	0.77%	0.74%	0.76%	1.55%	1.49%	1.54%	2.33%	2.26%	2.32%
2033	0.76%	0.73%	0.75%	1.52%	1.47%	1.52%	2.30%	2.23%	2.29%
2034	0.74%	0.72%	0.74%	1.50%	1.45%	1.49%	2.26%	2.19%	2.25%


Zone GTN Annual Therm Usage
Therms
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 63.28%
Medium: 38.64%
Low: 17.73%
Low
Medium
High


Zone GTN Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 64.22%
Medium: 39.21%
Low: 17.98%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone ME-OR

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,982,723	3,708,055	12,690,779	9,020,775	3,708,055	12,728,830	9,058,826	3,708,055	12,766,881
2016	9,081,027	3,708,055	12,789,083	9,158,004	3,708,055	12,866,059	9,235,212	3,708,055	12,943,267
2017	9,059,832	3,708,055	12,767,888	9,175,689	3,708,055	12,883,744	9,292,245	3,708,055	13,000,300
2018	9,098,884	3,708,055	12,806,939	9,254,501	3,708,055	12,962,556	9,411,531	3,708,055	13,119,587
2019	9,138,288	3,708,055	12,846,344	9,334,268	3,708,055	13,042,323	9,532,632	3,708,055	13,240,687
2020	9,238,278	3,708,055	12,946,333	9,475,853	3,708,055	13,183,909	9,717,051	3,708,055	13,425,106
2021	9,217,126	3,708,055	12,925,182	9,494,594	3,708,055	13,202,649	9,777,152	3,708,055	13,485,207
2022	9,256,715	3,708,055	12,964,771	9,575,472	3,708,055	13,283,527	9,901,065	3,708,055	13,609,120
2023	9,296,105	3,708,055	13,004,160	9,656,188	3,708,055	13,364,243	10,025,107	3,708,055	13,733,162
2024	9,397,059	3,708,055	13,105,114	9,800,725	3,708,055	13,508,780	10,215,547	3,708,055	13,923,602
2025	9,374,757	3,708,055	13,082,812	9,818,092	3,708,055	13,526,147	10,275,042	3,708,055	13,983,098
2026	9,413,789	3,708,055	13,121,844	9,898,800	3,708,055	13,606,856	10,400,195	3,708,055	14,108,250
2027	9,452,703	3,708,055	13,160,759	9,979,506	3,708,055	13,687,562	10,525,715	3,708,055	14,233,770
2028	9,553,533	3,708,055	13,261,589	10,124,754	3,708,055	13,832,809	10,718,751	3,708,055	14,426,807
2029	9,529,573	3,708,055	13,237,629	10,139,633	3,708,055	13,847,688	10,775,853	3,708,055	14,483,908
2030	9,567,534	3,708,055	13,275,589	10,219,053	3,708,055	13,927,109	10,900,457	3,708,055	14,608,512
2031	9,605,461	3,708,055	13,313,517	10,298,631	3,708,055	14,006,686	11,025,663	3,708,055	14,733,718
2032	9,706,104	3,708,055	13,414,159	10,444,408	3,708,055	14,152,463	11,220,972	3,708,055	14,929,027
2033	9,680,762	3,708,055	13,388,818	10,457,297	3,708,055	14,165,353	11,276,369	3,708,055	14,984,425
2034	9,718,139	3,708,055	13,426,195	10,536,387	3,708,055	14,244,442	11,401,863	3,708,055	15,109,919

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.09%	0.00%	0.77%	1.52%	0.00%	1.08%	1.95%	0.00%	1.38%
2017	-0.23%	0.00%	-0.17%	0.19%	0.00%	0.14%	0.62%	0.00%	0.44%
2018	0.43%	0.00%	0.31%	0.86%	0.00%	0.61%	1.28%	0.00%	0.92%
2019	0.43%	0.00%	0.31%	0.86%	0.00%	0.62%	1.29%	0.00%	0.92%
2020	1.09%	0.00%	0.78%	1.52%	0.00%	1.09%	1.93%	0.00%	1.39%
2021	-0.23%	0.00%	-0.16%	0.20%	0.00%	0.14%	0.62%	0.00%	0.45%
2022	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2023	0.43%	0.00%	0.30%	0.84%	0.00%	0.61%	1.25%	0.00%	0.91%
2024	1.09%	0.00%	0.78%	1.50%	0.00%	1.08%	1.90%	0.00%	1.39%
2025	-0.24%	0.00%	-0.17%	0.18%	0.00%	0.13%	0.58%	0.00%	0.43%
2026	0.42%	0.00%	0.30%	0.82%	0.00%	0.60%	1.22%	0.00%	0.90%
2027	0.41%	0.00%	0.30%	0.82%	0.00%	0.59%	1.21%	0.00%	0.89%
2028	1.07%	0.00%	0.77%	1.46%	0.00%	1.06%	1.83%	0.00%	1.36%
2029	-0.25%	0.00%	-0.18%	0.15%	0.00%	0.11%	0.53%	0.00%	0.40%
2030	0.40%	0.00%	0.29%	0.78%	0.00%	0.57%	1.16%	0.00%	0.86%
2031	0.40%	0.00%	0.29%	0.78%	0.00%	0.57%	1.15%	0.00%	0.86%
2032	1.05%	0.00%	0.76%	1.42%	0.00%	1.04%	1.77%	0.00%	1.33%
2033	-0.26%	0.00%	-0.19%	0.12%	0.00%	0.09%	0.49%	0.00%	0.37%
2034	0.39%	0.00%	0.28%	0.76%	0.00%	0.56%	1.11%	0.00%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	10,159	159,123	169,282	10,159	159,630	169,789	10,159	160,138	170,297
2016	10,159	159,634	169,793	10,159	160,656	170,815	10,159	161,681	171,840
2017	10,159	160,151	170,310	10,159	161,697	171,856	10,159	163,251	173,410
2018	10,159	160,672	170,831	10,159	162,748	172,907	10,159	164,842	175,001
2019	10,159	161,198	171,357	10,159	163,812	173,971	10,159	166,458	176,617
2020	10,159	161,722	171,881	10,159	164,876	175,035	10,159	168,078	178,237
2021	10,159	162,249	172,408	10,159	165,950	176,109	10,159	169,719	179,878
2022	10,159	162,777	172,936	10,159	167,029	177,188	10,159	171,372	181,531
2023	10,159	163,303	173,462	10,159	168,106	178,265	10,159	173,027	183,186
2024	10,159	163,830	173,989	10,159	169,189	179,348	10,159	174,696	184,855
2025	10,159	164,352	174,511	10,159	170,265	180,425	10,159	176,361	186,520
2026	10,159	164,873	175,032	10,159	171,342	181,501	10,159	178,030	188,189
2027	10,159	165,392	175,551	10,159	172,419	182,578	10,159	179,704	189,863
2028	10,159	165,907	176,066	10,159	173,491	183,650	10,159	181,377	191,536
2029	10,159	166,417	176,576	10,159	174,554	184,714	10,159	183,041	193,200
2030	10,159	166,923	177,082	10,159	175,614	185,773	10,159	184,703	194,862
2031	10,159	167,429	177,588	10,159	176,675	186,834	10,159	186,373	196,532
2032	10,159	167,933	178,092	10,159	177,735	187,894	10,159	188,045	198,204
2033	10,159	168,434	178,593	10,159	178,792	188,951	10,159	189,717	199,876
2034	10,159	168,932	179,091	10,159	179,847	190,006	10,159	191,391	201,550

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.96%	0.91%
2017	0.00%	0.32%	0.30%	0.00%	0.65%	0.61%	0.00%	0.97%	0.91%
2018	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2019	0.00%	0.33%	0.31%	0.00%	0.65%	0.62%	0.00%	0.98%	0.92%
2020	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2021	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2022	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2023	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.97%	0.91%
2024	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.96%	0.91%
2025	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.95%	0.90%
2026	0.00%	0.32%	0.30%	0.00%	0.63%	0.60%	0.00%	0.95%	0.90%
2027	0.00%	0.31%	0.30%	0.00%	0.63%	0.59%	0.00%	0.94%	0.89%
2028	0.00%	0.31%	0.29%	0.00%	0.62%	0.59%	0.00%	0.93%	0.88%
2029	0.00%	0.31%	0.29%	0.00%	0.61%	0.58%	0.00%	0.92%	0.87%
2030	0.00%	0.30%	0.29%	0.00%	0.61%	0.57%	0.00%	0.91%	0.86%
2031	0.00%	0.30%	0.29%	0.00%	0.60%	0.57%	0.00%	0.90%	0.86%
2032	0.00%	0.30%	0.28%	0.00%	0.60%	0.57%	0.00%	0.90%	0.85%
2033	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.89%	0.84%
2034	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.88%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,474,672	7,216,107	12,690,779	5,491,080	7,237,750	12,728,830	5,507,487	7,259,394	12,766,881
2016	5,519,133	7,269,949	12,789,083	5,552,339	7,313,721	12,866,059	5,585,644	7,357,623	12,943,267
2017	5,507,923	7,259,965	12,767,888	5,557,882	7,325,862	12,883,744	5,608,142	7,392,158	13,000,300
2018	5,524,763	7,282,175	12,806,939	5,591,869	7,370,687	12,962,556	5,659,583	7,460,003	13,119,587
2019	5,541,757	7,304,587	12,846,344	5,626,268	7,416,055	13,042,323	5,711,808	7,528,879	13,240,687
2020	5,586,973	7,359,361	12,946,333	5,689,461	7,494,448	13,183,909	5,793,511	7,631,595	13,425,106
2021	5,575,757	7,349,425	12,925,182	5,695,411	7,507,238	13,202,649	5,817,260	7,667,947	13,485,207
2022	5,592,831	7,371,940	12,964,771	5,730,292	7,553,235	13,283,527	5,870,700	7,738,420	13,609,120
2023	5,609,819	7,394,341	13,004,160	5,765,103	7,599,140	13,364,243	5,924,197	7,808,966	13,733,162
2024	5,655,477	7,449,636	13,105,114	5,829,623	7,679,157	13,508,780	6,008,581	7,915,022	13,923,602
2025	5,643,741	7,439,071	13,082,812	5,834,931	7,691,216	13,526,147	6,031,991	7,951,107	13,983,098
2026	5,660,576	7,461,268	13,121,844	5,869,741	7,737,115	13,606,856	6,085,968	8,022,282	14,108,250
2027	5,677,360	7,483,399	13,160,759	5,904,549	7,783,012	13,687,562	6,140,105	8,093,665	14,233,770
2028	5,722,991	7,538,597	13,261,589	5,969,430	7,863,379	13,832,809	6,225,692	8,201,114	14,426,807
2029	5,710,515	7,527,113	13,237,629	5,973,614	7,874,075	13,847,688	6,247,991	8,235,917	14,483,908
2030	5,726,889	7,548,701	13,275,589	6,007,869	7,919,240	13,927,109	6,301,734	8,306,778	14,608,512
2031	5,743,248	7,570,269	13,313,517	6,042,192	7,964,494	14,006,686	6,355,737	8,377,981	14,733,718
2032	5,788,823	7,625,336	13,414,159	6,107,354	8,045,109	14,152,463	6,442,388	8,486,639	14,929,027
2033	5,775,728	7,613,090	13,388,818	6,110,630	8,054,722	14,165,353	6,463,874	8,520,551	14,984,425
2034	5,791,850	7,634,344	13,426,195	6,144,745	8,099,697	14,244,442	6,518,004	8,591,915	15,109,919

Annual Change

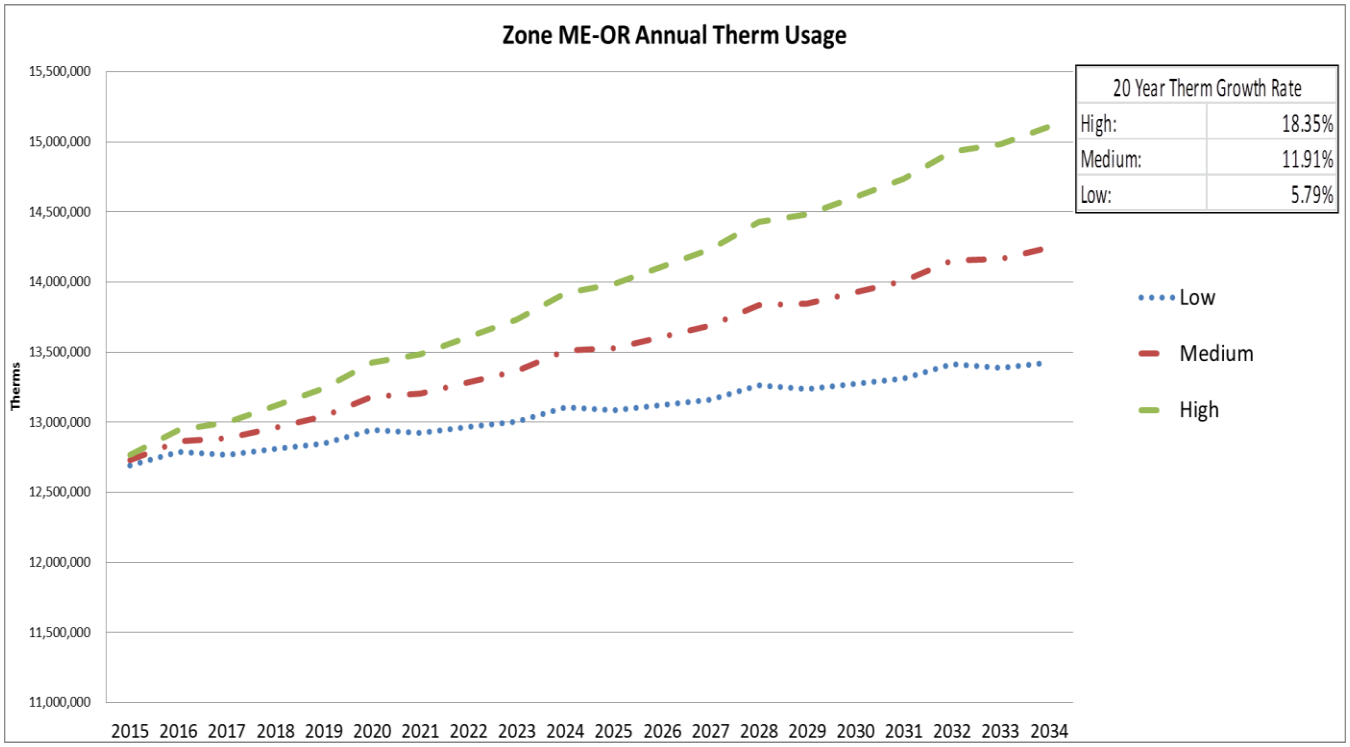
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.75%	0.77%	1.12%	1.05%	1.08%	1.42%	1.35%	1.38%
2017	-0.20%	-0.14%	-0.17%	0.10%	0.17%	0.14%	0.40%	0.47%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2020	0.82%	0.75%	0.78%	1.12%	1.06%	1.09%	1.43%	1.36%	1.39%
2021	-0.20%	-0.14%	-0.16%	0.10%	0.17%	0.14%	0.41%	0.48%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.75%	0.78%	1.12%	1.05%	1.08%	1.42%	1.36%	1.39%
2025	-0.21%	-0.14%	-0.17%	0.09%	0.16%	0.13%	0.39%	0.46%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.90%	0.90%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.74%	0.77%	1.10%	1.03%	1.06%	1.39%	1.33%	1.36%
2029	-0.22%	-0.15%	-0.18%	0.07%	0.14%	0.11%	0.36%	0.42%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.73%	0.76%	1.08%	1.01%	1.04%	1.36%	1.30%	1.33%
2033	-0.23%	-0.16%	-0.19%	0.05%	0.12%	0.09%	0.33%	0.40%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

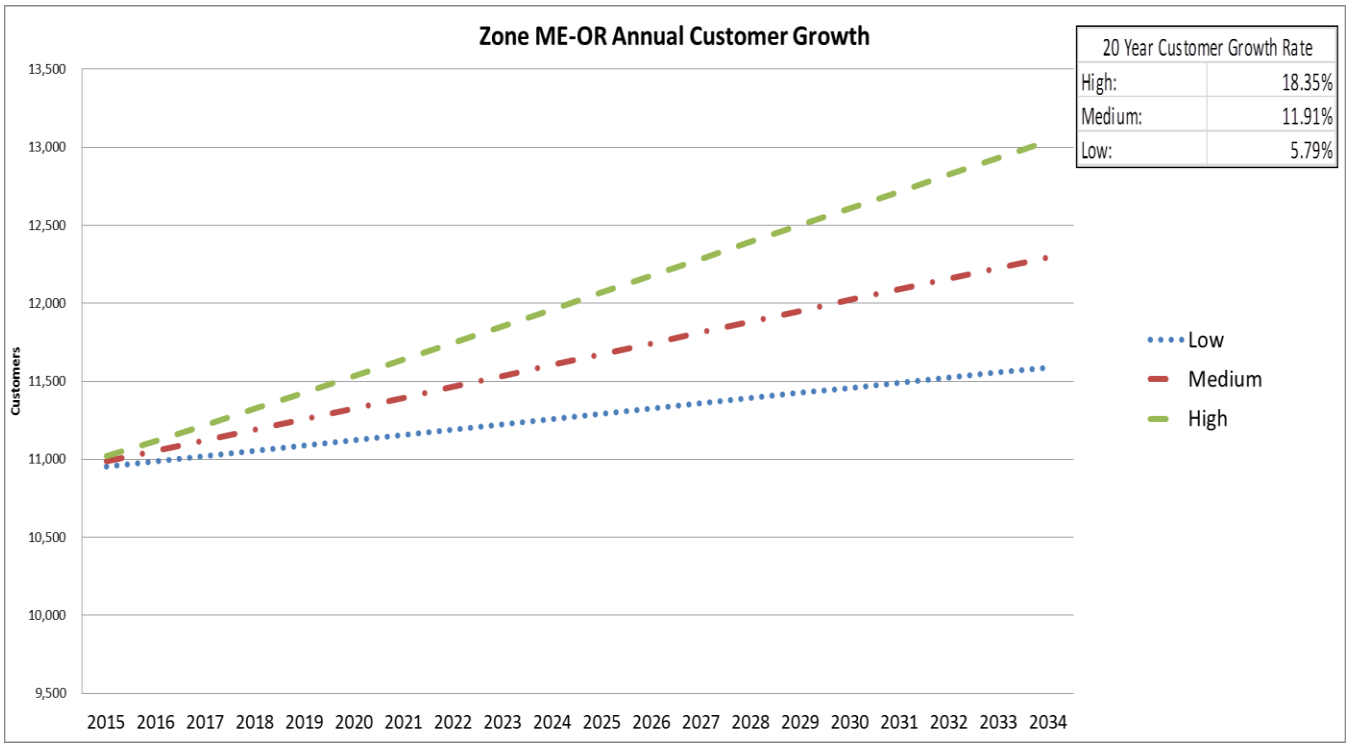
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	9,288	1,666	10,954	9,316	1,671	10,987	9,344	1,676	11,020
2016	9,316	1,671	10,987	9,372	1,681	11,053	9,428	1,691	11,120
2017	9,345	1,676	11,021	9,429	1,691	11,121	9,515	1,707	11,221
2018	9,373	1,681	11,054	9,487	1,702	11,189	9,602	1,722	11,324
2019	9,402	1,687	11,088	9,545	1,712	11,258	9,690	1,738	11,429
2020	9,431	1,692	11,122	9,604	1,723	11,326	9,779	1,754	11,534
2021	9,460	1,697	11,156	9,663	1,733	11,396	9,869	1,770	11,640
2022	9,489	1,702	11,191	9,722	1,744	11,466	9,960	1,787	11,747
2023	9,517	1,707	11,225	9,781	1,755	11,535	10,051	1,803	11,854
2024	9,546	1,712	11,259	9,840	1,765	11,606	10,142	1,819	11,962
2025	9,575	1,718	11,293	9,899	1,776	11,675	10,234	1,836	12,070
2026	9,604	1,723	11,326	9,958	1,786	11,745	10,325	1,852	12,178
2027	9,632	1,728	11,360	10,017	1,797	11,815	10,417	1,869	12,286
2028	9,660	1,733	11,393	10,076	1,808	11,884	10,509	1,885	12,394
2029	9,688	1,738	11,426	10,135	1,818	11,953	10,600	1,902	12,502
2030	9,716	1,743	11,459	10,193	1,828	12,021	10,691	1,918	12,609
2031	9,744	1,748	11,492	10,251	1,839	12,090	10,783	1,934	12,717
2032	9,771	1,753	11,524	10,309	1,849	12,159	10,875	1,951	12,826
2033	9,799	1,758	11,557	10,367	1,860	12,227	10,967	1,967	12,934
2034	9,826	1,763	11,589	10,425	1,870	12,295	11,058	1,984	13,042

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.91%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.62%	0.62%	0.62%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.90%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Zone ME-OR Annual Therm Usage
20 Year Therm Growth Rate
High: 18.35%
Medium: 11.91%
Low: 5.79%
Therms
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
11,500,000
11,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Zone ME-OR Annual Customer Growth
20 Year Customer Growth Rate
High: 18.35%
Medium: 11.91%
Low: 5.79%
Customers
13,500
13,000
12,500
12,000
11,500
11,000
10,500
10,000
9,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Zone ME-WA

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	10,223,690	4,501,171	14,724,861	10,233,510	4,501,171	14,734,681	10,243,330	4,501,171	14,744,501
2016	10,288,483	4,501,171	14,789,654	10,307,640	4,501,171	14,808,811	10,326,834	4,501,171	14,828,004
2017	10,216,549	4,501,171	14,717,720	10,244,324	4,501,171	14,745,495	10,272,208	4,501,171	14,773,379
2018	10,215,971	4,501,171	14,717,141	10,251,885	4,501,171	14,753,056	10,288,019	4,501,171	14,789,189
2019	10,217,055	4,501,171	14,718,225	10,260,652	4,501,171	14,761,823	10,304,616	4,501,171	14,805,787
2020	10,288,136	4,501,171	14,789,307	10,339,459	4,501,171	14,840,630	10,391,336	4,501,171	14,892,506
2021	10,222,473	4,501,171	14,723,644	10,280,491	4,501,171	14,781,661	10,339,282	4,501,171	14,840,452
2022	10,226,506	4,501,171	14,727,676	10,291,389	4,501,171	14,792,560	10,357,309	4,501,171	14,858,479
2023	10,230,822	4,501,171	14,731,993	10,302,461	4,501,171	14,803,631	10,375,434	4,501,171	14,876,605
2024	10,305,886	4,501,171	14,807,057	10,384,261	4,501,171	14,885,431	10,464,315	4,501,171	14,965,485
2025	10,241,703	4,501,171	14,742,874	10,326,198	4,501,171	14,827,369	10,412,740	4,501,171	14,913,910
2026	10,247,268	4,501,171	14,748,439	10,338,153	4,501,171	14,839,323	10,431,497	4,501,171	14,932,667
2027	10,253,129	4,501,171	14,754,299	10,350,302	4,501,171	14,851,473	10,450,384	4,501,171	14,951,555
2028	10,328,483	4,501,171	14,829,653	10,432,399	4,501,171	14,933,569	10,539,725	4,501,171	15,040,895
2029	10,264,071	4,501,171	14,765,242	10,373,999	4,501,171	14,875,170	10,487,842	4,501,171	14,989,012
2030	10,269,144	4,501,171	14,770,314	10,385,525	4,501,171	14,886,696	10,506,377	4,501,171	15,007,547
2031	10,274,856	4,501,171	14,776,027	10,397,504	4,501,171	14,898,675	10,525,214	4,501,171	15,026,384
2032	10,350,167	4,501,171	14,851,338	10,479,657	4,501,171	14,980,828	10,614,861	4,501,171	15,116,032
2033	10,286,202	4,501,171	14,787,373	10,421,398	4,501,171	14,922,568	10,562,945	4,501,171	15,064,116
2034	10,291,944	4,501,171	14,793,115	10,433,528	4,501,171	14,934,698	10,582,163	4,501,171	15,083,333

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.00%	0.44%	0.72%	0.00%	0.50%	0.82%	0.00%	0.57%
2017	-0.70%	0.00%	-0.49%	-0.61%	0.00%	-0.43%	-0.53%	0.00%	-0.37%
2018	-0.01%	0.00%	0.00%	0.07%	0.00%	0.05%	0.15%	0.00%	0.11%
2019	0.01%	0.00%	0.01%	0.09%	0.00%	0.06%	0.16%	0.00%	0.11%
2020	0.70%	0.00%	0.48%	0.77%	0.00%	0.53%	0.84%	0.00%	0.59%
2021	-0.64%	0.00%	-0.44%	-0.57%	0.00%	-0.40%	-0.50%	0.00%	-0.35%
2022	0.04%	0.00%	0.03%	0.11%	0.00%	0.07%	0.17%	0.00%	0.12%
2023	0.04%	0.00%	0.03%	0.11%	0.00%	0.07%	0.18%	0.00%	0.12%
2024	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.86%	0.00%	0.60%
2025	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2026	0.05%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2027	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2028	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.85%	0.00%	0.60%
2029	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2030	0.05%	0.00%	0.03%	0.11%	0.00%	0.08%	0.18%	0.00%	0.12%
2031	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%
2032	0.73%	0.00%	0.51%	0.79%	0.00%	0.55%	0.85%	0.00%	0.60%
2033	-0.62%	0.00%	-0.43%	-0.56%	0.00%	-0.39%	-0.49%	0.00%	-0.34%
2034	0.06%	0.00%	0.04%	0.12%	0.00%	0.08%	0.18%	0.00%	0.13%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	12,332	176,074	188,406	12,332	176,181	188,513	12,332	176,288	188,620
2016	12,332	175,988	188,320	12,332	176,194	188,526	12,332	176,399	188,731
2017	12,332	175,929	188,261	12,332	176,225	188,557	12,332	176,522	188,854
2018	12,332	175,896	188,228	12,332	176,275	188,607	12,332	176,656	188,988
2019	12,332	175,885	188,217	12,332	176,340	188,672	12,332	176,799	189,131
2020	12,332	175,882	188,214	12,332	176,412	188,744	12,332	176,946	189,278
2021	12,332	175,906	188,238	12,332	176,501	188,833	12,332	177,104	189,436
2022	12,332	175,934	188,266	12,332	176,594	188,926	12,332	177,264	189,596
2023	12,332	175,966	188,298	12,332	176,690	189,022	12,332	177,426	189,758
2024	12,332	176,016	188,348	12,332	176,798	189,130	12,332	177,595	189,927
2025	12,332	176,061	188,393	12,332	176,902	189,234	12,332	177,762	190,094
2026	12,332	176,110	188,442	12,332	177,009	189,341	12,332	177,931	190,263
2027	12,332	176,163	188,495	12,332	177,119	189,451	12,332	178,102	190,434
2028	12,332	176,215	188,547	12,332	177,229	189,561	12,332	178,273	190,605
2029	12,332	176,259	188,591	12,332	177,332	189,664	12,332	178,441	190,773
2030	12,332	176,302	188,634	12,332	177,435	189,766	12,332	178,607	190,939
2031	12,332	176,354	188,686	12,332	177,543	189,875	12,332	178,778	191,110
2032	12,332	176,405	188,737	12,332	177,651	189,983	12,332	178,949	191,281
2033	12,332	176,457	188,789	12,332	177,759	190,091	12,332	179,120	191,452
2034	12,332	176,509	188,841	12,332	177,870	190,202	12,332	179,295	191,627

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	-0.05%	-0.05%	0.00%	0.01%	0.01%	0.00%	0.06%	0.06%
2017	0.00%	-0.03%	-0.03%	0.00%	0.02%	0.02%	0.00%	0.07%	0.07%
2018	0.00%	-0.02%	-0.02%	0.00%	0.03%	0.03%	0.00%	0.08%	0.07%
2019	0.00%	-0.01%	-0.01%	0.00%	0.04%	0.03%	0.00%	0.08%	0.08%
2020	0.00%	0.00%	0.00%	0.00%	0.04%	0.04%	0.00%	0.08%	0.08%
2021	0.00%	0.01%	0.01%	0.00%	0.05%	0.05%	0.00%	0.09%	0.08%
2022	0.00%	0.02%	0.01%	0.00%	0.05%	0.05%	0.00%	0.09%	0.08%
2023	0.00%	0.02%	0.02%	0.00%	0.05%	0.05%	0.00%	0.09%	0.09%
2024	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2025	0.00%	0.03%	0.02%	0.00%	0.06%	0.06%	0.00%	0.09%	0.09%
2026	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2027	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2028	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2029	0.00%	0.02%	0.02%	0.00%	0.06%	0.05%	0.00%	0.09%	0.09%
2030	0.00%	0.02%	0.02%	0.00%	0.06%	0.05%	0.00%	0.09%	0.09%
2031	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2032	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2033	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%
2034	0.00%	0.03%	0.03%	0.00%	0.06%	0.06%	0.00%	0.10%	0.09%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,916,174	7,808,686	14,724,861	6,919,520	7,815,161	14,734,681	6,922,866	7,821,635	14,744,501
2016	6,946,619	7,843,035	14,789,654	6,953,031	7,855,780	14,808,811	6,959,452	7,868,552	14,828,004
2017	6,909,236	7,808,483	14,717,720	6,918,343	7,827,151	14,745,495	6,927,477	7,845,902	14,773,379
2018	6,907,262	7,809,879	14,717,141	6,918,787	7,834,269	14,753,056	6,930,363	7,858,826	14,789,189
2019	6,906,118	7,812,107	14,718,225	6,919,805	7,842,017	14,761,823	6,933,577	7,872,209	14,805,787
2020	6,939,681	7,849,625	14,789,307	6,955,508	7,885,121	14,840,630	6,971,462	7,921,044	14,892,506
2021	6,905,473	7,818,171	14,723,644	6,922,969	7,858,692	14,781,661	6,940,641	7,899,812	14,840,452
2022	6,905,813	7,821,863	14,727,676	6,925,014	7,867,546	14,792,560	6,944,449	7,914,030	14,858,479
2023	6,906,308	7,825,684	14,731,993	6,927,159	7,876,473	14,803,631	6,948,310	7,928,294	14,876,605
2024	6,941,857	7,865,200	14,807,057	6,964,266	7,921,165	14,885,431	6,987,054	7,978,431	14,965,485
2025	6,908,442	7,834,431	14,742,874	6,932,233	7,895,136	14,827,369	6,956,482	7,957,428	14,913,910
2026	6,909,583	7,838,856	14,748,439	6,934,819	7,904,504	14,839,323	6,960,607	7,972,061	14,932,667
2027	6,910,881	7,843,418	14,754,299	6,937,511	7,913,962	14,851,473	6,964,791	7,986,764	14,951,555
2028	6,946,589	7,883,065	14,829,653	6,974,754	7,958,816	14,933,569	7,003,681	8,037,214	15,040,895
2029	6,913,121	7,852,121	14,765,242	6,942,637	7,932,532	14,875,170	6,973,028	8,015,985	14,989,012
2030	6,914,060	7,856,254	14,770,314	6,945,068	7,941,628	14,886,696	6,977,072	8,030,475	15,007,547
2031	6,915,326	7,860,701	14,776,027	6,947,721	7,950,953	14,898,675	6,981,245	8,045,139	15,026,384
2032	6,951,026	7,900,312	14,851,338	6,984,984	7,995,843	14,980,828	7,020,216	8,095,816	15,116,032
2033	6,917,839	7,869,534	14,787,373	6,953,015	7,969,554	14,922,568	6,989,604	8,074,512	15,064,116
2034	6,919,142	7,873,973	14,793,115	6,955,763	7,978,935	14,934,698	6,993,954	8,089,380	15,083,333

Annual Change

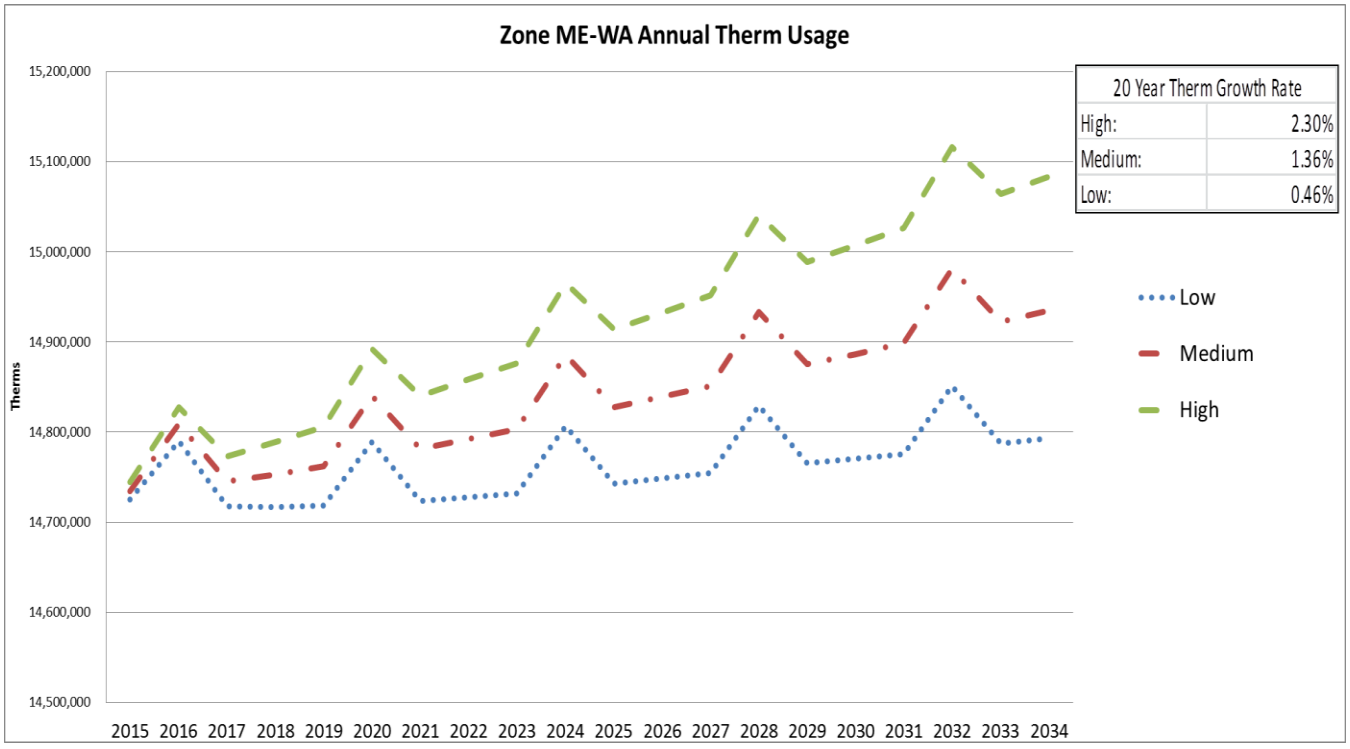
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.44%	0.44%	0.44%	0.48%	0.52%	0.50%	0.53%	0.60%	0.57%
2017	-0.54%	-0.44%	-0.49%	-0.50%	-0.36%	-0.43%	-0.46%	-0.29%	-0.37%
2018	-0.03%	0.02%	0.00%	0.01%	0.09%	0.05%	0.04%	0.16%	0.11%
2019	-0.02%	0.03%	0.01%	0.01%	0.10%	0.06%	0.05%	0.17%	0.11%
2020	0.49%	0.48%	0.48%	0.52%	0.55%	0.53%	0.55%	0.62%	0.59%
2021	-0.49%	-0.40%	-0.44%	-0.47%	-0.34%	-0.40%	-0.44%	-0.27%	-0.35%
2022	0.00%	0.05%	0.03%	0.03%	0.11%	0.07%	0.05%	0.18%	0.12%
2023	0.01%	0.05%	0.03%	0.03%	0.11%	0.07%	0.06%	0.18%	0.12%
2024	0.51%	0.50%	0.51%	0.54%	0.57%	0.55%	0.56%	0.63%	0.60%
2025	-0.48%	-0.39%	-0.43%	-0.46%	-0.33%	-0.39%	-0.44%	-0.26%	-0.34%
2026	0.02%	0.06%	0.04%	0.04%	0.12%	0.08%	0.06%	0.18%	0.13%
2027	0.02%	0.06%	0.04%	0.04%	0.12%	0.08%	0.06%	0.18%	0.13%
2028	0.52%	0.51%	0.51%	0.54%	0.57%	0.55%	0.56%	0.63%	0.60%
2029	-0.48%	-0.39%	-0.43%	-0.46%	-0.33%	-0.39%	-0.44%	-0.26%	-0.34%
2030	0.01%	0.05%	0.03%	0.04%	0.11%	0.08%	0.06%	0.18%	0.12%
2031	0.02%	0.06%	0.04%	0.04%	0.12%	0.08%	0.06%	0.18%	0.13%
2032	0.52%	0.50%	0.51%	0.54%	0.56%	0.55%	0.56%	0.63%	0.60%
2033	-0.48%	-0.39%	-0.43%	-0.46%	-0.33%	-0.39%	-0.44%	-0.26%	-0.34%
2034	0.02%	0.06%	0.04%	0.04%	0.12%	0.08%	0.06%	0.18%	0.13%

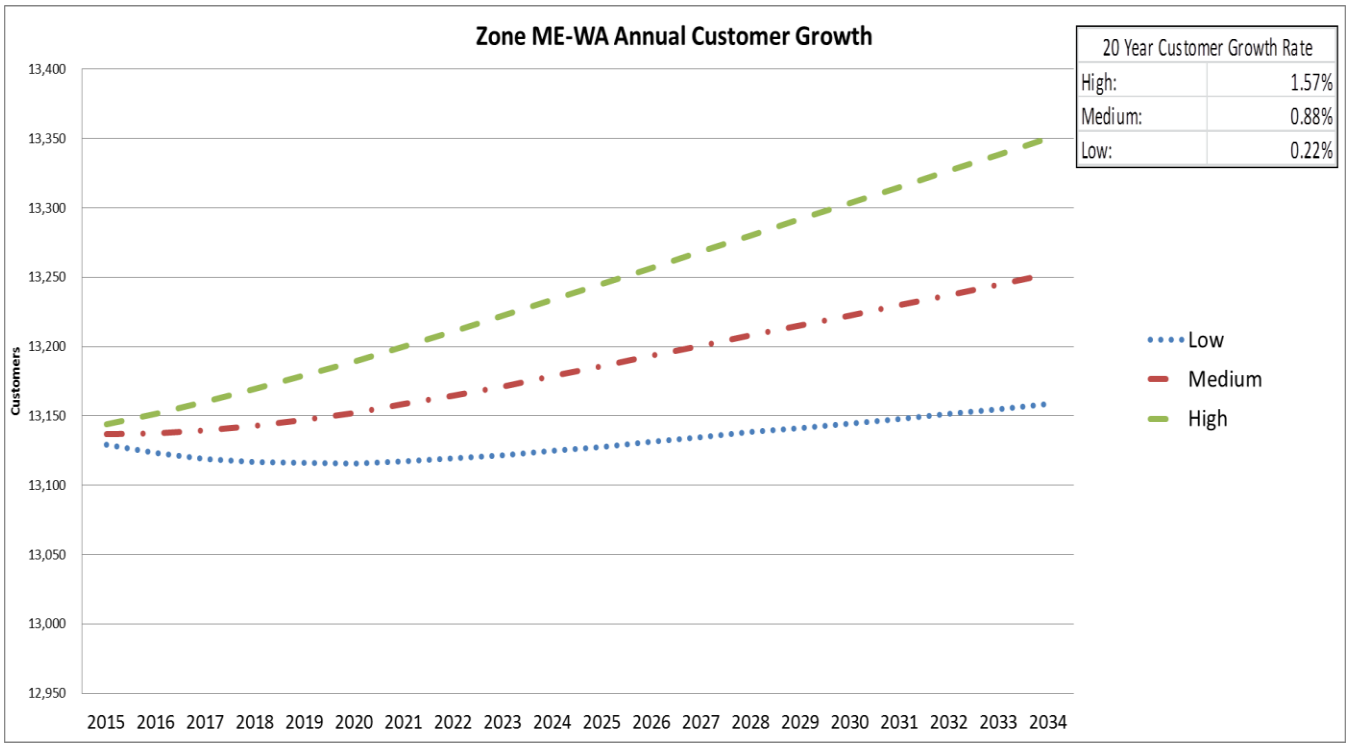
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	11,686	1,443	13,129	11,693	1,444	13,137	11,699	1,445	13,144
2016	11,681	1,443	13,123	11,693	1,444	13,138	11,706	1,446	13,152
2017	11,677	1,442	13,119	11,695	1,445	13,140	11,713	1,448	13,160
2018	11,675	1,442	13,117	11,697	1,446	13,143	11,720	1,449	13,169
2019	11,674	1,442	13,116	11,701	1,446	13,147	11,729	1,450	13,179
2020	11,673	1,442	13,116	11,705	1,447	13,152	11,737	1,452	13,189
2021	11,675	1,443	13,117	11,710	1,448	13,158	11,747	1,453	13,200
2022	11,676	1,443	13,119	11,716	1,449	13,165	11,756	1,455	13,211
2023	11,678	1,443	13,121	11,721	1,450	13,171	11,766	1,457	13,222
2024	11,681	1,444	13,125	11,728	1,451	13,179	11,776	1,458	13,234
2025	11,684	1,444	13,128	11,734	1,452	13,186	11,785	1,460	13,245
2026	11,686	1,445	13,131	11,740	1,453	13,193	11,795	1,461	13,257
2027	11,690	1,445	13,135	11,747	1,454	13,201	11,806	1,463	13,269
2028	11,693	1,446	13,139	11,753	1,455	13,208	11,816	1,465	13,280
2029	11,695	1,446	13,142	11,759	1,456	13,215	11,825	1,466	13,292
2030	11,698	1,447	13,144	11,765	1,457	13,223	11,835	1,468	13,303
2031	11,701	1,447	13,148	11,772	1,458	13,230	11,845	1,470	13,315
2032	11,704	1,448	13,152	11,778	1,459	13,237	11,855	1,471	13,327
2033	11,707	1,448	13,155	11,784	1,460	13,245	11,865	1,473	13,339
2034	11,710	1,449	13,159	11,791	1,461	13,252	11,876	1,475	13,351

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.05%	-0.04%	-0.05%	0.00%	0.02%	0.01%	0.05%	0.08%	0.06%
2017	-0.03%	-0.02%	-0.03%	0.01%	0.03%	0.02%	0.06%	0.09%	0.06%
2018	-0.02%	-0.01%	-0.02%	0.02%	0.04%	0.03%	0.07%	0.09%	0.07%
2019	-0.01%	0.00%	-0.01%	0.03%	0.05%	0.03%	0.07%	0.10%	0.07%
2020	0.00%	0.01%	0.00%	0.03%	0.05%	0.04%	0.07%	0.10%	0.08%
2021	0.01%	0.02%	0.01%	0.04%	0.06%	0.05%	0.08%	0.11%	0.08%
2022	0.01%	0.02%	0.01%	0.05%	0.07%	0.05%	0.08%	0.11%	0.08%
2023	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.08%
2024	0.02%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2025	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2026	0.02%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2027	0.03%	0.04%	0.03%	0.06%	0.07%	0.06%	0.09%	0.11%	0.09%
2028	0.03%	0.04%	0.03%	0.05%	0.07%	0.06%	0.09%	0.11%	0.09%
2029	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2030	0.02%	0.03%	0.02%	0.05%	0.07%	0.05%	0.08%	0.11%	0.09%
2031	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2032	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2033	0.03%	0.03%	0.03%	0.05%	0.07%	0.06%	0.08%	0.11%	0.09%
2034	0.03%	0.04%	0.03%	0.06%	0.07%	0.06%	0.09%	0.12%	0.09%


Zone ME-WA Annual Therm Usage
Therms
15,200,000
15,100,000
15,000,000
14,900,000
14,800,000
14,700,000
14,600,000
14,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 2.30%
Medium: 1.36%
Low: 0.46%
Low
Medium
High


Zone ME-WA Annual Customer Growth
Customers
13,400
13,350
13,300
13,250
13,200
13,150
13,100
13,050
13,000
12,950
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 1.57%
Medium: 0.88%
Low: 0.22%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bellingham Disctrict

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	36,040,658	10,930,271	46,970,929	36,486,999	10,930,271	47,417,270	36,933,340	10,930,271	47,863,611
2016	36,696,655	10,930,271	47,626,927	37,599,542	10,930,271	48,529,813	38,510,905	10,930,271	49,441,177
2017	36,926,747	10,930,271	47,857,019	38,284,376	10,930,271	49,214,647	39,667,438	10,930,271	50,597,709
2018	37,366,919	10,930,271	48,297,191	39,189,694	10,930,271	50,119,965	41,063,578	10,930,271	51,993,849
2019	37,804,813	10,930,271	48,735,085	40,098,535	10,930,271	51,028,806	42,477,810	10,930,271	53,408,081
2020	38,459,451	10,930,271	49,389,722	41,241,372	10,930,271	52,171,643	44,152,647	10,930,271	55,082,919
2021	38,672,637	10,930,271	49,602,908	41,923,889	10,930,271	52,854,160	45,356,093	10,930,271	56,286,365
2022	39,102,510	10,930,271	50,032,781	42,839,988	10,930,271	53,770,259	46,819,475	10,930,271	57,749,747
2023	39,529,011	10,930,271	50,459,283	43,756,710	10,930,271	54,686,982	48,296,328	10,930,271	59,226,599
2024	40,180,592	10,930,271	51,110,863	44,924,648	10,930,271	55,854,919	50,061,312	10,930,271	60,991,584
2025	40,373,278	10,930,271	51,303,549	45,594,307	10,930,271	56,524,578	51,293,865	10,930,271	62,224,136
2026	40,790,715	10,930,271	51,720,987	46,514,145	10,930,271	57,444,416	52,812,748	10,930,271	63,743,019
2027	41,204,718	10,930,271	52,134,989	47,433,777	10,930,271	58,364,048	54,343,448	10,930,271	65,273,719
2028	41,850,205	10,930,271	52,780,476	48,618,153	10,930,271	59,548,425	56,184,477	10,930,271	67,114,748
2029	42,021,911	10,930,271	52,952,183	49,270,553	10,930,271	60,200,824	57,436,728	10,930,271	68,366,999
2030	42,424,994	10,930,271	53,355,265	50,187,074	10,930,271	61,117,345	58,997,997	10,930,271	69,928,268
2031	42,825,689	10,930,271	53,755,961	51,105,051	10,930,271	62,035,322	60,573,471	10,930,271	71,503,742
2032	43,464,903	10,930,271	54,395,174	52,303,129	10,930,271	63,233,400	62,485,097	10,930,271	73,415,368
2033	43,617,538	10,930,271	54,547,809	52,939,347	10,930,271	63,869,618	63,756,417	10,930,271	74,686,689
2034	44,009,361	10,930,271	54,939,633	53,856,913	10,930,271	64,787,184	65,365,867	10,930,271	76,296,138

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.82%	0.00%	1.40%	3.05%	0.00%	2.35%	4.27%	0.00%	3.30%
2017	0.63%	0.00%	0.48%	1.82%	0.00%	1.41%	3.00%	0.00%	2.34%
2018	1.19%	0.00%	0.92%	2.36%	0.00%	1.84%	3.52%	0.00%	2.76%
2019	1.17%	0.00%	0.91%	2.32%	0.00%	1.81%	3.44%	0.00%	2.72%
2020	1.73%	0.00%	1.34%	2.85%	0.00%	2.24%	3.94%	0.00%	3.14%
2021	0.55%	0.00%	0.43%	1.65%	0.00%	1.31%	2.73%	0.00%	2.18%
2022	1.11%	0.00%	0.87%	2.19%	0.00%	1.73%	3.23%	0.00%	2.60%
2023	1.09%	0.00%	0.85%	2.14%	0.00%	1.70%	3.15%	0.00%	2.56%
2024	1.65%	0.00%	1.29%	2.67%	0.00%	2.14%	3.65%	0.00%	2.98%
2025	0.48%	0.00%	0.38%	1.49%	0.00%	1.20%	2.46%	0.00%	2.02%
2026	1.03%	0.00%	0.81%	2.02%	0.00%	1.63%	2.96%	0.00%	2.44%
2027	1.01%	0.00%	0.80%	1.98%	0.00%	1.60%	2.90%	0.00%	2.40%
2028	1.57%	0.00%	1.24%	2.50%	0.00%	2.03%	3.39%	0.00%	2.82%
2029	0.41%	0.00%	0.33%	1.34%	0.00%	1.10%	2.23%	0.00%	1.87%
2030	0.96%	0.00%	0.76%	1.86%	0.00%	1.52%	2.72%	0.00%	2.28%
2031	0.94%	0.00%	0.75%	1.83%	0.00%	1.50%	2.67%	0.00%	2.25%
2032	1.49%	0.00%	1.19%	2.34%	0.00%	1.93%	3.16%	0.00%	2.67%
2033	0.35%	0.00%	0.28%	1.22%	0.00%	1.01%	2.03%	0.00%	1.73%
2034	0.90%	0.00%	0.72%	1.73%	0.00%	1.44%	2.52%	0.00%	2.15%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	29,946	504,163	534,109	29,946	509,238	539,184	29,946	514,313	544,259
2016	29,946	509,212	539,158	29,946	519,434	549,379	29,946	529,751	559,697
2017	29,946	514,238	544,184	29,946	529,676	559,622	29,946	545,403	575,349
2018	29,946	519,244	549,190	29,946	539,971	569,916	29,946	561,278	591,224
2019	29,946	524,223	554,169	29,946	550,305	580,251	29,946	577,360	607,306
2020	29,946	529,168	559,114	29,946	560,661	590,607	29,946	593,618	623,563
2021	29,946	534,091	564,037	29,946	571,061	601,007	29,946	610,089	640,035
2022	29,946	538,979	568,925	29,946	581,478	611,424	29,946	626,729	656,675
2023	29,946	543,829	573,775	29,946	591,902	621,848	29,946	643,522	673,468
2024	29,946	548,652	578,598	29,946	602,357	632,303	29,946	660,506	690,452
2025	29,946	553,429	583,375	29,946	612,798	642,743	29,946	677,607	707,553
2026	29,946	558,176	588,122	29,946	623,257	653,203	29,946	694,879	724,825
2027	29,946	562,883	592,829	29,946	633,714	663,660	29,946	712,284	742,230
2028	29,946	567,553	597,499	29,946	644,169	674,115	29,946	729,823	759,769
2029	29,946	572,176	602,122	29,946	654,600	684,546	29,946	747,458	777,404
2030	29,946	576,759	606,705	29,946	665,022	694,968	29,946	765,211	795,157
2031	29,946	581,316	611,261	29,946	675,460	705,406	29,946	783,126	813,072
2032	29,946	585,832	615,778	29,946	685,885	715,831	29,946	801,149	831,095
2033	29,946	590,320	620,266	29,946	696,318	726,264	29,946	819,319	849,265
2034	29,946	594,775	624,721	29,946	706,752	736,698	29,946	837,621	867,566

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.00%	0.95%	0.00%	2.00%	1.89%	0.00%	3.00%	2.84%
2017	0.00%	0.99%	0.93%	0.00%	1.97%	1.86%	0.00%	2.95%	2.80%
2018	0.00%	0.97%	0.92%	0.00%	1.94%	1.84%	0.00%	2.91%	2.76%
2019	0.00%	0.96%	0.91%	0.00%	1.91%	1.81%	0.00%	2.87%	2.72%
2020	0.00%	0.94%	0.89%	0.00%	1.88%	1.78%	0.00%	2.82%	2.68%
2021	0.00%	0.93%	0.88%	0.00%	1.86%	1.76%	0.00%	2.77%	2.64%
2022	0.00%	0.92%	0.87%	0.00%	1.82%	1.73%	0.00%	2.73%	2.60%
2023	0.00%	0.90%	0.85%	0.00%	1.79%	1.70%	0.00%	2.68%	2.56%
2024	0.00%	0.89%	0.84%	0.00%	1.77%	1.68%	0.00%	2.64%	2.52%
2025	0.00%	0.87%	0.83%	0.00%	1.73%	1.65%	0.00%	2.59%	2.48%
2026	0.00%	0.86%	0.81%	0.00%	1.71%	1.63%	0.00%	2.55%	2.44%
2027	0.00%	0.84%	0.80%	0.00%	1.68%	1.60%	0.00%	2.50%	2.40%
2028	0.00%	0.83%	0.79%	0.00%	1.65%	1.58%	0.00%	2.46%	2.36%
2029	0.00%	0.81%	0.77%	0.00%	1.62%	1.55%	0.00%	2.42%	2.32%
2030	0.00%	0.80%	0.76%	0.00%	1.59%	1.52%	0.00%	2.38%	2.28%
2031	0.00%	0.79%	0.75%	0.00%	1.57%	1.50%	0.00%	2.34%	2.25%
2032	0.00%	0.78%	0.74%	0.00%	1.54%	1.48%	0.00%	2.30%	2.22%
2033	0.00%	0.77%	0.73%	0.00%	1.52%	1.46%	0.00%	2.27%	2.19%
2034	0.00%	0.75%	0.72%	0.00%	1.50%	1.44%	0.00%	2.23%	2.15%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,877,365	16,093,564	46,970,929	31,170,788	16,246,482	47,417,270	31,464,210	16,399,401	47,863,611
2016	31,310,824	16,316,102	47,626,927	31,904,420	16,625,393	48,529,813	32,503,589	16,937,587	49,441,177
2017	31,459,876	16,397,143	47,857,019	32,352,375	16,862,272	49,214,647	33,261,596	17,336,114	50,597,709
2018	31,749,243	16,547,948	48,297,191	32,947,527	17,172,438	50,119,965	34,179,412	17,814,437	51,993,849
2019	32,037,112	16,697,973	48,735,085	33,544,995	17,483,811	51,028,806	35,109,122	18,298,959	53,408,081
2020	32,469,758	16,919,964	49,389,722	34,298,710	17,872,933	52,171,643	36,212,709	18,870,209	55,082,919
2021	32,607,613	16,995,295	49,602,908	34,744,972	18,109,188	52,854,160	37,001,293	19,285,072	56,286,365
2022	32,890,208	17,142,573	50,032,781	35,347,210	18,423,049	53,770,259	37,963,313	19,786,434	57,749,747
2023	33,170,587	17,288,696	50,459,283	35,949,857	18,737,125	54,686,982	38,934,188	20,292,411	59,226,599
2024	33,601,303	17,509,561	51,110,863	36,720,243	19,134,675	55,854,919	40,097,310	20,894,273	60,991,584
2025	33,725,600	17,577,949	51,303,549	37,157,879	19,366,699	56,524,578	40,904,751	21,319,385	62,224,136
2026	34,000,019	17,720,968	51,720,987	37,762,573	19,681,843	57,444,416	41,903,255	21,839,764	63,743,019
2027	34,272,179	17,862,810	52,134,989	38,367,131	19,996,917	58,364,048	42,909,527	22,364,192	65,273,719
2028	34,698,966	18,081,510	52,780,476	39,148,494	20,399,931	59,548,425	44,122,922	22,991,826	67,114,748
2029	34,809,392	18,142,790	52,952,183	39,574,609	20,626,216	60,200,824	44,943,024	23,423,974	68,366,999
2030	35,074,373	18,280,892	53,355,265	40,177,119	20,940,226	61,117,345	45,969,389	23,958,879	69,928,268
2031	35,337,785	18,418,176	53,755,961	40,780,587	21,254,736	62,035,322	47,005,091	24,498,651	71,503,742
2032	35,760,521	18,634,654	54,395,174	41,571,126	21,662,274	63,233,400	48,265,186	25,150,182	73,415,368
2033	35,858,334	18,689,475	54,547,809	41,986,429	21,883,189	63,869,618	49,097,528	25,589,161	74,686,689
2034	36,115,912	18,823,721	54,939,633	42,589,624	22,197,559	64,787,184	50,155,562	26,140,576	76,296,138

Annual Change

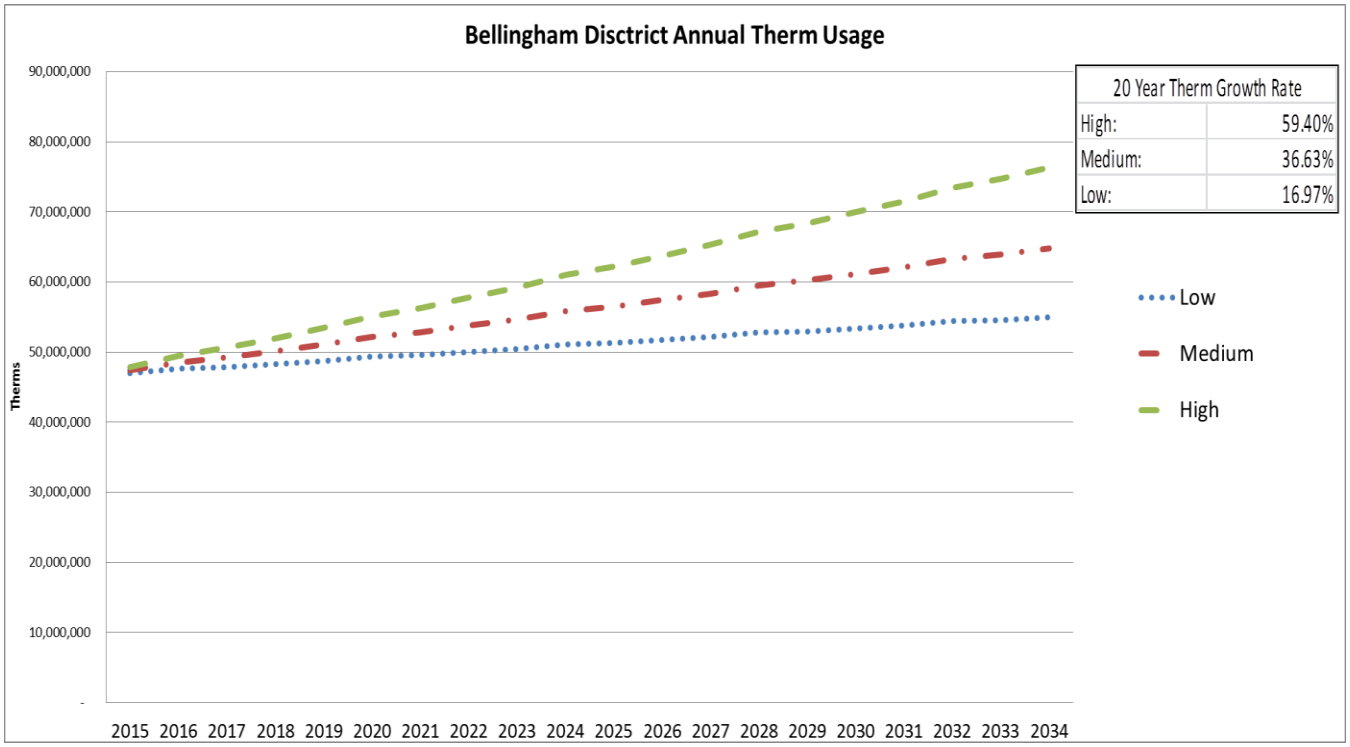
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.40%	1.38%	1.40%	2.35%	2.33%	2.35%	3.30%	3.28%	3.30%
2017	0.48%	0.50%	0.48%	1.40%	1.42%	1.41%	2.33%	2.35%	2.34%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	1.35%	1.33%	1.34%	2.25%	2.23%	2.24%	3.14%	3.12%	3.14%
2021	0.42%	0.45%	0.43%	1.30%	1.32%	1.31%	2.18%	2.20%	2.18%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	1.30%	1.28%	1.29%	2.14%	2.12%	2.14%	2.99%	2.97%	2.98%
2025	0.37%	0.39%	0.38%	1.19%	1.21%	1.20%	2.01%	2.03%	2.02%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	1.25%	1.22%	1.24%	2.04%	2.02%	2.03%	2.83%	2.81%	2.82%
2029	0.32%	0.34%	0.33%	1.09%	1.11%	1.10%	1.86%	1.88%	1.87%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	1.20%	1.18%	1.19%	1.94%	1.92%	1.93%	2.68%	2.66%	2.67%
2033	0.27%	0.29%	0.28%	1.00%	1.02%	1.01%	1.72%	1.75%	1.73%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%

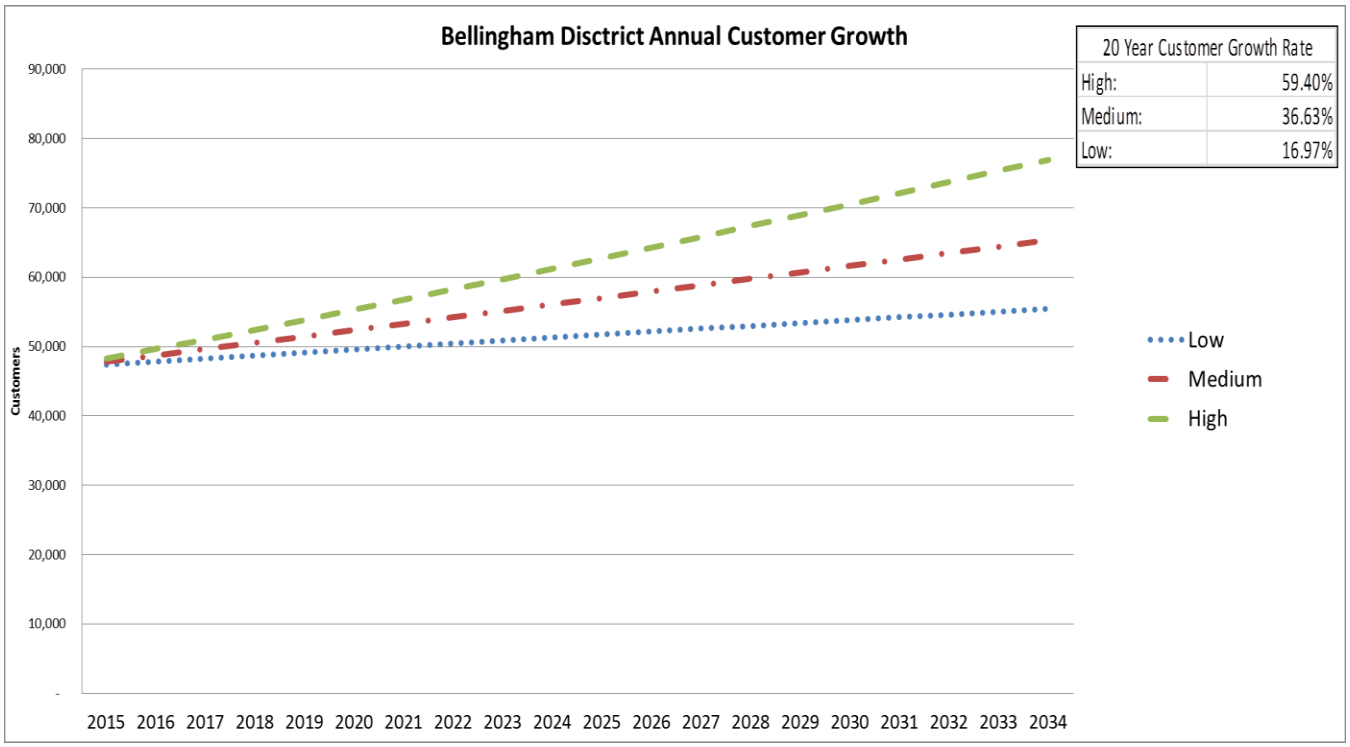
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	42,344	5,042	47,386	42,747	5,090	47,836	43,149	5,138	48,287
2016	42,745	5,090	47,834	43,555	5,186	48,741	44,373	5,283	49,656
2017	43,143	5,137	48,280	44,367	5,283	49,650	45,614	5,431	51,045
2018	43,540	5,184	48,724	45,183	5,380	50,563	46,873	5,581	52,454
2019	43,935	5,231	49,166	46,003	5,477	51,480	48,148	5,733	53,880
2020	44,327	5,278	49,605	46,824	5,575	52,399	49,436	5,886	55,323
2021	44,717	5,324	50,041	47,648	5,673	53,322	50,742	6,042	56,784
2022	45,105	5,371	50,475	48,474	5,772	54,246	52,062	6,199	58,261
2023	45,489	5,416	50,905	49,300	5,870	55,171	53,393	6,357	59,751
2024	45,871	5,462	51,333	50,129	5,969	56,098	54,740	6,518	61,257
2025	46,250	5,507	51,757	50,957	6,067	57,025	56,095	6,679	62,775
2026	46,627	5,552	52,178	51,786	6,166	57,953	57,465	6,842	64,307
2027	47,000	5,596	52,596	52,615	6,265	58,880	58,845	7,007	65,851
2028	47,370	5,640	53,010	53,444	6,364	59,808	60,235	7,172	67,407
2029	47,736	5,684	53,420	54,271	6,462	60,733	61,633	7,339	68,972
2030	48,100	5,727	53,827	55,098	6,560	61,658	63,041	7,506	70,547
2031	48,461	5,770	54,231	55,925	6,659	62,584	64,461	7,675	72,137
2032	48,819	5,813	54,632	56,752	6,757	63,509	65,890	7,845	73,736
2033	49,175	5,855	55,030	57,579	6,856	64,435	67,331	8,017	75,348
2034	49,528	5,897	55,425	58,406	6,954	65,360	68,782	8,190	76,971

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.95%	0.95%	0.95%	1.89%	1.89%	1.89%	2.84%	2.84%	2.84%
2017	0.93%	0.93%	0.93%	1.86%	1.86%	1.86%	2.80%	2.80%	2.80%
2018	0.92%	0.92%	0.92%	1.84%	1.84%	1.84%	2.76%	2.76%	2.76%
2019	0.91%	0.91%	0.91%	1.81%	1.81%	1.81%	2.72%	2.72%	2.72%
2020	0.89%	0.89%	0.89%	1.78%	1.78%	1.78%	2.68%	2.68%	2.68%
2021	0.88%	0.88%	0.88%	1.76%	1.76%	1.76%	2.64%	2.64%	2.64%
2022	0.87%	0.87%	0.87%	1.73%	1.73%	1.73%	2.60%	2.60%	2.60%
2023	0.85%	0.85%	0.85%	1.70%	1.70%	1.70%	2.56%	2.56%	2.56%
2024	0.84%	0.84%	0.84%	1.68%	1.68%	1.68%	2.52%	2.52%	2.52%
2025	0.83%	0.83%	0.83%	1.65%	1.65%	1.65%	2.48%	2.48%	2.48%
2026	0.81%	0.81%	0.81%	1.63%	1.63%	1.63%	2.44%	2.44%	2.44%
2027	0.80%	0.80%	0.80%	1.60%	1.60%	1.60%	2.40%	2.40%	2.40%
2028	0.79%	0.79%	0.79%	1.58%	1.58%	1.58%	2.36%	2.36%	2.36%
2029	0.77%	0.77%	0.77%	1.55%	1.55%	1.55%	2.32%	2.32%	2.32%
2030	0.76%	0.76%	0.76%	1.52%	1.52%	1.52%	2.28%	2.28%	2.28%
2031	0.75%	0.75%	0.75%	1.50%	1.50%	1.50%	2.25%	2.25%	2.25%
2032	0.74%	0.74%	0.74%	1.48%	1.48%	1.48%	2.22%	2.22%	2.22%
2033	0.73%	0.73%	0.73%	1.46%	1.46%	1.46%	2.19%	2.19%	2.19%
2034	0.72%	0.72%	0.72%	1.44%	1.44%	1.44%	2.15%	2.15%	2.15%


Bellingham Disctrict Annual Therm Usage
Therms
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 59.40%
Medium: 36.63%
Low: 16.97%
Low
Medium
High


Bellingham Disctrict Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 59.40%
Medium: 36.63%
Low: 16.97%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Mount Vernon District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	32,357,083	10,295,527	42,652,610	32,666,839	10,295,527	42,962,366	32,976,595	10,295,527	43,272,122
2016	32,857,836	10,295,527	43,153,363	33,483,725	10,295,527	43,779,252	34,114,126	10,295,527	44,409,654
2017	32,974,014	10,295,527	43,269,541	33,914,141	10,295,527	44,209,668	34,867,805	10,295,527	45,163,332
2018	33,281,632	10,295,527	43,577,159	34,542,762	10,295,527	44,838,289	35,831,102	10,295,527	46,126,629
2019	33,588,191	10,295,527	43,883,719	35,173,646	10,295,527	45,469,173	36,804,653	10,295,527	47,100,181
2020	34,090,429	10,295,527	44,385,956	36,011,343	10,295,527	46,306,870	38,001,122	10,295,527	48,296,650
2021	34,197,183	10,295,527	44,492,710	36,440,041	10,295,527	46,735,568	38,779,233	10,295,527	49,074,760
2022	34,499,424	10,295,527	44,794,951	37,075,030	10,295,527	47,370,557	39,779,447	10,295,527	50,074,974
2023	34,799,542	10,295,527	45,095,069	37,709,819	10,295,527	48,005,346	40,786,055	10,295,527	51,081,582
2024	35,301,339	10,295,527	45,596,867	38,563,803	10,295,527	48,859,331	42,035,106	10,295,527	52,330,633
2025	35,394,684	10,295,527	45,690,211	38,981,168	10,295,527	49,276,695	42,822,062	10,295,527	53,117,590
2026	35,689,426	10,295,527	45,984,953	39,616,976	10,295,527	49,912,503	43,850,195	10,295,527	54,145,722
2027	35,981,773	10,295,527	46,277,300	40,251,665	10,295,527	50,547,192	44,883,064	10,295,527	55,178,592
2028	36,479,948	10,295,527	46,775,475	41,114,227	10,295,527	51,409,754	46,172,320	10,295,527	56,467,847
2029	36,559,312	10,295,527	46,854,840	41,517,355	10,295,527	51,812,883	46,962,162	10,295,527	57,257,689
2030	36,844,337	10,295,527	47,139,864	42,147,791	10,295,527	52,443,319	48,007,299	10,295,527	58,302,826
2031	37,127,941	10,295,527	47,423,468	42,778,883	10,295,527	53,074,410	49,059,819	10,295,527	59,355,346
2032	37,622,228	10,295,527	47,917,755	43,648,260	10,295,527	53,943,788	50,385,771	10,295,527	60,681,299
2033	37,688,857	10,295,527	47,984,385	44,038,231	10,295,527	54,333,758	51,178,831	10,295,527	61,474,359
2034	37,966,695	10,295,527	48,262,222	44,667,511	10,295,527	54,963,038	52,246,933	10,295,527	62,542,461

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.55%	0.00%	1.17%	2.50%	0.00%	1.90%	3.45%	0.00%	2.63%
2017	0.35%	0.00%	0.27%	1.29%	0.00%	0.98%	2.21%	0.00%	1.70%
2018	0.93%	0.00%	0.71%	1.85%	0.00%	1.42%	2.76%	0.00%	2.13%
2019	0.92%	0.00%	0.70%	1.83%	0.00%	1.41%	2.72%	0.00%	2.11%
2020	1.50%	0.00%	1.14%	2.38%	0.00%	1.84%	3.25%	0.00%	2.54%
2021	0.31%	0.00%	0.24%	1.19%	0.00%	0.93%	2.05%	0.00%	1.61%
2022	0.88%	0.00%	0.68%	1.74%	0.00%	1.36%	2.58%	0.00%	2.04%
2023	0.87%	0.00%	0.67%	1.71%	0.00%	1.34%	2.53%	0.00%	2.01%
2024	1.44%	0.00%	1.11%	2.26%	0.00%	1.78%	3.06%	0.00%	2.45%
2025	0.26%	0.00%	0.20%	1.08%	0.00%	0.85%	1.87%	0.00%	1.50%
2026	0.83%	0.00%	0.65%	1.63%	0.00%	1.29%	2.40%	0.00%	1.94%
2027	0.82%	0.00%	0.64%	1.60%	0.00%	1.27%	2.36%	0.00%	1.91%
2028	1.38%	0.00%	1.08%	2.14%	0.00%	1.71%	2.87%	0.00%	2.34%
2029	0.22%	0.00%	0.17%	0.98%	0.00%	0.78%	1.71%	0.00%	1.40%
2030	0.78%	0.00%	0.61%	1.52%	0.00%	1.22%	2.23%	0.00%	1.83%
2031	0.77%	0.00%	0.60%	1.50%	0.00%	1.20%	2.19%	0.00%	1.81%
2032	1.33%	0.00%	1.04%	2.03%	0.00%	1.64%	2.70%	0.00%	2.23%
2033	0.18%	0.00%	0.14%	0.89%	0.00%	0.72%	1.57%	0.00%	1.31%
2034	0.74%	0.00%	0.58%	1.43%	0.00%	1.16%	2.09%	0.00%	1.74%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	28,207	450,689	478,896	28,207	454,161	482,367	28,207	457,632	485,839
2016	28,207	454,151	482,357	28,207	461,135	489,342	28,207	468,169	496,376
2017	28,207	457,604	485,811	28,207	468,141	496,348	28,207	478,830	507,037
2018	28,207	461,052	489,259	28,207	475,187	503,394	28,207	489,627	517,834
2019	28,207	464,488	492,695	28,207	482,258	510,465	28,207	500,538	528,745
2020	28,207	467,905	496,112	28,207	489,340	517,547	28,207	511,541	539,748
2021	28,207	471,314	499,521	28,207	496,453	524,660	28,207	522,669	550,876
2022	28,207	474,702	502,909	28,207	503,570	531,777	28,207	533,879	562,086
2023	28,207	478,066	506,273	28,207	510,685	538,892	28,207	545,160	573,367
2024	28,207	481,419	509,626	28,207	517,822	546,029	28,207	556,551	584,758
2025	28,207	484,738	512,945	28,207	524,935	553,142	28,207	567,978	596,185
2026	28,207	488,042	516,249	28,207	532,061	560,268	28,207	579,500	607,707
2027	28,207	491,319	519,526	28,207	539,175	567,382	28,207	591,075	619,282
2028	28,207	494,572	522,779	28,207	546,280	574,487	28,207	602,710	630,917
2029	28,207	497,793	526,000	28,207	553,361	581,567	28,207	614,374	642,581
2030	28,207	500,988	529,195	28,207	560,426	588,633	28,207	626,086	654,293
2031	28,207	504,167	532,374	28,207	567,500	595,706	28,207	637,881	666,088
2032	28,207	507,319	535,526	28,207	574,555	602,762	28,207	649,716	677,923
2033	28,207	510,455	538,662	28,207	581,614	609,821	28,207	661,626	689,833
2034	28,207	513,569	541,776	28,207	588,667	616,874	28,207	673,594	701,801

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.77%	0.72%	0.00%	1.54%	1.45%	0.00%	2.30%	2.17%
2017	0.00%	0.76%	0.72%	0.00%	1.52%	1.43%	0.00%	2.28%	2.15%
2018	0.00%	0.75%	0.71%	0.00%	1.51%	1.42%	0.00%	2.25%	2.13%
2019	0.00%	0.75%	0.70%	0.00%	1.49%	1.40%	0.00%	2.23%	2.11%
2020	0.00%	0.74%	0.69%	0.00%	1.47%	1.39%	0.00%	2.20%	2.08%
2021	0.00%	0.73%	0.69%	0.00%	1.45%	1.37%	0.00%	2.18%	2.06%
2022	0.00%	0.72%	0.68%	0.00%	1.43%	1.36%	0.00%	2.14%	2.03%
2023	0.00%	0.71%	0.67%	0.00%	1.41%	1.34%	0.00%	2.11%	2.01%
2024	0.00%	0.70%	0.66%	0.00%	1.40%	1.32%	0.00%	2.09%	1.99%
2025	0.00%	0.69%	0.65%	0.00%	1.37%	1.30%	0.00%	2.05%	1.95%
2026	0.00%	0.68%	0.64%	0.00%	1.36%	1.29%	0.00%	2.03%	1.93%
2027	0.00%	0.67%	0.63%	0.00%	1.34%	1.27%	0.00%	2.00%	1.90%
2028	0.00%	0.66%	0.63%	0.00%	1.32%	1.25%	0.00%	1.97%	1.88%
2029	0.00%	0.65%	0.62%	0.00%	1.30%	1.23%	0.00%	1.94%	1.85%
2030	0.00%	0.64%	0.61%	0.00%	1.28%	1.21%	0.00%	1.91%	1.82%
2031	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.88%	1.80%
2032	0.00%	0.63%	0.59%	0.00%	1.24%	1.18%	0.00%	1.86%	1.78%
2033	0.00%	0.62%	0.59%	0.00%	1.23%	1.17%	0.00%	1.83%	1.76%
2034	0.00%	0.61%	0.58%	0.00%	1.21%	1.16%	0.00%	1.81%	1.73%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	25,796,793	16,855,817	42,652,610	25,984,101	16,978,265	42,962,366	26,171,408	17,100,713	43,272,122
2016	26,102,337	17,051,027	43,153,363	26,480,848	17,298,405	43,779,252	26,862,087	17,547,566	44,409,654
2017	26,169,848	17,099,693	43,269,541	26,738,337	17,471,332	44,209,668	27,315,010	17,848,323	45,163,332
2018	26,355,865	17,221,295	43,577,159	27,118,462	17,719,827	44,838,289	27,897,510	18,229,119	46,126,629
2019	26,541,240	17,342,479	43,883,719	27,499,953	17,969,221	45,469,173	28,486,207	18,613,974	47,100,181
2020	26,847,760	17,538,197	44,385,956	28,009,443	18,297,427	46,306,870	29,212,767	19,083,882	48,296,650
2021	26,909,496	17,583,214	44,492,710	28,265,735	18,469,833	46,735,568	29,680,217	19,394,543	49,074,760
2022	27,092,261	17,702,690	44,794,951	28,649,710	18,720,848	47,370,557	30,285,036	19,789,938	50,074,974
2023	27,273,742	17,821,327	45,095,069	29,033,562	18,971,785	48,005,346	30,893,719	20,187,864	51,081,582
2024	27,580,072	18,016,795	45,596,867	29,553,061	19,306,270	48,859,331	31,652,325	20,678,308	52,330,633
2025	27,633,624	18,056,588	45,690,211	29,802,336	19,474,359	49,276,695	32,124,864	20,992,726	53,117,590
2026	27,811,854	18,173,099	45,984,953	30,186,806	19,725,697	49,912,503	32,746,562	21,399,160	54,145,722
2027	27,988,636	18,288,664	46,277,300	30,570,596	19,976,596	50,547,192	33,371,120	21,807,472	55,178,592
2028	28,292,850	18,482,625	46,775,475	31,095,441	20,314,312	51,409,754	34,154,294	22,313,554	56,467,847
2029	28,337,874	18,516,966	46,854,840	31,335,948	20,476,935	51,812,883	34,628,314	22,629,375	57,257,689
2030	28,510,228	18,629,636	47,139,864	31,717,165	20,726,153	52,443,319	35,260,287	23,042,539	58,302,826
2031	28,681,724	18,741,745	47,423,468	32,098,780	20,975,630	53,074,410	35,896,725	23,458,621	59,355,346
2032	28,983,658	18,934,097	47,917,755	32,627,905	21,315,883	53,943,788	36,702,348	23,978,950	60,681,299
2033	29,020,910	18,963,475	47,984,385	32,860,294	21,473,463	54,333,758	37,178,046	24,296,312	61,474,359
2034	29,188,918	19,073,304	48,262,222	33,240,812	21,722,226	54,963,038	37,823,902	24,718,559	62,542,461

Annual Change

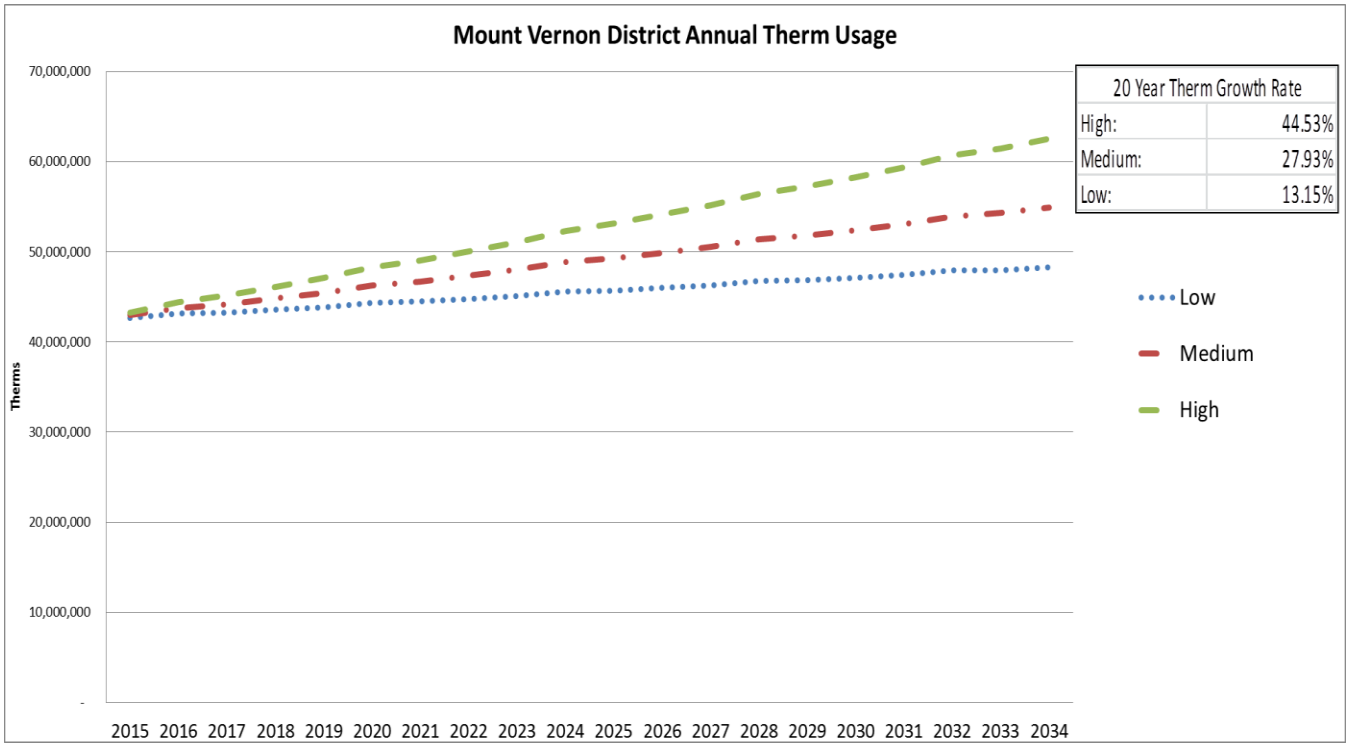
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.18%	1.16%	1.17%	1.91%	1.89%	1.90%	2.64%	2.61%	2.63%
2017	0.26%	0.29%	0.27%	0.97%	1.00%	0.98%	1.69%	1.71%	1.70%
2018	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2019	0.70%	0.70%	0.70%	1.41%	1.41%	1.41%	2.11%	2.11%	2.11%
2020	1.15%	1.13%	1.14%	1.85%	1.83%	1.84%	2.55%	2.52%	2.54%
2021	0.23%	0.26%	0.24%	0.92%	0.94%	0.93%	1.60%	1.63%	1.61%
2022	0.68%	0.68%	0.68%	1.36%	1.36%	1.36%	2.04%	2.04%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.01%	2.01%
2024	1.12%	1.10%	1.11%	1.79%	1.76%	1.78%	2.46%	2.43%	2.45%
2025	0.19%	0.22%	0.20%	0.84%	0.87%	0.85%	1.49%	1.52%	1.50%
2026	0.64%	0.65%	0.65%	1.29%	1.29%	1.29%	1.94%	1.94%	1.94%
2027	0.64%	0.64%	0.64%	1.27%	1.27%	1.27%	1.91%	1.91%	1.91%
2028	1.09%	1.06%	1.08%	1.72%	1.69%	1.71%	2.35%	2.32%	2.34%
2029	0.16%	0.19%	0.17%	0.77%	0.80%	0.78%	1.39%	1.42%	1.40%
2030	0.61%	0.61%	0.61%	1.22%	1.22%	1.22%	1.83%	1.83%	1.83%
2031	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.81%	1.81%
2032	1.05%	1.03%	1.04%	1.65%	1.62%	1.64%	2.24%	2.22%	2.23%
2033	0.13%	0.16%	0.14%	0.71%	0.74%	0.72%	1.30%	1.32%	1.31%
2034	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.74%	1.74%

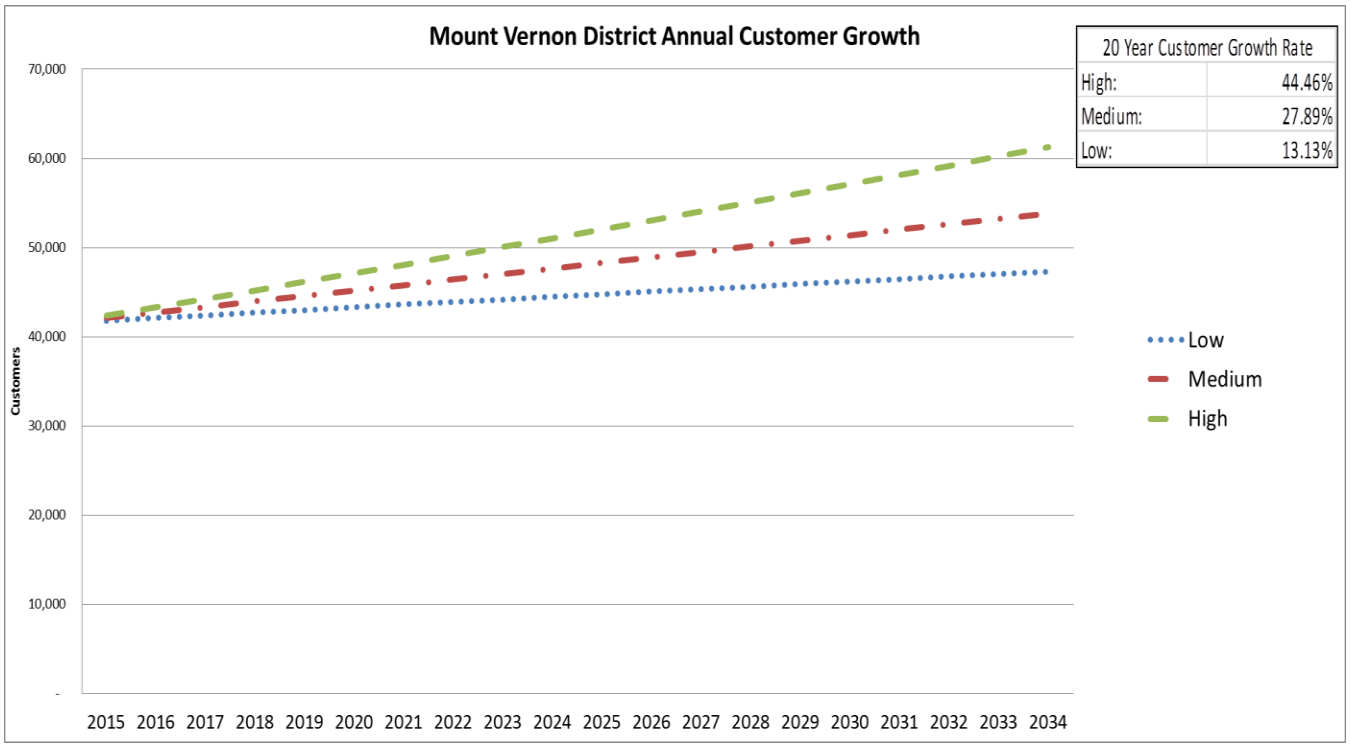
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	37,034	4,772	41,806	37,303	4,807	42,110	37,572	4,841	42,413
2016	37,302	4,806	42,109	37,843	4,876	42,719	38,387	4,946	43,333
2017	37,569	4,841	42,410	38,385	4,946	43,330	39,212	5,052	44,264
2018	37,836	4,875	42,711	38,930	5,016	43,946	40,047	5,160	45,206
2019	38,102	4,909	43,011	39,477	5,086	44,563	40,891	5,268	46,159
2020	38,366	4,943	43,310	40,025	5,157	45,181	41,742	5,378	47,120
2021	38,630	4,977	43,607	40,575	5,227	45,803	42,603	5,488	48,092
2022	38,892	5,011	43,903	41,126	5,298	46,424	43,471	5,600	49,071
2023	39,153	5,044	44,197	41,676	5,369	47,045	44,344	5,712	50,056
2024	39,412	5,078	44,490	42,228	5,440	47,668	45,225	5,826	51,050
2025	39,669	5,111	44,780	42,779	5,511	48,290	46,109	5,939	52,048
2026	39,924	5,144	45,068	43,330	5,582	48,912	47,001	6,054	53,054
2027	40,178	5,176	45,354	43,880	5,653	49,533	47,896	6,169	54,065
2028	40,429	5,209	45,638	44,430	5,723	50,153	48,796	6,285	55,081
2029	40,679	5,241	45,919	44,978	5,794	50,772	49,699	6,401	56,100
2030	40,926	5,273	46,198	45,525	5,864	51,389	50,605	6,517	57,122
2031	41,172	5,304	46,476	46,072	5,935	52,006	51,518	6,635	58,152
2032	41,416	5,336	46,751	46,618	6,005	52,622	52,433	6,753	59,186
2033	41,658	5,367	47,025	47,164	6,075	53,239	53,355	6,871	60,226
2034	41,899	5,398	47,297	47,710	6,145	53,855	54,281	6,990	61,271

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.72%	0.72%	0.72%	1.45%	1.44%	1.45%	2.17%	2.17%	2.17%
2017	0.72%	0.71%	0.72%	1.43%	1.43%	1.43%	2.15%	2.15%	2.15%
2018	0.71%	0.71%	0.71%	1.42%	1.42%	1.42%	2.13%	2.13%	2.13%
2019	0.70%	0.70%	0.70%	1.41%	1.40%	1.41%	2.11%	2.10%	2.11%
2020	0.69%	0.69%	0.69%	1.39%	1.39%	1.39%	2.08%	2.08%	2.08%
2021	0.69%	0.69%	0.69%	1.37%	1.37%	1.37%	2.06%	2.06%	2.06%
2022	0.68%	0.68%	0.68%	1.36%	1.35%	1.36%	2.04%	2.03%	2.04%
2023	0.67%	0.67%	0.67%	1.34%	1.34%	1.34%	2.01%	2.00%	2.01%
2024	0.66%	0.66%	0.66%	1.32%	1.32%	1.32%	1.99%	1.98%	1.99%
2025	0.65%	0.65%	0.65%	1.30%	1.30%	1.30%	1.95%	1.95%	1.95%
2026	0.64%	0.64%	0.64%	1.29%	1.29%	1.29%	1.93%	1.93%	1.93%
2027	0.64%	0.63%	0.63%	1.27%	1.27%	1.27%	1.91%	1.90%	1.91%
2028	0.63%	0.63%	0.63%	1.25%	1.25%	1.25%	1.88%	1.88%	1.88%
2029	0.62%	0.62%	0.62%	1.23%	1.23%	1.23%	1.85%	1.85%	1.85%
2030	0.61%	0.61%	0.61%	1.22%	1.21%	1.22%	1.82%	1.82%	1.82%
2031	0.60%	0.60%	0.60%	1.20%	1.20%	1.20%	1.80%	1.80%	1.80%
2032	0.59%	0.59%	0.59%	1.18%	1.18%	1.18%	1.78%	1.77%	1.78%
2033	0.59%	0.58%	0.59%	1.17%	1.17%	1.17%	1.76%	1.75%	1.76%
2034	0.58%	0.58%	0.58%	1.16%	1.16%	1.16%	1.74%	1.73%	1.74%


Mount Vernon District Annual Therm Usage
Therms
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 44.53%
Medium: 27.93%
Low: 13.15%
Low
Medium
High


Mount Vernon District Annual Customer Growth
Customers
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 44.46%
Medium: 27.89%
Low: 13.13%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Bremerton District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	24,277,702	8,971,425	33,249,127	24,457,667	8,971,425	33,429,092	24,637,632	8,971,425	33,609,057
2016	24,606,718	8,971,425	33,578,143	24,970,120	8,971,425	33,941,546	25,335,479	8,971,425	34,306,905
2017	24,637,408	8,971,425	33,608,833	25,182,918	8,971,425	34,154,343	25,734,300	8,971,425	34,705,725
2018	24,817,309	8,971,425	33,788,734	25,548,561	8,971,425	34,519,986	26,291,618	8,971,425	35,263,043
2019	24,997,045	8,971,425	33,968,471	25,915,813	8,971,425	34,887,238	26,854,354	8,971,425	35,825,779
2020	25,328,218	8,971,425	34,299,644	26,440,429	8,971,425	35,411,855	27,582,532	8,971,425	36,553,958
2021	25,354,708	8,971,425	34,326,133	26,652,409	8,971,425	35,623,835	27,991,936	8,971,425	36,963,361
2022	25,532,497	8,971,425	34,503,923	27,021,432	8,971,425	35,992,857	28,566,284	8,971,425	37,537,709
2023	25,709,222	8,971,425	34,680,647	27,390,132	8,971,425	36,361,557	29,143,072	8,971,425	38,114,497
2024	26,040,982	8,971,425	35,012,407	27,923,589	8,971,425	36,895,015	29,896,812	8,971,425	38,868,237
2025	26,060,033	8,971,425	35,031,459	28,127,613	8,971,425	37,099,039	30,305,533	8,971,425	39,276,958
2026	26,233,844	8,971,425	35,205,269	28,495,750	8,971,425	37,467,176	30,890,156	8,971,425	39,861,581
2027	26,406,384	8,971,425	35,377,809	28,863,001	8,971,425	37,834,427	31,476,237	8,971,425	40,447,663
2028	26,736,232	8,971,425	35,707,657	29,399,714	8,971,425	38,371,139	32,246,686	8,971,425	41,218,111
2029	26,747,127	8,971,425	35,718,552	29,593,557	8,971,425	38,564,982	32,650,561	8,971,425	41,621,986
2030	26,915,222	8,971,425	35,886,648	29,956,539	8,971,425	38,927,964	33,238,194	8,971,425	42,209,619
2031	27,082,646	8,971,425	36,054,071	30,319,763	8,971,425	39,291,188	33,828,959	8,971,425	42,800,384
2032	27,410,295	8,971,425	36,381,720	30,858,604	8,971,425	39,830,030	34,613,935	8,971,425	43,585,361
2033	27,413,893	8,971,425	36,385,318	31,043,390	8,971,425	40,014,815	35,014,040	8,971,425	43,985,465
2034	27,578,079	8,971,425	36,549,504	31,404,518	8,971,425	40,375,943	35,609,485	8,971,425	44,580,910

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.36%	0.00%	0.99%	2.10%	0.00%	1.53%	2.83%	0.00%	2.08%
2017	0.12%	0.00%	0.09%	0.85%	0.00%	0.63%	1.57%	0.00%	1.16%
2018	0.73%	0.00%	0.54%	1.45%	0.00%	1.07%	2.17%	0.00%	1.61%
2019	0.72%	0.00%	0.53%	1.44%	0.00%	1.06%	2.14%	0.00%	1.60%
2020	1.32%	0.00%	0.97%	2.02%	0.00%	1.50%	2.71%	0.00%	2.03%
2021	0.10%	0.00%	0.08%	0.80%	0.00%	0.60%	1.48%	0.00%	1.12%
2022	0.70%	0.00%	0.52%	1.38%	0.00%	1.04%	2.05%	0.00%	1.55%
2023	0.69%	0.00%	0.51%	1.36%	0.00%	1.02%	2.02%	0.00%	1.54%
2024	1.29%	0.00%	0.96%	1.95%	0.00%	1.47%	2.59%	0.00%	1.98%
2025	0.07%	0.00%	0.05%	0.73%	0.00%	0.55%	1.37%	0.00%	1.05%
2026	0.67%	0.00%	0.50%	1.31%	0.00%	0.99%	1.93%	0.00%	1.49%
2027	0.66%	0.00%	0.49%	1.29%	0.00%	0.98%	1.90%	0.00%	1.47%
2028	1.25%	0.00%	0.93%	1.86%	0.00%	1.42%	2.45%	0.00%	1.90%
2029	0.04%	0.00%	0.03%	0.66%	0.00%	0.51%	1.25%	0.00%	0.98%
2030	0.63%	0.00%	0.47%	1.23%	0.00%	0.94%	1.80%	0.00%	1.41%
2031	0.62%	0.00%	0.47%	1.21%	0.00%	0.93%	1.78%	0.00%	1.40%
2032	1.21%	0.00%	0.91%	1.78%	0.00%	1.37%	2.32%	0.00%	1.83%
2033	0.01%	0.00%	0.01%	0.60%	0.00%	0.46%	1.16%	0.00%	0.92%
2034	0.60%	0.00%	0.45%	1.16%	0.00%	0.90%	1.70%	0.00%	1.35%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	24,579	302,613	327,192	24,579	304,384	328,963	24,579	306,155	330,734
2016	24,579	304,383	328,962	24,579	307,943	332,522	24,579	311,523	336,102
2017	24,579	306,153	330,732	24,579	311,521	336,100	24,579	316,947	341,526
2018	24,579	307,923	332,502	24,579	315,119	339,698	24,579	322,431	347,010
2019	24,579	309,692	334,271	24,579	318,733	343,312	24,579	327,969	352,548
2020	24,579	311,451	336,031	24,579	322,348	346,927	24,579	333,537	358,116
2021	24,579	313,211	337,790	24,579	325,981	350,561	24,579	339,163	363,742
2022	24,579	314,961	339,540	24,579	329,613	354,192	24,579	344,815	369,394
2023	24,579	316,700	341,279	24,579	333,241	357,820	24,579	350,491	375,070
2024	24,579	318,434	343,014	24,579	336,878	361,457	24,579	356,210	380,789
2025	24,579	320,152	344,731	24,579	340,498	365,078	24,579	361,930	386,510
2026	24,579	321,862	346,442	24,579	344,121	368,700	24,579	367,683	392,263
2027	24,579	323,560	348,140	24,579	347,735	372,314	24,579	373,451	398,030
2028	24,579	325,246	349,825	24,579	351,339	375,919	24,579	379,231	403,810
2029	24,579	326,913	351,493	24,579	354,924	379,503	24,579	385,007	409,586
2030	24,579	328,568	353,147	24,579	358,496	383,075	24,579	390,790	415,369
2031	24,579	330,215	354,794	24,579	362,070	386,650	24,579	396,603	421,182
2032	24,579	331,849	356,429	24,579	365,632	390,211	24,579	402,423	427,002
2033	24,579	333,475	358,054	24,579	369,191	393,771	24,579	408,265	432,844
2034	24,579	335,091	359,670	24,579	372,745	397,324	24,579	414,125	438,704

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.58%	0.54%	0.00%	1.17%	1.08%	0.00%	1.75%	1.62%
2017	0.00%	0.58%	0.54%	0.00%	1.16%	1.08%	0.00%	1.74%	1.61%
2018	0.00%	0.58%	0.54%	0.00%	1.16%	1.07%	0.00%	1.73%	1.61%
2019	0.00%	0.57%	0.53%	0.00%	1.15%	1.06%	0.00%	1.72%	1.60%
2020	0.00%	0.57%	0.53%	0.00%	1.13%	1.05%	0.00%	1.70%	1.58%
2021	0.00%	0.57%	0.52%	0.00%	1.13%	1.05%	0.00%	1.69%	1.57%
2022	0.00%	0.56%	0.52%	0.00%	1.11%	1.04%	0.00%	1.67%	1.55%
2023	0.00%	0.55%	0.51%	0.00%	1.10%	1.02%	0.00%	1.65%	1.54%
2024	0.00%	0.55%	0.51%	0.00%	1.09%	1.02%	0.00%	1.63%	1.52%
2025	0.00%	0.54%	0.50%	0.00%	1.07%	1.00%	0.00%	1.61%	1.50%
2026	0.00%	0.53%	0.50%	0.00%	1.06%	0.99%	0.00%	1.59%	1.49%
2027	0.00%	0.53%	0.49%	0.00%	1.05%	0.98%	0.00%	1.57%	1.47%
2028	0.00%	0.52%	0.48%	0.00%	1.04%	0.97%	0.00%	1.55%	1.45%
2029	0.00%	0.51%	0.48%	0.00%	1.02%	0.95%	0.00%	1.52%	1.43%
2030	0.00%	0.51%	0.47%	0.00%	1.01%	0.94%	0.00%	1.50%	1.41%
2031	0.00%	0.50%	0.47%	0.00%	1.00%	0.93%	0.00%	1.49%	1.40%
2032	0.00%	0.49%	0.46%	0.00%	0.98%	0.92%	0.00%	1.47%	1.38%
2033	0.00%	0.49%	0.46%	0.00%	0.97%	0.91%	0.00%	1.45%	1.37%
2034	0.00%	0.48%	0.45%	0.00%	0.96%	0.90%	0.00%	1.44%	1.35%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	20,246,951	13,002,176	33,249,127	20,356,541	13,072,552	33,429,092	20,466,130	13,142,928	33,609,057
2016	20,449,351	13,128,792	33,578,143	20,670,666	13,270,879	33,941,546	20,893,173	13,413,732	34,306,905
2017	20,465,993	13,142,840	33,608,833	20,798,180	13,356,163	34,154,343	21,133,942	13,571,783	34,705,725
2018	20,575,543	13,213,191	33,788,734	21,020,837	13,499,149	34,519,986	21,473,319	13,789,724	35,263,043
2019	20,684,993	13,283,477	33,968,471	21,244,474	13,642,764	34,887,238	21,815,996	14,009,784	35,825,779
2020	20,888,751	13,410,893	34,299,644	21,566,096	13,845,759	35,411,855	22,261,646	14,292,312	36,553,958
2021	20,902,791	13,423,342	34,326,133	21,693,022	13,930,813	35,623,835	22,508,723	14,454,639	36,963,361
2022	21,011,055	13,492,868	34,503,923	21,917,737	14,075,120	35,992,857	22,858,470	14,679,239	37,537,709
2023	21,118,671	13,561,976	34,680,647	22,142,256	14,219,301	36,361,557	23,209,703	14,904,794	38,114,497
2024	21,322,829	13,689,578	35,012,407	22,469,352	14,425,663	36,895,015	23,671,060	15,197,177	38,868,237
2025	21,332,297	13,699,162	35,031,459	22,591,343	14,507,696	37,099,039	23,917,580	15,359,378	39,276,958
2026	21,438,138	13,767,131	35,205,269	22,815,519	14,651,657	37,467,176	24,273,584	15,587,997	39,861,581
2027	21,543,205	13,834,603	35,377,809	23,039,155	14,795,272	37,834,427	24,630,477	15,817,186	40,447,663
2028	21,746,242	13,961,415	35,707,657	23,368,323	15,002,816	38,371,139	25,102,152	16,115,960	41,218,111
2029	21,750,700	13,967,852	35,718,552	23,484,025	15,080,958	38,564,982	25,345,578	16,276,409	41,621,986
2030	21,853,061	14,033,586	35,886,648	23,705,061	15,222,903	38,927,964	25,703,415	16,506,204	42,209,619
2031	21,955,013	14,099,058	36,054,071	23,926,245	15,364,943	39,291,188	26,063,159	16,737,225	42,800,384
2032	22,156,752	14,224,968	36,381,720	24,256,799	15,573,231	39,830,030	26,543,825	17,041,536	43,585,361
2033	22,156,725	14,228,593	36,385,318	24,366,896	15,647,919	40,014,815	26,784,811	17,200,655	43,985,465
2034	22,256,706	14,292,799	36,549,504	24,586,804	15,789,140	40,375,943	27,147,405	17,433,505	44,580,910

Annual Change

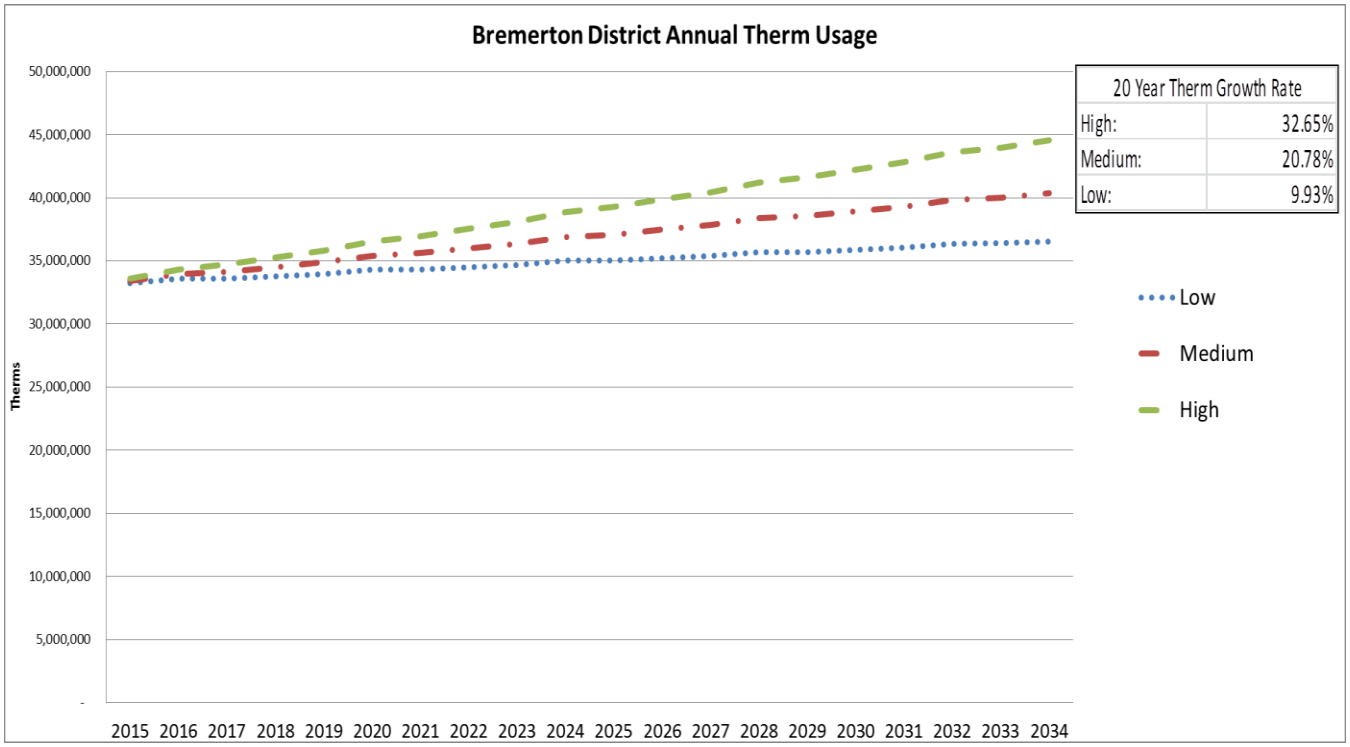
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.00%	0.97%	0.99%	1.54%	1.52%	1.53%	2.09%	2.06%	2.08%
2017	0.08%	0.11%	0.09%	0.62%	0.64%	0.63%	1.15%	1.18%	1.16%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.99%	0.96%	0.97%	1.51%	1.49%	1.50%	2.04%	2.02%	2.03%
2021	0.07%	0.09%	0.08%	0.59%	0.61%	0.60%	1.11%	1.14%	1.12%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.97%	0.94%	0.96%	1.48%	1.45%	1.47%	1.99%	1.96%	1.98%
2025	0.04%	0.07%	0.05%	0.54%	0.57%	0.55%	1.04%	1.07%	1.05%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.94%	0.92%	0.93%	1.43%	1.40%	1.42%	1.92%	1.89%	1.90%
2029	0.02%	0.05%	0.03%	0.50%	0.52%	0.51%	0.97%	1.00%	0.98%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.92%	0.89%	0.91%	1.38%	1.36%	1.37%	1.84%	1.82%	1.83%
2033	0.00%	0.03%	0.01%	0.45%	0.48%	0.46%	0.91%	0.93%	0.92%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%

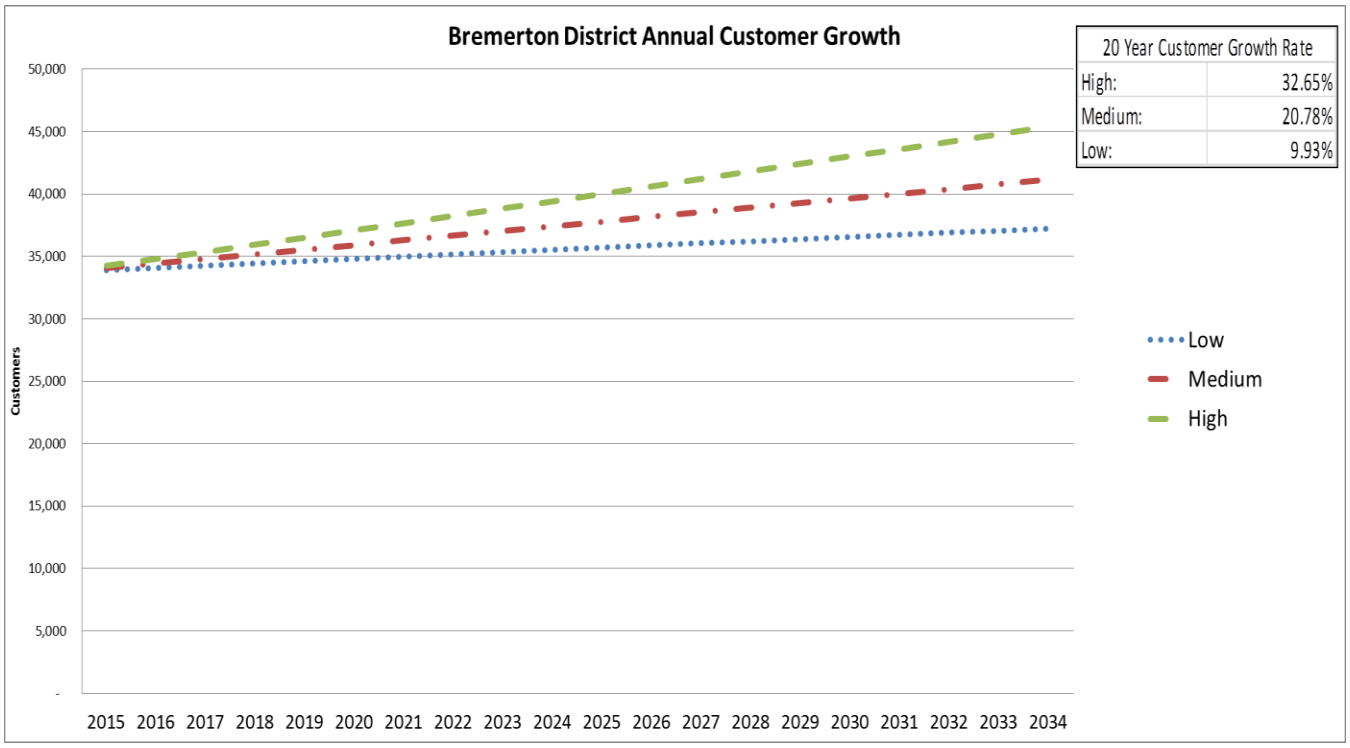
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	30,924	2,957	33,881	31,091	2,973	34,064	31,258	2,989	34,247
2016	31,091	2,973	34,064	31,427	3,005	34,433	31,766	3,038	34,803
2017	31,258	2,989	34,247	31,765	3,038	34,803	32,278	3,087	35,365
2018	31,425	3,005	34,430	32,106	3,070	35,176	32,797	3,136	35,933
2019	31,593	3,021	34,614	32,447	3,103	35,550	33,320	3,186	36,506
2020	31,759	3,037	34,796	32,789	3,135	35,924	33,846	3,236	37,083
2021	31,925	3,053	34,978	33,132	3,168	36,300	34,378	3,287	37,665
2022	32,091	3,069	35,159	33,475	3,201	36,676	34,912	3,338	38,251
2023	32,255	3,084	35,339	33,818	3,234	37,052	35,449	3,390	38,838
2024	32,419	3,100	35,519	34,162	3,267	37,429	35,989	3,441	39,430
2025	32,581	3,116	35,697	34,504	3,299	37,804	36,530	3,493	40,023
2026	32,743	3,131	35,874	34,847	3,332	38,179	37,073	3,545	40,619
2027	32,903	3,146	36,050	35,188	3,365	38,553	37,619	3,597	41,216
2028	33,063	3,162	36,224	35,529	3,397	38,926	38,165	3,649	41,814
2029	33,220	3,177	36,397	35,868	3,430	39,297	38,711	3,702	42,412
2030	33,377	3,192	36,568	36,205	3,462	39,667	39,257	3,754	43,011
2031	33,532	3,206	36,739	36,543	3,494	40,037	39,807	3,806	43,613
2032	33,687	3,221	36,908	36,880	3,527	40,406	40,357	3,859	44,216
2033	33,840	3,236	37,076	37,216	3,559	40,775	40,909	3,912	44,821
2034	33,993	3,251	37,244	37,552	3,591	41,143	41,463	3,965	45,428

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.62%	1.62%	1.62%
2017	0.54%	0.54%	0.54%	1.08%	1.08%	1.08%	1.61%	1.61%	1.61%
2018	0.54%	0.54%	0.54%	1.07%	1.07%	1.07%	1.61%	1.61%	1.61%
2019	0.53%	0.53%	0.53%	1.06%	1.06%	1.06%	1.60%	1.60%	1.60%
2020	0.53%	0.53%	0.53%	1.05%	1.05%	1.05%	1.58%	1.58%	1.58%
2021	0.52%	0.52%	0.52%	1.05%	1.05%	1.05%	1.57%	1.57%	1.57%
2022	0.52%	0.52%	0.52%	1.04%	1.04%	1.04%	1.55%	1.55%	1.55%
2023	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.54%	1.54%	1.54%
2024	0.51%	0.51%	0.51%	1.02%	1.02%	1.02%	1.52%	1.52%	1.52%
2025	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.50%	1.50%	1.50%
2026	0.50%	0.50%	0.50%	0.99%	0.99%	0.99%	1.49%	1.49%	1.49%
2027	0.49%	0.49%	0.49%	0.98%	0.98%	0.98%	1.47%	1.47%	1.47%
2028	0.48%	0.48%	0.48%	0.97%	0.97%	0.97%	1.45%	1.45%	1.45%
2029	0.48%	0.48%	0.48%	0.95%	0.95%	0.95%	1.43%	1.43%	1.43%
2030	0.47%	0.47%	0.47%	0.94%	0.94%	0.94%	1.41%	1.41%	1.41%
2031	0.47%	0.47%	0.47%	0.93%	0.93%	0.93%	1.40%	1.40%	1.40%
2032	0.46%	0.46%	0.46%	0.92%	0.92%	0.92%	1.38%	1.38%	1.38%
2033	0.46%	0.46%	0.46%	0.91%	0.91%	0.91%	1.37%	1.37%	1.37%
2034	0.45%	0.45%	0.45%	0.90%	0.90%	0.90%	1.35%	1.35%	1.35%


Bremerton District Annual Therm Usage
Therms
50,000,000
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High


Bremerton District Annual Customer Growth
Customers
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 32.65%
Medium: 20.78%
Low: 9.93%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Longview District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	4,245,541	1,859,912	6,105,453	4,276,386	1,859,912	6,136,299	4,307,232	1,859,912	6,167,145
2016	4,305,281	1,859,912	6,165,193	4,367,718	1,859,912	6,227,630	4,430,747	1,859,912	6,290,660
2017	4,306,878	1,859,912	6,166,790	4,400,810	1,859,912	6,260,722	4,496,512	1,859,912	6,356,424
2018	4,337,404	1,859,912	6,197,316	4,463,574	1,859,912	6,323,486	4,593,291	1,859,912	6,453,203
2019	4,367,806	1,859,912	6,227,719	4,526,627	1,859,912	6,386,540	4,691,370	1,859,912	6,551,282
2020	4,427,566	1,859,912	6,287,478	4,620,207	1,859,912	6,480,119	4,821,777	1,859,912	6,681,690
2021	4,428,076	1,859,912	6,287,988	4,653,202	1,859,912	6,513,114	4,890,787	1,859,912	6,750,700
2022	4,457,944	1,859,912	6,317,856	4,716,692	1,859,912	6,576,604	4,992,064	1,859,912	6,851,976
2023	4,487,565	1,859,912	6,347,477	4,780,156	1,859,912	6,640,069	5,094,125	1,859,912	6,954,037
2024	4,547,137	1,859,912	6,407,049	4,875,348	1,859,912	6,735,260	5,230,405	1,859,912	7,090,317
2025	4,546,174	1,859,912	6,406,086	4,907,167	1,859,912	6,767,079	5,300,818	1,859,912	7,160,731
2026	4,575,146	1,859,912	6,435,058	4,970,654	1,859,912	6,830,567	5,405,339	1,859,912	7,265,251
2027	4,603,860	1,859,912	6,463,772	5,034,031	1,859,912	6,893,943	5,510,475	1,859,912	7,370,387
2028	4,662,934	1,859,912	6,522,846	5,129,990	1,859,912	6,989,902	5,651,221	1,859,912	7,511,134
2029	4,660,433	1,859,912	6,520,346	5,160,239	1,859,912	7,020,152	5,722,209	1,859,912	7,582,122
2030	4,688,283	1,859,912	6,548,195	5,223,021	1,859,912	7,082,933	5,828,706	1,859,912	7,688,618
2031	4,715,973	1,859,912	6,575,885	5,285,853	1,859,912	7,145,765	5,936,038	1,859,912	7,795,950
2032	4,774,526	1,859,912	6,634,438	5,382,349	1,859,912	7,242,262	6,080,781	1,859,912	7,940,693
2033	4,770,620	1,859,912	6,630,532	5,411,086	1,859,912	7,270,998	6,152,239	1,859,912	8,012,151
2034	4,797,653	1,859,912	6,657,565	5,473,630	1,859,912	7,333,542	6,261,324	1,859,912	8,121,236

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.41%	0.00%	0.98%	2.14%	0.00%	1.49%	2.87%	0.00%	2.00%
2017	0.04%	0.00%	0.03%	0.76%	0.00%	0.53%	1.48%	0.00%	1.05%
2018	0.71%	0.00%	0.50%	1.43%	0.00%	1.00%	2.15%	0.00%	1.52%
2019	0.70%	0.00%	0.49%	1.41%	0.00%	1.00%	2.14%	0.00%	1.52%
2020	1.37%	0.00%	0.96%	2.07%	0.00%	1.47%	2.78%	0.00%	1.99%
2021	0.01%	0.00%	0.01%	0.71%	0.00%	0.51%	1.43%	0.00%	1.03%
2022	0.67%	0.00%	0.47%	1.36%	0.00%	0.97%	2.07%	0.00%	1.50%
2023	0.66%	0.00%	0.47%	1.35%	0.00%	0.97%	2.04%	0.00%	1.49%
2024	1.33%	0.00%	0.94%	1.99%	0.00%	1.43%	2.68%	0.00%	1.96%
2025	-0.02%	0.00%	-0.02%	0.65%	0.00%	0.47%	1.35%	0.00%	0.99%
2026	0.64%	0.00%	0.45%	1.29%	0.00%	0.94%	1.97%	0.00%	1.46%
2027	0.63%	0.00%	0.45%	1.28%	0.00%	0.93%	1.95%	0.00%	1.45%
2028	1.28%	0.00%	0.91%	1.91%	0.00%	1.39%	2.55%	0.00%	1.91%
2029	-0.05%	0.00%	-0.04%	0.59%	0.00%	0.43%	1.26%	0.00%	0.95%
2030	0.60%	0.00%	0.43%	1.22%	0.00%	0.89%	1.86%	0.00%	1.40%
2031	0.59%	0.00%	0.42%	1.20%	0.00%	0.89%	1.84%	0.00%	1.40%
2032	1.24%	0.00%	0.89%	1.83%	0.00%	1.35%	2.44%	0.00%	1.86%
2033	-0.08%	0.00%	-0.06%	0.53%	0.00%	0.40%	1.18%	0.00%	0.90%
2034	0.57%	0.00%	0.41%	1.16%	0.00%	0.86%	1.77%	0.00%	1.36%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	5,096	58,402	63,498	5,096	58,710	63,806	5,096	59,018	64,114
2016	5,096	58,709	63,805	5,096	59,330	64,426	5,096	59,956	65,052
2017	5,096	59,015	64,111	5,096	59,953	65,049	5,096	60,909	66,004
2018	5,096	59,321	64,416	5,096	60,581	65,677	5,096	61,876	66,971
2019	5,096	59,625	64,721	5,096	61,211	66,307	5,096	62,855	67,951
2020	5,096	59,927	65,023	5,096	61,843	66,939	5,096	63,845	68,941
2021	5,096	60,229	65,324	5,096	62,478	67,573	5,096	64,847	69,943
2022	5,096	60,528	65,624	5,096	63,113	68,208	5,096	65,859	70,954
2023	5,096	60,825	65,921	5,096	63,748	68,843	5,096	66,878	71,973
2024	5,096	61,121	66,216	5,096	64,384	69,480	5,096	67,907	73,003
2025	5,096	61,413	66,509	5,096	65,018	70,114	5,096	68,941	74,036
2026	5,096	61,704	66,799	5,096	65,654	70,749	5,096	69,984	75,079
2027	5,096	61,992	67,087	5,096	66,288	71,383	5,096	71,033	76,128
2028	5,096	62,277	67,373	5,096	66,920	72,016	5,096	72,087	77,183
2029	5,096	62,559	67,655	5,096	67,550	72,646	5,096	73,144	78,240
2030	5,096	62,839	67,935	5,096	68,178	73,274	5,096	74,206	79,301
2031	5,096	63,117	68,213	5,096	68,807	73,902	5,096	75,275	80,371
2032	5,096	63,392	68,488	5,096	69,433	74,529	5,096	76,349	81,445
2033	5,096	63,666	68,761	5,096	70,059	75,155	5,096	77,429	82,525
2034	5,096	63,937	69,033	5,096	70,685	75,780	5,096	78,516	83,611

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.53%	0.48%	0.00%	1.06%	0.97%	0.00%	1.59%	1.46%
2017	0.00%	0.52%	0.48%	0.00%	1.05%	0.97%	0.00%	1.59%	1.46%
2018	0.00%	0.52%	0.48%	0.00%	1.05%	0.96%	0.00%	1.59%	1.46%
2019	0.00%	0.51%	0.47%	0.00%	1.04%	0.96%	0.00%	1.58%	1.46%
2020	0.00%	0.51%	0.47%	0.00%	1.03%	0.95%	0.00%	1.57%	1.46%
2021	0.00%	0.50%	0.46%	0.00%	1.03%	0.95%	0.00%	1.57%	1.45%
2022	0.00%	0.50%	0.46%	0.00%	1.02%	0.94%	0.00%	1.56%	1.45%
2023	0.00%	0.49%	0.45%	0.00%	1.01%	0.93%	0.00%	1.55%	1.44%
2024	0.00%	0.49%	0.45%	0.00%	1.00%	0.92%	0.00%	1.54%	1.43%
2025	0.00%	0.48%	0.44%	0.00%	0.99%	0.91%	0.00%	1.52%	1.42%
2026	0.00%	0.47%	0.44%	0.00%	0.98%	0.91%	0.00%	1.51%	1.41%
2027	0.00%	0.47%	0.43%	0.00%	0.97%	0.90%	0.00%	1.50%	1.40%
2028	0.00%	0.46%	0.43%	0.00%	0.95%	0.89%	0.00%	1.48%	1.38%
2029	0.00%	0.45%	0.42%	0.00%	0.94%	0.87%	0.00%	1.47%	1.37%
2030	0.00%	0.45%	0.41%	0.00%	0.93%	0.86%	0.00%	1.45%	1.36%
2031	0.00%	0.44%	0.41%	0.00%	0.92%	0.86%	0.00%	1.44%	1.35%
2032	0.00%	0.44%	0.40%	0.00%	0.91%	0.85%	0.00%	1.43%	1.34%
2033	0.00%	0.43%	0.40%	0.00%	0.90%	0.84%	0.00%	1.41%	1.33%
2034	0.00%	0.43%	0.39%	0.00%	0.89%	0.83%	0.00%	1.40%	1.32%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,317,337	4,788,116	6,105,453	1,324,694	4,811,605	6,136,299	1,332,050	4,835,094	6,167,145
2016	1,330,712	4,834,481	6,165,193	1,345,601	4,882,029	6,227,630	1,360,641	4,930,018	6,290,660
2017	1,331,931	4,834,860	6,166,790	1,354,325	4,906,397	6,260,722	1,377,169	4,979,255	6,356,424
2018	1,339,176	4,858,140	6,197,316	1,369,251	4,954,235	6,323,486	1,400,227	5,052,977	6,453,203
2019	1,346,383	4,881,335	6,227,719	1,384,235	5,002,304	6,386,540	1,423,590	5,127,692	6,551,282
2020	1,359,725	4,927,753	6,287,478	1,405,636	5,074,484	6,480,119	1,453,813	5,227,876	6,681,690
2021	1,360,648	4,927,341	6,287,988	1,414,292	5,098,822	6,513,114	1,471,098	5,279,602	6,750,700
2022	1,367,706	4,950,150	6,317,856	1,429,359	5,147,245	6,576,604	1,495,228	5,356,747	6,851,976
2023	1,374,701	4,972,776	6,347,477	1,444,417	5,195,652	6,640,069	1,519,555	5,434,483	6,954,037
2024	1,387,974	5,019,075	6,407,049	1,466,181	5,269,079	6,735,260	1,551,199	5,539,119	7,090,317
2025	1,388,527	5,017,559	6,406,086	1,474,544	5,292,536	6,767,079	1,568,841	5,591,890	7,160,731
2026	1,395,355	5,039,703	6,435,058	1,489,599	5,340,967	6,830,567	1,593,776	5,671,475	7,265,251
2027	1,402,119	5,061,653	6,463,772	1,504,629	5,389,315	6,893,943	1,618,869	5,751,518	7,370,387
2028	1,415,262	5,107,584	6,522,846	1,526,578	5,463,324	6,989,902	1,651,630	5,859,504	7,511,134
2029	1,415,439	5,104,907	6,520,346	1,534,565	5,485,587	7,020,152	1,669,447	5,912,675	7,582,122
2030	1,421,993	5,126,202	6,548,195	1,549,460	5,533,473	7,082,933	1,694,908	5,993,710	7,688,618
2031	1,428,506	5,147,379	6,575,885	1,564,365	5,581,400	7,145,765	1,720,576	6,075,374	7,795,950
2032	1,441,519	5,192,919	6,634,438	1,586,451	5,655,810	7,242,262	1,754,352	6,186,341	7,940,693
2033	1,441,354	5,189,178	6,630,532	1,594,078	5,676,921	7,270,998	1,772,317	6,239,834	8,012,151
2034	1,447,705	5,209,860	6,657,565	1,608,916	5,724,626	7,333,542	1,798,437	6,322,799	8,121,236

Annual Change

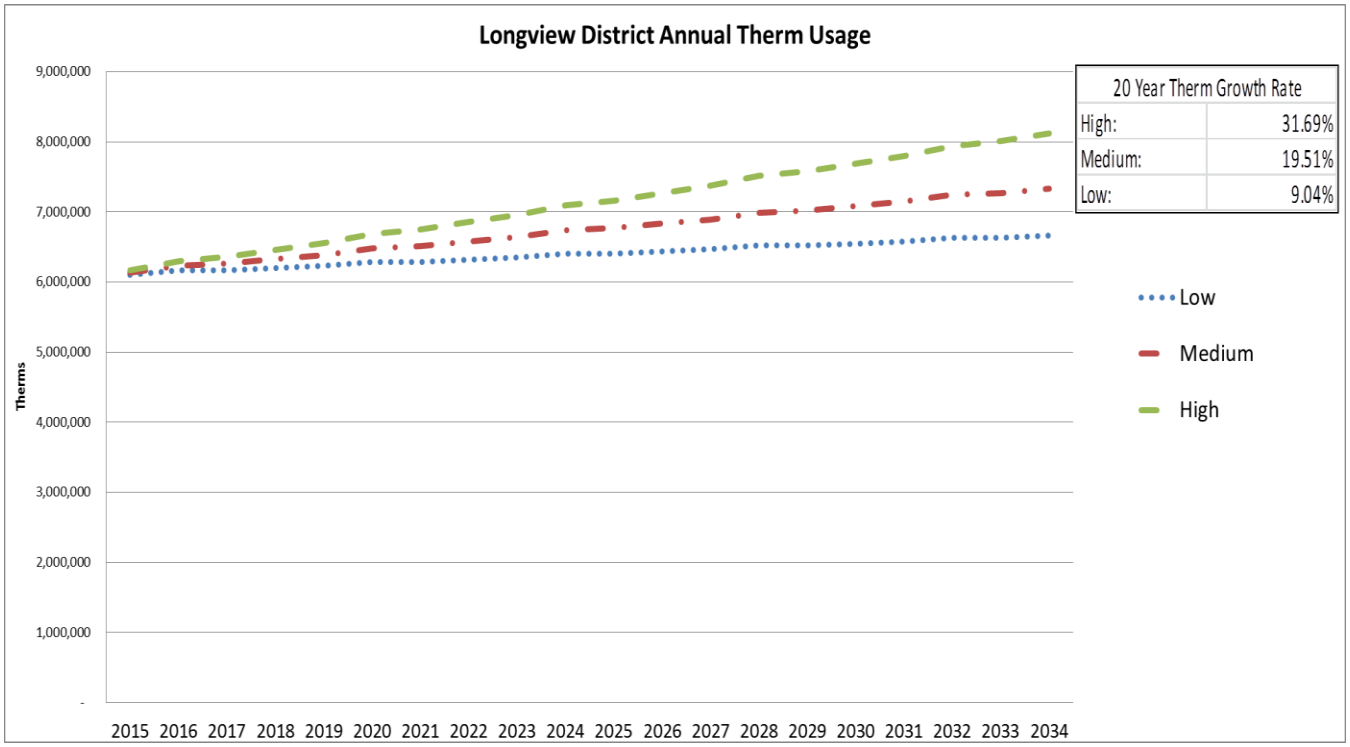
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.02%	0.97%	0.98%	1.58%	1.46%	1.49%	2.15%	1.96%	2.00%
2017	0.09%	0.01%	0.03%	0.65%	0.50%	0.53%	1.21%	1.00%	1.05%
2018	0.54%	0.48%	0.50%	1.10%	0.98%	1.00%	1.67%	1.48%	1.52%
2019	0.54%	0.48%	0.49%	1.09%	0.97%	1.00%	1.67%	1.48%	1.52%
2020	0.99%	0.95%	0.96%	1.55%	1.44%	1.47%	2.12%	1.95%	1.99%
2021	0.07%	-0.01%	0.01%	0.62%	0.48%	0.51%	1.19%	0.99%	1.03%
2022	0.52%	0.46%	0.47%	1.07%	0.95%	0.97%	1.64%	1.46%	1.50%
2023	0.51%	0.46%	0.47%	1.05%	0.94%	0.97%	1.63%	1.45%	1.49%
2024	0.97%	0.93%	0.94%	1.51%	1.41%	1.43%	2.08%	1.93%	1.96%
2025	0.04%	-0.03%	-0.02%	0.57%	0.45%	0.47%	1.14%	0.95%	0.99%
2026	0.49%	0.44%	0.45%	1.02%	0.92%	0.94%	1.59%	1.42%	1.46%
2027	0.48%	0.44%	0.45%	1.01%	0.91%	0.93%	1.57%	1.41%	1.45%
2028	0.94%	0.91%	0.91%	1.46%	1.37%	1.39%	2.02%	1.88%	1.91%
2029	0.01%	-0.05%	-0.04%	0.52%	0.41%	0.43%	1.08%	0.91%	0.95%
2030	0.46%	0.42%	0.43%	0.97%	0.87%	0.89%	1.53%	1.37%	1.40%
2031	0.46%	0.41%	0.42%	0.96%	0.87%	0.89%	1.51%	1.36%	1.40%
2032	0.91%	0.88%	0.89%	1.41%	1.33%	1.35%	1.96%	1.83%	1.86%
2033	-0.01%	-0.07%	-0.06%	0.48%	0.37%	0.40%	1.02%	0.86%	0.90%
2034	0.44%	0.40%	0.41%	0.93%	0.84%	0.86%	1.47%	1.33%	1.36%

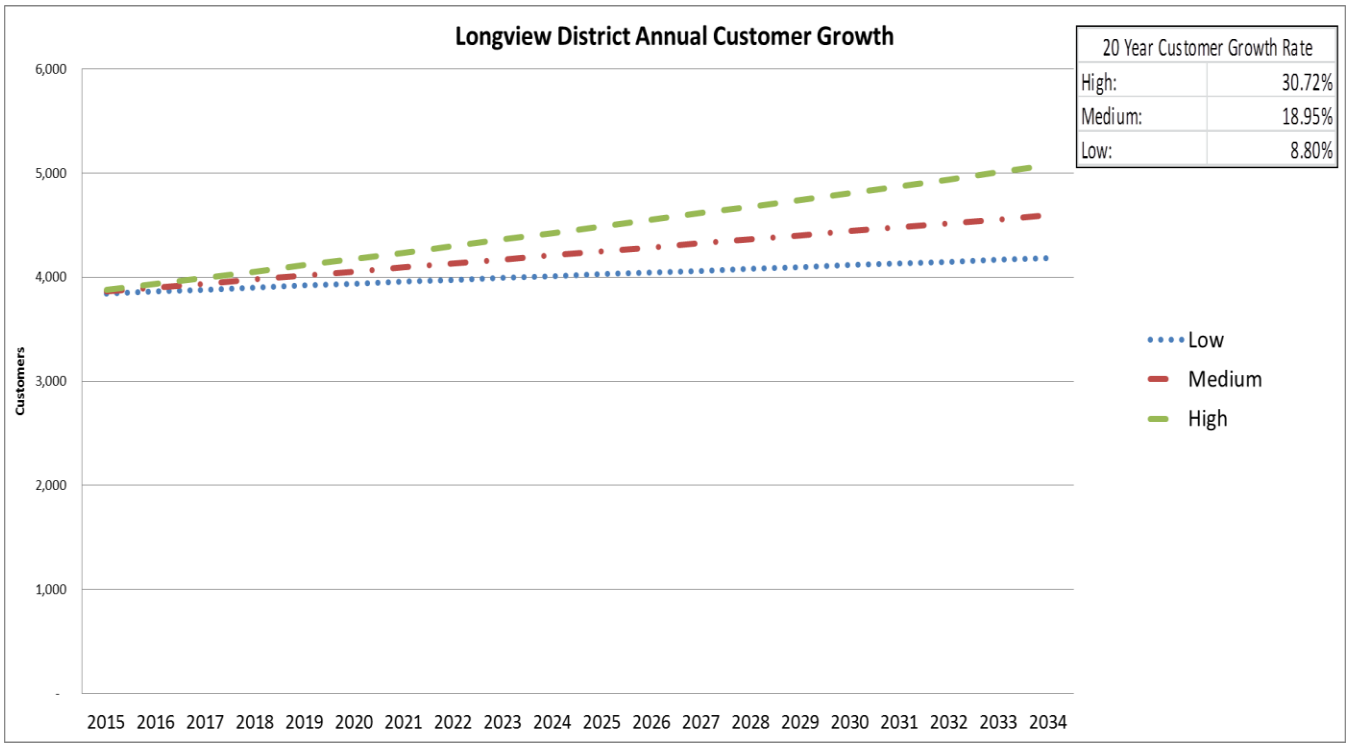
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,654	1,191	3,845	2,667	1,196	3,864	2,681	1,202	3,882
2016	2,667	1,196	3,863	2,694	1,207	3,901	2,722	1,218	3,940
2017	2,681	1,202	3,882	2,721	1,218	3,940	2,763	1,235	3,998
2018	2,694	1,207	3,901	2,749	1,229	3,978	2,805	1,252	4,057
2019	2,707	1,212	3,919	2,776	1,240	4,016	2,848	1,269	4,117
2020	2,720	1,218	3,938	2,804	1,251	4,055	2,891	1,286	4,177
2021	2,733	1,223	3,956	2,831	1,262	4,094	2,935	1,304	4,239
2022	2,746	1,228	3,975	2,859	1,274	4,133	2,979	1,322	4,300
2023	2,759	1,234	3,993	2,887	1,285	4,171	3,023	1,340	4,363
2024	2,772	1,239	4,011	2,914	1,296	4,210	3,068	1,358	4,426
2025	2,785	1,244	4,029	2,942	1,307	4,249	3,113	1,376	4,489
2026	2,797	1,249	4,046	2,969	1,318	4,288	3,159	1,394	4,553
2027	2,810	1,254	4,064	2,997	1,330	4,327	3,205	1,412	4,617
2028	2,822	1,259	4,081	3,025	1,341	4,365	3,251	1,431	4,682
2029	2,834	1,264	4,099	3,052	1,352	4,404	3,297	1,449	4,746
2030	2,847	1,269	4,116	3,079	1,363	4,442	3,343	1,468	4,811
2031	2,859	1,274	4,133	3,107	1,374	4,481	3,390	1,487	4,877
2032	2,871	1,279	4,150	3,134	1,385	4,519	3,437	1,506	4,943
2033	2,882	1,284	4,166	3,161	1,396	4,557	3,484	1,525	5,009
2034	2,894	1,289	4,183	3,189	1,407	4,596	3,532	1,544	5,075

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.45%	0.49%	1.01%	0.91%	0.98%	1.52%	1.37%	1.48%
2017	0.50%	0.45%	0.48%	1.01%	0.91%	0.98%	1.52%	1.37%	1.48%
2018	0.50%	0.45%	0.48%	1.00%	0.91%	0.97%	1.52%	1.37%	1.48%
2019	0.49%	0.44%	0.48%	1.00%	0.90%	0.97%	1.52%	1.37%	1.48%
2020	0.49%	0.44%	0.47%	0.99%	0.90%	0.96%	1.51%	1.37%	1.47%
2021	0.48%	0.44%	0.47%	0.98%	0.89%	0.96%	1.51%	1.37%	1.47%
2022	0.48%	0.43%	0.46%	0.98%	0.89%	0.95%	1.50%	1.36%	1.46%
2023	0.47%	0.43%	0.46%	0.97%	0.88%	0.94%	1.49%	1.35%	1.45%
2024	0.46%	0.42%	0.45%	0.96%	0.87%	0.93%	1.49%	1.35%	1.44%
2025	0.46%	0.42%	0.45%	0.95%	0.86%	0.92%	1.47%	1.34%	1.43%
2026	0.45%	0.41%	0.44%	0.94%	0.86%	0.91%	1.46%	1.33%	1.42%
2027	0.45%	0.41%	0.44%	0.93%	0.85%	0.90%	1.45%	1.32%	1.41%
2028	0.44%	0.40%	0.43%	0.92%	0.84%	0.89%	1.44%	1.31%	1.40%
2029	0.43%	0.40%	0.42%	0.91%	0.83%	0.88%	1.42%	1.29%	1.38%
2030	0.43%	0.39%	0.42%	0.90%	0.82%	0.87%	1.41%	1.28%	1.37%
2031	0.42%	0.39%	0.41%	0.89%	0.81%	0.87%	1.40%	1.28%	1.36%
2032	0.42%	0.38%	0.41%	0.88%	0.80%	0.86%	1.39%	1.26%	1.35%
2033	0.41%	0.38%	0.40%	0.87%	0.80%	0.85%	1.37%	1.26%	1.34%
2034	0.41%	0.38%	0.40%	0.86%	0.79%	0.84%	1.36%	1.25%	1.33%


Longview District Annual Therm Usage
Therms
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 31.69%
Medium: 19.51%
Low: 9.04%
Low
Medium
High


Longview District Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 30.72%
Medium: 18.95%
Low: 8.80%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Aberdeen District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	3,553,430	2,322,352	5,875,782	3,567,270	2,322,352	5,889,622	3,581,110	2,322,352	5,903,462
2016	3,592,616	2,322,352	5,914,968	3,620,567	2,322,352	5,942,919	3,648,584	2,322,352	5,970,936
2017	3,581,288	2,322,352	5,903,640	3,623,184	2,322,352	5,945,536	3,665,277	2,322,352	5,987,629
2018	3,595,305	2,322,352	5,917,657	3,651,417	2,322,352	5,973,769	3,707,927	2,322,352	6,030,279
2019	3,609,367	2,322,352	5,931,719	3,679,808	2,322,352	6,002,160	3,750,916	2,322,352	6,073,268
2020	3,648,779	2,322,352	5,971,131	3,733,826	2,322,352	6,056,178	3,819,879	2,322,352	6,142,231
2021	3,637,236	2,322,352	5,959,588	3,736,274	2,322,352	6,058,626	3,836,719	2,322,352	6,159,071
2022	3,651,083	2,322,352	5,973,435	3,764,428	2,322,352	6,086,780	3,879,651	2,322,352	6,202,003
2023	3,664,782	2,322,352	5,987,134	3,792,346	2,322,352	6,114,698	3,922,320	2,322,352	6,244,672
2024	3,704,186	2,322,352	6,026,539	3,846,608	2,322,352	6,168,960	3,992,052	2,322,352	6,314,404
2025	3,691,855	2,322,352	6,014,207	3,847,707	2,322,352	6,170,059	4,007,222	2,322,352	6,329,574
2026	3,705,230	2,322,352	6,027,582	3,875,150	2,322,352	6,197,502	4,049,451	2,322,352	6,371,804
2027	3,718,383	2,322,352	6,040,735	3,902,199	2,322,352	6,224,551	4,091,166	2,322,352	6,413,518
2028	3,757,319	2,322,352	6,079,671	3,955,743	2,322,352	6,278,095	4,160,167	2,322,352	6,482,519
2029	3,744,108	2,322,352	6,066,460	3,955,270	2,322,352	6,277,622	4,173,276	2,322,352	6,495,628
2030	3,756,643	2,322,352	6,078,995	3,981,213	2,322,352	6,303,565	4,213,541	2,322,352	6,535,893
2031	3,769,152	2,322,352	6,091,504	4,007,156	2,322,352	6,329,508	4,253,890	2,322,352	6,576,242
2032	3,807,624	2,322,352	6,129,977	4,059,960	2,322,352	6,382,312	4,322,081	2,322,352	6,644,433
2033	3,793,639	2,322,352	6,115,991	4,058,093	2,322,352	6,380,445	4,333,354	2,322,352	6,655,706
2034	3,805,732	2,322,352	6,128,084	4,083,325	2,322,352	6,405,677	4,372,835	2,322,352	6,695,187

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.10%	0.00%	0.67%	1.49%	0.00%	0.90%	1.88%	0.00%	1.14%
2017	-0.32%	0.00%	-0.19%	0.07%	0.00%	0.04%	0.46%	0.00%	0.28%
2018	0.39%	0.00%	0.24%	0.78%	0.00%	0.47%	1.16%	0.00%	0.71%
2019	0.39%	0.00%	0.24%	0.78%	0.00%	0.48%	1.16%	0.00%	0.71%
2020	1.09%	0.00%	0.66%	1.47%	0.00%	0.90%	1.84%	0.00%	1.14%
2021	-0.32%	0.00%	-0.19%	0.07%	0.00%	0.04%	0.44%	0.00%	0.27%
2022	0.38%	0.00%	0.23%	0.75%	0.00%	0.46%	1.12%	0.00%	0.70%
2023	0.38%	0.00%	0.23%	0.74%	0.00%	0.46%	1.10%	0.00%	0.69%
2024	1.08%	0.00%	0.66%	1.43%	0.00%	0.89%	1.78%	0.00%	1.12%
2025	-0.33%	0.00%	-0.20%	0.03%	0.00%	0.02%	0.38%	0.00%	0.24%
2026	0.36%	0.00%	0.22%	0.71%	0.00%	0.44%	1.05%	0.00%	0.67%
2027	0.36%	0.00%	0.22%	0.70%	0.00%	0.44%	1.03%	0.00%	0.65%
2028	1.05%	0.00%	0.64%	1.37%	0.00%	0.86%	1.69%	0.00%	1.08%
2029	-0.35%	0.00%	-0.22%	-0.01%	0.00%	-0.01%	0.32%	0.00%	0.20%
2030	0.33%	0.00%	0.21%	0.66%	0.00%	0.41%	0.96%	0.00%	0.62%
2031	0.33%	0.00%	0.21%	0.65%	0.00%	0.41%	0.96%	0.00%	0.62%
2032	1.02%	0.00%	0.63%	1.32%	0.00%	0.83%	1.60%	0.00%	1.04%
2033	-0.37%	0.00%	-0.23%	-0.05%	0.00%	-0.03%	0.26%	0.00%	0.17%
2034	0.32%	0.00%	0.20%	0.62%	0.00%	0.40%	0.91%	0.00%	0.59%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	6,363	47,063	53,425	6,363	47,189	53,551	6,363	47,315	53,677
2016	6,363	47,189	53,552	6,363	47,443	53,805	6,363	47,696	54,059
2017	6,363	47,316	53,679	6,363	47,697	54,060	6,363	48,080	54,442
2018	6,363	47,444	53,806	6,363	47,954	54,316	6,363	48,468	54,830
2019	6,363	47,571	53,934	6,363	48,212	54,575	6,363	48,858	55,221
2020	6,363	47,698	54,061	6,363	48,468	54,831	6,363	49,247	55,610
2021	6,363	47,825	54,187	6,363	48,725	55,088	6,363	49,639	56,001
2022	6,363	47,951	54,313	6,363	48,981	55,344	6,363	50,029	56,392
2023	6,363	48,075	54,438	6,363	49,235	55,598	6,363	50,417	56,780
2024	6,363	48,200	54,562	6,363	49,489	55,852	6,363	50,806	57,168
2025	6,363	48,321	54,684	6,363	49,739	56,101	6,363	51,189	57,552
2026	6,363	48,443	54,806	6,363	49,988	56,351	6,363	51,573	57,936
2027	6,363	48,563	54,925	6,363	50,234	56,597	6,363	51,952	58,315
2028	6,363	48,681	55,043	6,363	50,477	56,840	6,363	52,328	58,690
2029	6,363	48,797	55,159	6,363	50,717	57,079	6,363	52,699	59,061
2030	6,363	48,911	55,273	6,363	50,952	57,315	6,363	53,065	59,428
2031	6,363	49,024	55,387	6,363	51,188	57,551	6,363	53,432	59,794
2032	6,363	49,136	55,499	6,363	51,421	57,783	6,363	53,794	60,156
2033	6,363	49,247	55,610	6,363	51,652	58,014	6,363	54,154	60,517
2034	6,363	49,357	55,720	6,363	51,881	58,244	6,363	54,513	60,876

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.81%	0.71%
2017	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.80%	0.71%
2018	0.00%	0.27%	0.24%	0.00%	0.54%	0.47%	0.00%	0.81%	0.71%
2019	0.00%	0.27%	0.24%	0.00%	0.54%	0.48%	0.00%	0.81%	0.71%
2020	0.00%	0.27%	0.23%	0.00%	0.53%	0.47%	0.00%	0.80%	0.70%
2021	0.00%	0.27%	0.23%	0.00%	0.53%	0.47%	0.00%	0.80%	0.70%
2022	0.00%	0.26%	0.23%	0.00%	0.53%	0.46%	0.00%	0.79%	0.70%
2023	0.00%	0.26%	0.23%	0.00%	0.52%	0.46%	0.00%	0.78%	0.69%
2024	0.00%	0.26%	0.23%	0.00%	0.52%	0.46%	0.00%	0.77%	0.68%
2025	0.00%	0.25%	0.22%	0.00%	0.50%	0.45%	0.00%	0.75%	0.67%
2026	0.00%	0.25%	0.22%	0.00%	0.50%	0.44%	0.00%	0.75%	0.67%
2027	0.00%	0.25%	0.22%	0.00%	0.49%	0.44%	0.00%	0.74%	0.65%
2028	0.00%	0.24%	0.21%	0.00%	0.48%	0.43%	0.00%	0.72%	0.64%
2029	0.00%	0.24%	0.21%	0.00%	0.47%	0.42%	0.00%	0.71%	0.63%
2030	0.00%	0.23%	0.21%	0.00%	0.47%	0.41%	0.00%	0.69%	0.62%
2031	0.00%	0.23%	0.21%	0.00%	0.46%	0.41%	0.00%	0.69%	0.62%
2032	0.00%	0.23%	0.20%	0.00%	0.45%	0.40%	0.00%	0.68%	0.61%
2033	0.00%	0.23%	0.20%	0.00%	0.45%	0.40%	0.00%	0.67%	0.60%
2034	0.00%	0.22%	0.20%	0.00%	0.44%	0.40%	0.00%	0.66%	0.59%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,384,966	3,490,815	5,875,782	2,390,584	3,499,038	5,889,622	2,396,202	3,507,260	5,903,462
2016	2,401,502	3,513,466	5,914,968	2,412,851	3,530,069	5,942,919	2,424,226	3,546,711	5,970,936
2017	2,396,274	3,507,366	5,903,640	2,413,279	3,532,256	5,945,536	2,430,365	3,557,264	5,987,629
2018	2,401,963	3,515,694	5,917,657	2,424,739	3,549,030	5,973,769	2,447,676	3,582,602	6,030,279
2019	2,407,671	3,524,048	5,931,719	2,436,263	3,565,897	6,002,160	2,465,126	3,608,143	6,073,268
2020	2,424,305	3,546,826	5,971,131	2,458,834	3,597,344	6,056,178	2,493,772	3,648,459	6,142,231
2021	2,418,983	3,540,605	5,959,588	2,459,183	3,599,444	6,058,626	2,499,953	3,659,118	6,159,071
2022	2,424,604	3,548,832	5,973,435	2,470,610	3,616,170	6,086,780	2,517,379	3,684,624	6,202,003
2023	2,430,164	3,556,970	5,987,134	2,481,942	3,632,756	6,114,698	2,534,698	3,709,974	6,244,672
2024	2,446,801	3,579,738	6,026,539	2,504,624	3,664,336	6,168,960	2,563,675	3,750,729	6,314,404
2025	2,441,153	3,573,054	6,014,207	2,504,413	3,665,646	6,170,059	2,569,160	3,760,414	6,329,574
2026	2,446,582	3,581,000	6,027,582	2,515,552	3,681,950	6,197,502	2,586,301	3,785,503	6,371,804
2027	2,451,921	3,588,815	6,040,735	2,526,531	3,698,020	6,224,551	2,603,232	3,810,286	6,413,518
2028	2,468,373	3,611,298	6,079,671	2,548,934	3,729,162	6,278,095	2,631,930	3,850,588	6,482,519
2029	2,462,362	3,604,098	6,066,460	2,548,072	3,729,550	6,277,622	2,636,560	3,859,067	6,495,628
2030	2,467,450	3,611,545	6,078,995	2,558,603	3,744,962	6,303,565	2,652,904	3,882,989	6,535,893
2031	2,472,528	3,618,977	6,091,504	2,569,133	3,760,375	6,329,508	2,669,282	3,906,960	6,576,242
2032	2,488,797	3,641,180	6,129,977	2,591,246	3,791,066	6,382,312	2,697,668	3,946,765	6,644,433
2033	2,482,467	3,633,524	6,115,991	2,589,808	3,790,637	6,380,445	2,701,536	3,954,170	6,655,706
2034	2,487,375	3,640,709	6,128,084	2,600,050	3,805,627	6,405,677	2,717,561	3,977,626	6,695,187

Annual Change

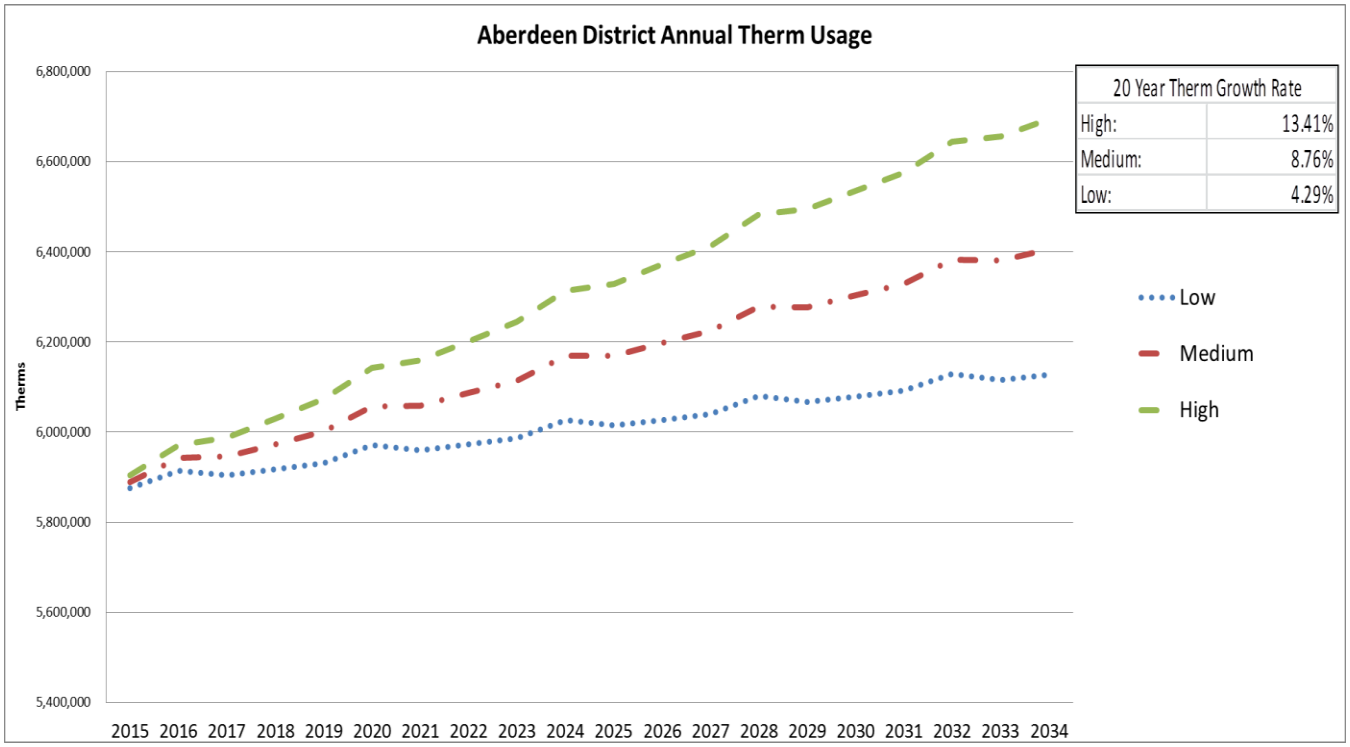
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.69%	0.65%	0.67%	0.93%	0.89%	0.90%	1.17%	1.12%	1.14%
2017	-0.22%	-0.17%	-0.19%	0.02%	0.06%	0.04%	0.25%	0.30%	0.28%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.69%	0.65%	0.66%	0.93%	0.88%	0.90%	1.16%	1.12%	1.14%
2021	-0.22%	-0.18%	-0.19%	0.01%	0.06%	0.04%	0.25%	0.29%	0.27%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.68%	0.64%	0.66%	0.91%	0.87%	0.89%	1.14%	1.10%	1.12%
2025	-0.23%	-0.19%	-0.20%	-0.01%	0.04%	0.02%	0.21%	0.26%	0.24%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.67%	0.63%	0.64%	0.89%	0.84%	0.86%	1.10%	1.06%	1.08%
2029	-0.24%	-0.20%	-0.22%	-0.03%	0.01%	-0.01%	0.18%	0.22%	0.20%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.66%	0.61%	0.63%	0.86%	0.82%	0.83%	1.06%	1.02%	1.04%
2033	-0.25%	-0.21%	-0.23%	-0.06%	-0.01%	-0.03%	0.14%	0.19%	0.17%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%

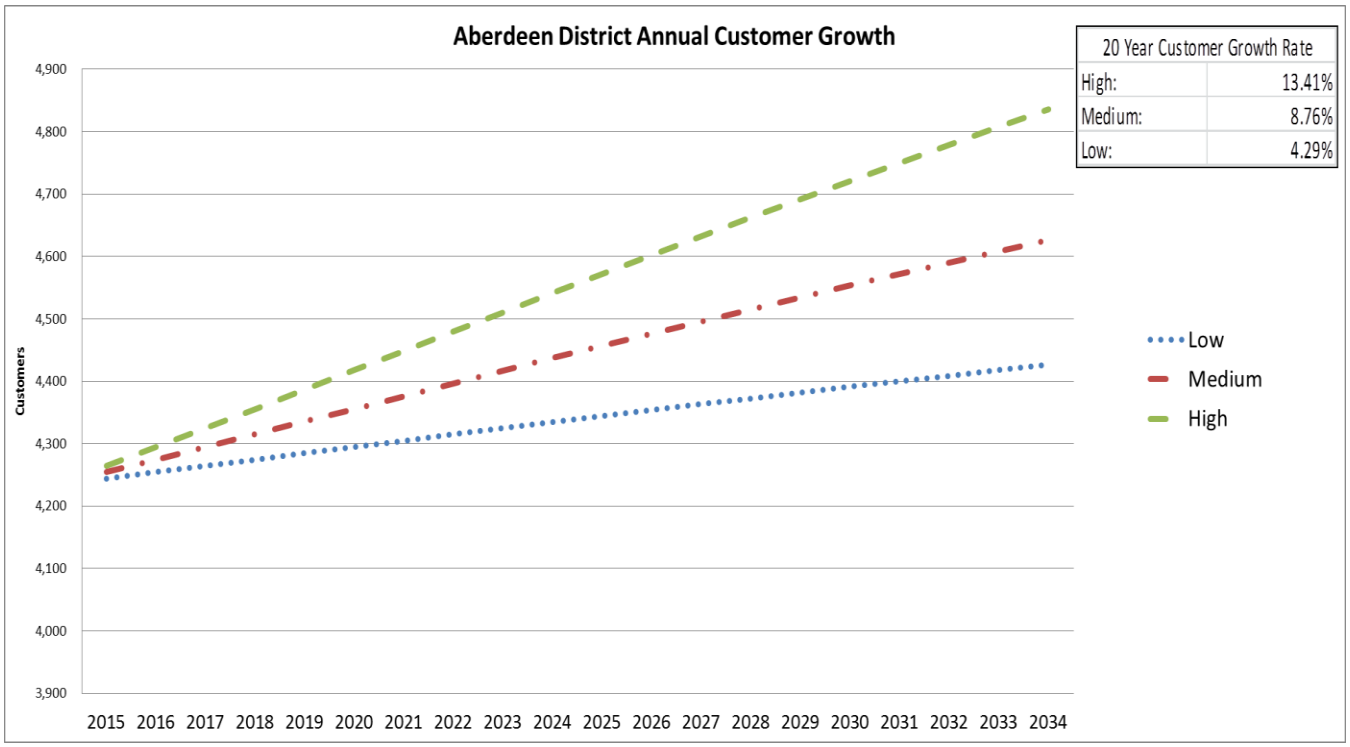
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,486	758	4,244	3,494	760	4,254	3,503	762	4,264
2016	3,494	760	4,254	3,511	763	4,274	3,528	767	4,295
2017	3,503	762	4,264	3,528	767	4,295	3,553	772	4,325
2018	3,511	763	4,275	3,544	771	4,315	3,578	778	4,356
2019	3,519	765	4,285	3,561	774	4,336	3,603	784	4,387
2020	3,528	767	4,295	3,578	778	4,356	3,629	789	4,418
2021	3,536	769	4,305	3,595	782	4,376	3,654	795	4,449
2022	3,544	771	4,315	3,611	785	4,397	3,680	800	4,480
2023	3,552	772	4,325	3,628	789	4,417	3,705	806	4,511
2024	3,560	774	4,335	3,645	792	4,437	3,730	811	4,542
2025	3,568	776	4,344	3,661	796	4,457	3,755	817	4,572
2026	3,576	778	4,354	3,677	800	4,477	3,781	822	4,603
2027	3,584	779	4,363	3,693	803	4,496	3,805	827	4,633
2028	3,592	781	4,373	3,709	806	4,516	3,830	833	4,663
2029	3,599	783	4,382	3,725	810	4,535	3,854	838	4,692
2030	3,607	784	4,391	3,740	813	4,553	3,878	843	4,721
2031	3,614	786	4,400	3,755	817	4,572	3,902	848	4,750
2032	3,622	787	4,409	3,771	820	4,590	3,925	854	4,779
2033	3,629	789	4,418	3,786	823	4,609	3,949	859	4,808
2034	3,636	791	4,427	3,801	826	4,627	3,972	864	4,836

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2017	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2018	0.24%	0.24%	0.24%	0.47%	0.47%	0.47%	0.71%	0.71%	0.71%
2019	0.24%	0.24%	0.24%	0.48%	0.48%	0.48%	0.71%	0.71%	0.71%
2020	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2021	0.23%	0.23%	0.23%	0.47%	0.47%	0.47%	0.70%	0.70%	0.70%
2022	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.70%	0.70%	0.70%
2023	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.69%	0.69%	0.69%
2024	0.23%	0.23%	0.23%	0.46%	0.46%	0.46%	0.68%	0.68%	0.68%
2025	0.22%	0.22%	0.22%	0.45%	0.45%	0.45%	0.67%	0.67%	0.67%
2026	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.67%	0.67%	0.67%
2027	0.22%	0.22%	0.22%	0.44%	0.44%	0.44%	0.65%	0.65%	0.65%
2028	0.21%	0.21%	0.21%	0.43%	0.43%	0.43%	0.64%	0.64%	0.64%
2029	0.21%	0.21%	0.21%	0.42%	0.42%	0.42%	0.63%	0.63%	0.63%
2030	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2031	0.21%	0.21%	0.21%	0.41%	0.41%	0.41%	0.62%	0.62%	0.62%
2032	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.61%	0.61%	0.61%
2033	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.60%	0.60%	0.60%
2034	0.20%	0.20%	0.20%	0.40%	0.40%	0.40%	0.59%	0.59%	0.59%


Aberdeen District Annual Therm Usage
Therms
6,800,000
6,600,000
6,400,000
6,200,000
6,000,000
5,800,000
5,600,000
5,400,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High


Aberdeen District Annual Customer Growth
Customers
4,900
4,800
4,700
4,600
4,500
4,400
4,300
4,200
4,100
4,000
3,900
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 13.41%
Medium: 8.76%
Low: 4.29%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Kennewick District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	21,687,481	7,130,339	28,817,821	21,862,416	7,130,339	28,992,756	22,037,352	7,130,339	29,167,691
2016	22,001,574	7,130,339	29,131,913	22,354,907	7,130,339	29,485,247	22,710,422	7,130,339	29,840,761
2017	22,036,218	7,130,339	29,166,558	22,566,388	7,130,339	29,696,727	23,103,095	7,130,339	30,233,435
2018	22,210,221	7,130,339	29,340,560	22,920,866	7,130,339	30,051,205	23,644,643	7,130,339	30,774,983
2019	22,383,651	7,130,339	29,513,990	23,276,318	7,130,339	30,406,658	24,190,954	7,130,339	31,321,294
2020	22,698,956	7,130,339	29,829,295	23,779,871	7,130,339	30,910,210	24,893,977	7,130,339	32,024,316
2021	22,728,214	7,130,339	29,858,553	23,988,857	7,130,339	31,119,197	25,295,882	7,130,339	32,426,222
2022	22,899,177	7,130,339	30,029,516	24,345,532	7,130,339	31,475,871	25,853,846	7,130,339	32,984,186
2023	23,068,884	7,130,339	30,199,224	24,701,644	7,130,339	31,831,984	26,414,155	7,130,339	33,544,494
2024	23,384,196	7,130,339	30,514,536	25,213,522	7,130,339	32,343,862	27,143,145	7,130,339	34,273,484
2025	23,405,378	7,130,339	30,535,717	25,413,789	7,130,339	32,544,129	27,544,219	7,130,339	34,674,558
2026	23,571,885	7,130,339	30,702,224	25,769,158	7,130,339	32,899,498	28,112,879	7,130,339	35,243,219
2027	23,737,044	7,130,339	30,867,384	26,123,600	7,130,339	33,253,939	28,683,182	7,130,339	35,813,521
2028	24,050,204	7,130,339	31,180,544	26,638,787	7,130,339	33,769,127	29,430,066	7,130,339	36,560,406
2029	24,062,907	7,130,339	31,193,246	26,828,618	7,130,339	33,958,957	29,826,794	7,130,339	36,957,134
2030	24,223,534	7,130,339	31,353,873	27,178,926	7,130,339	34,309,266	30,399,569	7,130,339	37,529,908
2031	24,383,379	7,130,339	31,513,719	27,529,349	7,130,339	34,659,688	30,975,512	7,130,339	38,105,851
2032	24,694,271	7,130,339	31,824,610	28,046,989	7,130,339	35,177,328	31,738,475	7,130,339	38,868,814
2033	24,699,296	7,130,339	31,829,636	28,227,271	7,130,339	35,357,610	32,131,447	7,130,339	39,261,787
2034	24,855,793	7,130,339	31,986,133	28,575,631	7,130,339	35,705,970	32,712,795	7,130,339	39,843,135

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.45%	0.00%	1.09%	2.25%	0.00%	1.70%	3.05%	0.00%	2.31%
2017	0.16%	0.00%	0.12%	0.95%	0.00%	0.72%	1.73%	0.00%	1.32%
2018	0.79%	0.00%	0.60%	1.57%	0.00%	1.19%	2.34%	0.00%	1.79%
2019	0.78%	0.00%	0.59%	1.55%	0.00%	1.18%	2.31%	0.00%	1.78%
2020	1.41%	0.00%	1.07%	2.16%	0.00%	1.66%	2.91%	0.00%	2.24%
2021	0.13%	0.00%	0.10%	0.88%	0.00%	0.68%	1.61%	0.00%	1.26%
2022	0.75%	0.00%	0.57%	1.49%	0.00%	1.15%	2.21%	0.00%	1.72%
2023	0.74%	0.00%	0.57%	1.46%	0.00%	1.13%	2.17%	0.00%	1.70%
2024	1.37%	0.00%	1.04%	2.07%	0.00%	1.61%	2.76%	0.00%	2.17%
2025	0.09%	0.00%	0.07%	0.79%	0.00%	0.62%	1.48%	0.00%	1.17%
2026	0.71%	0.00%	0.55%	1.40%	0.00%	1.09%	2.06%	0.00%	1.64%
2027	0.70%	0.00%	0.54%	1.38%	0.00%	1.08%	2.03%	0.00%	1.62%
2028	1.32%	0.00%	1.01%	1.97%	0.00%	1.55%	2.60%	0.00%	2.09%
2029	0.05%	0.00%	0.04%	0.71%	0.00%	0.56%	1.35%	0.00%	1.09%
2030	0.67%	0.00%	0.51%	1.31%	0.00%	1.03%	1.92%	0.00%	1.55%
2031	0.66%	0.00%	0.51%	1.29%	0.00%	1.02%	1.89%	0.00%	1.53%
2032	1.28%	0.00%	0.99%	1.88%	0.00%	1.49%	2.46%	0.00%	2.00%
2033	0.02%	0.00%	0.02%	0.64%	0.00%	0.51%	1.24%	0.00%	1.01%
2034	0.63%	0.00%	0.49%	1.23%	0.00%	0.99%	1.81%	0.00%	1.48%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	19,535	389,592	409,127	19,535	392,087	411,622	19,535	394,582	414,117
2016	19,535	392,081	411,616	19,535	397,096	416,632	19,535	402,143	421,678
2017	19,535	394,565	414,100	19,535	402,127	421,662	19,535	409,782	429,317
2018	19,535	397,046	416,582	19,535	407,182	426,717	19,535	417,506	437,041
2019	19,535	399,519	419,054	19,535	412,251	431,786	19,535	425,297	444,832
2020	19,535	401,977	421,513	19,535	417,320	436,855	19,535	433,135	452,670
2021	19,535	404,432	423,967	19,535	422,411	441,946	19,535	441,054	460,589
2022	19,535	406,869	426,404	19,535	427,496	447,031	19,535	449,010	468,545
2023	19,535	409,288	428,823	19,535	432,573	452,108	19,535	457,000	476,535
2024	19,535	411,698	431,234	19,535	437,662	457,197	19,535	465,054	484,589
2025	19,535	414,084	433,619	19,535	442,725	462,260	19,535	473,114	492,649
2026	19,535	416,457	435,992	19,535	447,791	467,326	19,535	481,222	500,757
2027	19,535	418,810	438,346	19,535	452,843	472,379	19,535	489,353	508,888
2028	19,535	421,145	440,680	19,535	457,882	477,417	19,535	497,506	517,041
2029	19,535	423,454	442,989	19,535	462,893	482,428	19,535	505,658	525,193
2030	19,535	425,743	445,278	19,535	467,885	487,421	19,535	513,824	533,359
2031	19,535	428,020	447,555	19,535	472,880	492,415	19,535	522,035	541,570
2032	19,535	430,278	449,813	19,535	477,856	497,391	19,535	530,259	549,794
2033	19,535	432,521	452,056	19,535	482,826	502,361	19,535	538,514	558,049
2034	19,535	434,750	454,285	19,535	487,790	507,326	19,535	546,801	566,337

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.64%	0.61%	0.00%	1.28%	1.22%	0.00%	1.92%	1.83%
2017	0.00%	0.63%	0.60%	0.00%	1.27%	1.21%	0.00%	1.90%	1.81%
2018	0.00%	0.63%	0.60%	0.00%	1.26%	1.20%	0.00%	1.88%	1.80%
2019	0.00%	0.62%	0.59%	0.00%	1.24%	1.19%	0.00%	1.87%	1.78%
2020	0.00%	0.62%	0.59%	0.00%	1.23%	1.17%	0.00%	1.84%	1.76%
2021	0.00%	0.61%	0.58%	0.00%	1.22%	1.17%	0.00%	1.83%	1.75%
2022	0.00%	0.60%	0.57%	0.00%	1.20%	1.15%	0.00%	1.80%	1.73%
2023	0.00%	0.59%	0.57%	0.00%	1.19%	1.14%	0.00%	1.78%	1.71%
2024	0.00%	0.59%	0.56%	0.00%	1.18%	1.13%	0.00%	1.76%	1.69%
2025	0.00%	0.58%	0.55%	0.00%	1.16%	1.11%	0.00%	1.73%	1.66%
2026	0.00%	0.57%	0.55%	0.00%	1.14%	1.10%	0.00%	1.71%	1.65%
2027	0.00%	0.57%	0.54%	0.00%	1.13%	1.08%	0.00%	1.69%	1.62%
2028	0.00%	0.56%	0.53%	0.00%	1.11%	1.07%	0.00%	1.67%	1.60%
2029	0.00%	0.55%	0.52%	0.00%	1.09%	1.05%	0.00%	1.64%	1.58%
2030	0.00%	0.54%	0.52%	0.00%	1.08%	1.03%	0.00%	1.61%	1.55%
2031	0.00%	0.53%	0.51%	0.00%	1.07%	1.02%	0.00%	1.60%	1.54%
2032	0.00%	0.53%	0.50%	0.00%	1.05%	1.01%	0.00%	1.58%	1.52%
2033	0.00%	0.52%	0.50%	0.00%	1.04%	1.00%	0.00%	1.56%	1.50%
2034	0.00%	0.52%	0.49%	0.00%	1.03%	0.99%	0.00%	1.54%	1.49%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	13,804,923	15,012,898	28,817,821	13,888,115	15,104,641	28,992,756	13,971,307	15,196,384	29,167,691
2016	13,958,054	15,173,859	29,131,913	14,126,124	15,359,123	29,485,247	14,295,224	15,545,537	29,840,761
2017	13,970,765	15,195,793	29,166,558	14,222,870	15,473,857	29,696,727	14,478,067	15,755,368	30,233,435
2018	14,053,510	15,287,051	29,340,560	14,391,420	15,659,785	30,051,205	14,735,538	16,039,445	30,774,983
2019	14,135,979	15,378,012	29,513,990	14,560,419	15,846,239	30,406,658	14,995,242	16,326,052	31,321,294
2020	14,289,756	15,539,539	29,829,295	14,803,804	16,106,406	30,910,210	15,333,541	16,690,776	32,024,316
2021	14,299,806	15,558,747	29,858,553	14,899,136	16,220,061	31,119,197	15,520,380	16,905,842	32,426,222
2022	14,381,084	15,648,432	30,029,516	15,068,657	16,407,214	31,475,871	15,785,501	17,198,685	32,984,186
2023	14,461,754	15,737,469	30,199,224	15,237,883	16,594,101	31,831,984	16,051,678	17,492,816	33,544,494
2024	14,615,597	15,898,938	30,514,536	15,485,328	16,858,534	32,343,862	16,402,435	17,871,050	34,273,484
2025	14,621,691	15,914,026	30,535,717	15,576,241	16,967,888	32,544,129	16,588,399	18,086,159	34,674,558
2026	14,700,821	16,001,404	30,702,224	15,745,049	17,154,449	32,899,498	16,858,406	18,384,813	35,243,219
2027	14,779,297	16,088,087	30,867,384	15,913,380	17,340,560	33,253,939	17,129,121	18,684,401	35,813,521
2028	14,932,164	16,248,380	31,180,544	16,162,468	17,606,659	33,769,127	17,488,440	19,071,965	36,560,406
2029	14,934,106	16,259,140	31,193,246	16,248,128	17,710,830	33,958,957	17,671,810	19,285,323	36,957,134
2030	15,010,399	16,343,474	31,353,873	16,414,407	17,894,858	34,309,266	17,943,513	19,586,395	37,529,908
2031	15,086,318	16,427,401	31,513,719	16,580,725	18,078,964	34,659,688	18,216,677	19,889,174	38,105,851
2032	15,238,147	16,586,463	31,824,610	16,831,031	18,346,297	35,177,328	18,583,660	20,285,155	38,868,814
2033	15,236,330	16,593,305	31,829,636	16,911,877	18,445,733	35,357,610	18,764,723	20,497,064	39,261,787
2034	15,310,634	16,675,498	31,986,133	17,077,136	18,628,835	35,705,970	19,040,273	20,802,862	39,843,135

Annual Change

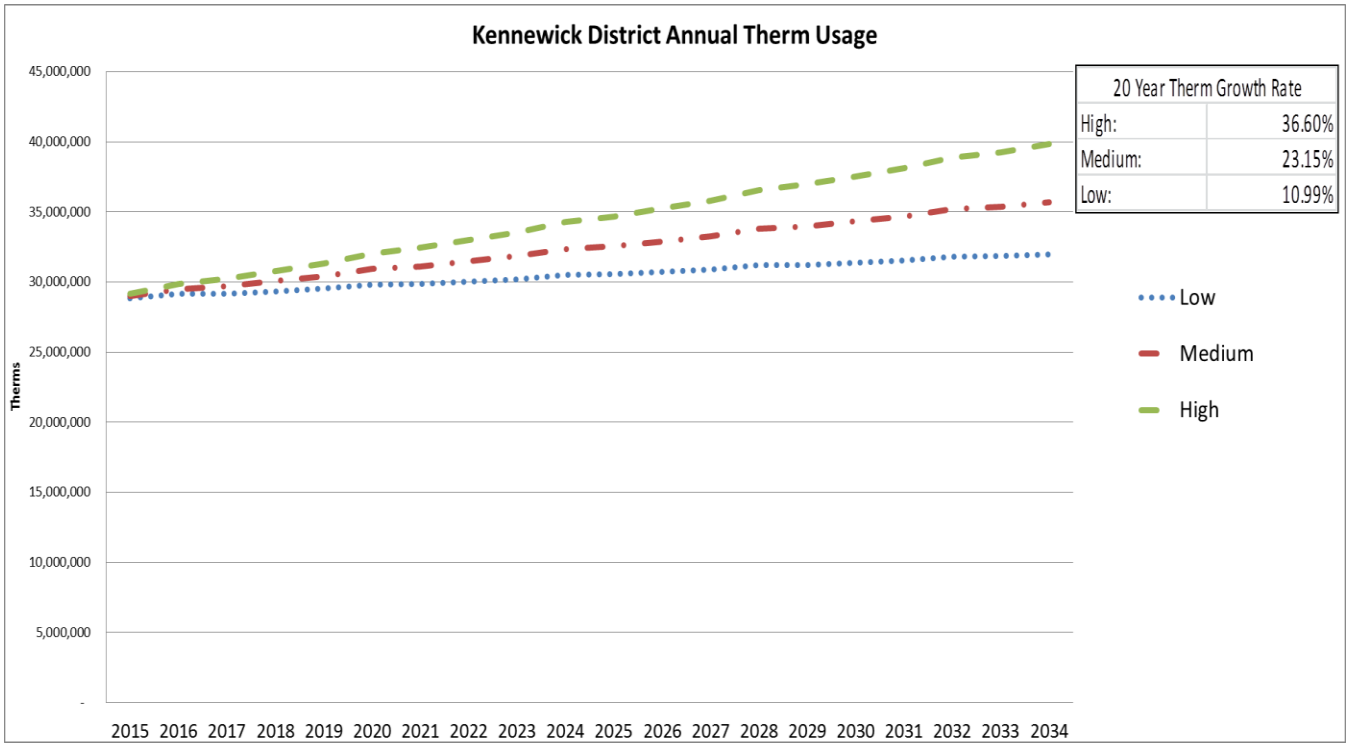
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.11%	1.07%	1.09%	1.71%	1.68%	1.70%	2.32%	2.30%	2.31%
2017	0.09%	0.14%	0.12%	0.68%	0.75%	0.72%	1.28%	1.35%	1.32%
2018	0.59%	0.60%	0.60%	1.19%	1.20%	1.19%	1.78%	1.80%	1.79%
2019	0.59%	0.60%	0.59%	1.17%	1.19%	1.18%	1.76%	1.79%	1.78%
2020	1.09%	1.05%	1.07%	1.67%	1.64%	1.66%	2.26%	2.23%	2.24%
2021	0.07%	0.12%	0.10%	0.64%	0.71%	0.68%	1.22%	1.29%	1.26%
2022	0.57%	0.58%	0.57%	1.14%	1.15%	1.15%	1.71%	1.73%	1.72%
2023	0.56%	0.57%	0.57%	1.12%	1.14%	1.13%	1.69%	1.71%	1.70%
2024	1.06%	1.03%	1.04%	1.62%	1.59%	1.61%	2.19%	2.16%	2.17%
2025	0.04%	0.09%	0.07%	0.59%	0.65%	0.62%	1.13%	1.20%	1.17%
2026	0.54%	0.55%	0.55%	1.08%	1.10%	1.09%	1.63%	1.65%	1.64%
2027	0.53%	0.54%	0.54%	1.07%	1.08%	1.08%	1.61%	1.63%	1.62%
2028	1.03%	1.00%	1.01%	1.57%	1.53%	1.55%	2.10%	2.07%	2.09%
2029	0.01%	0.07%	0.04%	0.53%	0.59%	0.56%	1.05%	1.12%	1.09%
2030	0.51%	0.52%	0.51%	1.02%	1.04%	1.03%	1.54%	1.56%	1.55%
2031	0.51%	0.51%	0.51%	1.01%	1.03%	1.02%	1.52%	1.55%	1.53%
2032	1.01%	0.97%	0.99%	1.51%	1.48%	1.49%	2.01%	1.99%	2.00%
2033	-0.01%	0.04%	0.02%	0.48%	0.54%	0.51%	0.97%	1.04%	1.01%
2034	0.49%	0.50%	0.49%	0.98%	0.99%	0.99%	1.47%	1.49%	1.48%

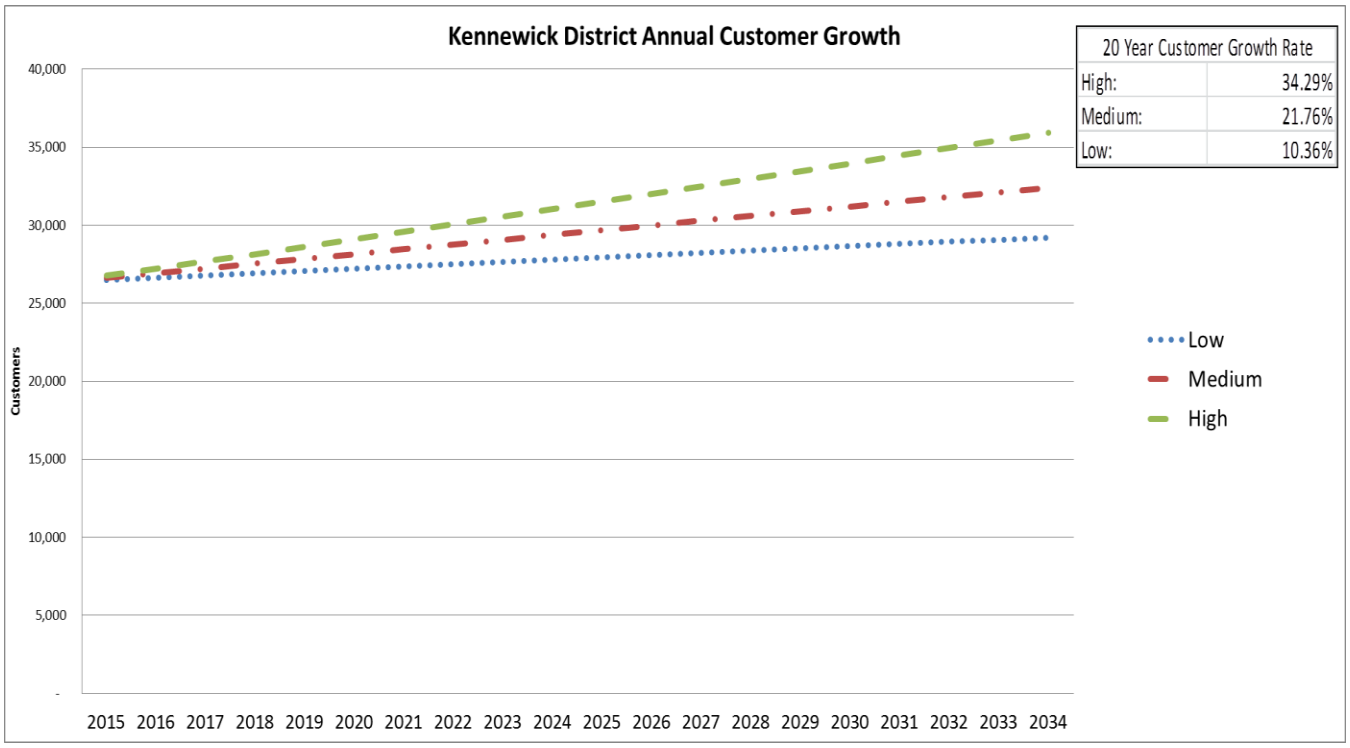
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	23,189	3,284	26,472	23,320	3,303	26,623	23,452	3,322	26,774
2016	23,320	3,303	26,623	23,585	3,341	26,926	23,851	3,380	27,231
2017	23,451	3,322	26,773	23,851	3,379	27,230	24,254	3,438	27,692
2018	23,583	3,341	26,923	24,118	3,418	27,536	24,662	3,497	28,159
2019	23,714	3,360	27,073	24,386	3,457	27,843	25,073	3,556	28,630
2020	23,844	3,378	27,222	24,654	3,496	28,149	25,487	3,616	29,103
2021	23,974	3,397	27,371	24,923	3,535	28,458	25,905	3,677	29,582
2022	24,103	3,416	27,519	25,192	3,574	28,765	26,325	3,738	30,062
2023	24,232	3,434	27,666	25,461	3,612	29,073	26,746	3,799	30,545
2024	24,360	3,453	27,813	25,730	3,651	29,381	27,171	3,860	31,031
2025	24,486	3,471	27,957	25,998	3,690	29,688	27,596	3,922	31,517
2026	24,612	3,489	28,102	26,266	3,729	29,994	28,023	3,983	32,006
2027	24,737	3,508	28,245	26,533	3,767	30,300	28,451	4,045	32,497
2028	24,861	3,525	28,387	26,799	3,806	30,605	28,881	4,108	32,988
2029	24,984	3,543	28,527	27,064	3,844	30,909	29,309	4,170	33,479
2030	25,105	3,561	28,666	27,328	3,883	31,211	29,739	4,232	33,971
2031	25,227	3,578	28,805	27,592	3,921	31,513	30,171	4,295	34,465
2032	25,347	3,596	28,942	27,855	3,959	31,814	30,603	4,357	34,960
2033	25,466	3,613	29,079	28,118	3,997	32,115	31,037	4,420	35,457
2034	25,584	3,630	29,214	28,380	4,035	32,415	31,472	4,483	35,955

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.58%	0.57%	1.13%	1.16%	1.14%	1.70%	1.74%	1.71%
2017	0.56%	0.58%	0.56%	1.13%	1.15%	1.13%	1.69%	1.73%	1.70%
2018	0.56%	0.57%	0.56%	1.12%	1.14%	1.12%	1.68%	1.72%	1.69%
2019	0.56%	0.57%	0.56%	1.11%	1.13%	1.11%	1.67%	1.70%	1.67%
2020	0.55%	0.56%	0.55%	1.10%	1.12%	1.10%	1.65%	1.68%	1.65%
2021	0.55%	0.56%	0.55%	1.09%	1.11%	1.10%	1.64%	1.67%	1.64%
2022	0.54%	0.55%	0.54%	1.08%	1.10%	1.08%	1.62%	1.65%	1.62%
2023	0.53%	0.54%	0.53%	1.07%	1.09%	1.07%	1.60%	1.63%	1.60%
2024	0.53%	0.54%	0.53%	1.06%	1.08%	1.06%	1.59%	1.62%	1.59%
2025	0.52%	0.53%	0.52%	1.04%	1.06%	1.04%	1.56%	1.59%	1.57%
2026	0.51%	0.52%	0.52%	1.03%	1.05%	1.03%	1.55%	1.58%	1.55%
2027	0.51%	0.52%	0.51%	1.02%	1.04%	1.02%	1.53%	1.56%	1.53%
2028	0.50%	0.51%	0.50%	1.00%	1.02%	1.01%	1.51%	1.54%	1.51%
2029	0.49%	0.50%	0.49%	0.99%	1.01%	0.99%	1.49%	1.51%	1.49%
2030	0.49%	0.50%	0.49%	0.98%	0.99%	0.98%	1.47%	1.49%	1.47%
2031	0.48%	0.49%	0.48%	0.97%	0.98%	0.97%	1.45%	1.48%	1.46%
2032	0.48%	0.48%	0.48%	0.95%	0.97%	0.96%	1.43%	1.46%	1.44%
2033	0.47%	0.48%	0.47%	0.94%	0.96%	0.95%	1.42%	1.44%	1.42%
2034	0.47%	0.47%	0.47%	0.93%	0.95%	0.94%	1.40%	1.43%	1.41%


Kennewick District Annual Therm Usage
Therms
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 36.60%
Medium: 23.15%
Low: 10.99%
Low
Medium
High


Kennewick District Annual Customer Growth
Customers
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 34.29%
Medium: 21.76%
Low: 10.36%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Walla Walla District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	8,747,482	4,043,380	12,790,863	8,751,579	4,043,380	12,794,960	8,755,676	4,043,380	12,799,057
2016	8,798,029	4,043,380	12,841,409	8,805,608	4,043,380	12,848,988	8,813,190	4,043,380	12,856,570
2017	8,728,734	4,043,380	12,772,114	8,739,075	4,043,380	12,782,455	8,749,421	4,043,380	12,792,801
2018	8,722,272	4,043,380	12,765,652	8,734,763	4,043,380	12,778,144	8,747,264	4,043,380	12,790,644
2019	8,717,427	4,043,380	12,760,807	8,731,530	4,043,380	12,774,911	8,745,646	4,043,380	12,789,026
2020	8,774,007	4,043,380	12,817,387	8,789,580	4,043,380	12,832,961	8,805,169	4,043,380	12,848,550
2021	8,710,968	4,043,380	12,754,349	8,727,220	4,043,380	12,770,600	8,743,488	4,043,380	12,786,868
2022	8,709,031	4,043,380	12,752,412	8,725,926	4,043,380	12,769,307	8,742,840	4,043,380	12,786,221
2023	8,707,417	4,043,380	12,750,797	8,724,849	4,043,380	12,768,229	8,742,301	4,043,380	12,785,681
2024	8,767,843	4,043,380	12,811,224	8,785,466	4,043,380	12,828,847	8,803,109	4,043,380	12,846,490
2025	8,706,449	4,043,380	12,749,829	8,724,202	4,043,380	12,767,583	8,741,977	4,043,380	12,785,358
2026	8,706,126	4,043,380	12,749,506	8,723,987	4,043,380	12,767,367	8,741,869	4,043,380	12,785,250
2027	8,706,126	4,043,380	12,749,506	8,723,987	4,043,380	12,767,367	8,741,869	4,043,380	12,785,250
2028	8,766,870	4,043,380	12,810,251	8,784,817	4,043,380	12,828,197	8,802,784	4,043,380	12,846,165
2029	8,705,480	4,043,380	12,748,861	8,723,556	4,043,380	12,766,936	8,741,654	4,043,380	12,785,034
2030	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2031	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2032	8,765,573	4,043,380	12,808,954	8,783,950	4,043,380	12,827,331	8,802,351	4,043,380	12,845,731
2033	8,704,835	4,043,380	12,748,215	8,723,125	4,043,380	12,766,505	8,741,438	4,043,380	12,784,818
2034	8,704,942	4,043,380	12,748,323	8,723,340	4,043,380	12,766,721	8,741,761	4,043,380	12,785,142

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.58%	0.00%	0.40%	0.62%	0.00%	0.42%	0.66%	0.00%	0.45%
2017	-0.79%	0.00%	-0.54%	-0.76%	0.00%	-0.52%	-0.72%	0.00%	-0.50%
2018	-0.07%	0.00%	-0.05%	-0.05%	0.00%	-0.03%	-0.02%	0.00%	-0.02%
2019	-0.06%	0.00%	-0.04%	-0.04%	0.00%	-0.03%	-0.02%	0.00%	-0.01%
2020	0.65%	0.00%	0.44%	0.66%	0.00%	0.45%	0.68%	0.00%	0.47%
2021	-0.72%	0.00%	-0.49%	-0.71%	0.00%	-0.49%	-0.70%	0.00%	-0.48%
2022	-0.02%	0.00%	-0.02%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	-0.01%
2023	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	0.00%
2024	0.69%	0.00%	0.47%	0.69%	0.00%	0.47%	0.70%	0.00%	0.48%
2025	-0.70%	0.00%	-0.48%	-0.70%	0.00%	-0.48%	-0.69%	0.00%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%
2029	-0.70%	0.00%	-0.48%	-0.70%	0.00%	-0.48%	-0.69%	0.00%	-0.48%
2030	-0.01%	0.00%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%	0.70%	0.00%	0.48%
2033	-0.69%	0.00%	-0.47%	-0.69%	0.00%	-0.47%	-0.69%	0.00%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	11,078	159,821	170,899	11,078	159,876	170,954	11,078	159,931	171,008
2016	11,078	159,683	170,761	11,078	159,784	170,861	11,078	159,884	170,962
2017	11,078	159,571	170,648	11,078	159,709	170,786	11,078	159,847	170,925
2018	11,078	159,484	170,562	11,078	159,651	170,729	11,078	159,818	170,896
2019	11,078	159,419	170,497	11,078	159,608	170,686	11,078	159,797	170,874
2020	11,078	159,363	170,441	11,078	159,570	170,648	11,078	159,778	170,856
2021	11,078	159,333	170,411	11,078	159,550	170,628	11,078	159,768	170,845
2022	11,078	159,307	170,385	11,078	159,533	170,611	11,078	159,759	170,837
2023	11,078	159,286	170,363	11,078	159,519	170,596	11,078	159,752	170,830
2024	11,078	159,281	170,359	11,078	159,516	170,594	11,078	159,750	170,828
2025	11,078	159,273	170,351	11,078	159,510	170,588	11,078	159,747	170,825
2026	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2027	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2028	11,078	159,268	170,346	11,078	159,507	170,585	11,078	159,746	170,824
2029	11,078	159,260	170,338	11,078	159,501	170,579	11,078	159,743	170,821
2030	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2031	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2032	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2033	11,078	159,251	170,329	11,078	159,496	170,573	11,078	159,740	170,818
2034	11,078	159,253	170,330	11,078	159,498	170,576	11,078	159,745	170,822

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	-0.09%	-0.08%	0.00%	-0.06%	-0.05%	0.00%	-0.03%	-0.03%
2017	0.00%	-0.07%	-0.07%	0.00%	-0.05%	-0.04%	0.00%	-0.02%	-0.02%
2018	0.00%	-0.05%	-0.05%	0.00%	-0.04%	-0.03%	0.00%	-0.02%	-0.02%
2019	0.00%	-0.04%	-0.04%	0.00%	-0.03%	-0.03%	0.00%	-0.01%	-0.01%
2020	0.00%	-0.04%	-0.03%	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%
2021	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%
2022	0.00%	-0.02%	-0.02%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%
2023	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	0.00%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,487,729	6,303,133	12,790,863	6,489,808	6,305,152	12,794,960	6,491,886	6,307,171	12,799,057
2016	6,514,667	6,326,742	12,841,409	6,518,513	6,330,476	12,848,988	6,522,359	6,334,211	12,856,570
2017	6,478,220	6,293,894	12,772,114	6,483,465	6,298,990	12,782,455	6,488,713	6,304,089	12,792,801
2018	6,474,942	6,290,710	12,765,652	6,481,278	6,296,865	12,778,144	6,487,619	6,303,025	12,790,644
2019	6,472,485	6,288,322	12,760,807	6,479,638	6,295,272	12,774,911	6,486,798	6,302,228	12,789,026
2020	6,502,481	6,314,907	12,817,387	6,510,381	6,322,579	12,832,961	6,518,290	6,330,260	12,848,550
2021	6,469,209	6,285,140	12,754,349	6,477,452	6,293,148	12,770,600	6,485,703	6,301,165	12,786,868
2022	6,468,227	6,284,185	12,752,412	6,476,796	6,292,511	12,769,307	6,485,375	6,300,846	12,786,221
2023	6,467,408	6,283,390	12,750,797	6,476,249	6,291,980	12,768,229	6,485,101	6,300,580	12,785,681
2024	6,499,354	6,311,870	12,811,224	6,508,294	6,320,552	12,828,847	6,517,245	6,329,245	12,846,490
2025	6,466,917	6,282,912	12,749,829	6,475,922	6,291,661	12,767,583	6,484,937	6,300,420	12,785,358
2026	6,466,753	6,282,753	12,749,506	6,475,812	6,291,555	12,767,367	6,484,883	6,300,367	12,785,250
2027	6,466,753	6,282,753	12,749,506	6,475,812	6,291,555	12,767,367	6,484,883	6,300,367	12,785,250
2028	6,498,860	6,311,391	12,810,251	6,507,965	6,320,232	12,828,197	6,517,080	6,329,085	12,846,165
2029	6,466,425	6,282,435	12,748,861	6,475,594	6,291,343	12,766,936	6,484,773	6,300,261	12,785,034
2030	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2031	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2032	6,498,202	6,310,751	12,808,954	6,507,525	6,319,806	12,827,331	6,516,860	6,328,871	12,845,731
2033	6,466,098	6,282,117	12,748,215	6,475,375	6,291,130	12,766,505	6,484,664	6,300,155	12,784,818
2034	6,466,153	6,282,170	12,748,323	6,475,484	6,291,236	12,766,721	6,484,828	6,300,314	12,785,142

Annual Change

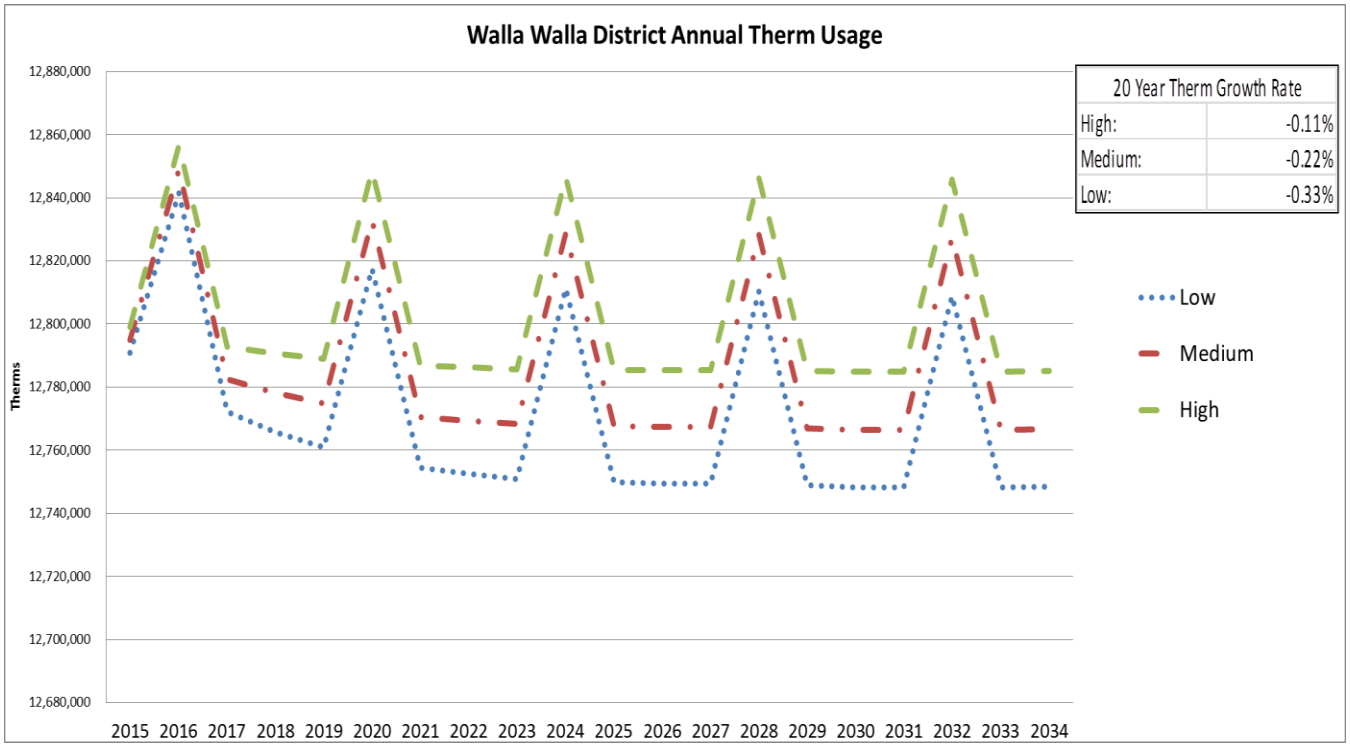
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.42%	0.37%	0.40%	0.44%	0.40%	0.42%	0.47%	0.43%	0.45%
2017	-0.56%	-0.52%	-0.54%	-0.54%	-0.50%	-0.52%	-0.52%	-0.48%	-0.50%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	0.46%	0.42%	0.44%	0.47%	0.43%	0.45%	0.49%	0.44%	0.47%
2021	-0.51%	-0.47%	-0.49%	-0.51%	-0.47%	-0.49%	-0.50%	-0.46%	-0.48%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.49%	0.45%	0.47%	0.49%	0.45%	0.47%	0.50%	0.45%	0.48%
2025	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%
2029	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%	-0.50%	-0.46%	-0.48%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%	0.50%	0.46%	0.48%
2033	-0.49%	-0.45%	-0.47%	-0.49%	-0.45%	-0.47%	-0.49%	-0.45%	-0.47%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

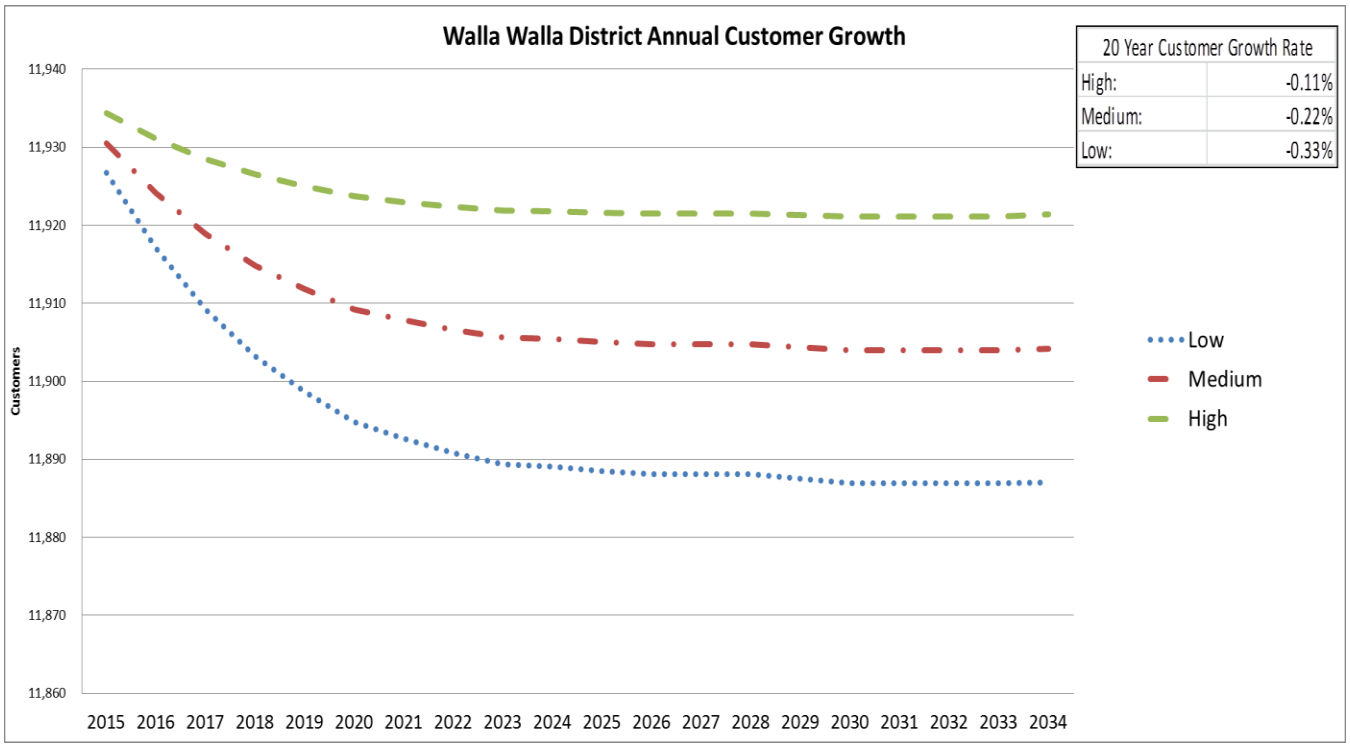
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,654	1,272	11,927	10,658	1,273	11,931	10,661	1,273	11,934
2016	10,646	1,271	11,917	10,652	1,272	11,924	10,658	1,273	11,931
2017	10,639	1,271	11,909	10,647	1,272	11,919	10,656	1,273	11,929
2018	10,633	1,270	11,903	10,644	1,271	11,915	10,654	1,272	11,927
2019	10,629	1,269	11,899	10,641	1,271	11,912	10,653	1,272	11,925
2020	10,626	1,269	11,895	10,639	1,271	11,909	10,652	1,272	11,924
2021	10,624	1,269	11,893	10,637	1,270	11,908	10,651	1,272	11,923
2022	10,622	1,269	11,891	10,636	1,270	11,907	10,650	1,272	11,922
2023	10,621	1,268	11,889	10,635	1,270	11,906	10,650	1,272	11,922
2024	10,621	1,268	11,889	10,635	1,270	11,905	10,650	1,272	11,922
2025	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,922
2026	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2027	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2028	10,620	1,268	11,888	10,635	1,270	11,905	10,650	1,272	11,921
2029	10,619	1,268	11,888	10,634	1,270	11,904	10,649	1,272	11,921
2030	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2031	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2032	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2033	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921
2034	10,619	1,268	11,887	10,634	1,270	11,904	10,649	1,272	11,921

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	-0.08%	-0.08%	-0.08%	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%
2017	-0.07%	-0.07%	-0.07%	-0.04%	-0.04%	-0.04%	-0.02%	-0.02%	-0.02%
2018	-0.05%	-0.05%	-0.05%	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
2019	-0.04%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.01%	-0.01%	-0.01%
2020	-0.03%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
2021	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2022	-0.02%	-0.02%	-0.02%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
2023	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2025	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2029	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2030	-0.01%	-0.01%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%


Walla Walla District Annual Therm Usage
Therms
12,880,000
12,860,000
12,840,000
12,820,000
12,800,000
12,780,000
12,760,000
12,740,000
12,720,000
12,700,000
12,680,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High


Walla Walla District Annual Customer Growth
Customers
11,940
11,930
11,920
11,910
11,900
11,890
11,880
11,870
11,860
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: -0.11%
Medium: -0.22%
Low: -0.33%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Wenatchee District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,461,943	3,428,692	10,890,635	7,535,946	3,428,692	10,964,639	7,609,950	3,428,692	11,038,642
2016	7,572,847	3,428,692	11,001,539	7,722,844	3,428,692	11,151,537	7,873,965	3,428,692	11,302,658
2017	7,610,944	3,428,692	11,039,636	7,837,322	3,428,692	11,266,014	8,067,100	3,428,692	11,495,793
2018	7,685,963	3,428,692	11,114,656	7,990,769	3,428,692	11,419,461	8,302,467	3,428,692	11,731,159
2019	7,761,324	3,428,692	11,190,017	8,146,070	3,428,692	11,574,763	8,542,456	3,428,692	11,971,149
2020	7,874,506	3,428,692	11,303,199	8,342,227	3,428,692	11,770,919	8,827,699	3,428,692	12,256,391
2021	7,912,663	3,428,692	11,341,355	8,461,465	3,428,692	11,890,158	9,035,341	3,428,692	12,464,033
2022	7,988,621	3,428,692	11,417,313	8,621,545	3,428,692	12,050,238	9,288,316	3,428,692	12,717,009
2023	8,064,683	3,428,692	11,493,376	8,783,049	3,428,692	12,211,742	9,545,461	3,428,692	12,974,153
2024	8,179,884	3,428,692	11,608,576	8,988,249	3,428,692	12,416,941	9,852,571	3,428,692	13,281,263
2025	8,217,371	3,428,692	11,646,063	9,110,893	3,428,692	12,539,585	10,073,337	3,428,692	13,502,030
2026	8,293,924	3,428,692	11,722,616	9,277,106	3,428,692	12,705,799	10,343,978	3,428,692	13,772,670
2027	8,370,535	3,428,692	11,799,227	9,444,693	3,428,692	12,873,386	10,618,913	3,428,692	14,047,605
2028	8,487,180	3,428,692	11,915,872	9,658,012	3,428,692	13,086,705	10,947,408	3,428,692	14,376,100
2029	8,523,869	3,428,692	11,952,562	9,783,889	3,428,692	13,212,582	11,181,708	3,428,692	14,610,401
2030	8,600,591	3,428,692	12,029,284	9,955,514	3,428,692	13,384,206	11,469,694	3,428,692	14,898,386
2031	8,677,479	3,428,692	12,106,172	10,128,786	3,428,692	13,557,478	11,762,629	3,428,692	15,191,321
2032	8,795,610	3,428,692	12,224,303	10,350,563	3,428,692	13,779,255	12,114,030	3,428,692	15,542,723
2033	8,831,593	3,428,692	12,260,286	10,479,971	3,428,692	13,908,664	12,363,079	3,428,692	15,791,771
2034	8,908,849	3,428,692	12,337,541	10,657,974	3,428,692	14,086,667	12,670,861	3,428,692	16,099,554

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.49%	0.00%	1.02%	2.48%	0.00%	1.70%	3.47%	0.00%	2.39%
2017	0.50%	0.00%	0.35%	1.48%	0.00%	1.03%	2.45%	0.00%	1.71%
2018	0.99%	0.00%	0.68%	1.96%	0.00%	1.36%	2.92%	0.00%	2.05%
2019	0.98%	0.00%	0.68%	1.94%	0.00%	1.36%	2.89%	0.00%	2.05%
2020	1.46%	0.00%	1.01%	2.41%	0.00%	1.69%	3.34%	0.00%	2.38%
2021	0.48%	0.00%	0.34%	1.43%	0.00%	1.01%	2.35%	0.00%	1.69%
2022	0.96%	0.00%	0.67%	1.89%	0.00%	1.35%	2.80%	0.00%	2.03%
2023	0.95%	0.00%	0.67%	1.87%	0.00%	1.34%	2.77%	0.00%	2.02%
2024	1.43%	0.00%	1.00%	2.34%	0.00%	1.68%	3.22%	0.00%	2.37%
2025	0.46%	0.00%	0.32%	1.36%	0.00%	0.99%	2.24%	0.00%	1.66%
2026	0.93%	0.00%	0.66%	1.82%	0.00%	1.33%	2.69%	0.00%	2.00%
2027	0.92%	0.00%	0.65%	1.81%	0.00%	1.32%	2.66%	0.00%	2.00%
2028	1.39%	0.00%	0.99%	2.26%	0.00%	1.66%	3.09%	0.00%	2.34%
2029	0.43%	0.00%	0.31%	1.30%	0.00%	0.96%	2.14%	0.00%	1.63%
2030	0.90%	0.00%	0.64%	1.75%	0.00%	1.30%	2.58%	0.00%	1.97%
2031	0.89%	0.00%	0.64%	1.74%	0.00%	1.29%	2.55%	0.00%	1.97%
2032	1.36%	0.00%	0.98%	2.19%	0.00%	1.64%	2.99%	0.00%	2.31%
2033	0.41%	0.00%	0.29%	1.25%	0.00%	0.94%	2.06%	0.00%	1.60%
2034	0.87%	0.00%	0.63%	1.70%	0.00%	1.28%	2.49%	0.00%	1.95%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	9,394	111,084	120,477	9,394	111,910	121,304	9,394	112,737	122,131
2016	9,394	111,914	121,308	9,394	113,583	122,977	9,394	115,265	124,659
2017	9,394	112,748	122,142	9,394	115,278	124,671	9,394	117,845	127,239
2018	9,394	113,587	122,980	9,394	116,992	126,386	9,394	120,476	129,870
2019	9,394	114,429	123,822	9,394	118,729	128,122	9,394	123,160	132,553
2020	9,394	115,272	124,666	9,394	120,481	129,874	9,394	125,889	135,283
2021	9,394	116,120	125,514	9,394	122,256	131,649	9,394	128,674	138,068
2022	9,394	116,970	126,363	9,394	124,046	133,440	9,394	131,506	140,899
2023	9,394	117,820	127,214	9,394	125,854	135,248	9,394	134,385	143,779
2024	9,394	118,675	128,068	9,394	127,682	137,076	9,394	137,320	146,713
2025	9,394	119,529	128,922	9,394	129,524	138,918	9,394	140,299	149,693
2026	9,394	120,385	129,779	9,394	131,386	140,780	9,394	143,333	152,726
2027	9,394	121,243	130,637	9,394	133,264	142,657	9,394	146,416	155,810
2028	9,394	122,101	131,495	9,394	135,157	144,551	9,394	149,549	158,943
2029	9,394	122,960	132,354	9,394	137,066	146,460	9,394	152,731	162,125
2030	9,394	123,820	133,213	9,394	138,991	148,385	9,394	155,965	165,359
2031	9,394	124,681	134,075	9,394	140,935	150,328	9,394	159,255	168,649
2032	9,394	125,544	134,938	9,394	142,896	152,290	9,394	162,601	171,995
2033	9,394	126,409	135,802	9,394	144,876	154,270	9,394	166,004	175,397
2034	9,394	127,275	136,668	9,394	146,875	156,269	9,394	169,465	178,858

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.75%	0.69%	0.00%	1.49%	1.38%	0.00%	2.24%	2.07%
2017	0.00%	0.75%	0.69%	0.00%	1.49%	1.38%	0.00%	2.24%	2.07%
2018	0.00%	0.74%	0.69%	0.00%	1.49%	1.38%	0.00%	2.23%	2.07%
2019	0.00%	0.74%	0.68%	0.00%	1.48%	1.37%	0.00%	2.23%	2.07%
2020	0.00%	0.74%	0.68%	0.00%	1.48%	1.37%	0.00%	2.22%	2.06%
2021	0.00%	0.74%	0.68%	0.00%	1.47%	1.37%	0.00%	2.21%	2.06%
2022	0.00%	0.73%	0.68%	0.00%	1.46%	1.36%	0.00%	2.20%	2.05%
2023	0.00%	0.73%	0.67%	0.00%	1.46%	1.35%	0.00%	2.19%	2.04%
2024	0.00%	0.72%	0.67%	0.00%	1.45%	1.35%	0.00%	2.18%	2.04%
2025	0.00%	0.72%	0.67%	0.00%	1.44%	1.34%	0.00%	2.17%	2.03%
2026	0.00%	0.72%	0.66%	0.00%	1.44%	1.34%	0.00%	2.16%	2.03%
2027	0.00%	0.71%	0.66%	0.00%	1.43%	1.33%	0.00%	2.15%	2.02%
2028	0.00%	0.71%	0.66%	0.00%	1.42%	1.33%	0.00%	2.14%	2.01%
2029	0.00%	0.70%	0.65%	0.00%	1.41%	1.32%	0.00%	2.13%	2.00%
2030	0.00%	0.70%	0.65%	0.00%	1.40%	1.31%	0.00%	2.12%	1.99%
2031	0.00%	0.70%	0.65%	0.00%	1.40%	1.31%	0.00%	2.11%	1.99%
2032	0.00%	0.69%	0.64%	0.00%	1.39%	1.30%	0.00%	2.10%	1.98%
2033	0.00%	0.69%	0.64%	0.00%	1.39%	1.30%	0.00%	2.09%	1.98%
2034	0.00%	0.69%	0.64%	0.00%	1.38%	1.30%	0.00%	2.08%	1.97%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	1,326,801	9,563,834	10,890,635	1,333,230	9,631,408	10,964,639	1,339,659	9,698,983	11,038,642
2016	1,336,212	9,665,328	11,001,539	1,349,184	9,802,353	11,151,537	1,362,222	9,940,435	11,302,658
2017	1,339,719	9,699,918	11,039,636	1,359,263	9,906,751	11,266,014	1,379,006	10,116,786	11,495,793
2018	1,346,205	9,768,451	11,114,656	1,372,434	10,047,028	11,419,461	1,399,063	10,332,096	11,731,159
2019	1,352,719	9,837,297	11,190,017	1,385,729	10,189,034	11,574,763	1,419,412	10,551,737	11,971,149
2020	1,362,245	9,940,954	11,303,199	1,402,182	10,368,737	11,770,919	1,443,138	10,813,254	12,256,391
2021	1,365,732	9,975,624	11,341,355	1,412,485	10,477,673	11,890,158	1,460,669	11,003,364	12,464,033
2022	1,372,227	10,045,086	11,417,313	1,425,940	10,624,298	12,050,238	1,481,571	11,235,438	12,717,009
2023	1,378,698	10,114,678	11,493,376	1,439,411	10,772,331	12,211,742	1,502,600	11,471,553	12,974,153
2024	1,388,292	10,220,285	11,608,576	1,456,270	10,960,671	12,416,941	1,527,368	11,753,895	13,281,263
2025	1,391,623	10,254,440	11,646,063	1,466,514	11,073,071	12,539,585	1,545,217	11,956,813	13,502,030
2026	1,398,066	10,324,550	11,722,616	1,480,120	11,225,678	12,705,799	1,566,766	12,205,904	13,772,670
2027	1,404,473	10,394,754	11,799,227	1,493,716	11,379,669	12,873,386	1,588,400	12,459,205	14,047,605
2028	1,414,015	10,501,857	11,915,872	1,510,727	11,575,977	13,086,705	1,613,821	12,762,279	14,376,100
2029	1,417,182	10,535,380	11,952,562	1,520,875	11,691,707	13,212,582	1,631,921	12,978,479	14,610,401
2030	1,423,488	10,605,796	12,029,284	1,534,445	11,849,762	13,384,206	1,653,816	13,244,570	14,898,386
2031	1,429,774	10,676,398	12,106,172	1,548,032	12,009,446	13,557,478	1,675,840	13,515,481	15,191,321
2032	1,439,283	10,785,020	12,224,303	1,565,221	12,214,035	13,779,255	1,701,949	13,840,773	15,542,723
2033	1,442,289	10,817,997	12,260,286	1,575,267	12,333,397	13,908,664	1,720,283	14,071,489	15,791,771
2034	1,448,522	10,889,019	12,337,541	1,588,920	12,497,747	14,086,667	1,742,711	14,356,843	16,099,554

Annual Change

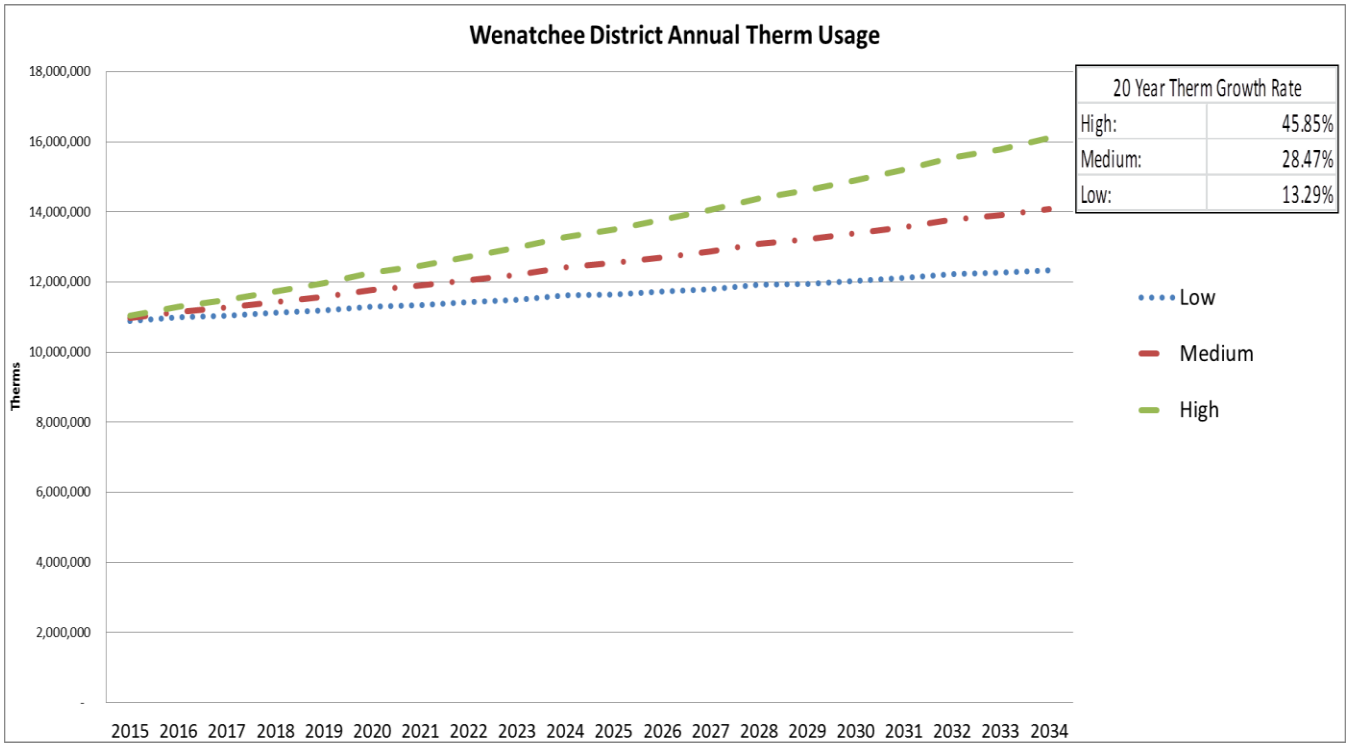
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.71%	1.06%	1.02%	1.20%	1.77%	1.70%	1.68%	2.49%	2.39%
2017	0.26%	0.36%	0.35%	0.75%	1.07%	1.03%	1.23%	1.77%	1.71%
2018	0.48%	0.71%	0.68%	0.97%	1.42%	1.36%	1.45%	2.13%	2.05%
2019	0.48%	0.70%	0.68%	0.97%	1.41%	1.36%	1.45%	2.13%	2.05%
2020	0.70%	1.05%	1.01%	1.19%	1.76%	1.69%	1.67%	2.48%	2.38%
2021	0.26%	0.35%	0.34%	0.73%	1.05%	1.01%	1.21%	1.76%	1.69%
2022	0.48%	0.70%	0.67%	0.95%	1.40%	1.35%	1.43%	2.11%	2.03%
2023	0.47%	0.69%	0.67%	0.94%	1.39%	1.34%	1.42%	2.10%	2.02%
2024	0.70%	1.04%	1.00%	1.17%	1.75%	1.68%	1.65%	2.46%	2.37%
2025	0.24%	0.33%	0.32%	0.70%	1.03%	0.99%	1.17%	1.73%	1.66%
2026	0.46%	0.68%	0.66%	0.93%	1.38%	1.33%	1.39%	2.08%	2.00%
2027	0.46%	0.68%	0.65%	0.92%	1.37%	1.32%	1.38%	2.08%	2.00%
2028	0.68%	1.03%	0.99%	1.14%	1.73%	1.66%	1.60%	2.43%	2.34%
2029	0.22%	0.32%	0.31%	0.67%	1.00%	0.96%	1.12%	1.69%	1.63%
2030	0.44%	0.67%	0.64%	0.89%	1.35%	1.30%	1.34%	2.05%	1.97%
2031	0.44%	0.67%	0.64%	0.89%	1.35%	1.29%	1.33%	2.05%	1.97%
2032	0.67%	1.02%	0.98%	1.11%	1.70%	1.64%	1.56%	2.41%	2.31%
2033	0.21%	0.31%	0.29%	0.64%	0.98%	0.94%	1.08%	1.67%	1.60%
2034	0.43%	0.66%	0.63%	0.87%	1.33%	1.28%	1.30%	2.03%	1.95%

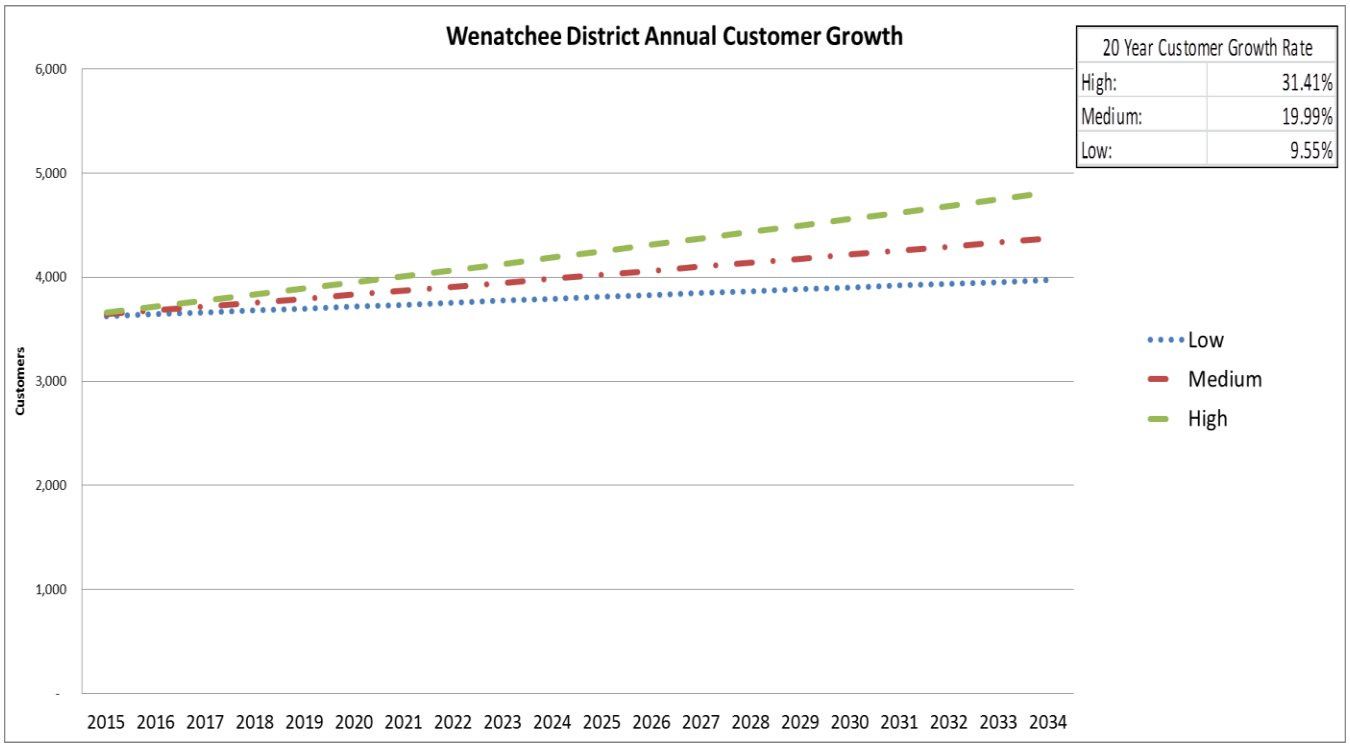
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	2,541	1,085	3,626	2,554	1,091	3,645	2,567	1,097	3,663
2016	2,554	1,091	3,645	2,579	1,102	3,682	2,605	1,114	3,719
2017	2,567	1,097	3,663	2,605	1,114	3,719	2,643	1,132	3,775
2018	2,579	1,102	3,682	2,631	1,126	3,757	2,683	1,150	3,833
2019	2,592	1,108	3,700	2,657	1,138	3,795	2,722	1,168	3,891
2020	2,605	1,114	3,719	2,682	1,150	3,833	2,762	1,187	3,949
2021	2,617	1,120	3,737	2,709	1,162	3,871	2,803	1,206	4,009
2022	2,630	1,126	3,756	2,735	1,174	3,909	2,844	1,225	4,068
2023	2,643	1,132	3,774	2,761	1,186	3,948	2,885	1,244	4,128
2024	2,655	1,137	3,793	2,788	1,199	3,986	2,926	1,263	4,189
2025	2,668	1,143	3,811	2,814	1,211	4,025	2,968	1,282	4,250
2026	2,680	1,149	3,829	2,841	1,223	4,064	3,010	1,302	4,311
2027	2,693	1,155	3,847	2,867	1,235	4,102	3,052	1,321	4,373
2028	2,705	1,160	3,866	2,894	1,247	4,141	3,094	1,341	4,435
2029	2,718	1,166	3,884	2,920	1,260	4,180	3,137	1,361	4,497
2030	2,730	1,172	3,901	2,946	1,272	4,218	3,180	1,380	4,560
2031	2,742	1,177	3,919	2,973	1,284	4,257	3,223	1,400	4,623
2032	2,754	1,183	3,937	2,999	1,296	4,296	3,266	1,420	4,686
2033	2,766	1,188	3,955	3,026	1,309	4,334	3,309	1,441	4,750
2034	2,779	1,194	3,972	3,052	1,321	4,373	3,353	1,461	4,814

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.50%	0.54%	0.51%	0.99%	1.07%	1.02%	1.49%	1.61%	1.52%
2017	0.50%	0.53%	0.51%	0.99%	1.07%	1.01%	1.49%	1.61%	1.52%
2018	0.49%	0.53%	0.51%	0.99%	1.07%	1.01%	1.48%	1.60%	1.52%
2019	0.49%	0.53%	0.50%	0.99%	1.06%	1.01%	1.48%	1.60%	1.52%
2020	0.49%	0.53%	0.50%	0.98%	1.05%	1.00%	1.47%	1.58%	1.50%
2021	0.49%	0.53%	0.50%	0.98%	1.05%	1.00%	1.47%	1.58%	1.50%
2022	0.48%	0.52%	0.49%	0.97%	1.04%	0.99%	1.46%	1.57%	1.49%
2023	0.48%	0.52%	0.49%	0.96%	1.03%	0.98%	1.44%	1.55%	1.48%
2024	0.48%	0.51%	0.49%	0.96%	1.03%	0.98%	1.44%	1.55%	1.47%
2025	0.47%	0.51%	0.48%	0.95%	1.02%	0.97%	1.42%	1.53%	1.45%
2026	0.47%	0.50%	0.48%	0.94%	1.01%	0.96%	1.42%	1.52%	1.45%
2027	0.47%	0.50%	0.48%	0.93%	1.00%	0.95%	1.40%	1.50%	1.43%
2028	0.46%	0.49%	0.47%	0.92%	0.99%	0.94%	1.39%	1.49%	1.42%
2029	0.46%	0.49%	0.47%	0.91%	0.98%	0.93%	1.37%	1.47%	1.40%
2030	0.45%	0.48%	0.46%	0.90%	0.97%	0.92%	1.36%	1.46%	1.39%
2031	0.45%	0.48%	0.46%	0.90%	0.96%	0.92%	1.35%	1.45%	1.38%
2032	0.44%	0.48%	0.45%	0.89%	0.95%	0.91%	1.34%	1.43%	1.37%
2033	0.44%	0.47%	0.45%	0.88%	0.95%	0.90%	1.33%	1.42%	1.36%
2034	0.44%	0.47%	0.45%	0.88%	0.94%	0.90%	1.32%	1.41%	1.35%


Wenatchee District Annual Therm Usage
Therms
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 45.85%
Medium: 28.47%
Low: 13.29%
Low
Medium
High


Wenatchee District Annual Customer Growth
Customers
6,000
5,000
4,000
3,000
2,000
1,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 31.41%
Medium: 19.99%
Low: 9.55%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Yakima District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	30,409,268	8,542,165	38,951,433	30,444,900	8,542,165	38,987,066	30,480,533	8,542,165	39,022,699
2016	30,623,399	8,542,165	39,165,564	30,696,716	8,542,165	39,238,881	30,770,164	8,542,165	39,312,330
2017	30,485,472	8,542,165	39,027,637	30,597,710	8,542,165	39,139,876	30,710,351	8,542,165	39,252,516
2018	30,526,194	8,542,165	39,068,360	30,679,572	8,542,165	39,221,737	30,833,773	8,542,165	39,375,938
2019	30,568,275	8,542,165	39,110,440	30,764,303	8,542,165	39,306,468	30,961,735	8,542,165	39,503,900
2020	30,788,508	8,542,165	39,330,673	31,028,922	8,542,165	39,571,088	31,271,488	8,542,165	39,813,653
2021	30,654,907	8,542,165	39,197,072	30,939,178	8,542,165	39,481,343	31,226,502	8,542,165	39,768,667
2022	30,699,299	8,542,165	39,241,464	31,029,007	8,542,165	39,571,172	31,362,847	8,542,165	39,905,012
2023	30,743,897	8,542,165	39,286,062	31,119,404	8,542,165	39,661,570	31,500,290	8,542,165	40,042,456
2024	30,967,751	8,542,165	39,509,916	31,391,933	8,542,165	39,934,098	31,822,951	8,542,165	40,365,116
2025	30,834,105	8,542,165	39,376,271	31,302,704	8,542,165	39,844,869	31,779,691	8,542,165	40,321,856
2026	30,879,482	8,542,165	39,421,647	31,395,133	8,542,165	39,937,298	31,920,936	8,542,165	40,463,101
2027	30,924,613	8,542,165	39,466,778	31,487,219	8,542,165	40,029,384	32,061,904	8,542,165	40,604,069
2028	31,148,885	8,542,165	39,691,050	31,761,217	8,542,165	40,303,382	32,387,780	8,542,165	40,929,945
2029	31,013,898	8,542,165	39,556,063	31,669,858	8,542,165	40,212,023	32,342,221	8,542,165	40,884,387
2030	31,057,831	8,542,165	39,599,996	31,759,953	8,542,165	40,302,118	32,480,868	8,542,165	41,023,033
2031	31,102,274	8,542,165	39,644,440	31,851,231	8,542,165	40,393,396	32,621,547	8,542,165	41,163,713
2032	31,326,283	8,542,165	39,868,448	32,125,287	8,542,165	40,667,452	32,948,474	8,542,165	41,490,640
2033	31,190,443	8,542,165	39,732,609	32,032,750	8,542,165	40,574,915	32,902,022	8,542,165	41,444,187
2034	31,234,769	8,542,165	39,776,934	32,124,212	8,542,165	40,666,377	33,043,678	8,542,165	41,585,843

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.70%	0.00%	0.55%	0.83%	0.00%	0.65%	0.95%	0.00%	0.74%
2017	-0.45%	0.00%	-0.35%	-0.32%	0.00%	-0.25%	-0.19%	0.00%	-0.15%
2018	0.13%	0.00%	0.10%	0.27%	0.00%	0.21%	0.40%	0.00%	0.31%
2019	0.14%	0.00%	0.11%	0.28%	0.00%	0.22%	0.42%	0.00%	0.32%
2020	0.72%	0.00%	0.56%	0.86%	0.00%	0.67%	1.00%	0.00%	0.78%
2021	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2022	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.34%
2023	0.15%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.34%
2024	0.73%	0.00%	0.57%	0.88%	0.00%	0.69%	1.02%	0.00%	0.81%
2025	-0.43%	0.00%	-0.34%	-0.28%	0.00%	-0.22%	-0.14%	0.00%	-0.11%
2026	0.15%	0.00%	0.12%	0.30%	0.00%	0.23%	0.44%	0.00%	0.35%
2027	0.15%	0.00%	0.11%	0.29%	0.00%	0.23%	0.44%	0.00%	0.35%
2028	0.73%	0.00%	0.57%	0.87%	0.00%	0.68%	1.02%	0.00%	0.80%
2029	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2030	0.14%	0.00%	0.11%	0.28%	0.00%	0.22%	0.43%	0.00%	0.34%
2031	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.43%	0.00%	0.34%
2032	0.72%	0.00%	0.57%	0.86%	0.00%	0.68%	1.00%	0.00%	0.79%
2033	-0.43%	0.00%	-0.34%	-0.29%	0.00%	-0.23%	-0.14%	0.00%	-0.11%
2034	0.14%	0.00%	0.11%	0.29%	0.00%	0.23%	0.43%	0.00%	0.34%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	23,403	439,151	462,554	23,403	439,566	462,969	23,403	439,981	463,384
2016	23,403	439,585	462,988	23,403	440,435	463,839	23,403	441,288	464,691
2017	23,403	440,040	463,443	23,403	441,348	464,751	23,403	442,662	466,065
2018	23,403	440,515	463,919	23,403	442,304	465,708	23,403	444,103	467,506
2019	23,403	441,007	464,410	23,403	443,295	466,698	23,403	445,599	469,002
2020	23,403	441,505	464,908	23,403	444,299	467,702	23,403	447,118	470,521
2021	23,403	442,020	465,423	23,403	445,340	468,743	23,403	448,694	472,098
2022	23,403	442,540	465,943	23,403	446,390	469,794	23,403	450,289	473,692
2023	23,403	443,062	466,465	23,403	447,448	470,851	23,403	451,897	475,300
2024	23,403	443,593	466,996	23,403	448,527	471,931	23,403	453,541	476,944
2025	23,403	444,117	467,521	23,403	449,593	472,996	23,403	455,166	478,570
2026	23,403	444,648	468,052	23,403	450,675	474,078	23,403	456,819	480,223
2027	23,403	445,177	468,580	23,403	451,753	475,156	23,403	458,469	481,872
2028	23,403	445,704	469,107	23,403	452,830	476,233	23,403	460,120	483,524
2029	23,403	446,222	469,625	23,403	453,890	477,293	23,403	461,749	485,152
2030	23,403	446,736	470,139	23,403	454,944	478,347	23,403	463,370	486,774
2031	23,403	447,256	470,659	23,403	456,012	479,415	23,403	465,016	488,419
2032	23,403	447,771	471,174	23,403	457,071	480,474	23,403	466,650	490,053
2033	23,403	448,288	471,691	23,403	458,136	481,539	23,403	468,297	491,700
2034	23,403	448,807	472,210	23,403	459,206	482,610	23,403	469,954	493,358

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.10%	0.09%	0.00%	0.20%	0.19%	0.00%	0.30%	0.28%
2017	0.00%	0.10%	0.10%	0.00%	0.21%	0.20%	0.00%	0.31%	0.30%
2018	0.00%	0.11%	0.10%	0.00%	0.22%	0.21%	0.00%	0.33%	0.31%
2019	0.00%	0.11%	0.11%	0.00%	0.22%	0.21%	0.00%	0.34%	0.32%
2020	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.32%
2021	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2022	0.00%	0.12%	0.11%	0.00%	0.24%	0.22%	0.00%	0.36%	0.34%
2023	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2024	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2025	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2026	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2028	0.00%	0.12%	0.11%	0.00%	0.24%	0.23%	0.00%	0.36%	0.34%
2029	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.33%
2031	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.36%	0.34%
2032	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.33%
2033	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2034	0.00%	0.12%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	15,707,391	23,244,042	38,951,433	15,720,288	23,266,778	38,987,066	15,733,184	23,289,515	39,022,699
2016	15,797,487	23,368,077	39,165,564	15,824,107	23,414,774	39,238,881	15,850,768	23,461,562	39,312,330
2017	15,735,217	23,292,420	39,027,637	15,776,065	23,363,811	39,139,876	15,817,038	23,435,478	39,252,516
2018	15,750,207	23,318,153	39,068,360	15,806,176	23,415,561	39,221,737	15,862,404	23,513,535	39,375,938
2019	15,765,757	23,344,683	39,110,440	15,837,457	23,469,011	39,306,468	15,909,599	23,594,301	39,503,900
2020	15,858,363	23,472,310	39,330,673	15,946,489	23,624,599	39,571,088	16,035,295	23,778,358	39,813,653
2021	15,797,886	23,399,187	39,197,072	15,902,228	23,579,115	39,481,343	16,007,538	23,761,129	39,768,667
2022	15,814,399	23,427,065	39,241,464	15,935,591	23,635,581	39,571,172	16,058,096	23,846,916	39,905,012
2023	15,831,005	23,455,057	39,286,062	15,969,189	23,692,381	39,661,570	16,109,087	23,933,369	40,042,456
2024	15,925,113	23,584,803	39,509,916	16,081,446	23,852,652	39,934,098	16,239,963	24,125,154	40,365,116
2025	15,864,650	23,511,620	39,376,271	16,037,412	23,807,457	39,844,869	16,212,857	24,108,999	40,321,856
2026	15,881,596	23,540,051	39,421,647	16,071,847	23,865,452	39,937,298	16,265,350	24,197,752	40,463,101
2027	15,898,450	23,568,328	39,466,778	16,106,145	23,923,239	40,029,384	16,317,716	24,286,353	40,604,069
2028	15,992,760	23,698,290	39,691,050	16,219,016	24,084,366	40,303,382	16,449,845	24,480,100	40,929,945
2029	15,931,785	23,624,279	39,556,063	16,174,136	24,037,887	40,212,023	16,421,761	24,462,625	40,884,387
2030	15,948,175	23,651,820	39,599,996	16,207,643	24,094,476	40,302,118	16,473,155	24,549,878	41,023,033
2031	15,964,782	23,679,657	39,644,440	16,241,634	24,151,762	40,393,396	16,525,362	24,638,350	41,163,713
2032	16,059,018	23,809,430	39,868,448	16,354,548	24,312,904	40,667,452	16,657,871	24,832,769	41,490,640
2033	15,997,725	23,734,884	39,732,609	16,309,208	24,265,708	40,574,915	16,629,380	24,814,807	41,444,187
2034	16,014,306	23,762,628	39,776,934	16,343,286	24,323,091	40,666,377	16,681,948	24,903,895	41,585,843

Annual Change

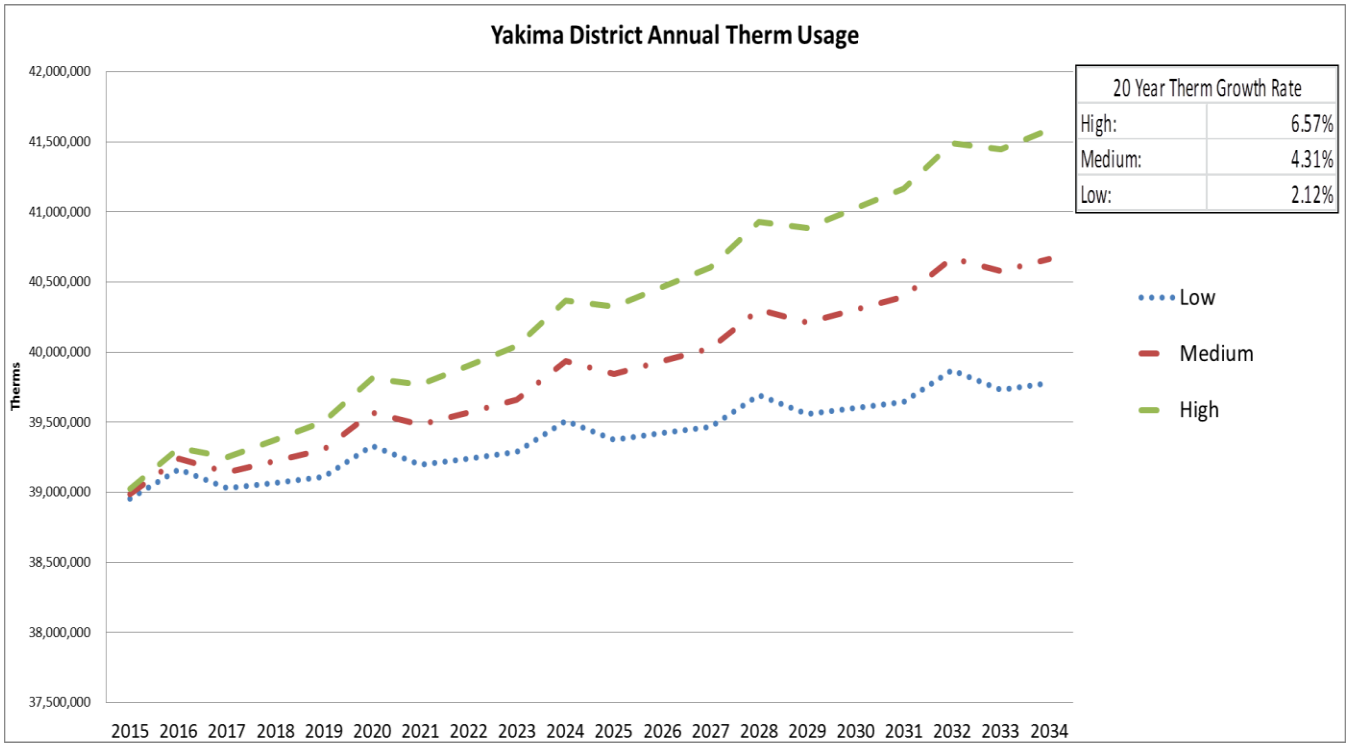
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.53%	0.55%	0.66%	0.64%	0.65%	0.75%	0.74%	0.74%
2017	-0.39%	-0.32%	-0.35%	-0.30%	-0.22%	-0.25%	-0.21%	-0.11%	-0.15%
2018	0.10%	0.11%	0.10%	0.19%	0.22%	0.21%	0.29%	0.33%	0.31%
2019	0.10%	0.11%	0.11%	0.20%	0.23%	0.22%	0.30%	0.34%	0.32%
2020	0.59%	0.55%	0.56%	0.69%	0.66%	0.67%	0.79%	0.78%	0.78%
2021	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2022	0.10%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2024	0.59%	0.55%	0.57%	0.70%	0.68%	0.69%	0.81%	0.80%	0.81%
2025	-0.38%	-0.31%	-0.34%	-0.27%	-0.19%	-0.22%	-0.17%	-0.07%	-0.11%
2026	0.11%	0.12%	0.12%	0.21%	0.24%	0.23%	0.32%	0.37%	0.35%
2027	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.37%	0.35%
2028	0.59%	0.55%	0.57%	0.70%	0.67%	0.68%	0.81%	0.80%	0.80%
2029	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2030	0.10%	0.12%	0.11%	0.21%	0.24%	0.22%	0.31%	0.36%	0.34%
2031	0.10%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2032	0.59%	0.55%	0.57%	0.70%	0.67%	0.68%	0.80%	0.79%	0.79%
2033	-0.38%	-0.31%	-0.34%	-0.28%	-0.19%	-0.23%	-0.17%	-0.07%	-0.11%
2034	0.10%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%

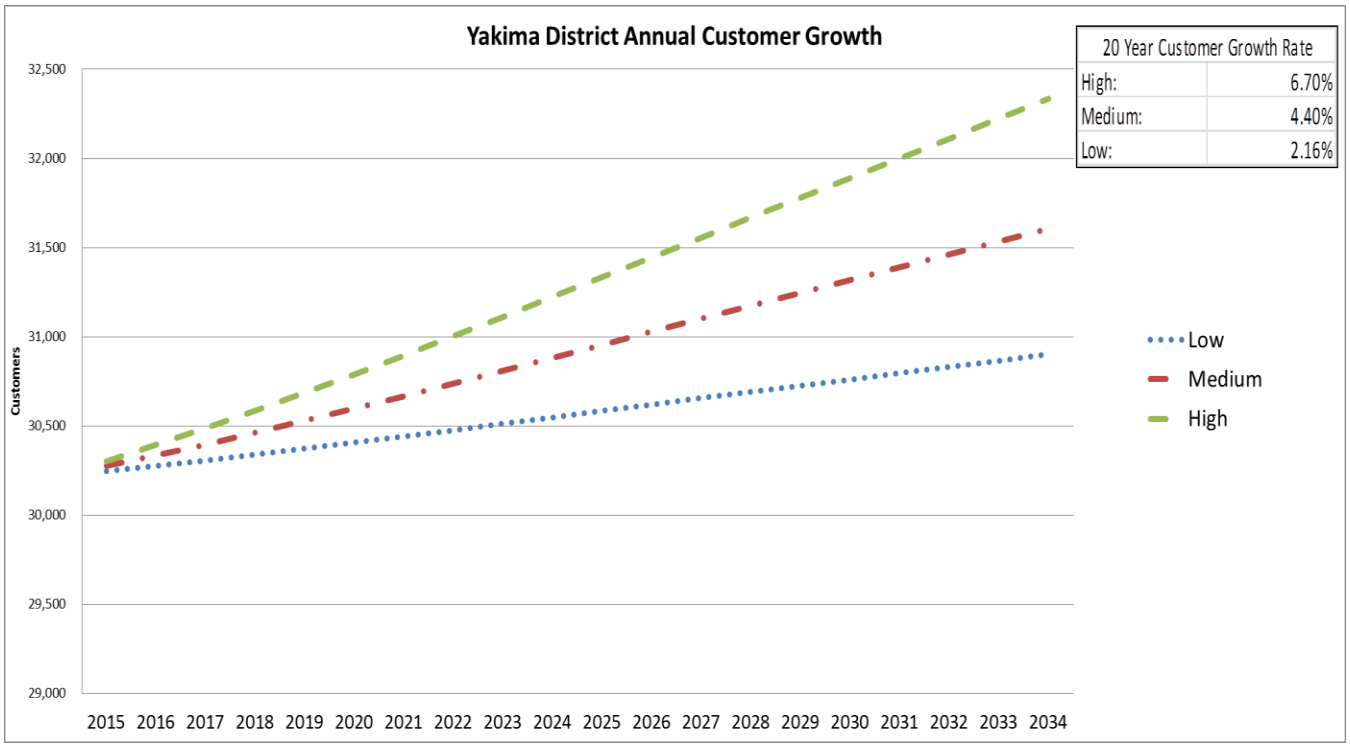
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	24,995	5,252	30,247	25,018	5,257	30,275	25,041	5,263	30,303
2016	25,019	5,257	30,276	25,066	5,268	30,334	25,113	5,280	30,392
2017	25,044	5,263	30,307	25,116	5,280	30,396	25,189	5,297	30,486
2018	25,070	5,269	30,339	25,169	5,292	30,461	25,268	5,316	30,584
2019	25,097	5,276	30,373	25,223	5,305	30,529	25,351	5,335	30,685
2020	25,125	5,282	30,407	25,279	5,318	30,597	25,434	5,354	30,788
2021	25,153	5,288	30,441	25,336	5,331	30,667	25,521	5,374	30,895
2022	25,182	5,295	30,477	25,394	5,344	30,738	25,609	5,394	31,003
2023	25,210	5,302	30,512	25,452	5,358	30,810	25,697	5,415	31,112
2024	25,240	5,308	30,548	25,512	5,371	30,883	25,788	5,435	31,223
2025	25,269	5,315	30,583	25,570	5,385	30,955	25,877	5,456	31,333
2026	25,298	5,322	30,619	25,630	5,398	31,028	25,968	5,477	31,445
2027	25,327	5,328	30,655	25,689	5,412	31,101	26,059	5,498	31,557
2028	25,356	5,335	30,691	25,749	5,426	31,174	26,150	5,519	31,669
2029	25,384	5,341	30,726	25,807	5,439	31,246	26,240	5,539	31,779
2030	25,413	5,348	30,761	25,865	5,452	31,317	26,329	5,560	31,889
2031	25,441	5,354	30,796	25,924	5,466	31,390	26,420	5,581	32,000
2032	25,470	5,361	30,831	25,982	5,479	31,461	26,510	5,601	32,111
2033	25,498	5,367	30,866	26,041	5,493	31,534	26,600	5,622	32,223
2034	25,527	5,374	30,901	26,100	5,506	31,606	26,692	5,643	32,335

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.19%	0.21%	0.20%	0.29%	0.32%	0.29%
2017	0.10%	0.11%	0.10%	0.20%	0.22%	0.20%	0.30%	0.34%	0.31%
2018	0.10%	0.12%	0.11%	0.21%	0.23%	0.21%	0.32%	0.35%	0.32%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2021	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2022	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.34%	0.38%	0.35%
2023	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2024	0.12%	0.13%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2025	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2026	0.12%	0.13%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2027	0.12%	0.12%	0.12%	0.23%	0.25%	0.24%	0.35%	0.38%	0.36%
2028	0.11%	0.12%	0.12%	0.23%	0.25%	0.23%	0.35%	0.38%	0.35%
2029	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2030	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.35%
2031	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2032	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.35%
2033	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%
2034	0.11%	0.12%	0.11%	0.23%	0.25%	0.23%	0.34%	0.37%	0.35%


Yakima District Annual Therm Usage
20 Year Therm Growth Rate
High: 6.57%
Medium: 4.31%
Low: 2.12%
Therms
42,000,000
41,500,000
41,000,000
40,500,000
40,000,000
39,500,000
39,000,000
38,500,000
38,000,000
37,500,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High


Yakima District Annual Customer Growth
20 Year Customer Growth Rate
High: 6.70%
Medium: 4.40%
Low: 2.16%
Customers
32,500
32,000
31,500
31,000
30,500
30,000
29,500
29,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Central Oregon (Bend) District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	39,629,090	10,345,659	49,974,749	40,139,670	10,345,659	50,485,329	40,650,250	10,345,659	50,995,909
2016	40,359,771	10,345,659	50,705,430	41,391,944	10,345,659	51,737,603	42,435,355	10,345,659	52,781,014
2017	40,636,543	10,345,659	50,982,202	42,187,821	10,345,659	52,533,480	43,772,712	10,345,659	54,118,371
2018	41,134,263	10,345,659	51,479,922	43,215,910	10,345,659	53,561,569	45,364,896	10,345,659	55,710,555
2019	41,627,835	10,345,659	51,973,494	44,245,994	10,345,659	54,591,653	46,976,553	10,345,659	57,322,212
2020	42,349,964	10,345,659	52,695,623	45,523,500	10,345,659	55,869,159	48,866,502	10,345,659	59,212,161
2021	42,601,446	10,345,659	52,947,104	46,308,714	10,345,659	56,654,373	50,252,442	10,345,659	60,598,101
2022	43,081,593	10,345,659	53,427,251	47,340,983	10,345,659	57,686,642	51,915,809	10,345,659	62,261,468
2023	43,556,872	10,345,659	53,902,531	48,372,554	10,345,659	58,718,213	53,593,831	10,345,659	63,939,490
2024	44,270,364	10,345,659	54,616,022	49,671,186	10,345,659	60,016,845	55,581,297	10,345,659	65,926,956
2025	44,494,345	10,345,659	54,840,004	50,435,680	10,345,659	60,781,339	56,996,457	10,345,659	67,342,116
2026	44,956,284	10,345,659	55,301,943	51,466,140	10,345,659	61,811,799	58,718,958	10,345,659	69,064,616
2027	45,413,383	10,345,659	55,759,042	52,494,807	10,345,659	62,840,466	60,453,571	10,345,659	70,799,230
2028	46,116,182	10,345,659	56,461,841	53,806,236	10,345,659	64,151,894	62,523,344	10,345,659	72,869,003
2029	46,313,305	10,345,659	56,658,964	54,546,140	10,345,659	64,891,799	63,957,182	10,345,659	74,302,841
2030	46,756,101	10,345,659	57,101,760	55,568,192	10,345,659	65,913,851	65,724,700	10,345,659	76,070,359
2031	47,195,344	10,345,659	57,541,003	56,590,296	10,345,659	66,935,954	67,506,657	10,345,659	77,852,316
2032	47,888,125	10,345,659	58,233,783	57,912,291	10,345,659	68,257,950	69,652,752	10,345,659	79,998,410
2033	48,061,390	10,345,659	58,407,049	58,629,679	10,345,659	68,975,338	71,104,673	10,345,659	81,450,332
2034	48,488,823	10,345,659	58,834,482	59,647,958	10,345,659	69,993,617	72,922,098	10,345,659	83,267,757

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.84%	0.00%	1.46%	3.12%	0.00%	2.48%	4.39%	0.00%	3.50%
2017	0.69%	0.00%	0.55%	1.92%	0.00%	1.54%	3.15%	0.00%	2.53%
2018	1.22%	0.00%	0.98%	2.44%	0.00%	1.96%	3.64%	0.00%	2.94%
2019	1.20%	0.00%	0.96%	2.38%	0.00%	1.92%	3.55%	0.00%	2.89%
2020	1.73%	0.00%	1.39%	2.89%	0.00%	2.34%	4.02%	0.00%	3.30%
2021	0.59%	0.00%	0.48%	1.72%	0.00%	1.41%	2.84%	0.00%	2.34%
2022	1.13%	0.00%	0.91%	2.23%	0.00%	1.82%	3.31%	0.00%	2.74%
2023	1.10%	0.00%	0.89%	2.18%	0.00%	1.79%	3.23%	0.00%	2.70%
2024	1.64%	0.00%	1.32%	2.68%	0.00%	2.21%	3.71%	0.00%	3.11%
2025	0.51%	0.00%	0.41%	1.54%	0.00%	1.27%	2.55%	0.00%	2.15%
2026	1.04%	0.00%	0.84%	2.04%	0.00%	1.70%	3.02%	0.00%	2.56%
2027	1.02%	0.00%	0.83%	2.00%	0.00%	1.66%	2.95%	0.00%	2.51%
2028	1.55%	0.00%	1.26%	2.50%	0.00%	2.09%	3.42%	0.00%	2.92%
2029	0.43%	0.00%	0.35%	1.38%	0.00%	1.15%	2.29%	0.00%	1.97%
2030	0.96%	0.00%	0.78%	1.87%	0.00%	1.58%	2.76%	0.00%	2.38%
2031	0.94%	0.00%	0.77%	1.84%	0.00%	1.55%	2.71%	0.00%	2.34%
2032	1.47%	0.00%	1.20%	2.34%	0.00%	1.98%	3.18%	0.00%	2.76%
2033	0.36%	0.00%	0.30%	1.24%	0.00%	1.05%	2.08%	0.00%	1.81%
2034	0.89%	0.00%	0.73%	1.74%	0.00%	1.48%	2.56%	0.00%	2.23%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	28,344	584,217	612,561	28,344	590,417	618,761	28,344	596,617	624,961
2016	28,344	590,360	618,704	28,344	602,839	631,184	28,344	615,454	643,798
2017	28,344	596,453	624,797	28,344	615,292	643,636	28,344	634,538	662,882
2018	28,344	602,499	630,843	28,344	627,779	656,124	28,344	653,876	682,220
2019	28,344	608,495	636,839	28,344	640,292	668,636	28,344	673,451	701,796
2020	28,344	614,430	642,774	28,344	652,803	681,147	28,344	693,221	721,565
2021	28,344	620,324	648,669	28,344	665,351	693,695	28,344	713,243	741,587
2022	28,344	626,159	654,503	28,344	677,892	706,236	28,344	733,448	761,792
2023	28,344	631,934	660,279	28,344	690,425	718,769	28,344	753,831	782,175
2024	28,344	637,663	666,007	28,344	702,972	731,317	28,344	774,426	802,771
2025	28,344	643,328	671,672	28,344	715,492	743,837	28,344	795,164	823,509
2026	28,344	648,942	677,286	28,344	728,013	756,358	28,344	816,089	844,433
2027	28,344	654,498	682,842	28,344	740,512	768,857	28,344	837,160	865,504
2028	28,344	659,999	688,343	28,344	752,995	781,339	28,344	858,383	886,727
2029	28,344	665,437	693,781	28,344	765,439	793,783	28,344	879,720	908,064
2030	28,344	670,820	699,164	28,344	777,858	806,202	28,344	901,191	929,535
2031	28,344	676,159	704,504	28,344	790,279	818,623	28,344	922,837	951,181
2032	28,344	681,444	709,788	28,344	802,670	831,014	28,344	944,605	972,949
2033	28,344	686,688	715,032	28,344	815,061	843,406	28,344	966,544	994,888
2034	28,344	691,885	720,229	28,344	827,436	855,780	28,344	988,621	1,016,965

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	1.05%	1.00%	0.00%	2.10%	2.01%	0.00%	3.16%	3.01%
2017	0.00%	1.03%	0.98%	0.00%	2.07%	1.97%	0.00%	3.10%	2.96%
2018	0.00%	1.01%	0.97%	0.00%	2.03%	1.94%	0.00%	3.05%	2.92%
2019	0.00%	1.00%	0.95%	0.00%	1.99%	1.91%	0.00%	2.99%	2.87%
2020	0.00%	0.98%	0.93%	0.00%	1.95%	1.87%	0.00%	2.94%	2.82%
2021	0.00%	0.96%	0.92%	0.00%	1.92%	1.84%	0.00%	2.89%	2.77%
2022	0.00%	0.94%	0.90%	0.00%	1.88%	1.81%	0.00%	2.83%	2.72%
2023	0.00%	0.92%	0.88%	0.00%	1.85%	1.77%	0.00%	2.78%	2.68%
2024	0.00%	0.91%	0.87%	0.00%	1.82%	1.75%	0.00%	2.73%	2.63%
2025	0.00%	0.89%	0.85%	0.00%	1.78%	1.71%	0.00%	2.68%	2.58%
2026	0.00%	0.87%	0.84%	0.00%	1.75%	1.68%	0.00%	2.63%	2.54%
2027	0.00%	0.86%	0.82%	0.00%	1.72%	1.65%	0.00%	2.58%	2.50%
2028	0.00%	0.84%	0.81%	0.00%	1.69%	1.62%	0.00%	2.54%	2.45%
2029	0.00%	0.82%	0.79%	0.00%	1.65%	1.59%	0.00%	2.49%	2.41%
2030	0.00%	0.81%	0.78%	0.00%	1.62%	1.56%	0.00%	2.44%	2.36%
2031	0.00%	0.80%	0.76%	0.00%	1.60%	1.54%	0.00%	2.40%	2.33%
2032	0.00%	0.78%	0.75%	0.00%	1.57%	1.51%	0.00%	2.36%	2.29%
2033	0.00%	0.77%	0.74%	0.00%	1.54%	1.49%	0.00%	2.32%	2.25%
2034	0.00%	0.76%	0.73%	0.00%	1.52%	1.47%	0.00%	2.28%	2.22%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	29,254,809	20,719,940	49,974,749	29,567,843	20,917,486	50,485,329	29,880,877	21,115,032	50,995,909
2016	29,698,992	21,006,438	50,705,430	30,331,748	21,405,855	51,737,603	30,971,463	21,809,551	52,781,014
2017	29,871,945	21,110,257	50,982,202	30,822,696	21,710,784	52,533,480	31,794,257	22,324,114	54,118,371
2018	30,176,597	21,303,326	51,479,922	31,452,207	22,109,362	53,561,569	32,769,502	22,941,052	55,710,555
2019	30,478,568	21,494,926	51,973,494	32,082,723	22,508,931	54,591,653	33,756,451	23,565,761	57,322,212
2020	30,917,052	21,778,571	52,695,623	32,861,429	23,007,730	55,869,159	34,910,704	24,301,457	59,212,161
2021	31,073,873	21,873,231	52,947,104	33,344,790	23,309,583	56,654,373	35,762,049	24,836,052	60,598,101
2022	31,367,290	22,059,962	53,427,251	33,976,143	23,710,500	57,686,642	36,780,199	25,481,269	62,261,468
2023	31,657,656	22,244,874	53,902,531	34,606,979	24,111,234	58,718,213	37,807,282	26,132,208	63,939,490
2024	32,090,530	22,525,492	54,616,022	35,398,209	24,618,636	60,016,845	39,021,038	26,905,918	65,926,956
2025	32,230,088	22,609,917	54,840,004	35,868,199	24,913,140	60,781,339	39,889,564	27,452,551	67,342,116
2026	32,512,053	22,789,890	55,301,943	36,498,021	25,313,778	61,811,799	40,943,638	28,120,978	69,064,616
2027	32,791,001	22,968,041	55,759,042	37,126,676	25,713,790	62,840,466	42,005,105	28,794,125	70,799,230
2028	33,217,178	23,244,663	56,461,841	37,925,637	26,226,257	64,151,894	43,269,491	29,599,512	72,869,003
2029	33,339,991	23,318,973	56,658,964	38,380,087	26,511,711	64,891,799	44,148,985	30,153,856	74,302,841
2030	33,610,030	23,491,730	57,101,760	39,004,491	26,909,359	65,913,851	45,230,523	30,839,836	76,070,359
2031	33,877,845	23,663,158	57,541,003	39,628,860	27,307,095	66,935,954	46,320,873	31,531,442	77,852,316
2032	34,297,794	23,935,989	58,233,783	40,434,274	27,823,676	68,257,950	47,632,334	32,366,077	79,998,410
2033	34,405,732	24,001,317	58,407,049	40,874,474	28,100,864	68,975,338	48,522,410	32,927,922	81,450,332
2034	34,666,166	24,168,316	58,834,482	41,496,279	28,497,338	69,993,617	49,634,345	33,633,413	83,267,757

Annual Change

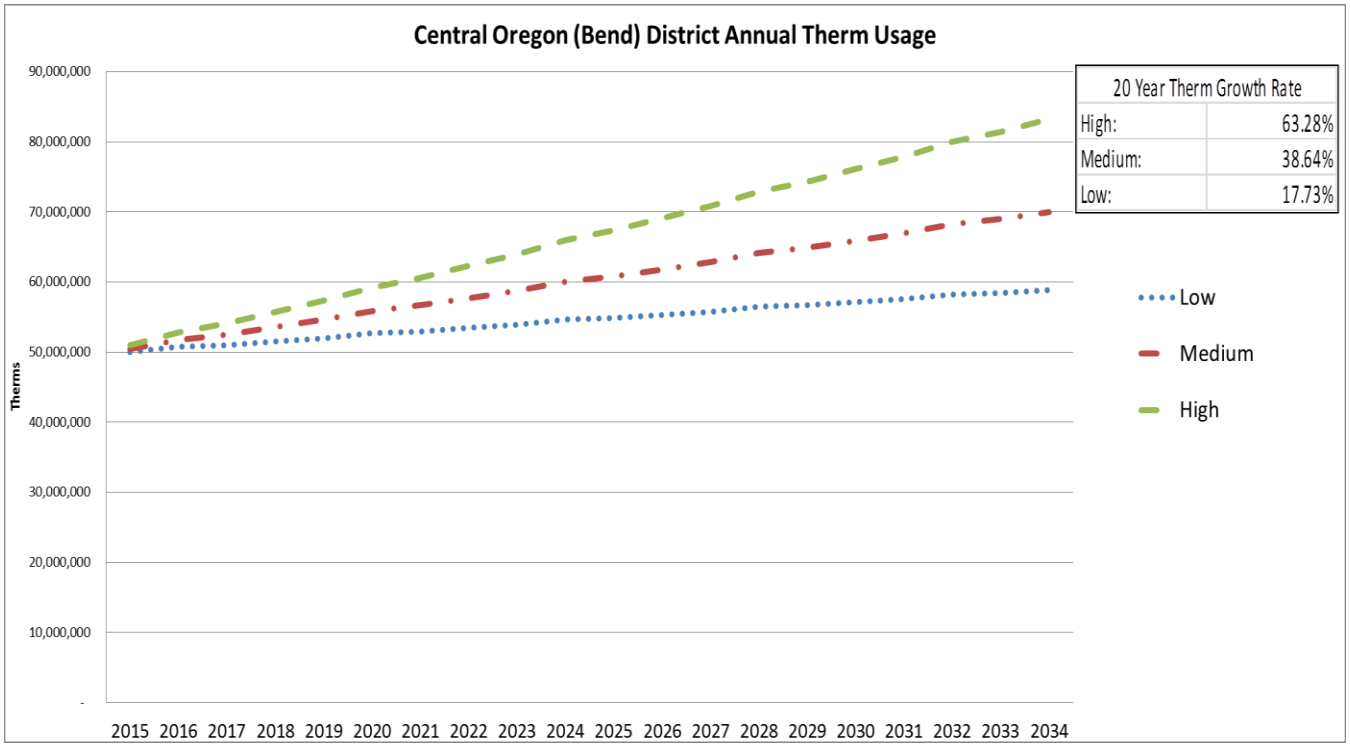
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.52%	1.38%	1.46%	2.58%	2.33%	2.48%	3.65%	3.29%	3.50%
2017	0.58%	0.49%	0.55%	1.62%	1.42%	1.54%	2.66%	2.36%	2.53%
2018	1.02%	0.91%	0.98%	2.04%	1.84%	1.96%	3.07%	2.76%	2.94%
2019	1.00%	0.90%	0.96%	2.00%	1.81%	1.92%	3.01%	2.72%	2.89%
2020	1.44%	1.32%	1.39%	2.43%	2.22%	2.34%	3.42%	3.12%	3.30%
2021	0.51%	0.43%	0.48%	1.47%	1.31%	1.41%	2.44%	2.20%	2.34%
2022	0.94%	0.85%	0.91%	1.89%	1.72%	1.82%	2.85%	2.60%	2.74%
2023	0.93%	0.84%	0.89%	1.86%	1.69%	1.79%	2.79%	2.55%	2.70%
2024	1.37%	1.26%	1.32%	2.29%	2.10%	2.21%	3.21%	2.96%	3.11%
2025	0.43%	0.37%	0.41%	1.33%	1.20%	1.27%	2.23%	2.03%	2.15%
2026	0.87%	0.80%	0.84%	1.76%	1.61%	1.70%	2.64%	2.43%	2.56%
2027	0.86%	0.78%	0.83%	1.72%	1.58%	1.66%	2.59%	2.39%	2.51%
2028	1.30%	1.20%	1.26%	2.15%	1.99%	2.09%	3.01%	2.80%	2.92%
2029	0.37%	0.32%	0.35%	1.20%	1.09%	1.15%	2.03%	1.87%	1.97%
2030	0.81%	0.74%	0.78%	1.63%	1.50%	1.58%	2.45%	2.27%	2.38%
2031	0.80%	0.73%	0.77%	1.60%	1.48%	1.55%	2.41%	2.24%	2.34%
2032	1.24%	1.15%	1.20%	2.03%	1.89%	1.98%	2.83%	2.65%	2.76%
2033	0.31%	0.27%	0.30%	1.09%	1.00%	1.05%	1.87%	1.74%	1.81%
2034	0.76%	0.70%	0.73%	1.52%	1.41%	1.48%	2.29%	2.14%	2.23%

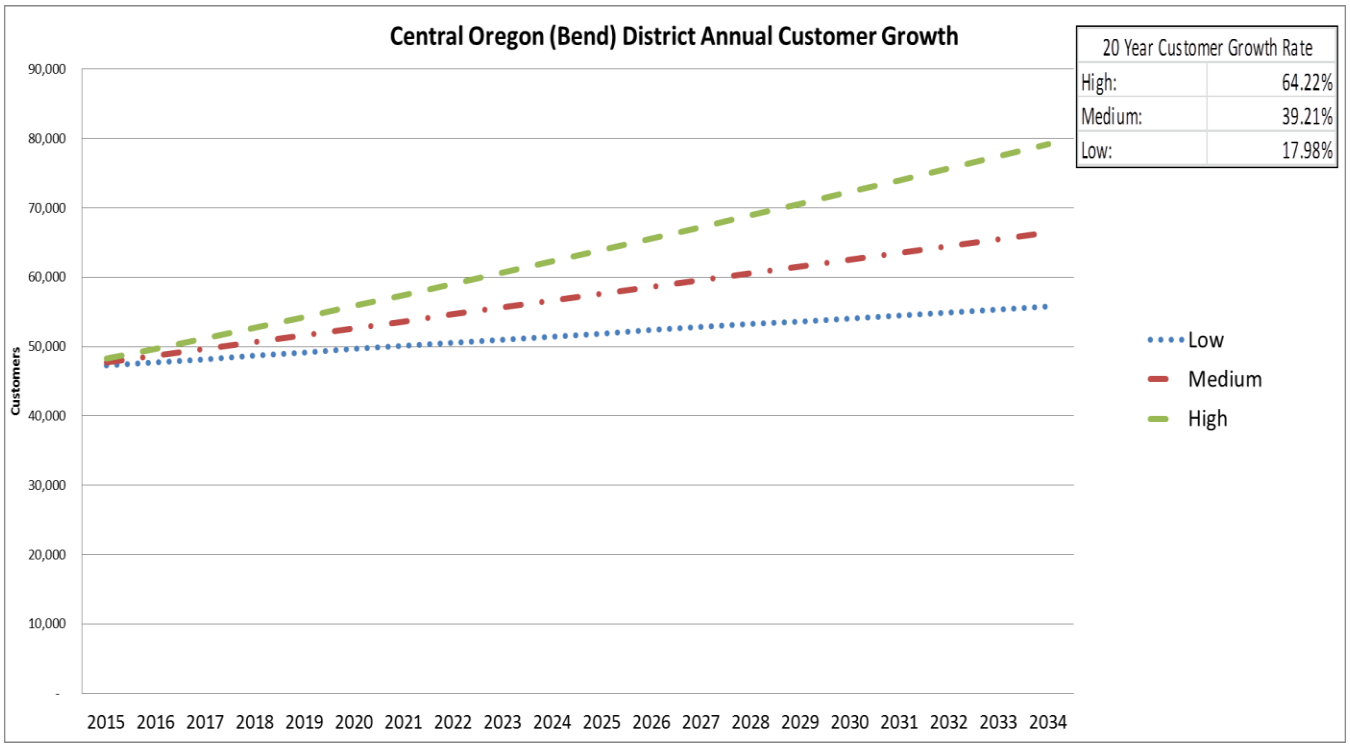
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	40,704	6,548	47,252	41,130	6,613	47,743	41,555	6,678	48,233
2016	41,126	6,612	47,738	41,982	6,743	48,725	42,847	6,875	49,723
2017	41,544	6,676	48,220	42,836	6,874	49,709	44,156	7,075	51,232
2018	41,958	6,740	48,697	43,692	7,005	50,696	45,482	7,278	52,760
2019	42,369	6,802	49,171	44,549	7,136	51,685	46,824	7,484	54,308
2020	42,775	6,865	49,640	45,407	7,267	52,674	48,179	7,691	55,870
2021	43,179	6,927	50,105	46,266	7,399	53,665	49,551	7,901	57,453
2022	43,578	6,988	50,566	47,125	7,531	54,656	50,936	8,113	59,049
2023	43,973	7,049	51,022	47,983	7,662	55,646	52,333	8,327	60,660
2024	44,365	7,109	51,474	48,843	7,794	56,636	53,744	8,543	62,287
2025	44,753	7,168	51,921	49,700	7,925	57,625	55,165	8,761	63,926
2026	45,137	7,227	52,364	50,557	8,057	58,614	56,598	8,980	65,579
2027	45,517	7,286	52,802	51,412	8,188	59,600	58,042	9,201	67,244
2028	45,893	7,343	53,236	52,267	8,319	60,586	59,496	9,424	68,920
2029	46,265	7,401	53,665	53,118	8,450	61,568	60,958	9,648	70,606
2030	46,633	7,457	54,090	53,968	8,580	62,549	62,429	9,873	72,302
2031	46,997	7,513	54,511	54,818	8,711	63,529	63,912	10,101	74,012
2032	47,359	7,569	54,927	55,666	8,841	64,507	65,403	10,329	75,732
2033	47,717	7,624	55,341	56,514	8,971	65,485	66,906	10,559	77,465
2034	48,072	7,679	55,750	57,360	9,101	66,461	68,418	10,791	79,209

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.98%	1.03%	2.07%	1.97%	2.06%	3.11%	2.96%	3.09%
2017	1.02%	0.97%	1.01%	2.03%	1.94%	2.02%	3.05%	2.91%	3.03%
2018	1.00%	0.95%	0.99%	2.00%	1.91%	1.99%	3.00%	2.87%	2.98%
2019	0.98%	0.93%	0.97%	1.96%	1.87%	1.95%	2.95%	2.82%	2.93%
2020	0.96%	0.92%	0.95%	1.92%	1.84%	1.91%	2.89%	2.77%	2.88%
2021	0.94%	0.90%	0.94%	1.89%	1.81%	1.88%	2.85%	2.73%	2.83%
2022	0.92%	0.88%	0.92%	1.86%	1.78%	1.85%	2.79%	2.68%	2.78%
2023	0.91%	0.87%	0.90%	1.82%	1.75%	1.81%	2.74%	2.64%	2.73%
2024	0.89%	0.85%	0.89%	1.79%	1.72%	1.78%	2.70%	2.60%	2.68%
2025	0.87%	0.84%	0.87%	1.75%	1.69%	1.75%	2.64%	2.55%	2.63%
2026	0.86%	0.82%	0.85%	1.72%	1.66%	1.72%	2.60%	2.51%	2.59%
2027	0.84%	0.81%	0.84%	1.69%	1.63%	1.68%	2.55%	2.46%	2.54%
2028	0.83%	0.79%	0.82%	1.66%	1.60%	1.65%	2.51%	2.42%	2.49%
2029	0.81%	0.78%	0.81%	1.63%	1.57%	1.62%	2.46%	2.38%	2.45%
2030	0.80%	0.76%	0.79%	1.60%	1.54%	1.59%	2.41%	2.34%	2.40%
2031	0.78%	0.75%	0.78%	1.57%	1.52%	1.57%	2.38%	2.30%	2.37%
2032	0.77%	0.74%	0.76%	1.55%	1.49%	1.54%	2.33%	2.26%	2.32%
2033	0.76%	0.73%	0.75%	1.52%	1.47%	1.52%	2.30%	2.23%	2.29%
2034	0.74%	0.72%	0.74%	1.50%	1.45%	1.49%	2.26%	2.19%	2.25%


Central Oregon (Bend) District Annual Therm Usage
Therms
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 63.28%
Medium: 38.64%
Low: 17.73%
Low
Medium
High


Central Oregon (Bend) District Annual Customer Growth
Customers
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 64.22%
Medium: 39.21%
Low: 17.98%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Pendleton District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	10,458,931	4,165,846	14,624,777	10,502,706	4,165,846	14,668,551	10,546,480	4,165,846	14,712,326
2016	10,571,482	4,165,846	14,737,327	10,660,036	4,165,846	14,825,882	10,748,856	4,165,846	14,914,702
2017	10,547,648	4,165,846	14,713,493	10,680,939	4,165,846	14,846,784	10,815,032	4,165,846	14,980,878
2018	10,592,582	4,165,846	14,758,428	10,771,622	4,165,846	14,937,468	10,952,286	4,165,846	15,118,132
2019	10,637,916	4,165,846	14,803,762	10,863,390	4,165,846	15,029,235	11,091,602	4,165,846	15,257,448
2020	10,752,407	4,165,846	14,918,253	11,025,732	4,165,846	15,191,577	11,303,217	4,165,846	15,469,063
2021	10,728,631	4,165,846	14,894,477	11,047,865	4,165,846	15,213,710	11,372,945	4,165,846	15,538,791
2022	10,774,190	4,165,846	14,940,035	11,140,935	4,165,846	15,306,780	11,515,533	4,165,846	15,681,379
2023	10,819,510	4,165,846	14,985,355	11,233,800	4,165,846	15,399,646	11,658,240	4,165,846	15,824,086
2024	10,935,102	4,165,846	15,100,947	11,399,519	4,165,846	15,565,365	11,876,752	4,165,846	16,042,598
2025	10,910,011	4,165,846	15,075,857	11,420,087	4,165,846	15,585,933	11,945,805	4,165,846	16,111,650
2026	10,954,931	4,165,846	15,120,777	11,512,966	4,165,846	15,678,812	12,089,822	4,165,846	16,255,668
2027	10,999,706	4,165,846	15,165,552	11,605,822	4,165,846	15,771,667	12,234,230	4,165,846	16,400,075
2028	11,115,146	4,165,846	15,280,991	11,772,336	4,165,846	15,938,182	12,455,692	4,165,846	16,621,537
2029	11,088,164	4,165,846	15,254,010	11,790,076	4,165,846	15,955,922	12,522,041	4,165,846	16,687,887
2030	11,131,843	4,165,846	15,297,689	11,881,454	4,165,846	16,047,299	12,665,396	4,165,846	16,831,241
2031	11,175,483	4,165,846	15,341,328	11,973,010	4,165,846	16,138,855	12,809,439	4,165,846	16,975,285
2032	11,290,698	4,165,846	15,456,543	12,140,114	4,165,846	16,305,960	13,033,482	4,165,846	17,199,328
2033	11,262,130	4,165,846	15,427,976	12,155,570	4,165,846	16,321,416	13,097,877	4,165,846	17,263,723
2034	11,305,141	4,165,846	15,470,987	12,246,574	4,165,846	16,412,420	13,242,265	4,165,846	17,408,110

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.08%	0.00%	0.77%	1.50%	0.00%	1.07%	1.92%	0.00%	1.38%
2017	-0.23%	0.00%	-0.16%	0.20%	0.00%	0.14%	0.62%	0.00%	0.44%
2018	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2019	0.43%	0.00%	0.31%	0.85%	0.00%	0.61%	1.27%	0.00%	0.92%
2020	1.08%	0.00%	0.77%	1.49%	0.00%	1.08%	1.91%	0.00%	1.39%
2021	-0.22%	0.00%	-0.16%	0.20%	0.00%	0.15%	0.62%	0.00%	0.45%
2022	0.42%	0.00%	0.31%	0.84%	0.00%	0.61%	1.25%	0.00%	0.92%
2023	0.42%	0.00%	0.30%	0.83%	0.00%	0.61%	1.24%	0.00%	0.91%
2024	1.07%	0.00%	0.77%	1.48%	0.00%	1.08%	1.87%	0.00%	1.38%
2025	-0.23%	0.00%	-0.17%	0.18%	0.00%	0.13%	0.58%	0.00%	0.43%
2026	0.41%	0.00%	0.30%	0.81%	0.00%	0.60%	1.21%	0.00%	0.89%
2027	0.41%	0.00%	0.30%	0.81%	0.00%	0.59%	1.19%	0.00%	0.89%
2028	1.05%	0.00%	0.76%	1.43%	0.00%	1.06%	1.81%	0.00%	1.35%
2029	-0.24%	0.00%	-0.18%	0.15%	0.00%	0.11%	0.53%	0.00%	0.40%
2030	0.39%	0.00%	0.29%	0.78%	0.00%	0.57%	1.14%	0.00%	0.86%
2031	0.39%	0.00%	0.29%	0.77%	0.00%	0.57%	1.14%	0.00%	0.86%
2032	1.03%	0.00%	0.75%	1.40%	0.00%	1.04%	1.75%	0.00%	1.32%
2033	-0.25%	0.00%	-0.18%	0.13%	0.00%	0.09%	0.49%	0.00%	0.37%
2034	0.38%	0.00%	0.28%	0.75%	0.00%	0.56%	1.10%	0.00%	0.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	11,413	175,376	186,789	11,413	175,935	187,349	11,413	176,495	187,908
2016	11,413	175,940	187,353	11,413	177,066	188,479	11,413	178,196	189,609
2017	11,413	176,510	187,923	11,413	178,213	189,626	11,413	179,926	191,340
2018	11,413	177,084	188,497	11,413	179,372	190,785	11,413	181,680	193,093
2019	11,413	177,663	189,076	11,413	180,544	191,958	11,413	183,460	194,874
2020	11,413	178,241	189,654	11,413	181,717	193,130	11,413	185,246	196,660
2021	11,413	178,822	190,236	11,413	182,901	194,315	11,413	187,055	198,469
2022	11,413	179,404	190,818	11,413	184,091	195,504	11,413	188,877	200,291
2023	11,413	179,983	191,397	11,413	185,277	196,691	11,413	190,701	202,114
2024	11,413	180,564	191,978	11,413	186,471	197,884	11,413	192,541	203,954
2025	11,413	181,140	192,553	11,413	187,658	199,071	11,413	194,375	205,789
2026	11,413	181,714	193,127	11,413	188,844	200,258	11,413	196,215	207,629
2027	11,413	182,286	193,699	11,413	190,031	201,444	11,413	198,061	209,474
2028	11,413	182,854	194,267	11,413	191,213	202,626	11,413	199,904	211,317
2029	11,413	183,416	194,829	11,413	192,385	203,798	11,413	201,738	213,152
2030	11,413	183,974	195,388	11,413	193,553	204,966	11,413	203,570	214,983
2031	11,413	184,532	195,945	11,413	194,723	206,136	11,413	205,411	216,824
2032	11,413	185,087	196,500	11,413	195,890	207,304	11,413	207,253	218,666
2033	11,413	185,639	197,052	11,413	197,055	208,469	11,413	209,096	220,510
2034	11,413	186,189	197,602	11,413	198,218	209,632	11,413	210,941	222,355

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.96%	0.91%
2017	0.00%	0.32%	0.30%	0.00%	0.65%	0.61%	0.00%	0.97%	0.91%
2018	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2019	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2020	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2021	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.98%	0.92%
2022	0.00%	0.33%	0.31%	0.00%	0.65%	0.61%	0.00%	0.97%	0.92%
2023	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.97%	0.91%
2024	0.00%	0.32%	0.30%	0.00%	0.64%	0.61%	0.00%	0.96%	0.91%
2025	0.00%	0.32%	0.30%	0.00%	0.64%	0.60%	0.00%	0.95%	0.90%
2026	0.00%	0.32%	0.30%	0.00%	0.63%	0.60%	0.00%	0.95%	0.89%
2027	0.00%	0.31%	0.30%	0.00%	0.63%	0.59%	0.00%	0.94%	0.89%
2028	0.00%	0.31%	0.29%	0.00%	0.62%	0.59%	0.00%	0.93%	0.88%
2029	0.00%	0.31%	0.29%	0.00%	0.61%	0.58%	0.00%	0.92%	0.87%
2030	0.00%	0.30%	0.29%	0.00%	0.61%	0.57%	0.00%	0.91%	0.86%
2031	0.00%	0.30%	0.29%	0.00%	0.60%	0.57%	0.00%	0.90%	0.86%
2032	0.00%	0.30%	0.28%	0.00%	0.60%	0.57%	0.00%	0.90%	0.85%
2033	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.89%	0.84%
2034	0.00%	0.30%	0.28%	0.00%	0.59%	0.56%	0.00%	0.88%	0.84%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	5,903,117	8,721,660	14,624,777	5,920,792	8,747,759	14,668,551	5,938,468	8,773,858	14,712,326
2016	5,951,085	8,786,242	14,737,327	5,986,858	8,839,024	14,825,882	6,022,737	8,891,965	14,914,702
2017	5,938,939	8,774,554	14,713,493	5,992,761	8,854,024	14,846,784	6,046,906	8,933,972	14,980,878
2018	5,957,083	8,801,345	14,758,428	6,029,377	8,908,091	14,937,468	6,102,327	9,015,804	15,118,132
2019	5,975,390	8,828,372	14,803,762	6,066,435	8,962,800	15,029,235	6,158,587	9,098,860	15,257,448
2020	6,024,173	8,894,079	14,918,253	6,134,588	9,056,990	15,191,577	6,246,683	9,222,379	15,469,063
2021	6,012,021	8,882,456	14,894,477	6,140,928	9,072,782	15,213,710	6,272,197	9,266,594	15,538,791
2022	6,030,418	8,909,618	14,940,035	6,178,510	9,128,271	15,306,780	6,329,774	9,351,605	15,681,379
2023	6,048,720	8,936,636	14,985,355	6,216,013	9,183,633	15,399,646	6,387,406	9,436,680	15,824,086
2024	6,097,980	9,002,967	15,100,947	6,285,596	9,279,769	15,565,365	6,478,390	9,564,208	16,042,598
2025	6,085,267	8,990,590	15,075,857	6,291,242	9,294,691	15,585,933	6,503,536	9,608,114	16,111,650
2026	6,103,406	9,017,371	15,120,777	6,328,748	9,350,064	15,678,812	6,561,693	9,693,975	16,255,668
2027	6,121,488	9,044,063	15,165,552	6,366,248	9,405,419	15,771,667	6,620,014	9,780,062	16,400,075
2028	6,170,719	9,110,272	15,280,991	6,436,219	9,501,963	15,938,182	6,712,293	9,909,244	16,621,537
2029	6,157,211	9,096,799	15,254,010	6,440,657	9,515,264	15,955,922	6,736,245	9,951,642	16,687,887
2030	6,174,851	9,122,838	15,297,689	6,477,562	9,569,738	16,047,299	6,794,142	10,037,099	16,831,241
2031	6,192,475	9,148,853	15,341,328	6,514,539	9,624,317	16,138,855	6,852,319	10,122,966	16,975,285
2032	6,241,647	9,214,896	15,456,543	6,584,813	9,721,146	16,305,960	6,945,744	10,253,584	17,199,328
2033	6,227,469	9,200,507	15,427,976	6,588,270	9,733,146	16,321,416	6,968,814	10,294,909	17,263,723
2034	6,244,840	9,226,147	15,470,987	6,625,024	9,787,396	16,412,420	7,027,130	10,380,981	17,408,110

Annual Change

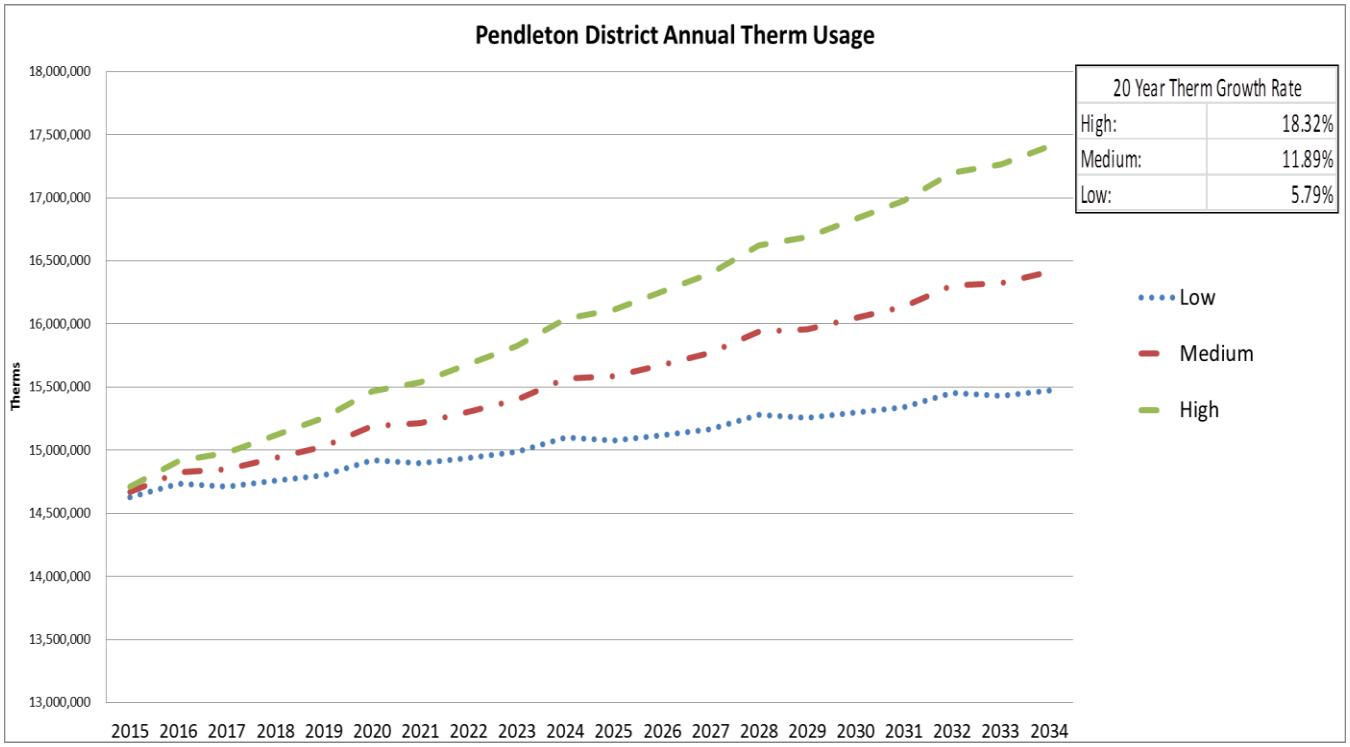
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.81%	0.74%	0.77%	1.12%	1.04%	1.07%	1.42%	1.35%	1.38%
2017	-0.20%	-0.13%	-0.16%	0.10%	0.17%	0.14%	0.40%	0.47%	0.44%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2020	0.82%	0.74%	0.77%	1.12%	1.05%	1.08%	1.43%	1.36%	1.39%
2021	-0.20%	-0.13%	-0.16%	0.10%	0.17%	0.15%	0.41%	0.48%	0.45%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.81%	0.74%	0.77%	1.12%	1.05%	1.08%	1.42%	1.35%	1.38%
2025	-0.21%	-0.14%	-0.17%	0.09%	0.16%	0.13%	0.39%	0.46%	0.43%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.80%	0.73%	0.76%	1.10%	1.03%	1.06%	1.39%	1.32%	1.35%
2029	-0.22%	-0.15%	-0.18%	0.07%	0.14%	0.11%	0.36%	0.43%	0.40%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.79%	0.72%	0.75%	1.08%	1.01%	1.04%	1.36%	1.29%	1.32%
2033	-0.23%	-0.16%	-0.18%	0.05%	0.12%	0.09%	0.33%	0.40%	0.37%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%

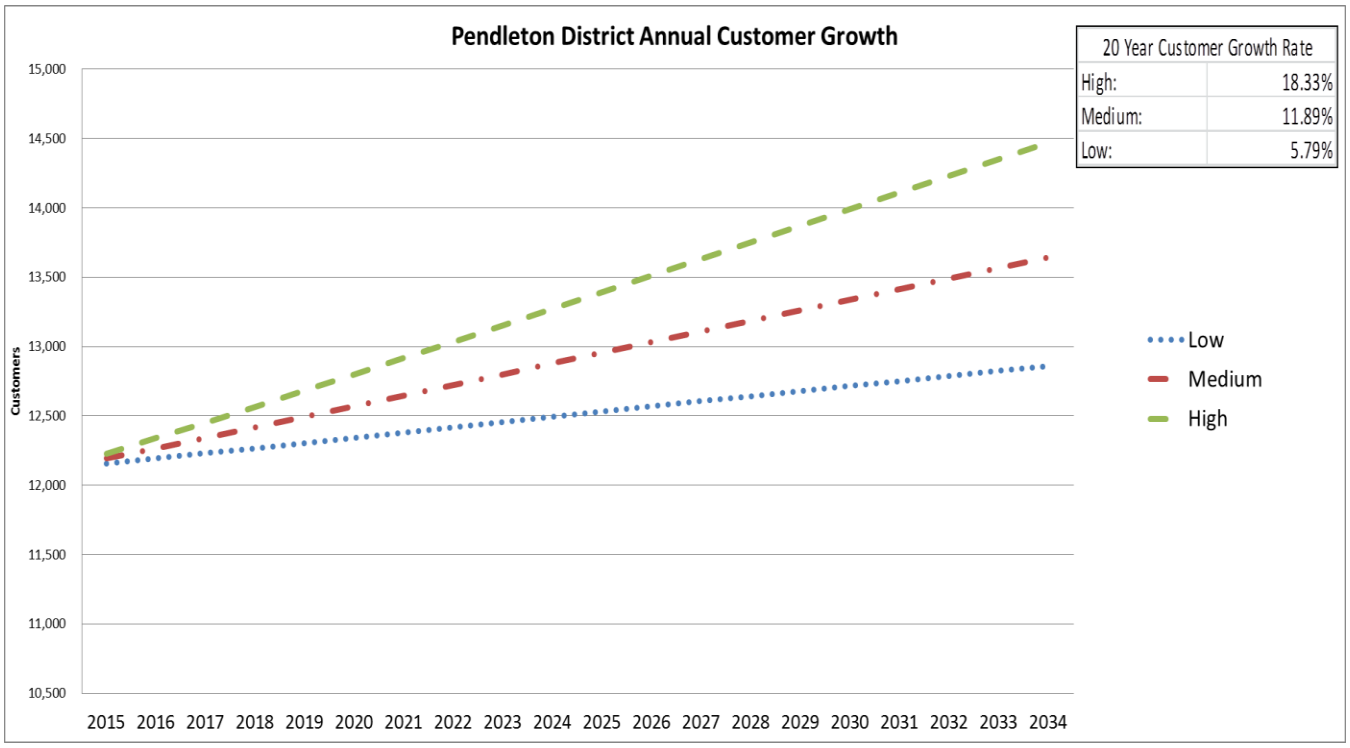
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	10,320	1,837	12,157	10,351	1,842	12,193	10,382	1,848	12,230
2016	10,351	1,842	12,194	10,413	1,853	12,267	10,476	1,865	12,340
2017	10,383	1,848	12,231	10,477	1,865	12,342	10,571	1,882	12,453
2018	10,414	1,854	12,268	10,541	1,876	12,417	10,668	1,899	12,567
2019	10,446	1,859	12,306	10,606	1,888	12,493	10,767	1,916	12,683
2020	10,478	1,865	12,343	10,670	1,899	12,570	10,865	1,934	12,799
2021	10,510	1,871	12,381	10,736	1,911	12,647	10,965	1,952	12,917
2022	10,543	1,876	12,419	10,801	1,923	12,724	11,066	1,970	13,036
2023	10,575	1,882	12,457	10,867	1,934	12,801	11,167	1,988	13,154
2024	10,607	1,888	12,495	10,933	1,946	12,879	11,268	2,006	13,274
2025	10,638	1,894	12,532	10,998	1,958	12,956	11,370	2,024	13,393
2026	10,670	1,899	12,569	11,064	1,969	13,033	11,471	2,042	13,513
2027	10,702	1,905	12,607	11,130	1,981	13,111	11,573	2,060	13,633
2028	10,733	1,910	12,644	11,195	1,993	13,188	11,675	2,078	13,753
2029	10,764	1,916	12,680	11,260	2,004	13,264	11,776	2,096	13,872
2030	10,795	1,921	12,716	11,324	2,016	13,340	11,877	2,114	13,992
2031	10,826	1,927	12,753	11,389	2,027	13,416	11,979	2,132	14,111
2032	10,856	1,932	12,789	11,453	2,039	13,492	12,081	2,150	14,231
2033	10,887	1,938	12,825	11,518	2,050	13,568	12,183	2,169	14,351
2034	10,917	1,943	12,861	11,582	2,062	13,643	12,285	2,187	14,471

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.91%	0.91%
2017	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2018	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2019	0.31%	0.31%	0.31%	0.61%	0.62%	0.61%	0.92%	0.92%	0.92%
2020	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2021	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2022	0.31%	0.31%	0.31%	0.61%	0.61%	0.61%	0.92%	0.92%	0.92%
2023	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2024	0.30%	0.30%	0.30%	0.61%	0.61%	0.61%	0.91%	0.91%	0.91%
2025	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.90%	0.90%	0.90%
2026	0.30%	0.30%	0.30%	0.60%	0.60%	0.60%	0.89%	0.89%	0.89%
2027	0.30%	0.30%	0.30%	0.59%	0.59%	0.59%	0.89%	0.89%	0.89%
2028	0.29%	0.29%	0.29%	0.59%	0.59%	0.59%	0.88%	0.88%	0.88%
2029	0.29%	0.29%	0.29%	0.58%	0.58%	0.58%	0.87%	0.87%	0.87%
2030	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2031	0.29%	0.29%	0.29%	0.57%	0.57%	0.57%	0.86%	0.86%	0.86%
2032	0.28%	0.28%	0.28%	0.57%	0.57%	0.57%	0.85%	0.85%	0.85%
2033	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%
2034	0.28%	0.28%	0.28%	0.56%	0.56%	0.56%	0.84%	0.84%	0.84%


Pendleton District Annual Therm Usage
Therms
18,000,000
17,500,000
17,000,000
16,500,000
16,000,000
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 18.32%
Medium: 11.89%
Low: 5.79%
Low
Medium
High


Pendleton District Annual Customer Growth
Customers
15,000
14,500
14,000
13,500
13,000
12,500
12,000
11,500
11,000
10,500
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 18.33%
Medium: 11.89%
Low: 5.79%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Eastern Oregon (Ontario) District

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	7,991,022	1,075,348	9,066,370	8,000,458	1,075,348	9,075,805	8,009,893	1,075,348	9,085,241
2016	8,044,830	1,075,348	9,120,178	8,064,159	1,075,348	9,139,506	8,083,510	1,075,348	9,158,857
2017	8,010,710	1,075,348	9,086,058	8,039,905	1,075,348	9,115,253	8,069,170	1,075,348	9,144,518
2018	8,021,103	1,075,348	9,096,451	8,060,764	1,075,348	9,136,112	8,100,570	1,075,348	9,175,918
2019	8,031,635	1,075,348	9,106,983	8,081,929	1,075,348	9,157,277	8,132,470	1,075,348	9,207,817
2020	8,086,374	1,075,348	9,161,722	8,147,598	1,075,348	9,222,946	8,209,199	1,075,348	9,284,547
2021	8,052,901	1,075,348	9,128,249	8,124,748	1,075,348	9,200,095	8,197,129	1,075,348	9,272,477
2022	8,063,637	1,075,348	9,138,985	8,146,406	1,075,348	9,221,754	8,229,897	1,075,348	9,305,245
2023	8,074,348	1,075,348	9,149,696	8,168,040	1,075,348	9,243,388	8,262,671	1,075,348	9,338,019
2024	8,129,672	1,075,348	9,205,020	8,234,997	1,075,348	9,310,345	8,341,513	1,075,348	9,416,861
2025	8,095,813	1,075,348	9,171,161	8,211,478	1,075,348	9,286,826	8,328,598	1,075,348	9,403,946
2026	8,106,458	1,075,348	9,181,806	8,233,061	1,075,348	9,308,409	8,361,418	1,075,348	9,436,766
2027	8,117,076	1,075,348	9,192,424	8,254,617	1,075,348	9,329,965	8,394,239	1,075,348	9,469,587
2028	8,172,046	1,075,348	9,247,394	8,320,967	1,075,348	9,396,315	8,472,328	1,075,348	9,547,676
2029	8,137,621	1,075,348	9,212,969	8,296,405	1,075,348	9,371,753	8,457,985	1,075,348	9,533,333
2030	8,147,629	1,075,348	9,222,977	8,316,800	1,075,348	9,392,148	8,489,156	1,075,348	9,564,504
2031	8,157,693	1,075,348	9,233,041	8,337,332	1,075,348	9,412,680	8,520,575	1,075,348	9,595,922
2032	8,212,421	1,075,348	9,287,769	8,403,289	1,075,348	9,478,637	8,598,214	1,075,348	9,673,562
2033	8,177,443	1,075,348	9,252,791	8,377,697	1,075,348	9,453,045	8,582,447	1,075,348	9,657,795
2034	8,187,364	1,075,348	9,262,712	8,398,009	1,075,348	9,473,357	8,613,638	1,075,348	9,688,986

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.67%	0.00%	0.59%	0.80%	0.00%	0.70%	0.92%	0.00%	0.81%
2017	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2018	0.13%	0.00%	0.11%	0.26%	0.00%	0.23%	0.39%	0.00%	0.34%
2019	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2020	0.68%	0.00%	0.60%	0.81%	0.00%	0.72%	0.94%	0.00%	0.83%
2021	-0.41%	0.00%	-0.37%	-0.28%	0.00%	-0.25%	-0.15%	0.00%	-0.13%
2022	0.13%	0.00%	0.12%	0.27%	0.00%	0.24%	0.40%	0.00%	0.35%
2023	0.13%	0.00%	0.12%	0.27%	0.00%	0.23%	0.40%	0.00%	0.35%
2024	0.69%	0.00%	0.60%	0.82%	0.00%	0.72%	0.95%	0.00%	0.84%
2025	-0.42%	0.00%	-0.37%	-0.29%	0.00%	-0.25%	-0.15%	0.00%	-0.14%
2026	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2027	0.13%	0.00%	0.12%	0.26%	0.00%	0.23%	0.39%	0.00%	0.35%
2028	0.68%	0.00%	0.60%	0.80%	0.00%	0.71%	0.93%	0.00%	0.82%
2029	-0.42%	0.00%	-0.37%	-0.30%	0.00%	-0.26%	-0.17%	0.00%	-0.15%
2030	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2031	0.12%	0.00%	0.11%	0.25%	0.00%	0.22%	0.37%	0.00%	0.33%
2032	0.67%	0.00%	0.59%	0.79%	0.00%	0.70%	0.91%	0.00%	0.81%
2033	-0.43%	0.00%	-0.38%	-0.30%	0.00%	-0.27%	-0.18%	0.00%	-0.16%
2034	0.12%	0.00%	0.11%	0.24%	0.00%	0.21%	0.36%	0.00%	0.32%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	2,946	108,677	111,623	2,946	108,794	111,741	2,946	108,912	111,858
2016	2,946	108,799	111,745	2,946	109,038	111,984	2,946	109,277	112,223
2017	2,946	108,922	111,868	2,946	109,285	112,231	2,946	109,648	112,594
2018	2,946	109,051	111,997	2,946	109,544	112,490	2,946	110,038	112,984
2019	2,946	109,182	112,128	2,946	109,806	112,752	2,946	110,434	113,380
2020	2,946	109,312	112,258	2,946	110,069	113,015	2,946	110,830	113,777
2021	2,946	109,446	112,392	2,946	110,338	113,284	2,946	111,237	114,183
2022	2,946	109,579	112,525	2,946	110,607	113,553	2,946	111,644	114,590
2023	2,946	109,712	112,658	2,946	110,875	113,821	2,946	112,051	114,997
2024	2,946	109,847	112,793	2,946	111,148	114,095	2,946	112,465	115,411
2025	2,946	109,978	112,924	2,946	111,414	114,361	2,946	112,869	115,815
2026	2,946	110,110	113,056	2,946	111,682	114,628	2,946	113,276	116,222
2027	2,946	110,242	113,188	2,946	111,950	114,896	2,946	113,684	116,630
2028	2,946	110,370	113,316	2,946	112,210	115,157	2,946	114,081	117,027
2029	2,946	110,497	113,443	2,946	112,469	115,415	2,946	114,475	117,421
2030	2,946	110,621	113,567	2,946	112,722	115,668	2,946	114,862	117,808
2031	2,946	110,746	113,692	2,946	112,977	115,923	2,946	115,252	118,199
2032	2,946	110,869	113,815	2,946	113,228	116,174	2,946	115,637	118,583
2033	2,946	110,991	113,938	2,946	113,478	116,424	2,946	116,021	118,967
2034	2,946	111,115	114,061	2,946	113,730	116,676	2,946	116,408	119,354

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.34%	0.33%
2017	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2018	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2019	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2020	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2021	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2022	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.37%	0.36%
2023	0.00%	0.12%	0.12%	0.00%	0.24%	0.24%	0.00%	0.36%	0.36%
2024	0.00%	0.12%	0.12%	0.00%	0.25%	0.24%	0.00%	0.37%	0.36%
2025	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2026	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2027	0.00%	0.12%	0.12%	0.00%	0.24%	0.23%	0.00%	0.36%	0.35%
2028	0.00%	0.12%	0.11%	0.00%	0.23%	0.23%	0.00%	0.35%	0.34%
2029	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.35%	0.34%
2030	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2031	0.00%	0.11%	0.11%	0.00%	0.23%	0.22%	0.00%	0.34%	0.33%
2032	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%
2033	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.32%
2034	0.00%	0.11%	0.11%	0.00%	0.22%	0.22%	0.00%	0.33%	0.33%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	3,949,646	5,116,724	9,066,370	3,953,392	5,122,413	9,075,805	3,957,139	5,128,103	9,085,241
2016	3,973,740	5,146,438	9,120,178	3,981,424	5,158,082	9,139,506	3,989,117	5,169,741	9,158,857
2017	3,957,471	5,128,587	9,086,058	3,969,069	5,146,184	9,115,253	3,980,693	5,163,824	9,144,518
2018	3,961,649	5,134,802	9,096,451	3,977,452	5,158,660	9,136,112	3,993,309	5,182,608	9,175,918
2019	3,965,874	5,141,109	9,106,983	3,985,941	5,171,336	9,157,277	4,006,099	5,201,718	9,207,817
2020	3,990,381	5,171,341	9,161,722	4,014,838	5,208,108	9,222,946	4,039,436	5,245,111	9,284,547
2021	3,974,419	5,153,830	9,128,249	4,003,138	5,196,958	9,200,095	4,032,057	5,240,420	9,272,477
2022	3,978,739	5,160,247	9,138,985	4,011,847	5,209,906	9,221,754	4,045,228	5,260,017	9,305,245
2023	3,983,049	5,166,647	9,149,696	4,020,549	5,222,839	9,243,388	4,058,402	5,279,617	9,338,019
2024	4,007,824	5,197,195	9,205,020	4,050,028	5,260,317	9,310,345	4,092,680	5,324,182	9,416,861
2025	3,991,709	5,179,452	9,171,161	4,038,061	5,248,765	9,286,826	4,084,961	5,318,985	9,403,946
2026	3,995,996	5,185,810	9,181,806	4,046,745	5,261,664	9,308,409	4,098,155	5,338,611	9,436,766
2027	4,000,273	5,192,151	9,192,424	4,055,419	5,274,545	9,329,965	4,111,351	5,358,236	9,469,587
2028	4,024,890	5,222,503	9,247,394	4,084,622	5,311,694	9,396,315	4,145,273	5,402,403	9,547,676
2029	4,008,536	5,204,433	9,212,969	4,072,209	5,299,543	9,371,753	4,136,937	5,396,396	9,533,333
2030	4,012,550	5,210,427	9,222,977	4,080,381	5,311,767	9,392,148	4,149,413	5,415,092	9,564,504
2031	4,016,583	5,216,457	9,233,041	4,088,600	5,324,080	9,412,680	4,161,975	5,433,948	9,595,922
2032	4,041,107	5,246,662	9,287,769	4,117,648	5,360,989	9,478,637	4,195,719	5,477,843	9,673,562
2033	4,024,518	5,228,273	9,252,791	4,104,796	5,348,249	9,453,045	4,186,769	5,471,026	9,657,795
2034	4,028,501	5,234,211	9,262,712	4,112,939	5,360,418	9,473,357	4,199,256	5,489,730	9,688,986

Annual Change

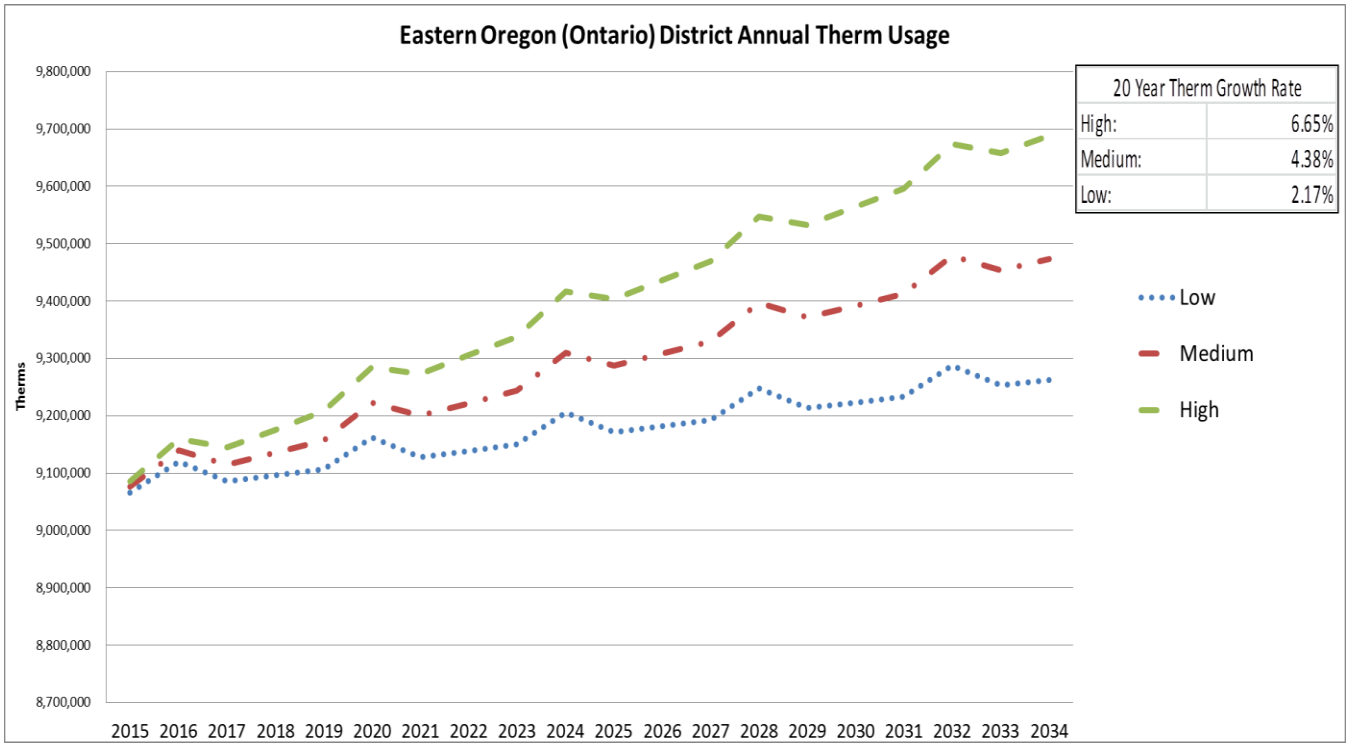
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.61%	0.58%	0.59%	0.71%	0.70%	0.70%	0.81%	0.81%	0.81%
2017	-0.41%	-0.35%	-0.37%	-0.31%	-0.23%	-0.27%	-0.21%	-0.11%	-0.16%
2018	0.11%	0.12%	0.11%	0.21%	0.24%	0.23%	0.32%	0.36%	0.34%
2019	0.11%	0.12%	0.12%	0.21%	0.25%	0.23%	0.32%	0.37%	0.35%
2020	0.62%	0.59%	0.60%	0.72%	0.71%	0.72%	0.83%	0.83%	0.83%
2021	-0.40%	-0.34%	-0.37%	-0.29%	-0.21%	-0.25%	-0.18%	-0.09%	-0.13%
2022	0.11%	0.12%	0.12%	0.22%	0.25%	0.24%	0.33%	0.37%	0.35%
2023	0.11%	0.12%	0.12%	0.22%	0.25%	0.23%	0.33%	0.37%	0.35%
2024	0.62%	0.59%	0.60%	0.73%	0.72%	0.72%	0.84%	0.84%	0.84%
2025	-0.40%	-0.34%	-0.37%	-0.30%	-0.22%	-0.25%	-0.19%	-0.10%	-0.14%
2026	0.11%	0.12%	0.12%	0.22%	0.25%	0.23%	0.32%	0.37%	0.35%
2027	0.11%	0.12%	0.12%	0.21%	0.24%	0.23%	0.32%	0.37%	0.35%
2028	0.62%	0.58%	0.60%	0.72%	0.70%	0.71%	0.83%	0.82%	0.82%
2029	-0.41%	-0.35%	-0.37%	-0.30%	-0.23%	-0.26%	-0.20%	-0.11%	-0.15%
2030	0.10%	0.12%	0.11%	0.20%	0.23%	0.22%	0.30%	0.35%	0.33%
2031	0.10%	0.12%	0.11%	0.20%	0.23%	0.22%	0.30%	0.35%	0.33%
2032	0.61%	0.58%	0.59%	0.71%	0.69%	0.70%	0.81%	0.81%	0.81%
2033	-0.41%	-0.35%	-0.38%	-0.31%	-0.24%	-0.27%	-0.21%	-0.12%	-0.16%
2034	0.10%	0.11%	0.11%	0.20%	0.23%	0.21%	0.30%	0.34%	0.32%

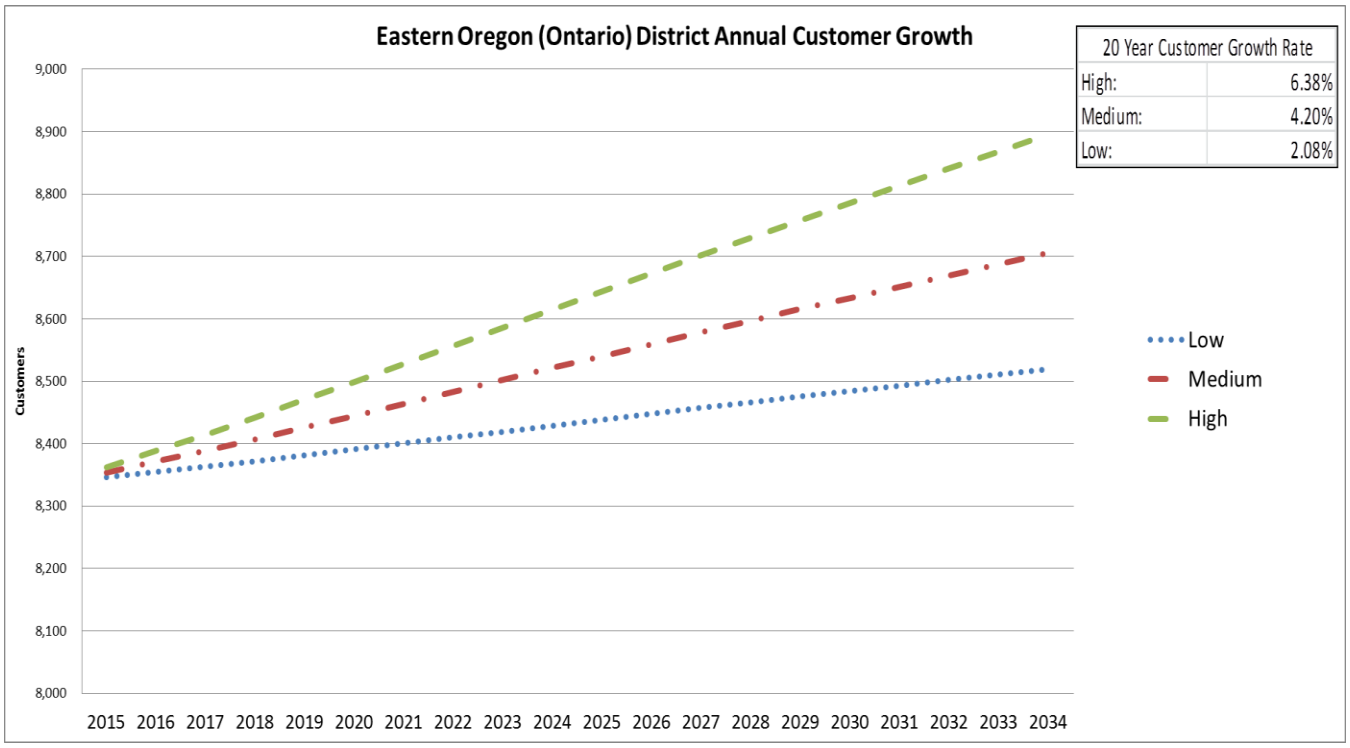
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	6,918	1,428	8,346	6,924	1,430	8,354	6,931	1,431	8,362
2016	6,925	1,430	8,354	6,938	1,433	8,371	6,952	1,436	8,388
2017	6,932	1,432	8,363	6,953	1,436	8,389	6,974	1,441	8,415
2018	6,939	1,433	8,372	6,968	1,440	8,407	6,996	1,446	8,442
2019	6,947	1,435	8,382	6,983	1,443	8,426	7,019	1,451	8,471
2020	6,954	1,437	8,391	6,998	1,447	8,445	7,042	1,456	8,499
2021	6,962	1,438	8,400	7,014	1,450	8,464	7,066	1,462	8,528
2022	6,970	1,440	8,410	7,029	1,454	8,483	7,090	1,467	8,557
2023	6,978	1,442	8,419	7,045	1,457	8,502	7,113	1,472	8,586
2024	6,985	1,444	8,429	7,061	1,461	8,522	7,137	1,478	8,615
2025	6,993	1,445	8,438	7,077	1,464	8,541	7,161	1,483	8,644
2026	7,001	1,447	8,448	7,092	1,468	8,560	7,185	1,488	8,673
2027	7,009	1,449	8,457	7,108	1,471	8,579	7,208	1,494	8,702
2028	7,016	1,450	8,466	7,123	1,474	8,597	7,231	1,499	8,730
2029	7,023	1,452	8,475	7,138	1,478	8,616	7,254	1,504	8,758
2030	7,031	1,454	8,484	7,153	1,481	8,634	7,277	1,509	8,786
2031	7,038	1,455	8,493	7,167	1,484	8,652	7,299	1,514	8,814
2032	7,045	1,457	8,502	7,182	1,488	8,670	7,322	1,519	8,841
2033	7,052	1,459	8,511	7,197	1,491	8,687	7,344	1,524	8,868
2034	7,059	1,460	8,519	7,211	1,494	8,705	7,367	1,529	8,896

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2017	0.10%	0.11%	0.10%	0.21%	0.23%	0.21%	0.31%	0.34%	0.31%
2018	0.11%	0.12%	0.11%	0.22%	0.23%	0.22%	0.33%	0.35%	0.33%
2019	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2020	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2021	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2022	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.34%	0.36%	0.34%
2023	0.11%	0.12%	0.11%	0.22%	0.24%	0.23%	0.33%	0.36%	0.34%
2024	0.11%	0.12%	0.11%	0.23%	0.24%	0.23%	0.34%	0.37%	0.34%
2025	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2026	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.34%
2027	0.11%	0.12%	0.11%	0.22%	0.24%	0.22%	0.33%	0.36%	0.33%
2028	0.11%	0.12%	0.11%	0.21%	0.23%	0.22%	0.32%	0.35%	0.32%
2029	0.11%	0.11%	0.11%	0.21%	0.23%	0.21%	0.32%	0.34%	0.32%
2030	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.31%
2031	0.10%	0.11%	0.10%	0.21%	0.22%	0.21%	0.31%	0.34%	0.32%
2032	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%
2033	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.30%	0.33%	0.31%
2034	0.10%	0.11%	0.10%	0.20%	0.22%	0.21%	0.31%	0.33%	0.31%


Eastern Oregon (Ontario) District Annual Therm Usage
Therms
9,800,000
9,700,000
9,600,000
9,500,000
9,400,000
9,300,000
9,200,000
9,100,000
9,000,000
8,900,000
8,800,000
8,700,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 6.65%
Medium: 4.38%
Low: 2.17%
Low
Medium
High


Eastern Oregon (Ontario) District Annual Customer Growth
Customers
9,000
8,900
8,800
8,700
8,600
8,500
8,400
8,300
8,200
8,100
8,000
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 6.38%
Medium: 4.20%
Low: 2.08%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Oregon

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	58,079,043	15,586,852	73,665,896	58,642,833	15,586,852	74,229,686	59,206,623	15,586,852	74,793,476
2016	58,783,891	15,779,045	74,562,936	59,801,872	15,901,120	75,702,992	60,831,379	16,023,195	76,854,573
2017	58,952,610	15,829,143	74,781,753	60,421,675	16,073,842	76,495,517	61,922,815	16,320,951	78,243,766
2018	59,385,614	15,949,187	75,334,801	61,316,459	16,318,690	77,635,149	63,309,168	16,695,436	80,004,604
2019	59,815,796	16,068,442	75,884,238	62,213,917	16,564,248	78,778,165	64,712,909	17,074,569	81,787,477
2020	60,516,278	16,259,319	76,775,597	63,398,436	16,885,246	80,283,682	66,430,280	17,535,490	83,965,770
2021	60,665,806	16,304,024	76,969,830	64,012,069	17,056,110	81,068,179	67,564,809	17,844,560	85,409,369
2022	61,085,841	16,420,431	77,506,272	64,912,727	17,302,449	82,215,176	69,012,680	18,235,412	87,248,092
2023	61,501,868	16,535,714	78,037,582	65,812,683	17,548,563	83,361,247	70,472,246	18,629,349	89,101,595
2024	62,196,972	16,725,017	78,921,989	67,017,606	17,874,949	84,892,554	72,273,788	19,112,627	91,386,415
2025	62,323,627	16,763,395	79,087,022	67,613,219	18,040,878	85,654,098	73,430,192	19,427,520	92,857,712
2026	62,728,865	16,875,660	79,604,525	68,512,336	18,286,683	86,799,019	74,925,991	19,831,060	94,757,051
2027	63,130,178	16,986,839	80,117,017	69,410,006	18,532,091	87,942,098	76,431,651	20,237,241	96,668,892
2028	63,816,527	17,173,699	80,990,226	70,625,182	18,861,209	89,486,391	78,299,894	20,738,323	99,038,217
2029	63,920,216	17,205,726	81,125,942	71,198,445	19,021,028	90,219,473	79,467,807	21,056,254	100,524,061
2030	64,308,985	17,313,441	81,622,426	72,088,849	19,264,449	91,353,298	80,997,303	21,468,802	102,466,105
2031	64,694,995	17,420,377	82,115,372	72,979,569	19,507,922	92,487,490	82,538,959	21,884,564	104,423,523
2032	65,373,146	17,604,950	82,978,095	74,203,248	19,839,299	94,042,547	84,469,130	22,402,170	106,871,300
2033	65,456,455	17,631,360	83,087,815	74,756,193	19,993,606	94,749,799	85,648,621	22,723,229	108,371,850
2034	65,832,625	17,735,556	83,568,181	75,643,339	20,236,055	95,879,394	87,218,399	23,146,455	110,364,853

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.21%	1.23%	1.22%	1.98%	2.02%	1.98%	2.74%	2.80%	2.76%
2017	0.29%	0.32%	0.29%	1.04%	1.09%	1.05%	1.79%	1.86%	1.81%
2018	0.73%	0.76%	0.74%	1.48%	1.52%	1.49%	2.24%	2.29%	2.25%
2019	0.72%	0.75%	0.73%	1.46%	1.50%	1.47%	2.22%	2.27%	2.23%
2020	1.17%	1.19%	1.17%	1.90%	1.94%	1.91%	2.65%	2.70%	2.66%
2021	0.25%	0.27%	0.25%	0.97%	1.01%	0.98%	1.71%	1.76%	1.72%
2022	0.69%	0.71%	0.70%	1.41%	1.44%	1.41%	2.14%	2.19%	2.15%
2023	0.68%	0.70%	0.69%	1.39%	1.42%	1.39%	2.11%	2.16%	2.12%
2024	1.13%	1.14%	1.13%	1.83%	1.86%	1.84%	2.56%	2.59%	2.56%
2025	0.20%	0.23%	0.21%	0.89%	0.93%	0.90%	1.60%	1.65%	1.61%
2026	0.65%	0.67%	0.65%	1.33%	1.36%	1.34%	2.04%	2.08%	2.05%
2027	0.64%	0.66%	0.64%	1.31%	1.34%	1.32%	2.01%	2.05%	2.02%
2028	1.09%	1.10%	1.09%	1.75%	1.78%	1.76%	2.44%	2.48%	2.45%
2029	0.16%	0.19%	0.17%	0.81%	0.85%	0.82%	1.49%	1.53%	1.50%
2030	0.61%	0.63%	0.61%	1.25%	1.28%	1.26%	1.92%	1.96%	1.93%
2031	0.60%	0.62%	0.60%	1.24%	1.26%	1.24%	1.90%	1.94%	1.91%
2032	1.05%	1.06%	1.05%	1.68%	1.70%	1.68%	2.34%	2.37%	2.34%
2033	0.13%	0.15%	0.13%	0.75%	0.78%	0.75%	1.40%	1.43%	1.40%
2034	0.57%	0.59%	0.58%	1.19%	1.21%	1.19%	1.83%	1.86%	1.84%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	42,704	868,270	910,974	42,704	875,147	917,850	42,704	882,024	924,727
2016	43,230	874,572	917,802	43,565	888,082	931,647	43,899	901,731	945,630
2017	43,368	881,220	924,588	44,038	901,455	945,493	44,715	922,102	966,816
2018	43,696	887,641	931,337	44,709	914,689	959,398	45,741	942,557	988,298
2019	44,023	894,020	938,043	45,382	927,965	973,346	46,780	963,270	1,010,050
2020	44,546	900,140	944,686	46,261	941,032	987,293	48,042	983,959	1,032,001
2021	44,669	906,627	951,296	46,729	954,565	1,001,294	48,889	1,005,350	1,054,239
2022	44,987	912,858	957,846	47,404	967,889	1,015,293	49,960	1,026,712	1,076,673
2023	45,303	919,030	964,333	48,078	981,203	1,029,281	51,039	1,048,247	1,099,286
2024	45,822	924,956	970,778	48,972	994,323	1,043,295	52,363	1,069,772	1,122,136
2025	45,927	931,222	977,149	49,427	1,007,841	1,057,268	53,226	1,091,886	1,145,112
2026	46,235	937,235	983,470	50,101	1,021,143	1,071,244	54,332	1,113,952	1,168,284
2027	46,539	943,190	989,730	50,773	1,034,424	1,085,197	55,444	1,136,163	1,191,608
2028	47,051	948,876	995,927	51,675	1,047,447	1,099,121	56,817	1,158,254	1,215,072
2029	47,139	954,915	1,002,054	52,112	1,060,884	1,112,996	57,688	1,180,949	1,238,637
2030	47,434	960,685	1,008,119	52,779	1,074,057	1,126,837	58,819	1,203,508	1,262,327
2031	47,727	966,414	1,014,141	53,446	1,087,236	1,140,682	59,958	1,226,246	1,286,204
2032	48,233	971,871	1,020,104	54,354	1,100,137	1,154,491	61,376	1,248,822	1,310,198
2033	48,305	977,717	1,026,022	54,777	1,113,521	1,168,298	62,255	1,272,109	1,334,365
2034	48,591	983,301	1,031,892	55,441	1,126,647	1,182,088	63,415	1,295,259	1,358,674

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.23%	0.73%	0.75%	2.02%	1.48%	1.50%	2.80%	2.23%	2.26%
2017	0.32%	0.76%	0.74%	1.09%	1.51%	1.49%	1.86%	2.26%	2.24%
2018	0.76%	0.73%	0.73%	1.52%	1.47%	1.47%	2.29%	2.22%	2.22%
2019	0.75%	0.72%	0.72%	1.50%	1.45%	1.45%	2.27%	2.20%	2.20%
2020	1.19%	0.68%	0.71%	1.94%	1.41%	1.43%	2.70%	2.15%	2.17%
2021	0.27%	0.72%	0.70%	1.01%	1.44%	1.42%	1.76%	2.17%	2.15%
2022	0.71%	0.69%	0.69%	1.44%	1.40%	1.40%	2.19%	2.12%	2.13%
2023	0.70%	0.68%	0.68%	1.42%	1.38%	1.38%	2.16%	2.10%	2.10%
2024	1.14%	0.64%	0.67%	1.86%	1.34%	1.36%	2.59%	2.05%	2.08%
2025	0.23%	0.68%	0.66%	0.93%	1.36%	1.34%	1.65%	2.07%	2.05%
2026	0.67%	0.65%	0.65%	1.36%	1.32%	1.32%	2.08%	2.02%	2.02%
2027	0.66%	0.64%	0.64%	1.34%	1.30%	1.30%	2.05%	1.99%	2.00%
2028	1.10%	0.60%	0.63%	1.78%	1.26%	1.28%	2.48%	1.94%	1.97%
2029	0.19%	0.64%	0.62%	0.85%	1.28%	1.26%	1.53%	1.96%	1.94%
2030	0.63%	0.60%	0.61%	1.28%	1.24%	1.24%	1.96%	1.91%	1.91%
2031	0.62%	0.60%	0.60%	1.26%	1.23%	1.23%	1.94%	1.89%	1.89%
2032	1.06%	0.56%	0.59%	1.70%	1.19%	1.21%	2.37%	1.84%	1.87%
2033	0.15%	0.60%	0.58%	0.78%	1.22%	1.20%	1.43%	1.86%	1.84%
2034	0.59%	0.57%	0.57%	1.21%	1.18%	1.18%	1.86%	1.82%	1.82%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	39,107,572	34,558,324	73,665,896	39,442,028	34,787,658	74,229,686	39,776,484	35,016,992	74,793,476
2016	39,623,817	34,939,119	74,562,936	40,300,030	35,402,962	75,702,992	40,983,317	35,871,256	76,854,573
2017	39,768,355	35,013,398	74,781,753	40,784,526	35,710,991	76,495,517	41,821,857	36,421,910	78,243,766
2018	40,095,328	35,239,473	75,334,801	41,459,036	36,176,113	77,635,149	42,865,139	37,139,465	80,004,604
2019	40,419,832	35,464,406	75,884,238	42,135,099	36,643,067	78,778,165	43,921,138	37,866,339	81,787,477
2020	40,931,606	35,843,991	76,775,597	43,010,854	37,272,828	80,283,682	45,196,823	38,768,948	83,965,770
2021	41,060,313	35,909,517	76,969,830	43,488,856	37,579,323	81,068,179	46,066,303	39,343,067	85,409,369
2022	41,376,446	36,129,826	77,506,272	44,166,500	38,048,676	82,215,176	47,155,201	40,092,891	87,248,092
2023	41,689,425	36,348,157	78,037,582	44,843,541	38,517,706	83,361,247	48,253,089	40,848,505	89,101,595
2024	42,196,335	36,725,654	78,921,989	45,733,832	39,158,722	84,892,554	49,592,108	41,794,307	91,386,415
2025	42,307,064	36,779,958	79,087,022	46,197,502	39,456,596	85,654,098	50,478,061	42,379,651	92,857,712
2026	42,611,455	36,993,070	79,604,525	46,873,514	39,925,506	86,799,019	51,603,486	43,153,564	94,757,051
2027	42,912,762	37,204,255	80,117,017	47,548,343	40,393,754	87,942,098	52,736,469	43,932,423	96,668,892
2028	43,412,788	37,577,438	80,990,226	48,446,478	41,039,913	89,486,391	54,127,057	44,911,160	99,038,217
2029	43,505,737	37,620,205	81,125,942	48,892,954	41,326,519	90,219,473	55,022,167	45,501,894	100,524,061
2030	43,797,431	37,824,995	81,622,426	49,562,434	41,790,864	91,353,298	56,174,078	46,292,027	102,466,105
2031	44,086,904	38,028,468	82,115,372	50,231,998	42,255,492	92,487,490	57,335,167	47,088,356	104,423,523
2032	44,580,548	38,397,547	82,978,095	51,136,735	42,905,811	94,042,547	58,773,796	48,097,504	106,871,300
2033	44,657,719	38,430,096	83,087,815	51,567,541	43,182,258	94,749,799	59,677,993	48,693,857	108,371,850
2034	44,939,507	38,628,674	83,568,181	52,234,242	43,645,152	95,879,394	60,860,730	49,504,123	110,364,853

Annual Change

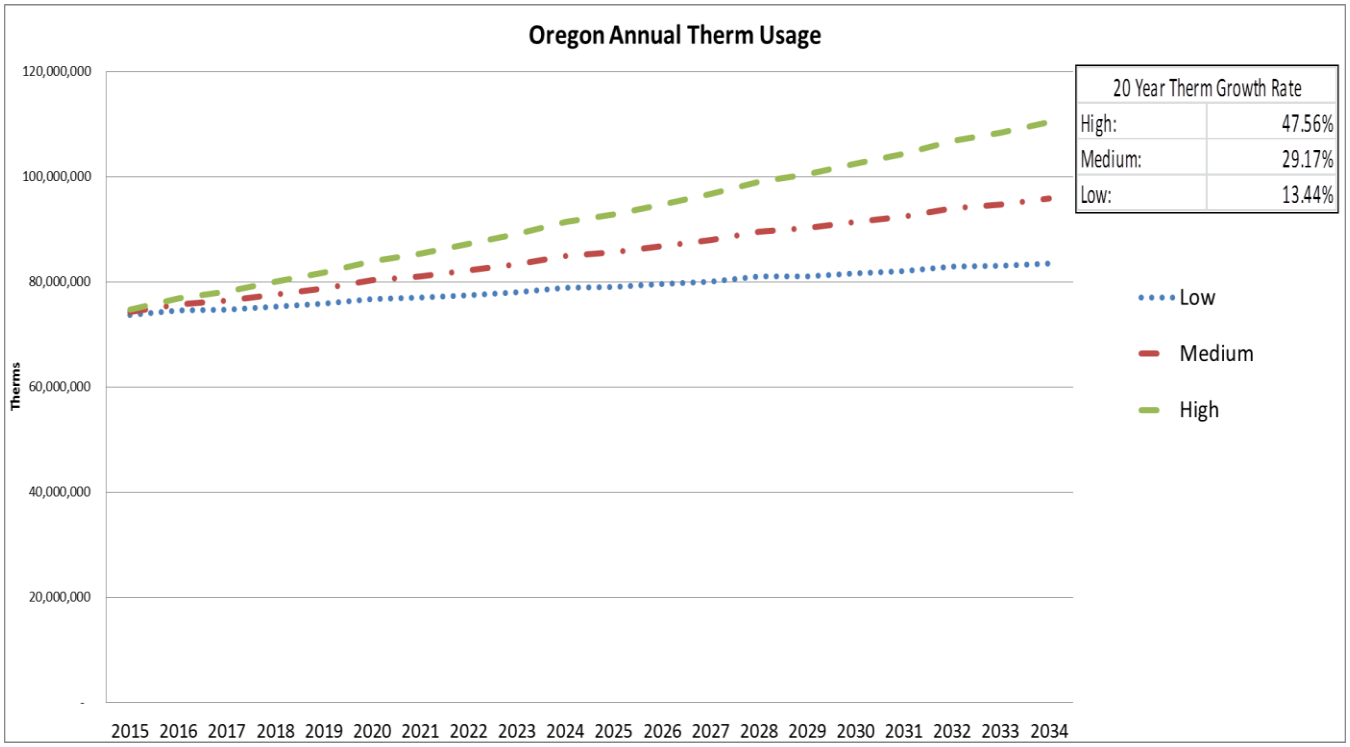
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.32%	1.10%	1.22%	2.18%	1.77%	1.98%	3.03%	2.44%	2.76%
2017	0.36%	0.21%	0.29%	1.20%	0.87%	1.05%	2.05%	1.54%	1.81%
2018	0.82%	0.65%	0.74%	1.65%	1.30%	1.49%	2.49%	1.97%	2.25%
2019	0.81%	0.64%	0.73%	1.63%	1.29%	1.47%	2.46%	1.96%	2.23%
2020	1.27%	1.07%	1.17%	2.08%	1.72%	1.91%	2.90%	2.38%	2.66%
2021	0.31%	0.18%	0.25%	1.11%	0.82%	0.98%	1.92%	1.48%	1.72%
2022	0.77%	0.61%	0.70%	1.56%	1.25%	1.41%	2.36%	1.91%	2.15%
2023	0.76%	0.60%	0.69%	1.53%	1.23%	1.39%	2.33%	1.88%	2.12%
2024	1.22%	1.04%	1.13%	1.99%	1.66%	1.84%	2.77%	2.32%	2.56%
2025	0.26%	0.15%	0.21%	1.01%	0.76%	0.90%	1.79%	1.40%	1.61%
2026	0.72%	0.58%	0.65%	1.46%	1.19%	1.34%	2.23%	1.83%	2.05%
2027	0.71%	0.57%	0.64%	1.44%	1.17%	1.32%	2.20%	1.80%	2.02%
2028	1.17%	1.00%	1.09%	1.89%	1.60%	1.76%	2.64%	2.23%	2.45%
2029	0.21%	0.11%	0.17%	0.92%	0.70%	0.82%	1.65%	1.32%	1.50%
2030	0.67%	0.54%	0.61%	1.37%	1.12%	1.26%	2.09%	1.74%	1.93%
2031	0.66%	0.54%	0.60%	1.35%	1.11%	1.24%	2.07%	1.72%	1.91%
2032	1.12%	0.97%	1.05%	1.80%	1.54%	1.68%	2.51%	2.14%	2.34%
2033	0.17%	0.08%	0.13%	0.84%	0.64%	0.75%	1.54%	1.24%	1.40%
2034	0.63%	0.52%	0.58%	1.29%	1.07%	1.19%	1.98%	1.66%	1.84%

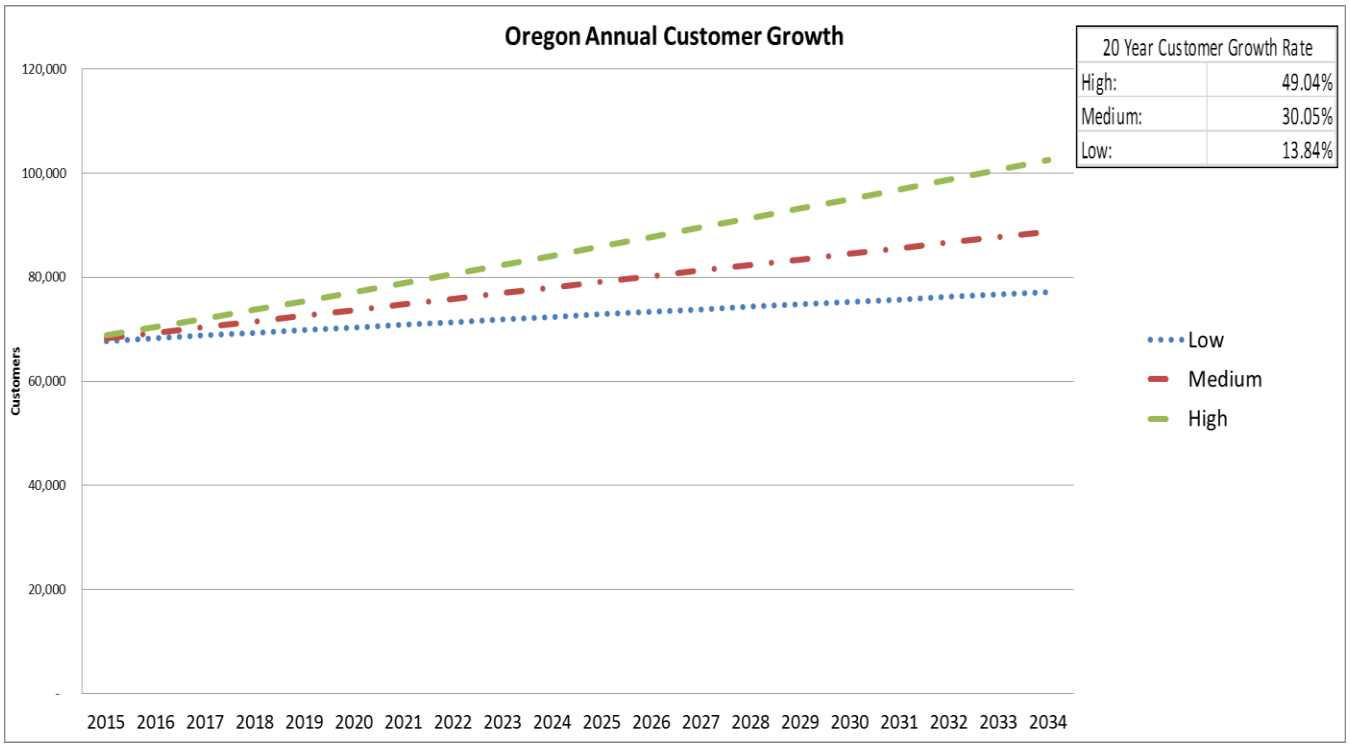
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	57,942	9,813	67,755	58,405	9,885	68,290	58,868	9,957	68,825
2016	58,402	9,885	68,286	59,334	10,030	69,363	60,275	10,176	70,451
2017	58,858	9,956	68,813	60,265	10,175	70,440	61,701	10,398	72,099
2018	59,311	10,026	69,338	61,200	10,320	71,521	63,147	10,623	73,770
2019	59,762	10,097	69,859	62,138	10,467	72,605	64,610	10,851	75,461
2020	60,208	10,166	70,374	63,075	10,613	73,688	66,087	11,081	77,168
2021	60,651	10,236	70,887	64,016	10,760	74,776	67,582	11,315	78,897
2022	61,091	10,305	71,395	64,956	10,907	75,863	69,091	11,550	80,641
2023	61,526	10,373	71,898	65,896	11,053	76,949	70,613	11,787	82,400
2024	61,958	10,440	72,398	66,837	11,200	78,037	72,150	12,027	84,176
2025	62,384	10,507	72,892	67,775	11,347	79,122	73,695	12,267	85,963
2026	62,808	10,573	73,381	68,713	11,494	80,207	75,254	12,510	87,765
2027	63,227	10,639	73,866	69,650	11,640	81,290	76,824	12,755	89,579
2028	63,642	10,704	74,346	70,585	11,786	82,371	78,403	13,001	91,404
2029	64,052	10,769	74,821	71,516	11,932	83,448	79,989	13,248	93,237
2030	64,458	10,832	75,290	72,445	12,077	84,522	81,583	13,497	95,080
2031	64,861	10,895	75,757	73,374	12,222	85,597	83,190	13,747	96,937
2032	65,260	10,958	76,218	74,301	12,367	86,668	84,806	13,999	98,804
2033	65,656	11,020	76,676	75,228	12,512	87,740	86,433	14,252	100,685
2034	66,048	11,082	77,130	76,154	12,657	88,810	88,069	14,507	102,576

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.79%	0.73%	0.78%	1.59%	1.46%	1.57%	2.39%	2.20%	2.36%
2017	0.78%	0.72%	0.77%	1.57%	1.45%	1.55%	2.37%	2.18%	2.34%
2018	0.77%	0.71%	0.76%	1.55%	1.43%	1.53%	2.34%	2.17%	2.32%
2019	0.76%	0.70%	0.75%	1.53%	1.42%	1.52%	2.32%	2.15%	2.29%
2020	0.75%	0.69%	0.74%	1.51%	1.40%	1.49%	2.29%	2.12%	2.26%
2021	0.74%	0.68%	0.73%	1.49%	1.38%	1.48%	2.26%	2.10%	2.24%
2022	0.72%	0.67%	0.72%	1.47%	1.36%	1.45%	2.23%	2.08%	2.21%
2023	0.71%	0.66%	0.70%	1.45%	1.35%	1.43%	2.20%	2.05%	2.18%
2024	0.70%	0.65%	0.69%	1.43%	1.33%	1.41%	2.18%	2.03%	2.16%
2025	0.69%	0.64%	0.68%	1.40%	1.31%	1.39%	2.14%	2.00%	2.12%
2026	0.68%	0.63%	0.67%	1.38%	1.29%	1.37%	2.12%	1.98%	2.10%
2027	0.67%	0.62%	0.66%	1.36%	1.27%	1.35%	2.09%	1.95%	2.07%
2028	0.66%	0.61%	0.65%	1.34%	1.26%	1.33%	2.06%	1.93%	2.04%
2029	0.64%	0.60%	0.64%	1.32%	1.24%	1.31%	2.02%	1.90%	2.01%
2030	0.63%	0.59%	0.63%	1.30%	1.22%	1.29%	1.99%	1.87%	1.98%
2031	0.63%	0.58%	0.62%	1.28%	1.20%	1.27%	1.97%	1.86%	1.95%
2032	0.62%	0.57%	0.61%	1.26%	1.19%	1.25%	1.94%	1.83%	1.93%
2033	0.61%	0.57%	0.60%	1.25%	1.17%	1.24%	1.92%	1.81%	1.90%
2034	0.60%	0.56%	0.59%	1.23%	1.16%	1.22%	1.89%	1.79%	1.88%


Oregon Annual Therm Usage
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
Therms
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 47.56%
Medium: 29.17%
Low: 13.44%
Low
Medium
High


Oregon Annual Customer Growth
120,000
100,000
80,000
60,000
40,000
20,000
-
Customers
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 49.04%
Medium: 30.05%
Low: 13.84%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

Washington

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	168,780,587	57,524,066	226,304,652	170,050,003	57,524,066	227,574,069	171,319,420	57,524,066	228,843,485
2016	170,487,797	58,091,223	228,579,019	172,738,358	58,407,456	231,145,814	175,007,960	58,723,689	233,731,649
2017	170,666,415	58,145,353	228,811,769	173,890,877	58,779,111	232,669,988	177,167,927	59,417,438	236,585,365
2018	171,610,587	58,456,699	230,067,285	175,832,410	59,413,632	235,246,042	180,155,379	60,384,350	240,539,729
2019	172,553,983	58,767,984	231,321,966	177,784,872	60,051,845	237,836,717	183,180,547	61,363,413	244,543,960
2020	174,274,429	59,340,058	233,614,486	180,551,109	60,960,733	241,511,842	187,072,392	62,627,965	249,700,357
2021	174,432,525	59,388,133	233,820,658	181,711,316	61,335,284	243,046,600	189,327,798	63,352,250	252,680,047
2022	175,366,918	59,696,733	235,063,651	183,683,657	61,979,989	245,663,645	192,447,529	64,361,307	256,808,836
2023	176,295,585	60,003,484	236,299,069	185,657,141	62,625,035	248,282,176	195,590,497	65,377,675	260,968,172
2024	178,020,577	60,577,399	238,597,976	188,483,683	63,553,549	252,037,232	199,662,077	66,699,452	266,361,529
2025	178,140,327	60,613,065	238,753,392	189,614,953	63,918,663	253,533,616	201,956,907	67,435,883	269,392,790
2026	179,054,625	60,915,218	239,969,842	191,596,013	64,566,113	256,162,126	205,175,499	68,476,118	273,651,617
2027	179,962,284	61,215,217	241,177,501	193,575,289	65,212,950	258,788,238	208,412,287	69,522,036	277,934,323
2028	181,677,857	61,785,985	243,463,842	196,433,365	66,151,360	262,584,725	212,620,261	70,886,714	283,506,975
2029	181,755,328	61,807,784	243,563,112	197,523,872	66,503,089	264,026,961	214,933,036	71,628,342	286,561,378
2030	182,640,155	62,100,180	244,740,335	199,491,388	67,145,834	266,637,222	218,213,673	72,687,697	290,901,370
2031	183,521,837	62,391,597	245,913,434	201,463,270	67,789,991	269,253,261	221,521,657	73,755,711	295,277,368
2032	185,226,615	62,958,764	248,185,379	204,346,786	68,736,371	273,083,157	225,855,162	75,159,900	301,015,062
2033	185,266,501	62,968,279	248,234,780	205,401,092	69,076,238	274,477,329	228,189,120	75,907,813	304,096,933
2034	186,131,670	63,254,268	249,385,938	207,371,367	69,719,752	277,091,119	231,555,462	76,994,142	308,549,604

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.01%	0.99%	1.01%	1.58%	1.54%	1.57%	2.15%	2.09%	2.14%
2017	0.10%	0.09%	0.10%	0.67%	0.64%	0.66%	1.23%	1.18%	1.22%
2018	0.55%	0.54%	0.55%	1.12%	1.08%	1.11%	1.69%	1.63%	1.67%
2019	0.55%	0.53%	0.55%	1.11%	1.07%	1.10%	1.68%	1.62%	1.66%
2020	1.00%	0.97%	0.99%	1.56%	1.51%	1.55%	2.12%	2.06%	2.11%
2021	0.09%	0.08%	0.09%	0.64%	0.61%	0.64%	1.21%	1.16%	1.19%
2022	0.54%	0.52%	0.53%	1.09%	1.05%	1.08%	1.65%	1.59%	1.63%
2023	0.53%	0.51%	0.53%	1.07%	1.04%	1.07%	1.63%	1.58%	1.62%
2024	0.98%	0.96%	0.97%	1.52%	1.48%	1.51%	2.08%	2.02%	2.07%
2025	0.07%	0.06%	0.07%	0.60%	0.57%	0.59%	1.15%	1.10%	1.14%
2026	0.51%	0.50%	0.51%	1.04%	1.01%	1.04%	1.59%	1.54%	1.58%
2027	0.51%	0.49%	0.50%	1.03%	1.00%	1.03%	1.58%	1.53%	1.57%
2028	0.95%	0.93%	0.95%	1.48%	1.44%	1.47%	2.02%	1.96%	2.01%
2029	0.04%	0.04%	0.04%	0.56%	0.53%	0.55%	1.09%	1.05%	1.08%
2030	0.49%	0.47%	0.48%	1.00%	0.97%	0.99%	1.53%	1.48%	1.51%
2031	0.48%	0.47%	0.48%	0.99%	0.96%	0.98%	1.52%	1.47%	1.50%
2032	0.93%	0.91%	0.92%	1.43%	1.40%	1.42%	1.96%	1.90%	1.94%
2033	0.02%	0.02%	0.02%	0.52%	0.49%	0.51%	1.03%	1.00%	1.02%
2034	0.47%	0.45%	0.46%	0.96%	0.93%	0.95%	1.48%	1.43%	1.46%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	157,600	2,462,576	2,620,176	157,600	2,477,120	2,634,720	157,600	2,491,664	2,649,264
2016	159,154	2,475,353	2,634,507	160,020	2,503,762	2,663,783	160,887	2,532,389	2,693,275
2017	159,302	2,489,548	2,648,850	161,039	2,532,011	2,693,050	162,788	2,575,117	2,737,904
2018	160,155	2,503,060	2,663,215	162,777	2,559,764	2,722,541	165,437	2,617,746	2,783,183
2019	161,008	2,516,566	2,677,574	164,526	2,587,676	2,752,202	168,119	2,660,913	2,829,032
2020	162,576	2,529,293	2,691,869	167,016	2,614,913	2,781,929	171,583	2,703,724	2,875,307
2021	162,707	2,543,469	2,706,176	168,042	2,643,813	2,811,854	173,568	2,748,629	2,922,197
2022	163,553	2,556,854	2,720,407	169,808	2,672,013	2,841,821	176,332	2,793,143	2,969,475
2023	164,393	2,570,158	2,734,551	171,575	2,700,229	2,871,805	179,117	2,837,986	3,017,102
2024	165,965	2,582,708	2,748,673	174,119	2,727,798	2,901,917	182,738	2,882,506	3,065,245
2025	166,063	2,596,593	2,762,656	175,120	2,756,821	2,931,940	184,756	2,928,817	3,113,572
2026	166,891	2,609,695	2,776,586	176,893	2,785,147	2,962,040	187,606	2,974,734	3,162,340
2027	167,713	2,622,703	2,790,416	178,666	2,813,447	2,992,113	190,471	3,020,908	3,211,380
2028	169,277	2,634,870	2,804,147	181,237	2,840,926	3,022,162	194,210	3,066,490	3,260,700
2029	169,336	2,648,397	2,817,734	182,200	2,869,902	3,052,102	196,242	3,113,922	3,310,164
2030	170,137	2,661,076	2,831,214	183,961	2,898,030	3,081,991	199,144	3,160,714	3,359,858
2031	170,936	2,673,712	2,844,648	185,726	2,926,222	3,111,948	202,070	3,207,894	3,409,964
2032	172,490	2,685,483	2,857,973	188,319	2,953,526	3,141,845	205,918	3,254,364	3,460,281
2033	172,516	2,698,715	2,871,231	189,250	2,982,519	3,171,769	207,967	3,302,983	3,510,949
2034	173,299	2,711,114	2,884,414	191,013	3,010,687	3,201,700	210,943	3,350,991	3,561,934

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.99%	0.52%	0.55%	1.54%	1.08%	1.10%	2.09%	1.63%	1.66%
2017	0.09%	0.57%	0.54%	0.64%	1.13%	1.10%	1.18%	1.69%	1.66%
2018	0.54%	0.54%	0.54%	1.08%	1.10%	1.10%	1.63%	1.66%	1.65%
2019	0.53%	0.54%	0.54%	1.07%	1.09%	1.09%	1.62%	1.65%	1.65%
2020	0.97%	0.51%	0.53%	1.51%	1.05%	1.08%	2.06%	1.61%	1.64%
2021	0.08%	0.56%	0.53%	0.61%	1.11%	1.08%	1.16%	1.66%	1.63%
2022	0.52%	0.53%	0.53%	1.05%	1.07%	1.07%	1.59%	1.62%	1.62%
2023	0.51%	0.52%	0.52%	1.04%	1.06%	1.06%	1.58%	1.61%	1.60%
2024	0.96%	0.49%	0.52%	1.48%	1.02%	1.05%	2.02%	1.57%	1.60%
2025	0.06%	0.54%	0.51%	0.57%	1.06%	1.03%	1.10%	1.61%	1.58%
2026	0.50%	0.50%	0.50%	1.01%	1.03%	1.03%	1.54%	1.57%	1.57%
2027	0.49%	0.50%	0.50%	1.00%	1.02%	1.02%	1.53%	1.55%	1.55%
2028	0.93%	0.46%	0.49%	1.44%	0.98%	1.00%	1.96%	1.51%	1.54%
2029	0.04%	0.51%	0.48%	0.53%	1.02%	0.99%	1.05%	1.55%	1.52%
2030	0.47%	0.48%	0.48%	0.97%	0.98%	0.98%	1.48%	1.50%	1.50%
2031	0.47%	0.47%	0.47%	0.96%	0.97%	0.97%	1.47%	1.49%	1.49%
2032	0.91%	0.44%	0.47%	1.40%	0.93%	0.96%	1.90%	1.45%	1.48%
2033	0.02%	0.49%	0.46%	0.49%	0.98%	0.95%	1.00%	1.49%	1.46%
2034	0.45%	0.46%	0.46%	0.93%	0.94%	0.94%	1.43%	1.45%	1.45%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	117,950,257	108,354,395	226,304,652	118,658,147	108,915,922	227,574,069	119,366,036	109,477,449	228,843,485
2016	119,201,146	109,377,873	228,579,019	120,632,313	110,513,501	231,145,814	122,074,290	111,657,360	233,731,649
2017	119,347,842	109,463,926	228,811,769	121,498,159	111,171,829	232,669,988	123,680,905	112,904,460	236,585,365
2018	120,046,655	110,020,631	230,067,285	122,932,124	112,313,918	235,246,042	125,882,768	114,656,961	240,539,729
2019	120,744,340	110,577,627	231,321,966	124,373,163	113,463,554	237,836,717	128,111,091	116,432,869	244,543,960
2020	122,003,143	111,611,344	233,614,486	126,401,576	115,110,266	241,511,842	130,964,971	118,735,386	249,700,357
2021	122,132,163	111,688,495	233,820,658	127,268,504	115,778,096	243,046,600	132,635,574	120,044,473	252,680,047
2022	122,821,770	112,241,881	235,063,651	128,721,609	116,942,036	245,663,645	134,929,968	121,878,868	256,808,836
2023	123,506,729	112,792,340	236,299,069	130,174,765	118,107,411	248,282,176	137,240,329	123,727,844	260,968,172
2024	124,767,334	113,830,642	238,597,976	132,244,800	119,792,432	252,037,232	140,222,580	126,138,949	266,361,529
2025	124,866,081	113,887,311	238,753,392	133,086,603	120,447,013	253,533,616	141,916,606	127,476,184	269,392,790
2026	125,539,183	114,430,659	239,969,842	134,542,877	121,619,249	256,162,126	144,278,882	129,372,735	273,651,617
2027	126,207,032	114,970,468	241,177,501	135,997,095	122,791,143	258,788,238	146,653,345	131,280,979	277,934,323
2028	127,459,492	116,004,350	243,463,842	138,087,946	124,496,779	262,584,725	149,732,114	133,774,860	283,506,975
2029	127,525,265	116,037,846	243,563,112	138,895,951	125,131,010	264,026,961	151,433,188	135,128,189	286,561,378
2030	128,175,267	116,565,068	244,740,335	140,339,279	126,297,943	266,637,222	153,836,050	137,065,320	290,901,370
2031	128,822,527	117,090,907	245,913,434	141,784,876	127,468,385	269,253,261	156,257,376	139,019,992	295,277,368
2032	130,065,896	118,119,483	248,185,379	143,891,852	129,191,305	273,083,157	159,423,719	141,591,342	301,015,062
2033	130,102,232	118,132,549	248,234,780	144,669,231	129,808,098	274,477,329	161,133,286	142,963,647	304,096,933
2034	130,736,230	118,649,708	249,385,938	146,111,032	130,980,087	277,091,119	163,592,625	144,956,979	308,549,604

Annual Change

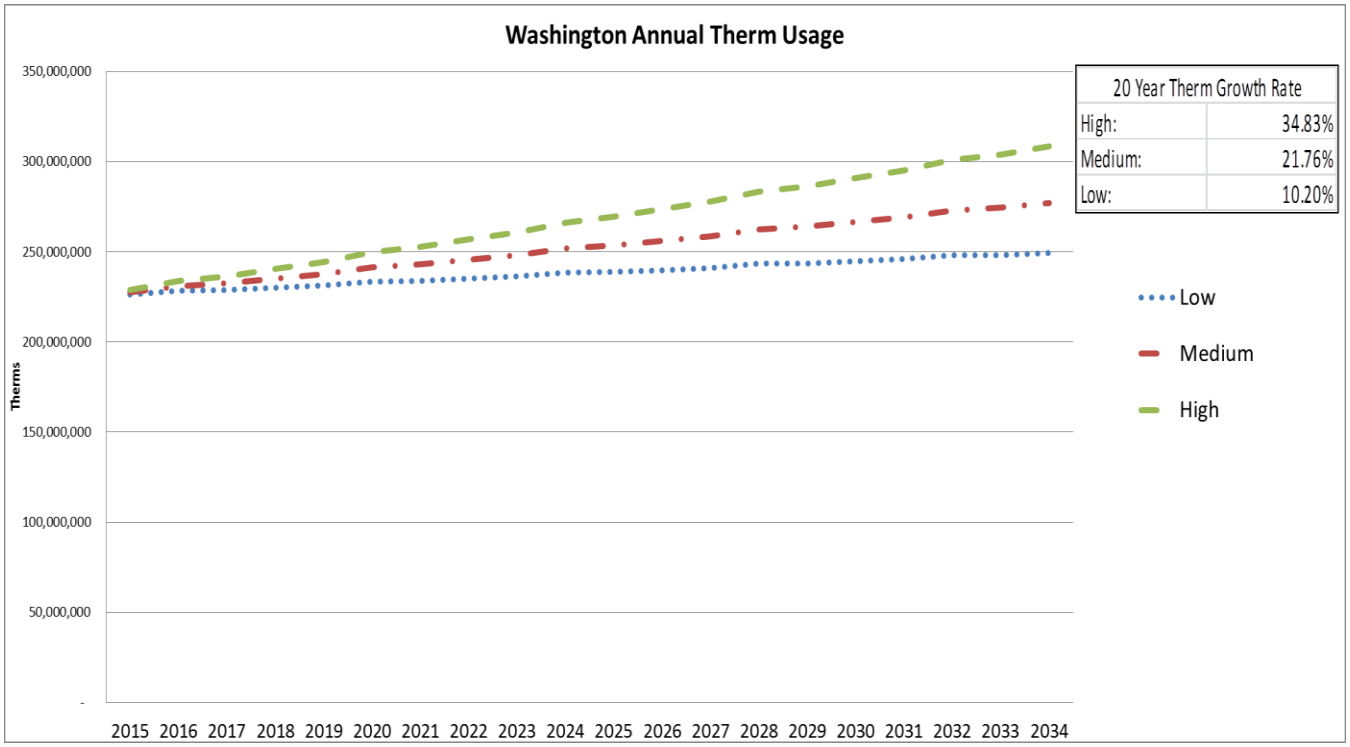
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.06%	0.94%	1.01%	1.66%	1.47%	1.57%	2.27%	1.99%	2.14%
2017	0.12%	0.08%	0.10%	0.72%	0.60%	0.66%	1.32%	1.12%	1.22%
2018	0.59%	0.51%	0.55%	1.18%	1.03%	1.11%	1.78%	1.55%	1.67%
2019	0.58%	0.51%	0.55%	1.17%	1.02%	1.10%	1.77%	1.55%	1.66%
2020	1.04%	0.93%	0.99%	1.63%	1.45%	1.55%	2.23%	1.98%	2.11%
2021	0.11%	0.07%	0.09%	0.69%	0.58%	0.64%	1.28%	1.10%	1.19%
2022	0.56%	0.50%	0.53%	1.14%	1.01%	1.08%	1.73%	1.53%	1.63%
2023	0.56%	0.49%	0.53%	1.13%	1.00%	1.07%	1.71%	1.52%	1.62%
2024	1.02%	0.92%	0.97%	1.59%	1.43%	1.51%	2.17%	1.95%	2.07%
2025	0.08%	0.05%	0.07%	0.64%	0.55%	0.59%	1.21%	1.06%	1.14%
2026	0.54%	0.48%	0.51%	1.09%	0.97%	1.04%	1.66%	1.49%	1.58%
2027	0.53%	0.47%	0.50%	1.08%	0.96%	1.03%	1.65%	1.47%	1.57%
2028	0.99%	0.90%	0.95%	1.54%	1.39%	1.47%	2.10%	1.90%	2.01%
2029	0.05%	0.03%	0.04%	0.59%	0.51%	0.55%	1.14%	1.01%	1.08%
2030	0.51%	0.45%	0.48%	1.04%	0.93%	0.99%	1.59%	1.43%	1.51%
2031	0.50%	0.45%	0.48%	1.03%	0.93%	0.98%	1.57%	1.43%	1.50%
2032	0.97%	0.88%	0.92%	1.49%	1.35%	1.42%	2.03%	1.85%	1.94%
2033	0.03%	0.01%	0.02%	0.54%	0.48%	0.51%	1.07%	0.97%	1.02%
2034	0.49%	0.44%	0.46%	1.00%	0.90%	0.95%	1.53%	1.39%	1.46%

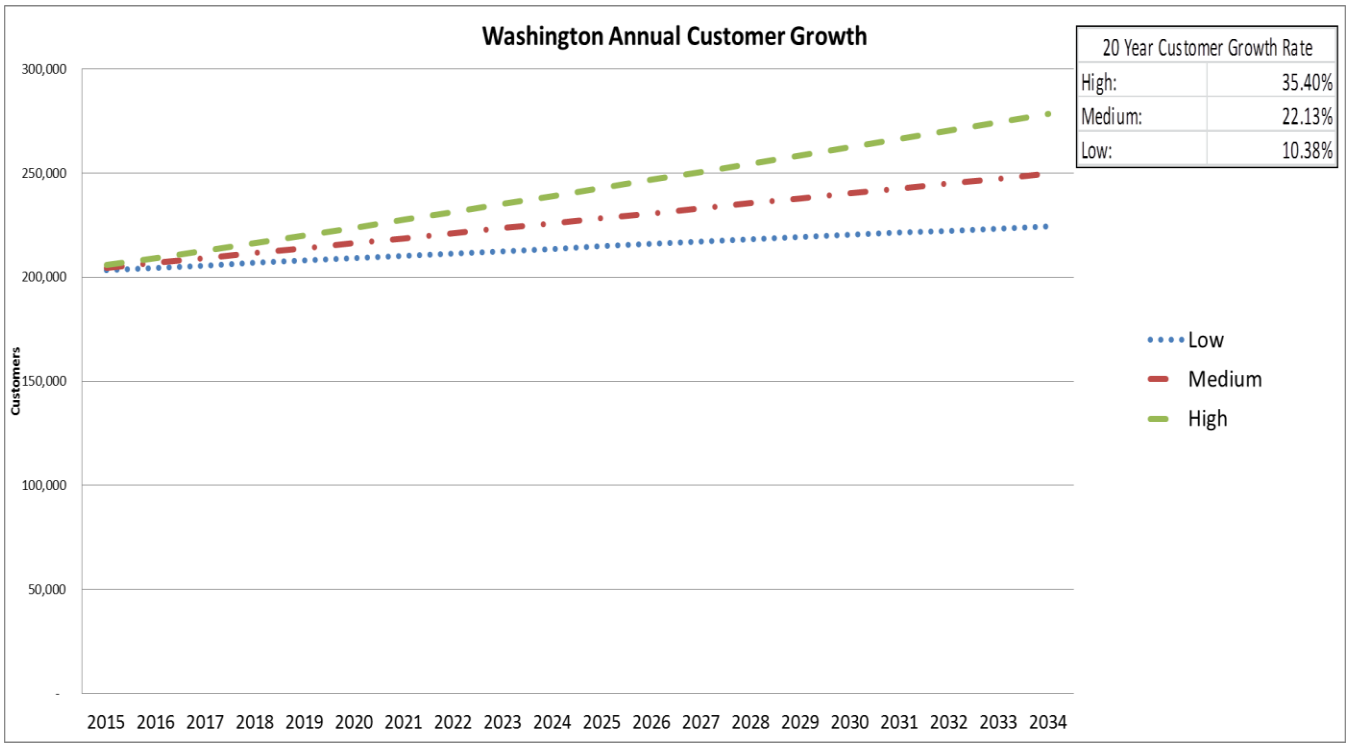
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	177,821	25,613	203,434	178,852	25,749	204,601	179,883	25,885	205,768
2016	178,838	25,747	204,585	180,912	26,022	206,934	183,001	26,298	209,300
2017	179,854	25,882	205,737	182,985	26,297	209,281	186,162	26,717	212,879
2018	180,872	26,017	206,889	185,072	26,573	211,646	189,366	27,142	216,508
2019	181,888	26,152	208,040	187,170	26,852	214,022	192,609	27,572	220,180
2020	182,899	26,286	209,185	189,272	27,131	216,403	195,880	28,005	223,885
2021	183,910	26,421	210,331	191,386	27,411	218,798	199,193	28,445	227,637
2022	184,915	26,554	211,469	193,503	27,692	221,195	202,531	28,888	231,418
2023	185,913	26,687	212,601	195,619	27,973	223,592	205,892	29,333	235,225
2024	186,910	26,820	213,729	197,743	28,256	225,998	209,287	29,784	239,071
2025	187,896	26,951	214,847	199,859	28,537	228,396	212,693	30,235	242,929
2026	188,877	27,082	215,959	201,980	28,818	230,799	216,129	30,691	246,820
2027	189,852	27,211	217,063	204,098	29,100	233,198	219,581	31,149	250,730
2028	190,818	27,340	218,158	206,213	29,381	235,594	223,051	31,609	254,660
2029	191,774	27,467	219,242	208,319	29,660	237,979	226,529	32,070	258,599
2030	192,723	27,593	220,316	210,420	29,939	240,360	230,021	32,533	262,554
2031	193,667	27,719	221,386	212,525	30,219	242,744	233,539	32,999	266,539
2032	194,603	27,844	222,447	214,624	30,498	245,122	237,070	33,467	270,537
2033	195,534	27,968	223,502	216,724	30,777	247,501	240,623	33,938	274,561
2034	196,459	28,091	224,550	218,823	31,055	249,879	244,195	34,411	278,606

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.57%	0.53%	0.57%	1.15%	1.06%	1.14%	1.73%	1.60%	1.72%
2017	0.57%	0.52%	0.56%	1.15%	1.06%	1.13%	1.73%	1.59%	1.71%
2018	0.57%	0.52%	0.56%	1.14%	1.05%	1.13%	1.72%	1.59%	1.70%
2019	0.56%	0.52%	0.56%	1.13%	1.05%	1.12%	1.71%	1.58%	1.70%
2020	0.56%	0.51%	0.55%	1.12%	1.04%	1.11%	1.70%	1.57%	1.68%
2021	0.55%	0.51%	0.55%	1.12%	1.03%	1.11%	1.69%	1.57%	1.68%
2022	0.55%	0.51%	0.54%	1.11%	1.03%	1.10%	1.68%	1.56%	1.66%
2023	0.54%	0.50%	0.53%	1.09%	1.01%	1.08%	1.66%	1.54%	1.64%
2024	0.54%	0.50%	0.53%	1.09%	1.01%	1.08%	1.65%	1.54%	1.63%
2025	0.53%	0.49%	0.52%	1.07%	0.99%	1.06%	1.63%	1.52%	1.61%
2026	0.52%	0.48%	0.52%	1.06%	0.99%	1.05%	1.62%	1.51%	1.60%
2027	0.52%	0.48%	0.51%	1.05%	0.98%	1.04%	1.60%	1.49%	1.58%
2028	0.51%	0.47%	0.50%	1.04%	0.97%	1.03%	1.58%	1.48%	1.57%
2029	0.50%	0.47%	0.50%	1.02%	0.95%	1.01%	1.56%	1.46%	1.55%
2030	0.49%	0.46%	0.49%	1.01%	0.94%	1.00%	1.54%	1.44%	1.53%
2031	0.49%	0.46%	0.49%	1.00%	0.93%	0.99%	1.53%	1.43%	1.52%
2032	0.48%	0.45%	0.48%	0.99%	0.92%	0.98%	1.51%	1.42%	1.50%
2033	0.48%	0.45%	0.47%	0.98%	0.91%	0.97%	1.50%	1.41%	1.49%
2034	0.47%	0.44%	0.47%	0.97%	0.91%	0.96%	1.48%	1.39%	1.47%


Washington Annual Therm Usage
Therms
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 34.83%
Medium: 21.76%
Low: 10.20%
Low
Medium
High


Washington Annual Customer Growth
Customers
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 35.40%
Medium: 22.13%
Low: 10.38%
Low
Medium
High

Cascade Natural Gas
2014 IRP Demand Forecast Summary Tables

System

Annual Requirements (Therms)

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	226,859,630	73,110,918	299,970,548	228,692,836	73,110,918	301,803,755	230,526,043	73,110,918	303,636,961
2016	229,271,688	73,870,268	303,141,955	232,540,230	74,308,576	306,848,805	235,839,339	74,746,884	310,586,223
2017	229,619,026	73,974,496	303,593,522	234,312,552	74,852,954	309,165,506	239,090,742	75,738,389	314,829,131
2018	230,996,201	74,405,886	305,402,087	237,148,869	75,732,322	312,881,191	243,464,547	77,079,786	320,544,333
2019	232,369,778	74,836,426	307,206,204	239,998,789	76,616,093	316,614,882	247,893,456	78,437,981	326,331,437
2020	234,790,707	75,599,376	310,390,084	243,949,545	77,845,979	321,795,524	253,502,672	80,163,455	333,666,127
2021	235,098,331	75,692,157	310,790,488	245,723,385	78,391,394	324,114,779	256,892,607	81,196,810	338,089,416
2022	236,452,759	76,117,164	312,569,923	248,596,383	79,282,438	327,878,822	261,460,209	82,596,719	344,056,928
2023	237,797,454	76,539,198	314,336,651	251,469,824	80,173,599	331,643,423	266,062,743	84,007,024	350,069,767
2024	240,217,549	77,302,417	317,519,965	255,501,289	81,428,497	336,929,787	271,935,865	85,812,079	357,747,944
2025	240,463,954	77,376,460	317,840,415	257,228,172	81,959,541	339,187,714	275,387,099	86,863,403	362,250,502
2026	241,783,490	77,790,877	319,574,367	260,108,349	82,852,796	342,961,145	280,101,490	88,307,178	368,408,668
2027	243,092,463	78,202,056	321,294,518	262,985,295	83,745,041	346,730,336	284,843,938	89,759,277	374,603,215
2028	245,494,384	78,959,684	324,454,068	267,058,548	85,012,569	352,071,116	290,920,155	91,625,036	382,545,191
2029	245,675,544	79,013,510	324,689,054	268,722,316	85,524,118	354,246,434	294,400,843	92,684,596	387,085,439
2030	246,949,140	79,413,621	326,362,761	271,580,238	86,410,282	357,990,520	299,210,975	94,156,499	393,367,474
2031	248,216,832	79,811,974	328,028,806	274,442,838	87,297,913	361,740,751	304,060,616	95,640,275	399,700,891
2032	250,599,760	80,563,714	331,163,474	278,550,033	88,575,670	367,125,704	310,324,292	97,562,069	407,886,362
2033	250,722,956	80,599,639	331,322,596	280,157,285	89,069,844	369,227,129	313,837,742	98,631,042	412,468,783
2034	251,964,295	80,989,824	332,954,119	283,014,705	89,955,808	372,970,513	318,773,861	100,140,597	418,914,457

Annual Change

	Low			Medium			High		
	Heating	Baseload	Total	Heating	Baseload	Total	Heating	Baseload	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.06%	1.04%	1.06%	1.68%	1.64%	1.67%	2.30%	2.24%	2.29%
2017	0.15%	0.14%	0.15%	0.76%	0.73%	0.75%	1.38%	1.33%	1.37%
2018	0.60%	0.58%	0.60%	1.21%	1.17%	1.20%	1.83%	1.77%	1.82%
2019	0.59%	0.58%	0.59%	1.20%	1.17%	1.19%	1.82%	1.76%	1.81%
2020	1.04%	1.02%	1.04%	1.65%	1.61%	1.64%	2.26%	2.20%	2.25%
2021	0.13%	0.12%	0.13%	0.73%	0.70%	0.72%	1.34%	1.29%	1.33%
2022	0.58%	0.56%	0.57%	1.17%	1.14%	1.16%	1.78%	1.72%	1.77%
2023	0.57%	0.55%	0.57%	1.16%	1.12%	1.15%	1.76%	1.71%	1.75%
2024	1.02%	1.00%	1.01%	1.60%	1.57%	1.59%	2.21%	2.15%	2.19%
2025	0.10%	0.10%	0.10%	0.68%	0.65%	0.67%	1.27%	1.23%	1.26%
2026	0.55%	0.54%	0.55%	1.12%	1.09%	1.11%	1.71%	1.66%	1.70%
2027	0.54%	0.53%	0.54%	1.11%	1.08%	1.10%	1.69%	1.64%	1.68%
2028	0.99%	0.97%	0.98%	1.55%	1.51%	1.54%	2.13%	2.08%	2.12%
2029	0.07%	0.07%	0.07%	0.62%	0.60%	0.62%	1.20%	1.16%	1.19%
2030	0.52%	0.51%	0.52%	1.06%	1.04%	1.06%	1.63%	1.59%	1.62%
2031	0.51%	0.50%	0.51%	1.05%	1.03%	1.05%	1.62%	1.58%	1.61%
2032	0.96%	0.94%	0.96%	1.50%	1.46%	1.49%	2.06%	2.01%	2.05%
2033	0.05%	0.04%	0.05%	0.58%	0.56%	0.57%	1.13%	1.10%	1.12%
2034	0.50%	0.48%	0.49%	1.02%	0.99%	1.01%	1.57%	1.53%	1.56%

Peak Day - Baseload

	Low			Medium			High		
	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total	Daily Baseload	Peak	Total
2015	200,304	3,330,846	3,531,150	200,304	3,352,267	3,552,570	200,304	3,373,687	3,573,991
2016	202,384	3,349,925	3,552,309	203,585	3,391,844	3,595,429	204,786	3,434,120	3,638,906
2017	202,670	3,370,768	3,573,438	205,077	3,433,466	3,638,543	207,502	3,497,218	3,704,721
2018	203,852	3,390,700	3,594,552	207,486	3,474,454	3,681,940	211,177	3,560,303	3,771,481
2019	205,031	3,410,586	3,615,617	209,907	3,515,641	3,725,548	214,899	3,624,183	3,839,082
2020	207,122	3,429,433	3,636,555	213,277	3,555,945	3,769,222	219,626	3,687,682	3,907,308
2021	207,376	3,450,096	3,657,472	214,771	3,598,377	3,813,148	222,457	3,753,978	3,976,435
2022	208,540	3,469,712	3,678,252	217,212	3,639,902	3,857,114	226,292	3,819,855	4,046,147
2023	209,696	3,489,188	3,698,884	219,654	3,681,432	3,901,086	230,156	3,886,232	4,116,389
2024	211,787	3,507,664	3,719,451	223,092	3,722,121	3,945,213	235,102	3,952,279	4,187,380
2025	211,990	3,527,815	3,739,805	224,547	3,764,662	3,989,209	237,982	4,020,703	4,258,685
2026	213,126	3,546,930	3,760,056	226,994	3,806,290	4,033,284	241,937	4,088,686	4,330,624
2027	214,252	3,565,893	3,780,145	229,438	3,847,871	4,077,310	245,916	4,157,072	4,402,988
2028	216,328	3,583,745	3,800,073	232,911	3,888,373	4,121,284	251,027	4,224,744	4,475,772
2029	216,475	3,603,312	3,819,788	234,313	3,930,785	4,165,098	253,930	4,294,871	4,548,801
2030	217,572	3,621,761	3,839,333	236,740	3,972,087	4,208,828	257,963	4,364,222	4,622,185
2031	218,663	3,640,126	3,858,789	239,172	4,013,457	4,252,630	262,028	4,434,141	4,696,169
2032	220,723	3,657,354	3,878,076	242,673	4,053,663	4,296,336	267,293	4,503,186	4,770,479
2033	220,821	3,676,432	3,897,253	244,027	4,096,040	4,340,067	270,222	4,575,092	4,845,314
2034	221,890	3,694,416	3,916,305	246,454	4,137,334	4,383,788	274,358	4,646,250	4,920,608

Annual Change

	Low			Medium			High		
	Base	Peak	Total	Base	Peak	Total	Base	Peak	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.04%	0.57%	0.60%	1.64%	1.18%	1.21%	2.24%	1.79%	1.82%
2017	0.14%	0.62%	0.59%	0.73%	1.23%	1.20%	1.33%	1.84%	1.81%
2018	0.58%	0.59%	0.59%	1.17%	1.19%	1.19%	1.77%	1.80%	1.80%
2019	0.58%	0.59%	0.59%	1.17%	1.19%	1.18%	1.76%	1.79%	1.79%
2020	1.02%	0.55%	0.58%	1.61%	1.15%	1.17%	2.20%	1.75%	1.78%
2021	0.12%	0.60%	0.58%	0.70%	1.19%	1.17%	1.29%	1.80%	1.77%
2022	0.56%	0.57%	0.57%	1.14%	1.15%	1.15%	1.72%	1.75%	1.75%
2023	0.55%	0.56%	0.56%	1.12%	1.14%	1.14%	1.71%	1.74%	1.74%
2024	1.00%	0.53%	0.56%	1.57%	1.11%	1.13%	2.15%	1.70%	1.72%
2025	0.10%	0.57%	0.55%	0.65%	1.14%	1.12%	1.23%	1.73%	1.70%
2026	0.54%	0.54%	0.54%	1.09%	1.11%	1.10%	1.66%	1.69%	1.69%
2027	0.53%	0.53%	0.53%	1.08%	1.09%	1.09%	1.64%	1.67%	1.67%
2028	0.97%	0.50%	0.53%	1.51%	1.05%	1.08%	2.08%	1.63%	1.65%
2029	0.07%	0.55%	0.52%	0.60%	1.09%	1.06%	1.16%	1.66%	1.63%
2030	0.51%	0.51%	0.51%	1.04%	1.05%	1.05%	1.59%	1.61%	1.61%
2031	0.50%	0.51%	0.51%	1.03%	1.04%	1.04%	1.58%	1.60%	1.60%
2032	0.94%	0.47%	0.50%	1.46%	1.00%	1.03%	2.01%	1.56%	1.58%
2033	0.04%	0.52%	0.49%	0.56%	1.05%	1.02%	1.10%	1.60%	1.57%
2034	0.48%	0.49%	0.49%	0.99%	1.01%	1.01%	1.53%	1.56%	1.55%

Therms Usage by Class

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	157,057,829	142,912,719	299,970,548	158,100,174	143,703,580	301,803,755	159,142,520	144,494,441	303,636,961
2016	158,824,963	144,316,992	303,141,955	160,932,343	145,916,462	306,848,805	163,057,607	147,528,616	310,586,223
2017	159,116,198	144,477,324	303,593,522	162,282,685	146,882,820	309,165,506	165,502,761	149,326,370	314,829,131
2018	160,141,983	145,260,104	305,402,087	164,391,160	148,490,031	312,881,191	168,747,907	151,796,426	320,544,333
2019	161,164,171	146,042,033	307,206,204	166,508,262	150,106,620	316,614,882	172,032,229	154,299,208	326,331,437
2020	162,934,749	147,455,335	310,390,084	169,412,430	152,383,094	321,795,524	176,161,793	157,504,334	333,666,127
2021	163,192,477	147,598,011	310,790,488	170,757,360	153,357,419	324,114,779	178,701,877	159,387,540	338,089,416
2022	164,198,216	148,371,707	312,569,923	172,888,109	154,990,712	327,878,822	182,085,169	161,971,759	344,056,928
2023	165,196,154	149,140,497	314,336,651	175,018,306	156,625,117	331,643,423	185,493,418	164,576,349	350,069,767
2024	166,963,669	150,556,297	317,519,965	177,978,633	158,951,154	336,929,787	189,814,688	167,933,256	357,747,944
2025	167,173,145	150,667,269	317,840,415	179,284,105	159,903,609	339,187,714	192,394,667	169,855,835	362,250,502
2026	168,150,638	151,423,730	319,574,367	181,416,390	161,544,755	342,961,145	195,882,368	172,526,300	368,408,668
2027	169,119,794	152,174,724	321,294,518	183,545,439	163,184,897	346,730,336	199,389,814	175,213,401	374,603,215
2028	170,872,280	153,581,788	324,454,068	186,534,424	165,536,692	352,071,116	203,859,171	178,686,020	382,545,191
2029	171,031,002	153,658,052	324,689,054	187,788,905	166,457,529	354,246,434	206,455,356	180,630,083	387,085,439
2030	171,972,698	154,390,063	326,362,761	189,901,713	168,088,807	357,990,520	210,010,128	183,357,347	393,367,474
2031	172,909,431	155,119,375	328,028,806	192,016,875	169,723,876	361,740,751	213,592,543	186,108,348	399,700,891
2032	174,646,444	156,517,030	331,163,474	195,028,587	172,097,116	367,125,704	218,197,516	189,688,846	407,886,362
2033	174,759,951	156,562,645	331,322,596	196,236,772	172,990,356	369,227,129	220,811,280	191,657,504	412,468,783
2034	175,675,737	157,278,382	332,954,119	198,345,274	174,625,239	372,970,513	224,453,355	194,461,102	418,914,457

Annual Change

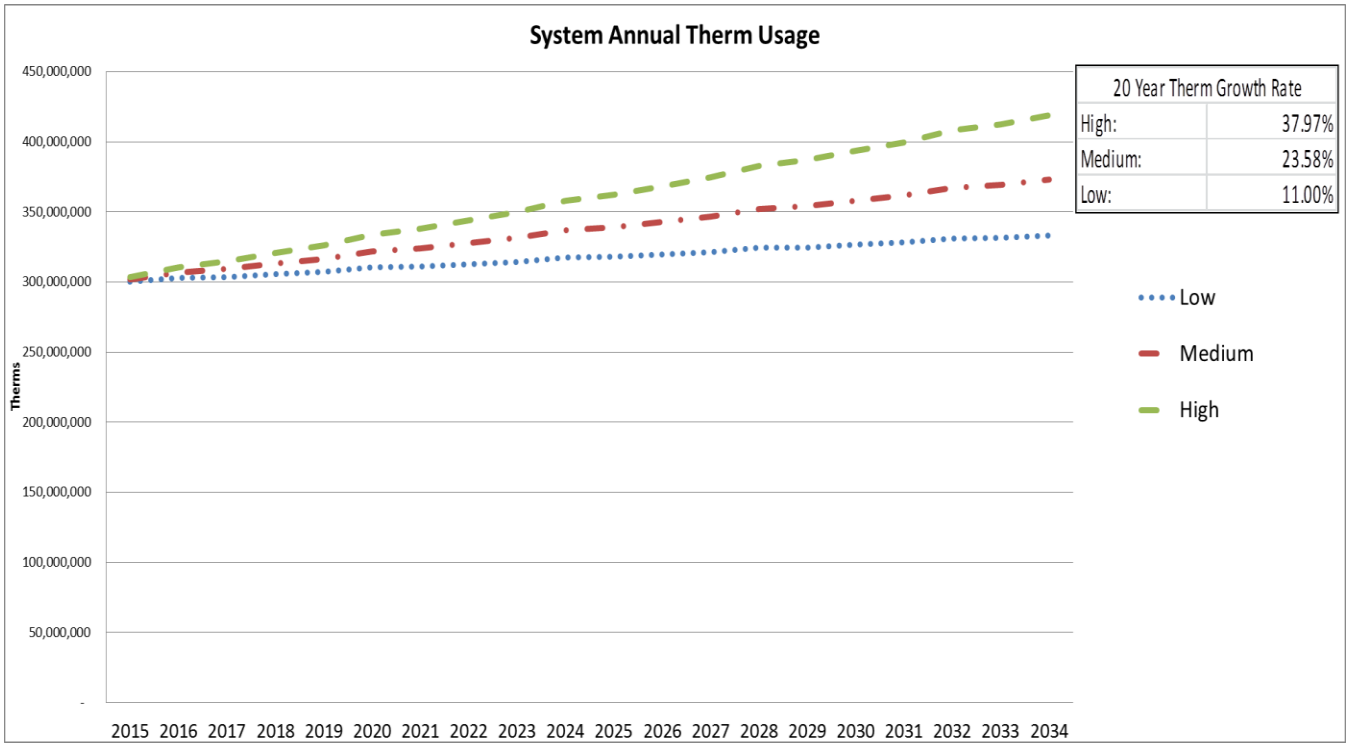
	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	1.13%	0.98%	1.06%	1.79%	1.54%	1.67%	2.46%	2.10%	2.29%
2017	0.18%	0.11%	0.15%	0.84%	0.66%	0.75%	1.50%	1.22%	1.37%
2018	0.64%	0.54%	0.60%	1.30%	1.09%	1.20%	1.96%	1.65%	1.82%
2019	0.64%	0.54%	0.59%	1.29%	1.09%	1.19%	1.95%	1.65%	1.81%
2020	1.10%	0.97%	1.04%	1.74%	1.52%	1.64%	2.40%	2.08%	2.25%
2021	0.16%	0.10%	0.13%	0.79%	0.64%	0.72%	1.44%	1.20%	1.33%
2022	0.62%	0.52%	0.57%	1.25%	1.07%	1.16%	1.89%	1.62%	1.77%
2023	0.61%	0.52%	0.57%	1.23%	1.05%	1.15%	1.87%	1.61%	1.75%
2024	1.07%	0.95%	1.01%	1.69%	1.49%	1.59%	2.33%	2.04%	2.19%
2025	0.13%	0.07%	0.10%	0.73%	0.60%	0.67%	1.36%	1.14%	1.26%
2026	0.58%	0.50%	0.55%	1.19%	1.03%	1.11%	1.81%	1.57%	1.70%
2027	0.58%	0.50%	0.54%	1.17%	1.02%	1.10%	1.79%	1.56%	1.68%
2028	1.04%	0.92%	0.98%	1.63%	1.44%	1.54%	2.24%	1.98%	2.12%
2029	0.09%	0.05%	0.07%	0.67%	0.56%	0.62%	1.27%	1.09%	1.19%
2030	0.55%	0.48%	0.52%	1.13%	0.98%	1.06%	1.72%	1.51%	1.62%
2031	0.54%	0.47%	0.51%	1.11%	0.97%	1.05%	1.71%	1.50%	1.61%
2032	1.00%	0.90%	0.96%	1.57%	1.40%	1.49%	2.16%	1.92%	2.05%
2033	0.06%	0.03%	0.05%	0.62%	0.52%	0.57%	1.20%	1.04%	1.12%
2034	0.52%	0.46%	0.49%	1.07%	0.95%	1.01%	1.65%	1.46%	1.56%

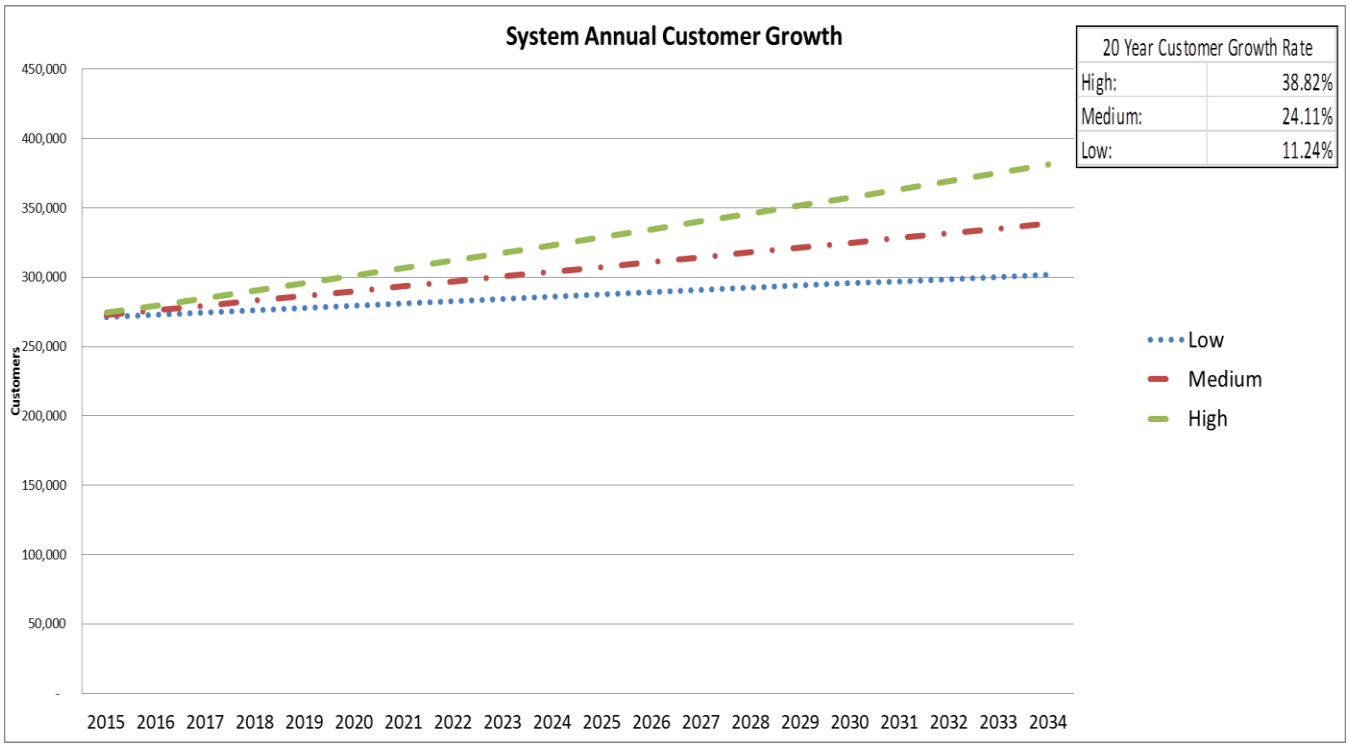
Customer Count Forecast

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	235,763	35,426	271,189	237,257	35,634	272,891	238,751	35,842	274,593
2016	237,239	35,632	272,871	240,246	36,051	276,297	243,277	36,474	279,751
2017	238,712	35,838	274,550	243,250	36,471	279,721	247,863	37,115	284,978
2018	240,183	36,044	276,227	246,273	36,894	283,166	252,513	37,765	290,277
2019	241,650	36,249	277,899	249,308	37,319	286,627	257,219	38,423	295,642
2020	243,107	36,453	279,559	252,347	37,744	290,091	261,967	39,087	301,053
2021	244,561	36,657	281,218	255,402	38,171	293,573	266,775	39,759	306,534
2022	246,006	36,859	282,865	258,459	38,599	297,058	271,622	40,437	312,060
2023	247,439	37,060	284,499	261,514	39,027	300,541	276,504	41,120	317,625
2024	248,867	37,260	286,127	264,579	39,456	304,035	281,437	41,810	323,247
2025	250,280	37,458	287,738	267,634	39,884	307,518	286,389	42,503	328,892
2026	251,685	37,655	289,340	270,693	40,312	311,005	291,383	43,202	334,585
2027	253,079	37,850	290,929	273,748	40,740	314,487	296,405	43,904	340,309
2028	254,460	38,044	292,504	276,797	41,167	317,964	301,454	44,610	346,064
2029	255,827	38,236	294,062	279,835	41,592	321,427	306,518	45,318	351,836
2030	257,181	38,426	295,606	282,865	42,016	324,882	311,604	46,029	357,634
2031	258,528	38,615	297,143	285,900	42,441	328,341	316,730	46,746	363,476
2032	259,863	38,802	298,665	288,926	42,865	331,791	321,876	47,465	369,341
2033	261,190	38,988	300,178	291,952	43,289	335,241	327,056	48,190	375,245
2034	262,508	39,173	301,681	294,977	43,712	338,689	332,265	48,918	381,183

Annual Change

	Low			Medium			High		
	Res	Com/Ind	Total	Res	Com/Ind	Total	Res	Com/Ind	Total
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.63%	0.58%	0.62%	1.26%	1.17%	1.25%	1.90%	1.76%	1.88%
2017	0.62%	0.58%	0.62%	1.25%	1.16%	1.24%	1.89%	1.76%	1.87%
2018	0.62%	0.57%	0.61%	1.24%	1.16%	1.23%	1.88%	1.75%	1.86%
2019	0.61%	0.57%	0.61%	1.23%	1.15%	1.22%	1.86%	1.74%	1.85%
2020	0.60%	0.56%	0.60%	1.22%	1.14%	1.21%	1.85%	1.73%	1.83%
2021	0.60%	0.56%	0.59%	1.21%	1.13%	1.20%	1.84%	1.72%	1.82%
2022	0.59%	0.55%	0.59%	1.20%	1.12%	1.19%	1.82%	1.71%	1.80%
2023	0.58%	0.54%	0.58%	1.18%	1.11%	1.17%	1.80%	1.69%	1.78%
2024	0.58%	0.54%	0.57%	1.17%	1.10%	1.16%	1.78%	1.68%	1.77%
2025	0.57%	0.53%	0.56%	1.15%	1.08%	1.15%	1.76%	1.66%	1.75%
2026	0.56%	0.53%	0.56%	1.14%	1.07%	1.13%	1.74%	1.64%	1.73%
2027	0.55%	0.52%	0.55%	1.13%	1.06%	1.12%	1.72%	1.63%	1.71%
2028	0.55%	0.51%	0.54%	1.11%	1.05%	1.11%	1.70%	1.61%	1.69%
2029	0.54%	0.50%	0.53%	1.10%	1.03%	1.09%	1.68%	1.59%	1.67%
2030	0.53%	0.50%	0.53%	1.08%	1.02%	1.07%	1.66%	1.57%	1.65%
2031	0.52%	0.49%	0.52%	1.07%	1.01%	1.06%	1.64%	1.56%	1.63%
2032	0.52%	0.48%	0.51%	1.06%	1.00%	1.05%	1.62%	1.54%	1.61%
2033	0.51%	0.48%	0.51%	1.05%	0.99%	1.04%	1.61%	1.53%	1.60%
2034	0.50%	0.47%	0.50%	1.04%	0.98%	1.03%	1.59%	1.51%	1.58%


System Annual Therm Usage
Therms
450,000,000
400,000,000
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Therm Growth Rate
High: 37.97%
Medium: 23.58%
Low: 11.00%
Low
Medium
High


System Annual Customer Growth
Customers
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
20 Year Customer Growth Rate
High: 38.82%
Medium: 24.11%
Low: 11.24%
Low
Medium
High

Pipeline Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
Anacortes Bare Steel Replacement - Phase III	Mt. Vernon	Bare steel replacement as part of Pipe Replacement Program. Carry over from 2013	$ 2,345,460.00	$ 1,950,000.00	$ 2,345,460.00	$ 1,950,000.00	$ 2,345,460.00	$ 1,950,000.00	$ 2,345,460.00	$ 1,950,000.00	$ 2,345,460.00	$ 11,727,300.00
Longview Bare Steel Replacement - Phase IV	Longview	Bare steel replacement as part of Pipe Replacement Program	$ 2,345,460.00	$ 2,050,000.00	$ 2,465,740.00	$ 2,150,000.00	$ 2,586,020.00	$ 2,150,000.00	$ 2,586,020.00	$ -	$ -	$ 9,983,240.00
Kelso Bare Steel Replacement - Phase I	Longview	Bare steel replacement as part of Pipe Replacement Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,000,000.00	$ 2,405,600.00	$ 2,405,600.00
12" Longview HP Replacement - Phase I	Longview	Bare steel replacement as part of Pipe Replacement Program	$ -	$ 1,191,611.00	$ 1,433,269.71	$ 1,532,071.00	$ 1,842,775.00	$ 1,702,302.00	$ 2,047,528.85	$ 1,702,302.00	$ 2,047,528.85	$ 7,371,102.40
Kelso Mill Street Replacement	Longview	100 ft @ S. 11th	$ 150,350.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,350.00
Kitsap Phase IV Construction	Aberdeen	Transmission line construction. 4.25 miles.	$ 8,419,600.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,419,600.00
Kitsap Phase V ROW Acquisition	Aberdeen	ROW acquisition for transmission line	$ -	$ 500,000.00	$ 601,400.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 601,400.00
Kitsap Phase V Construction	Aberdeen	Transmission line construction. ≈ 3 miles	$ -	$ -	$ -	$ 5,000,000.00	$ 6,014,000.00	$ -	$ -	$ -	$ -	$ 6,014,000.00
Shelton Bare Steel Replacement - Phase I	Aberdeen	Bare steel replacement as part of Pipe Replacement Program	$ -	$ 1,400,000.00	$ 1,683,920.00	$ 1,400,000.00	$ 1,683,920.00	$ 1,400,000.00	$ 1,683,920.00	$ 1,400,000.00	$ 1,683,920.00	$ 6,735,680.00
McCleary 2" IP Reinforcement/Replacement	Aberdeen	Reinforce/replace 2" IP at gate with 3,100 ft of 4" HP	$ -	$ -	$ -	$ 270,000.00	$ 324,756.00	$ -	$ -	$ -	$ -	$ 324,756.00
Vance Creek Exposure	Aberdeen	8" Grays Harbor Line - pipe exposed in creek. Replace approx. 800 ft. by HDD	$ 1,202,800.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,202,800.00
Camp Creek Exposure	Aberdeen	8" Grays Harbor Line - pipe exposed in cree, off CC 100. Replace approx. 800 ft by HDD.	$ 1,202,800.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,202,800.00
Ferndale Reinforcement	Bellingham	Reinforcement near Olson Road and Mountain View Road	$ 726,337.24		$ -		$ -		$ -		$ -	$ 726,337.24
Arlington 6" HP Reinforcement	Mt. Vernon	Previously on 5 year budget.	$ -	$ 1,425,180.00	$ 1,714,206.50	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,714,206.50
Stanwood Reinforcement	Mt. Vernon	≈ 1,500 ft of 4" PE (2017 Project)	$ -	$ -	$ -	$ 95,000.00	$ 114,266.00	$ -	$ -	$ -	$ -	$ 114,266.00
Sedro Woolley IP Reinforcement	Mt. Vernon	≈ 500 ft at Highway 20 crossing (2016 project)	$ -	$ 85,000.00	$ 102,238.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 102,238.00
3" Burlington HP Line ROW	Mt. Vernon	2015 project	$ 150,350.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,350.00
3" Burlington HP Line Construction	Mt. Vernon	6,700 ft HP steel. 2016 project	$ -	$ 675,000.00	$ 811,890.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 811,890.00
Burlington Reinforcement at Peterson Road	Mt. Vernon	Replace about 6,500 ft 2 in with larger pipe. 2017 project	$ -	$ -	$ -	$ 240,000.00	$ 288,672.00	$ -	$ -	$ -	$ -	$ 288,672.00
8" Attalia HP Line - Phase I	Kennewick	Phase I of a multi-phase replacement between the gate and Snake River. 1950s pipeline. ≈ 1 mile.	$ -	$ 1,000,000.00	$ 1,202,800.00	$ 1,200,000.00	$ 1,443,360.00	$ 1,400,000.00	$ 1,683,920.00	$ 1,400,000.00	$ 1,683,920.00	$ 6,014,000.00
Walla Walla HP Line	Walla Walla	HP Line from new Walla Walla gate	$ -	$ -	$ -	$ 1,300,000.00	$ 1,563,640.00	$ -	$ -	$ -	$ -	$ 1,563,640.00
`	Kennewick	HP main to accommodate new growth and coordinate with City of Kennewick construction	$ 846,195.59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 846,195.59
Handord DOE	Kennewick	12" HP line to Hanford Nuclear Reservation	$ 2,180,315.56	$ 25,520,000.00	$ 30,695,456.00	$ 22,600,000.00	$ 27,183,280.00	$ -	$ -	$ -	$ -	$ 60,059,051.56
Bend Bare Steel Replacement - Phase IV	Bend	Continuation of bare steel replacement project.	$ 2,405,600.00	$ 2,000,000.00	$ 2,405,600.00	$ 2,000,000.00	$ 2,405,600.00	$ 2,000,000.00	$ 2,405,600.00	$ 2,000,000.00	$ 2,405,600.00	$ 12,028,000.00
12" Bend HP Line #1 Replacement	Bend	Replacing shallow/exposed line near high school and elementary	$ -	$ 1,500,000.00	$ 1,804,200.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,804,200.00
4" Madras HP Line	Bend		$ -	$ 500,000.00	$ 601,400.00	$ 500,000.00	$ 601,400.00	$ 500,000.00	$ 601,400.00	$ 500,000.00	$ 601,400.00	$ 2,405,600.00
Hermiston 2" Steel Reinforcement	Pendleton	≈ 1,000 ft of 2" steel, will allow retirement of R-26. 5 year plan to address Cold Springs area.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6" Pilot Rock Line Replacement	Pendleton	≈ 2,100 ft of 6" HP steel line to replace exisitng from rectifier @ Circle Road and CR-1386 to R-59.	$ -	$ 400,000.00	$ 481,120.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 481,120.00
4" Pilot Rock IP Reinforcement	Pendleton	4" plastic main reinforcement from R-64 to bridge in town. ≈ 2,500 ft	$ -	$ 400,000.00	$ 481,120.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 481,120.00
Umatilla 2" Reinforcement	Pendleton	Reinforce Umatilla IP system from the east, crossing under I-82, approx. 5,000 ft. 4 in HP steel	$ -	$ -	$ -	$ -	$ -	$ 500,000.00	$ 601,400.00	$ -	$ -	$ 601,400.00
Yakima Bare Steel Replacement	Yakima	Multi phase project	$ -	$ -	$ -	$ -	$ -	$ 1,950,000.00	$ 2,345,460.00	$ 1,950,000.00	$ 2,345,460.00	$ 4,690,920.00
Milton-Freewater Bare Steel Replacement	Pendleton		$ -	$ 1,525,000.00	$ 1,834,270.00	$ 1,525,000.00	$ 1,834,270.00	$ 1,525,000.00	$ 1,834,270.00		$ -	$ 5,502,810.00
Pendleton/Pilot Rock Bare Steel Replacement	Pendleton		$ -	$ 1,600,000.00	$ 1,924,480.00	$ 1,600,000.00	$ 1,924,480.00	$ 1,600,000.00	$ 1,924,480.00	$ 1,600,000.00	$ 1,924,480.00	$ 7,697,920.00
Pendleton 4" IP Reinforcement	Pendleton	2,800 ft of 4 in PE connecting Ladow Ave to Tutuilla Road	$ -	$ 400,000.00	$ 481,120.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 481,120.00
Pendleton 4" HP Reinforcement	Pendleton	2019 project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300,000.00	$ 360,840.00	$ 360,840.00
Pendleton Korvola Road 4 in PE Reinforcement	Pendleton	2,700 ft of 4 in PE from Korvola and 45th to McKay Creek crossing	$ -	$ -	$ -	$ -	$ -	$ 400,000.00	$ 481,120.00	$ -	$ -	$ 481,120.00
4" Grandview HP Line #3 Replacement	Yakima		$ 1,172,730.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,172,730.00
8" Future High Pressure	Yakima		$ -	$ 750,000.00	$ 902,100.00	$ 1,000,000.00	$ 1,202,800.00	$ 1,000,000.00	$ 1,202,800.00	$ -	$ -	$ 3,307,700.00
River Road Reinforcement	Yakima		$ -	$ 300,000.00	$ 360,840.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,840.00
Silverdale Reinforcement @ HWY3	Bremerton		$ -	$ 871,135.00	$ 1,047,801.18		$ -		$ -		$ -	$ 1,047,801.18
Port Orchard Reinforcement	Bremerton	≈ 1,850 ft of 4" PE. 2016 project.	$ -	$ 165,000.00	$ 198,462.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 198,462.00
Manchester Reinforcement	Bremerton	≈ 5,400 ft of 4" PE. 2017 project.	$ -	$ -	$ -	$ 200,000.00	$ 240,560.00	$ -	$ -	$ -	$ -	$ 240,560.00
Othello Reinforcement	Wenatchee	Reinforcement along Reynolds/14th Avenue, approx. 5,300 ft, 2016 project	$ -	$ 292,000.00	$ 351,217.60	$ -	$ -	$ -	$ -	$ -	$ -	$ 351,217.60
Ontario 6" IP Replacement	Eastern Oregon	≈ 300 feet long	$ 294,337.19		$ -		$ -		$ -		$ -	$ 294,337.19
Highway 3 Casing Removal	Bremerton	Replace casing/carrier pipe. High priority.	$ 195,092.96	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 195,092.96
Sunnyside 2" IP Main	Yakima	Remove R-58 and replace house piping with 2" main and service lines at Sunnyside mental facility	$ 331,972.80		$ -		$ -		$ -		$ -	$ 331,972.80

Gate Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
Arlington Gate Upgrade	Mt. Vernon	Carry over from 2013	$ 2,405,600.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,405,600.00
McCleary Gate Heater	Aberdeen	Necessary for 2014 to coordinate with Williams	$ 150,350.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,350.00
McCleary Gate Upgrade	Aberdeen	Station rebuild with R-10, R-52 and O-2. Also includes replacing 8" line between CNGC and Williams. Unodorized gas for ≈	$ 2,225,180.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,225,180.00
Southridge Gate Station Project	Kennewick	Gate station to accommodate new growth	$ 1,152,522.96		$ -		$ -		$ -		$ -	$ 1,152,522.96
Sun River Gate Upgrade	Bend	Previously on 5 year budget	$ 2,258,301.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,258,301.85
Ontario Gate Upgrade	Eastern Oregon	Part of Frys Foods upgrade - include odorizer	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bellingham Gate Upgrade	Bellingham	Carry over from 2014	$ 655,526.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 655,526.00
New Walla Walla Gate	Walla Walla		$ -	$ -	$ -	$ 2,500,000.00	$ 3,007,000.00	$ -	$ -	$ -	$ -	$ 3,007,000.00

Odorizer Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
			$ -		$ -		$ -		$ -		$ -	$ -

Reg Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
R-26 Relocate	Bremerton	Vault in narrow lot in residential area. Will require a new reg station with a building to reduce noise. Bremerton #2 priority.	$ 360,840.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,840.00
R-64	Bremerton	Reg station in vault in street. Want to relocate, along with valve, to Walgreens property in Silverdale. Bremerton #5 priority.	$ -	$ 155,000.00	$ 186,434.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 186,434.00

Valve Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
V-22	Bremerton	Burwell and Callow in Bremerton. 8" Rockwell plug valve located in drivline at bottom of hill. Need to relocate to parking are	$ 210,490.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 210,490.00

Chico Check Meter	Bremerton	Leaking Cameron valves	$ -	$ 175,000.00	$ 210,490.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 210,490.00
V-23 Retirement and New Valve	Pendleton	Valve near college baseball fields and RR tracks. To be retired and replaced near R-52 to allow isolation of Pilot Rock line.	$ 228,532.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,532.00
V-13	Bremerton	Sidney Avenue and Radey Street in Port Orchard. In a vault in drivelane with a bad lid. Want to relocate to back of ROW o	$ 150,350.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,350.00
V-29	Pendleton	4" valve off of 8" Boardman line	$ 121,482.80	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,482.80
V-9	Aberdeen	In a vault on Grays Harbor line	$ -	$ 165,000.00	$ 198,462.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 198,462.00

Bridge/Exposure Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
Bellingham Bridge Crossing Removal	Bellingham	Removing pipe from bridges, installing new reg station & 1700ft of 2", and remove ≈ 25-30 reg stations	$ 962,240.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 962,240.00
Squalicum Creek Exposure	Bellingham	Contractor bid from Michels Pipeline for $405,000. Commission has commented.	$ 902,100.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 902,100.00
Shelton 4" IP Bridge Removal	Aberdeen		$ 277,018.07	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 277,018.07
Kelso Grade Street Bridge Removal	Longview		$ 300,700.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300,700.00
Mt. Washington Bridge	Bend	Pedestrian bridge will be removed in the future.	$ -	$ 375,000.00	$ 451,050.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 451,050.00
American Lane Bridge	Bend	Pipeline is encased in concrete (thrust block?) from city water project. May require replacement due to City of Bend project	$ -	$ 250,000.00	$ 300,700.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 300,700.00

Forced Relocations	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
Dakota Creek Bridge Relocate - Blaine	Bellingham		$ 1,022,380.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,022,380.00
R-47 Relocate	Bremerton	County project to restore fish habitat. May replace or remove and add piping.	$ 144,336.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 144,336.00
Bremerton R-146 Project - Tremont Road	Bremerton	Includes relocating R-146, ≈400 ft of 2" steel IP main, ≈300 ft of 2" steel HP main, ≈1,500 ft of 4" steel HP main, and ≈7 HPS	$ 560,504.80	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 560,504.80
Woodland Roundabout Forced Relocate	Longview	Lewis River Road and Old Pacific Highway	$ 210,490.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 210,490.00
College Place CARS Project	Walla Walla	Forced relocation along College Avenue	$ 2,439,282.01		$ -		$ -		$ -		$ -	$ 2,439,282.01

Other Projects	District	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
16" N. Whatcom Valve Vaults	Bellingham		$ 150,350.00	$ 125,000.00	$ 150,350.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 300,700.00

Blanket FPs	State	Notes	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Loaded
Mains - OR	Oregon		$ 489,539.60	$ 413,105.00	$ 496,882.69	$ 419,301.58	$ 504,335.93	$ 425,591.10	$ 511,900.97	$ 431,974.97	$ 519,579.49	$ 2,522,238.69
General Reinforcement - OR	Oregon		$ 123,287.00	$ 126,018.12	$ 151,574.59	$ 126,018.12	$ 151,574.59	$ 126,018.12	$ 151,574.59	$ 126,018.12	$ 151,574.59	$ 729,585.38
General Relocation/Replacement	Oregon	Emerging relocation, pipe replacement, valve replacement	$ 339,189.60	$ 556,764.60	$ 669,676.46	$ 556,764.60	$ 669,676.46	$ 556,764.60	$ 669,676.46	$ 556,764.60	$ 669,676.46	$ 3,017,895.44
General Gate Station Upgrade or Reg Station Replacement	Oregon	Emerging gate station station upgrade, reg station replacement, odorizer replacement	$ 122,685.60	$ 103,530.00	$ 124,525.88	$ 105,082.95	$ 126,393.77	$ 106,659.19	$ 128,289.68	$ 108,259.08	$ 130,214.02	$ 632,108.96
Services - OR	Oregon		$ 1,146,636.42	$ 1,000,032.00	$ 1,202,838.49	$ 1,035,036.00	$ 1,244,941.30	$ 1,071,264.00	$ 1,288,516.34		$ -	$ 4,882,932.55
Large Volume Meter Sets	Oregon		$ 49,314.80	$ 42,006.00	$ 50,524.82	$ 42,006.00	$ 50,524.82	$ 42,006.00	$ 50,524.82	$ 42,006.00	$ 50,524.82	$ 251,414.07
Mains - WA	Washington		$ 979,079.20	$ 826,210.00	$ 993,765.39	$ 838,603.15	$ 1,008,671.87	$ 851,182.20	$ 1,023,801.95	$ 863,949.93	$ 1,039,158.98	$ 5,044,477.38
General Reinforcement	Washington		$ 342,196.60	$ 255,453.24	$ 307,259.16	$ 255,453.24	$ 307,259.16	$ 264,396.00	$ 318,015.51		$ -	$ 1,274,730.42
General Relocation/Replacement	Washington	Emerging relocation, pipe replacement, valve replacement	$ 1,176,338.40	$ 981,144.00	$ 1,180,120.00	$ 981,144.00	$ 1,180,120.00	$ 1,015,488.00	$ 1,221,428.97		$ -	$ 4,758,007.37
General Gate Station Upgrade or Reg Station Replacement	Washington	Emerging gate station station upgrade, reg station replacement, odorizer replacement	$ 294,686.00	$ 408,552.00	$ 491,406.35	$ 408,552.00	$ 491,406.35	$ 408,552.00	$ 491,406.35	$ 408,552.00	$ 491,406.35	$ 2,260,311.38
Services - WA	Washington		$ 3,439,909.25	$ 2,902,816.67	$ 3,491,507.89	$ 2,946,358.92	$ 3,543,880.50	$ 2,990,554.30	$ 3,597,038.71	$ 3,035,412.61	$ 3,650,994.29	$ 17,723,330.64
Large Volume Meter Sets	Washington		$ 122,685.60	$ 102,138.12	$ 122,851.73	$ 102,138.12	$ 122,851.73	$ 102,138.12	$ 122,851.73	$ 102,138.12	$ 122,851.73	$ 614,092.52
		TOTAL BLANKET FUNDING PROJECTS	**$ 8,625,548.06**	**$ 7,717,769.75**	**$ 9,282,933.45**	**$ 7,816,458.67**	**$ 9,401,636.49**	**$ 7,960,613.63**	**$ 9,575,026.07**	**$ 5,675,075.43**	**$ 6,825,980.73**	**$ 43,711,124.81**

TOTAL SPECIFIC AND BLANKET FUNDING PROJECTS	**$ 49,483,525.89**	**$ 55,462,695.75**	**$ 66,710,530.44**	**$ 54,878,529.67**	**$ 66,007,895.49**	**$ 26,037,915.63**	**$ 31,318,404.92**	**$ 20,477,377.43**	**$ 24,630,189.57**	**$ 238,150,546.32**

Gate Projects	District	2015 Direct Cost - Cascade Owned	2015 Direct Cost - Non-Cascade Owned	Notes
Arlington Gate Upgrade	Mt. Vernon	$ 1,200,000.00	$ 800,000.00	
McCleary Gate Heater	Aberdeen	$ 125,000.00	$ -	All Williams costs paid in 2014
McCleary Gate Upgrade	Aberdeen	$ 1,050,000.00	$ 800,000.00	
Southridge Gate Station Project	Kennewick	$ 958,200.00	$ -	All Williams costs paid in 2014
Sun River Gate Upgrade	Bend	$ 604,837.29	$ 1,272,700.00	
Bellingham Gate Upgrade	Bellingham	$ 545,000.00	$ -	All Williams costs paid in 2014

2015-2019 SPECIFIC PROJECTS

Pipeline Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded
Anacortes Bare Steel Replacement - Phase III	Mt. Vernon	Bare steel replacement as part of Pipe Replacement Program. Carry over from 2013	$ 1,950,000.00	$ 2,405,715.00	$ 1,950,000.00	$ 2,405,715.00	$ 1,950,000.00	$ 2,405,715.00	$ 1,950,000.00	$ 2,405,715.00	$ 1,950,000.00	$ 2,405,715.00	$ 9,750,000.00	$ 12,028,575.00
Arlington 6" HP Reinforcement	Mt. Vernon	Previously on 5 year budget.	$ -	$ -	$ 1,425,180.00	$ 1,758,244.57	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,425,180.00	$ 1,758,244.57
Stanwood Reinforcement	Mt. Vernon	≈ 1,500 ft of 4" PE (2017 Project)	$ -	$ -	$ -	$ -	$ 95,000.00	$ 117,201.50	$ -	$ -	$ -	$ -	$ 95,000.00	$ 117,201.50
Sedro Woolley IP Reinforcement	Mt. Vernon	≈ 500 ft at Highway 20 crossing (2016 project)	$ -	$ -	$ 85,000.00	$ 104,864.50	$ -	$ -	$ -	$ -	$ -	$ -	$ 85,000.00	$ 104,864.50
3" Burlington HP Line ROW	Mt. Vernon	2015 project	$ 125,000.00	$ 154,212.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,000.00	$ 154,212.50
3" Burlington HP Line Construction	Mt. Vernon	6,700 ft HP steel. 2016 project	$ -	$ -	$ 675,000.00	$ 832,747.50	$ -	$ -	$ -	$ -	$ -	$ -	$ 675,000.00	$ 832,747.50
Burlington Reinforcement at Peterson Road	Mt. Vernon	Replace about 6,500 ft 2 in with larger pipe. 2017 project	$ -	$ -	$ -	$ -	$ 240,000.00	$ 296,088.00	$ -	$ -	$ -	$ -	$ 240,000.00	$ 296,088.00

Gate Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded
Arlington Gate Upgrade	Mt. Vernon	Carry over from 2013	$ 2,000,000.00	$ 2,467,400.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,000,000.00	$ 2,467,400.00

Odorizer Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded
				$ -		$ -		$ -		$ -		$ -	$ -	$ -

Reg Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded

Valve Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded

Bridge/Exposure Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded

Forced Relocations	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded

Other Projects	District	Notes	2015 Direct Cost	2015 Loaded Cost	2016 Direct Cost	2016 Loaded Cost	2017 Direct Cost	2017 Loaded Cost	2018 Direct Cost	2018 Loaded Cost	2019 Direct Cost	2019 Loaded Cost	Total Direct	Total Loaded
		TOTAL SPECIFIC FUNDING PROJECTS	**$ 4,075,000.00**	**$ 5,027,327.50**	**$ 4,135,180.00**	**$ 5,101,571.57**	**$ 2,285,000.00**	**$ 2,819,004.50**	**$ 1,950,000.00**	**$ 2,405,715.00**	**$ 1,950,000.00**	**$ 2,405,715.00**	**$ 14,395,180.00**	**$ 17,759,333.57**

2015 SPECIFIC PROJECTS

FP #	Pipeline Projects	District	Notes
200687	Anacortes Bare Steel Replacement - Phase III	Mt. Vernon	Bare steel replacement as part of Pipe Replacement Program.
200686	Longview Bare Steel Replacement - Phase IV	Longview	Bare steel replacement as part of Pipe Replacement Program.
306996	Kelso Mill Street Replacement	Longview	100 ft @ S. 11th to repair leak. Costs will be higher due to restoration in the street. Replace for safety & reliability.
200080	Kitsap Phase IV Construction	Aberdeen	HP line to parallel 8" Kitsap line. Growth/reliability is driving project.
306982	Vance Creek Exposure	Aberdeen	8" Grays Harbor Line - pipe exposed in creek. Replace approx. 800 ft. by HDD for safety & reliabililty.
306983	Camp Creek Exposure	Aberdeen	8" Grays Harbor Line - pipe exposed in creek, off CC 100. Replace approx. 800 ft by HDD for safety & reliability.
307181	Ferndale Reinforcement	Bellingham	Reinforcement near Olson Road and Mountain View Road to increase low pressure area and prepare for growth.
306986	3" Burlington HP Line ROW	Mt. Vernon	Obtaining ROW to replace problematic line as part of 2015 project. Project driven for safety & reliability.
302588	Hildebrand Boulevard HP Main	Kennewick	HP main to accommodate new growth and coordinate with City of Kennewick construction.
200076	Handord DOE	Kennewick	12" HP line to Hanford Nuclear Reservation.
200688	Bend Bare Steel Replacement - Phase IV	Bend	Continuation of bare steel replacement project.
304022	4" Grandview HP Line #3 Replacement	Yakima	Replacing aged line that commission has commented on. Part of MAOP validation work.
307026	Ontario 6" IP Replacement	Eastern Oregon	≈ 300 feet long. Multiple leaks on corroded pipe (pre-CNG). Safety & reliability issue.
307027	Highway 3 Casing Removal	Bremerton	Replace casing/carrier pipe. High priority due to shorted casing.Project driven by safety & reliability.
307024	Sunnyside 2" IP Main	Yakima	Remove R-58 and replace former house piping with main and service lines at Sunnyside mental facility. Safety & reliability issue.

FP #	Gate Projects	District	Notes
101505	Arlington Gate Upgrade	Mt. Vernon	Increase gate capacity. Has been planned for approximately 5 years.
302645	McCleary Gate Heater	Aberdeen	Necessary for 2015 to coordinate with Williams.
302724	McCleary Gate Upgrade	Aberdeen	Station rebuild with R-10, R-52, and O-2. Also includes replacing 8" line between CNGC and Williams. Unodorized gas for ≈ 100 ft, piting @ regs and odorizer, incorporates heater.
302648	Southridge Gate Station Project	Kennewick	Gate station to accommodate new growth.
200282	Sun River Gate Upgrade	Bend	Increase gate capacity. Has been planned for approximately 4 years.
304020	Bellingham Gate Upgrade	Bellingham	Carry over from 2014.

FP #	Reg Projects	District	Notes
302652	R-26 Relocate	Bremerton	Vault in narrow lot in residential area. Will require a new reg station with a building to reduce noise. Existing station is a safety & reliability issue.

FP #	Valve Projects	District	Notes
302705	V-22	Bremerton	Burwell & Callow in Bremerton, 8" Rockwell plug valve located in driveline at bottom of hill. Need to relocate to parking area, out of driveline, safety & reliability issue.
302714	V-23 Retirement and New Valve	Pendleton	Valve near college baseball fields and RR tracks. To be retired and replaced near R-52 to allow isolation of Pilot Rock line. Safety & reliability issue.
306999	V-13	Bremerton	Sidney Avenue and Radey Street in Port Orchard. In a vault in drivelane with a bad lid. Want to relocate to back of ROW or in an easement. Safety & reliability issue.
307001	V-29	Pendleton	4" valve off of 8" Boardman line. Safety and reliability issue.
307002	V-9	Aberdeen	In a vault on Grays Harbor line. Safety & reliability issue.

FP #	Bridge/Exposure Projects	District	Notes
302663	Bellingham Bridge Crossing Removal	Bellingham	Removing pipe from bridges, installing new reg station & 1,700 ft of 2", and remove ≈ 25 HPSS. Part of MAOP validation work.
200394	Squalicum Creek Exposure	Bellingham	Contractor bid from Michels Pipeline for $405,000. Commission has commented. Safety & reliability issue.
307025	Shelton 4" IP Bridge Removal	Aberdeen	Metal-metal/metal-concrete bridge crossing. Safety & reliability issue.
307212	Kelso Grade Street Bridge Removal	Longview	Metal-metal/metal-concrete bridge crossing. Safety & reliability issue.

FP #	Forced Relocations	District	Notes
307003	Dakota Creek Bridge Relocate - Blaine	Bellingham	Forced relocate.
302670	R-47 Relocate	Bremerton	County project to restore fish habitat. May replace or remove and add piping. Forced relocate.
302672	Bremerton R-146 Project - Tremont Road	Bremerton	Includes relocating R-146, ≈ 400 ft of 2" steel IP main, ≈ 300 ft of 2" steel HP main, and ≈ 1,500 ft of 4" steel HP main, and ≈ 7 HPSS. Forced relocate.
307213	Woodland Roundabout Forced Relocate	Longview	Lewis River Road and Old Pacific Highway. Forced relocate.
305740	College Place CARS Project	Walla Walla	Forced relocation along College Avenue.

FP #	Other Projects	District	Notes
302715	16" N. Whatcom Valve Vaults	Bellingham	Part of MAOP validation work.



In the Community to Serve®

2014
Integrated Resource Plan

Appendix Volume 3 (Sec D-E)

Appendix D

Demand Side Management

Cascade Natural Gas Corporation

Integrated Resource Plan 2014

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CASCADE NATURAL GAS CORPORATION
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Cascade Natural Gas Conservation Incentive Program Existing & New Homes Incentives

New & Existing Homes

Energy-Saving Measure	Basic Specifications	Incentive
High-Efficiency Natural Gas Furnace[1]	95% + AFUE	$250
High-Efficiency Natural Gas Hearth (Fireplace)	70% + FE (Fireplace Efficiency)[2] 80% + AFUE (Annual Fuel Utilization Efficiency)	$150 $250
High-Efficiency Combination Domestic Hot Water and Hydronic Space Heating System using pre-approved Tankless Water Heater[3]	90% + AFUE	$825
Condensing High-Efficiency Natural Gas Tankless Water Heater	0.91 + EF	$150
Conventional High-Efficiency Natural Gas Water Heater	0.67 + EF	$45
High-Efficiency Exterior Door[1]	U ≤ 0.21	$50

Existing Homes Incentives

Energy-Saving Measure	Basic Specifications	Incentive
Floor Insulation[4]	Equal to or greater than R-30 or to fill cavity[5], prior condition must not exceed R-11	$0.30/sq.ft.
Wall Insulation[4]	Equal to or greater than R-11 or to fill cavity, prior condition must not exceed R-4	$0.35/sq.ft.
Ceiling or Attic Insulation[4]	Equal to or greater than R-38, prior condition must not exceed R-18	$0.30/sq.ft.
Whole House Residential Air Sealing[4]	Equal or less than 0.0003 Specific Leakage Area through pre and post blower door testing[6]	$100

Efficient New Home Packages

Energy-Saving Measure	Basic Specifications	Incentive
ENERGY STAR® Certified Home + U.30 Window Glazing[7]	92% AFUE furnace + U.30 glazing	$600
Upgrade to ENERGY STAR Premium High-Efficiency Natural Gas Furnace[8]	95% + AFUE	$250
Built Green Certified Home[7]	Requires Built Green Certification	$600

1. Home must be heated by natural gas.
2. Must use intermittent ignition device.
3. Water must be heated with a tankless system. Pre-approval from CNGC required. Boilers do not qualify.
4. All insulation and air sealing must be performed by a CNGC qualified Trade Ally in order to be eligible for a rebate through the Conservation Incentive Program. Attic insulation cannot be filled to cavity.
5. Minimum of R-19 or higher to fill cavity.
6. Requires WA Department of Commerce Combustion Safety Test Report Exhibit 5.3.1A. Whole House Residential Air Sealing must comply with Washington State Energy Code section 502.4.5
7. These incentives are only applicable to new homes, not available to existing homes.
8. Only eligible on ENERGY STAR Certified homes. These incentives are only applicable to new homes, not available to existing homes.

Last Updated 02/2015

CASCADE NATURAL GAS CORPORATION
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Cascade Natural Gas Conservation Incentive Program Existing & New Homes Incentives

Elegibility Reqirements

- Qualifying measures must be purchased and installed by December 31 of the current calendar year and applications must be postmarked no later than March 1 of the following calendar year.
- Applicant must be a Washington customer of Cascade Natural Gas on residential rate schedule 503 (see your gas bill).
- Fuel for the home's primary heat source must be provided by Cascade Natural Gas for all heating incentives.
- Water-heating fuel must be provided by Cascade Natural Gas for all water-heating incentives.
- Customer **must not use a heat pump** for heating and/or cooling with a natural gas furnace back-up.
- Energy-saving measures must meet program requirements. Details at www.cngc.com/conservation.
- All equipment and service measures must be installed by a Washington-licensed contractor.
- All insulation and air sealing measures must be performed by a CNGC qualified Trade Ally in order to be eligible for a rebate through the Conservation Incentive Program. 1.866.626.4479 for a list of qualified Trade Allies in your area or visit http://cngconserve.com/interactive-map.
- Appliances and building materials specified by Washington state code are not eligible for Cascade Natural gas incentives.
- ENERGY STAR homes must be approved by an ENERGY STAR verifier.
- Built Green Homes must present Built Green Certification.
- Incentives may be subject to change and are only applicable for tariff approved measures in place at the time of installation.

How to qualify for Cascade Natural Gas incentives:

1. Establish your eligibility. Call 1.866.626.4479 or visit **www.cngc.com/conservation** for program requirements.
2. Install energy-efficient home improvements. Contact a participating Trade Ally contractor or Washington licensed contractor to install eligible measures. Please visit **www.cngc.com/conservation** for a list of qualified trade allies. Note: if installing insulation or air sealing you must use a CNGC qualified Trade Ally.
3. Acquire the appropriate incentive form online at **www.cngc.com/conservation** or call 1.866.626.4479.
4. Complete, sign and submit form along with a copy of your contractor's invoice marked "Paid in Full" to:

Mail: Cascade Natural Gas
Conservation Incentive Program
Rebate Processing Center
3800 Watt Ave., Suite 105
Sacramento, CA 95821

Fax: 1.800.506.9073

Upon receipt of completed application please allow six to eight weeks for processing and payment of incentives.

Home Energy Saver Kit

Water-saving shower heads and faucet aerators available upon request.
Please call 1.866.626.4479 for details or apply online at:
www.cngc.com/conservation.

For questions or more information, please visit us online at www.cngc.com/conservation or call 1.866.626.4479.

Last Updated 02/2015

Cascade Natural Gas Conservation Incentive Program Commercial/Industrial Standard Incentives

Warm Air Furnaces - $3.00/kBtu/hr High Efficiency Condensing Furnace—Min 91% AFUE	**Ozone Injection Laundry[3] - $2,500** Venturi injection or bubble diffusion - Min 125 lb. total washer/extractor capacity. **Pre-approval required.**
HVAC Unit Heater - $1.50/kBtu/hr High Efficiency Non-Condensing Min—86% AFUE	**Motion Control Faucet[3] - $105** Maximum flow rate of 1.8 gpm WaterSense® Certified and Below Deck Mixing Valve
HVAC Unit Heater - $3.00/kBtu/hr High Efficiency Condensing Min—92% AFUE	**Clothes Washer[3] - $180** Commercial gas washer—1.8 MEF
Radiant Heating - $6.95/kBtu/hr Direct fired radiant heating	**Gas Convection Oven - $450** ENERGY STAR® ≥42% Cooking Eff/ ≤13,000 Btu/hr Idle Rate
Boiler - $4.00/kBtu/hr High Efficiency Condensing Boiler Min 90% Thermal Eff & 300 kBtu input	**Gas Griddle - $350** ENERGY STAR® ≥38% Cooking Eff/ ≤2650 Btu/hr sq ft Idle Rate
Boiler Vent Damper - $1,000 Min 1,000 kBtu input	**Gas Conveyor Oven - $600** Greater than 42% tested baking efficiency
Boiler Steam Trap[1] - $125 Min 300 kBtu in; steam pressure at 7psig or >	**Connectionless 3 Pan Gas Steamer - $850** ENERGY STAR® or CEE/FSTC Qualified ≥38% Cooking Eff / ≤2,083 Btu/hr/pan Idle Rate
Domestic Hot Water Tanks[3] - $2.50/kBtu/hr Condensing tank, Min 91% Thermal Eff	**Connectionless 6 Pan Gas Steamer - $1,200** ENERGY STAR® or CEE/FSTC Qualified ≥38% Cooking Eff / ≤2,083 Btu/hr/pan Idle Rate
Domestic Hot Water Tankless Water Heater[3] - $60/gpm ENERGY STAR® .82 EF	**Double Rack Oven - $2,000** FSTC Qualified ≥50% Cooking Eff/ ≤3,500 Btu/hr/Idle Rate D Rack
Attic Insulation - (retrofit only) **Tier 1:** Min R-30 - **$0.50/sq ft** **Tier 2:** Min R-45 - **$0.65/sq ft**	**ENERGY STAR® Gas Fryer - $600**
Roof Insulation - (retrofit only) **Tier 1:** Min R-21 - **$0.60/sq ft** **Tier 2:** Min R-30 - **$0.80/sq ft**	**Door Type Dishwasher Low Temp Gas[3] - $650** ENERGY STAR® ≤.6 kw Idle Rate/ ≤1.18 gallon/rack
Wall Insulation[2] - (retrofit only) **Tier 1:** Min R-11 - **$0.50/sq ft** **Tier 2:** Min R-19 - **$0.56/sq ft**	**Multi-Tank Conveyor Low Temp Dishwasher[3] - $1,000** Gas Main w/Electric Booster ENERGY STAR® ≤2.0 kw Idle Rate; ≤ 0.50 gallons/rack
Energy Savings Kits[3] - FREE **A:** Kitchen Pre Rinse Spray Valve & Bath Aerators **B:** Low Flow Showerhead	**Recirculation Controls[3] - $100** Continuous Operation DHW Pump **Pre-Approval required.**

If you are planning equipment or building upgrades that do not fit within the standard incentives, but significantly reduce natural gas consumption, please call 866.450.0005 to learn about custom project opportunities.

Mixed purpose facilities that include buildings on both Residential Rate Schedule 503 **and** qualifying Rate Schedules 504, 505, 511, 570, and 577 as part of the same Cascade Natural Gas customer account shall also be eligible for custom conservation incentives.

Please note: Standard incentives are available on the qualified measures above to Cascade Natural Gas Corporation (CNGC) customers on rate schedules 504, 505, 511, 570 and 577.

[1] This measure will only be allowed where the customer agrees to regular trap maintenance and replacement every seven (7) years.

[2] Minimum value of R-11 applies only where existing walls have no internal insulation cavities.

[3] Incentive eligibility dependent on use of gas fired domestic hot water serving the specified measure equipment or fixture.

Cascade Natural Gas Corporation®
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Updated 09/14

Who is eligible to participate?

- Must be a new or existing commercial or industrial customer of CNGC on one of five qualifying rate schedules: 504, 505, 511, 570 or 577.
- Incentives apply on qualified high-efficiency natural gas equipment such as heating, insulation, water heating systems, cooking equipment installed as replacement, retrofit as well as new installation in place of standard efficiency equipment. If the equipment installation, replacement, or retrofit provides significant increase over existing high-efficiency equipment, and is not listed here please contact program representative for potential custom incentive.
- Insulation measures must be installed in an existing building, heated by natural gas, without functional insulation.
- Eligible measures installed are subject to the available incentives coinciding with the date of the installation as outlined in CNGC's tariff.
- Customers requesting incentives for site-specific energy efficiency measures must submit estimated costs and natural gas savings associated with the project. Natural gas savings are to be calculated using standard engineering practices. CNGC will review the natural gas savings calculations, and reserves the right to modify energy savings estimates.

How to qualify for Cascade Natural Gas incentives

1. Establish your eligibility. Call 1.866.450.0005 or visit www.cngc.com/conservation for program requirements.
2. Install energy-efficient upgrades. Contact a participating Trade Ally contractor or licensed contractor to install eligible measures.
3. Acquire appropriate incentive form online at www.cngc.com/conservation.
4. Sign and submit the following forms:

C&I Standard Incentive application • W9 form • Copy of recent CNGC gas bill • Quote for proposed equipment • Final invoice marked "paid" • Manufacturer's spec sheet.

Send forms to:

Mail: Cascade Natural Gas Corporation, c/o Lockheed Martin Energy and Environmental Services
22121 20th Avenue SE, Bothell, WA 98021

Fax: 1.877.671.2998

Upon receipt of completed application, please allow six weeks for processing and payment.

Get started today!

To apply for an incentive, download a C&I Standard Incentive application at www.cngc.com/conservation and return to us via email at conserve@cngc.com or by fax at 1.877.671.2998



Questions on food service, lodging or health care projects? Call Autumn Marks at 1.877.508.7116.

All measure assumptions were adjusted as appropriate based on Nexant's findings. All measures were run under the Company's 4.17% long term discount rate as per discussion with its Conservation Advisory Group. Additional scenarios have been screened under the UCT and utilized the 8.33% WACC discount rate recommended for residential measures weighed under the UCT per policy statement UG-121207 with bond rate used for the TRC under the residential scenarios.and can be referenced in Appendix __. This was performed in the Company's standard program planning and cost-effectiveness assessment tool and became the final version approved by the CAG and forwarded to the WUTC for implementation in September.

At the time two main options were considered for the Residential sector and for the C&I sector. Each option presented the best possible outcomes under the WACC and Long Term discount rate scenarios. In this instance "Best Possible Outcome" resulted in a portfolio that:

1. Maximized the inclusiveness of viable, industry-acknowledged conservation measures
2. Did so while maintaining incentive levels that send a meaningful market signal to consumers to upgrade to high-efficiency equipment and measures
3. Remained cost effective at the Company's most recently acknowledged avoided costs, even if participation levels remained on par with prior year's achievements (for residential)

Residential Scenarios

As suggested above, residential offerings have been screened for cost-effectiveness and synchronized with the corresponding scenarios in TEAPOT. The TEAPOT model was built to include the Company's current portfolio measures so coordination between the Nexant model and the internal program planning tool was a straightforward process.

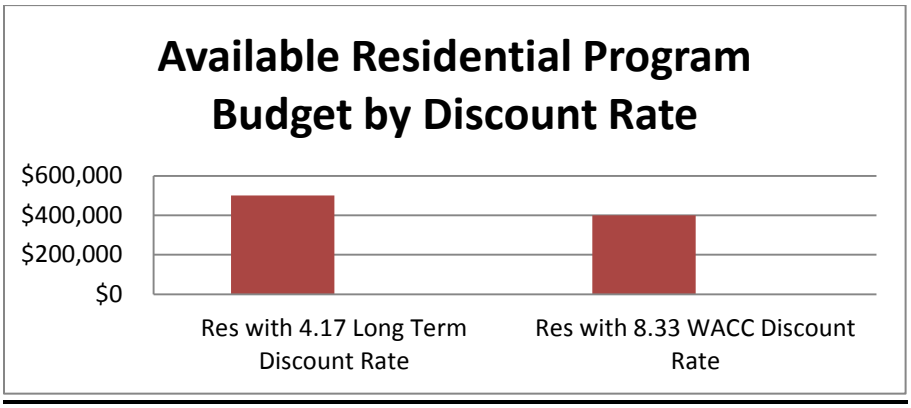
Scenarios were built from measures identified by Nexant and our program delivery team. The portfolios were then run through TEAPOT once more so generalized Achievable Potential targets could be set. This is described in more details in the sections below.

Portfolios were developed to maximize the number of rebates available to our customers— with rebates set at incentive levels attractive enough to encourage the desired conservation behavior. Administrative costs were set to levels commensurate with our 2014 budget, with downward adjustments made to minimize the sacrifice to program measures if forced to utilize the WACC as the discount rate. The WACC had not been used previously by the Company at the program planning and evaluation level because it artificially devalues the savings associated with long-term measures and reduces the pool of viable incentives.

We set an administrative budget in order to plan and operate programs. This budget must ensure an acceptable ratio of costs balanced with therm savings achievements. Since therm savings offset the costs of administrative investment, the greater the achievement, the more cost-effective our programs. If the budget or therm savings upon which the portfolio is built are unrealistic, we risk developing a scale-dependent portfolio doomed to failure.

Below is a chart comparing the "optimized" budget of $500k (maximum) for our Residential programs against the upward threshold of $400k under a scenario in which we must use the WACC. The $500k reflects the estimated expense of a continued vendor/in-house approach to program offerings with a small buffer for unforeseen expenses.

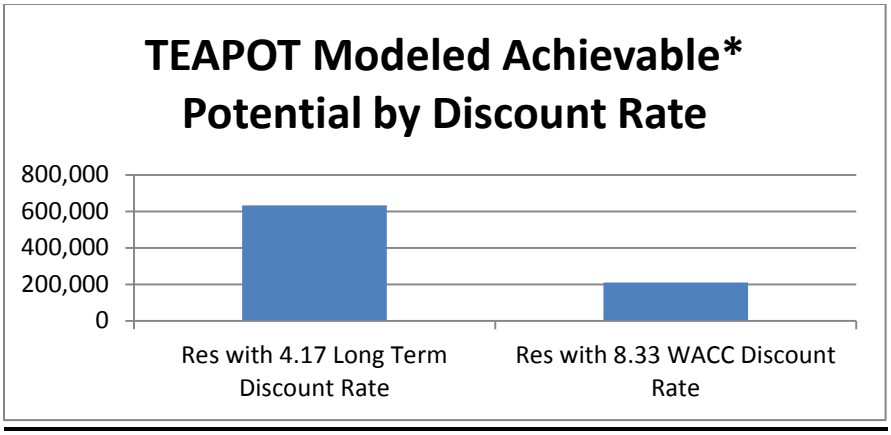
Figure 6 - 6



As described above, the budget by necessity must shrink if we were required to utilize the WACC discount rate. If the budget were to remain the same under both scenarios, more measures would have needed to be reduced or removed to maintain the balance necessary to maintain a levelized avoided cost of $.31 or less under the UCT. If more measures had been removed, the overall potential would have been likewise reduced, creating a vicious cycle of cuts that would severely (and unnecessarily) handicap the Company's conservation efforts.

Next, we will look at the overall Achievable Potential identified by Nexant's TEAPOT model based on the portfolio of measures deemed cost effective under the Long Term vs. WACC discount rate scenarios.

Figure 6 - 7



***For program planning Achievable Potential means the likelihood of measure adoption under realistic market and societal conditions in the CNGC service territory. However, Achievable Potential should not be confused with Program Potential, which is influenced by Regulatory Policy and company budgets/tariffs. Cascade will aggressively strive towards Achievable Potential, but will build programs against the threshold of lower more Program-realistic targets in order to ensure maintained cost effectiveness.**

Under the 4.17% Long Term Discount Rate, Cascade was able to grow and maintain a portfolio of measures with a total Achievable Potential of 632,913 utilizing the UCT. Under the 8.33% WACC Discount Rate, the total Achievable Potential dropped to 209,752. This is because the total number of cost-effective measures plummets when the savings of long-lived measures are severely discounted.

In order to keep programs operating within a severe discounting scenario, costs needed to be reduced as well as incentive levels. Programs take first priority, so Step One was to reduce administrative costs to lowered levels without profoundly harming daily program operations. Setting the budget at $400k should reasonably have achieved this goal. However, it was not enough to lower the budget and maintain the full portfolio available under the 4.17% long term discount rate. The UCT still exceeded the avoided levelized cost threshold. The TRC also remained prohibitive in its current state. So the next step was to reduce rebate levels. The first rebate levels lowered were those above the ".30 of cost" threshold, since Nexant indicated rebates at this level were adequate for incentivizing conservation behavior. Small downward adjustments were also made to measures that were significantly above .31 levelized cost under the UCT on an individual basis. If rebates needed to be significantly shrunk in order to maintain the portfolio, and could not be offset by other adjustments, they were removed. As measures were removed, the overall Achievable Potential dropped.

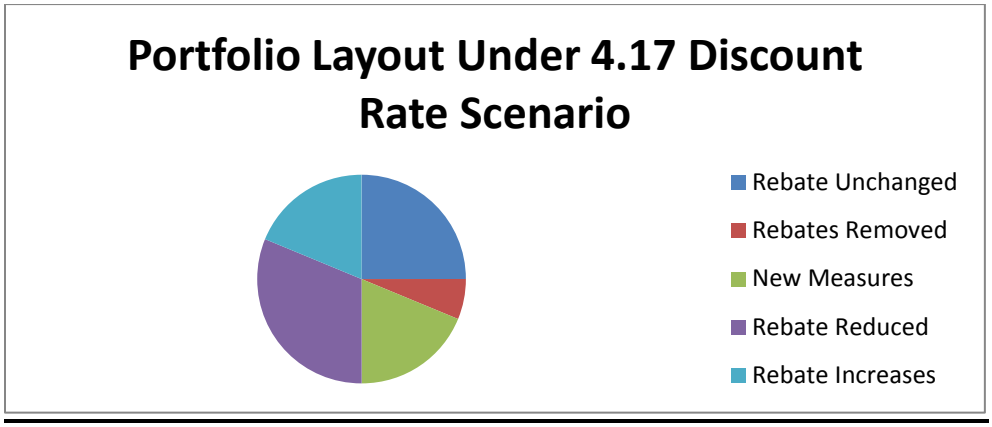
As a final note, therm savings targets were based from the TEAPOT tool and will be used for the purposes of IRP and Conservation Plan development. However for the

purposes of program development, we have narrowed the target to 138k therms (closer to 25% of Achievable base), reflecting a number within approximate range of our 2013 achievement. This was built this way in order to ensure any program portfolio built is not set up for failure if it cannot attain an unrealistic model-created target. Additional savings achieved beyond this figure will make the conservation programs even more cost effective, maximizing the value of participation for the Company and Ratepayers.

TEAPOT- generated targets will be acknowledged in the IRP and conservation plan as *aspirational* targets and those we will aggressively strive towards throughout the year. However, the programs will be built in a way that ensures cost-effectiveness can be maintained even if we fall short of that target.

Now that we have reviewed Residential program budgets and targets, here are the results of the Best Possible Outcomes under the 4.17% and 8.33% discount rate scenarios for our Residential Program.

Figure 6 - 8



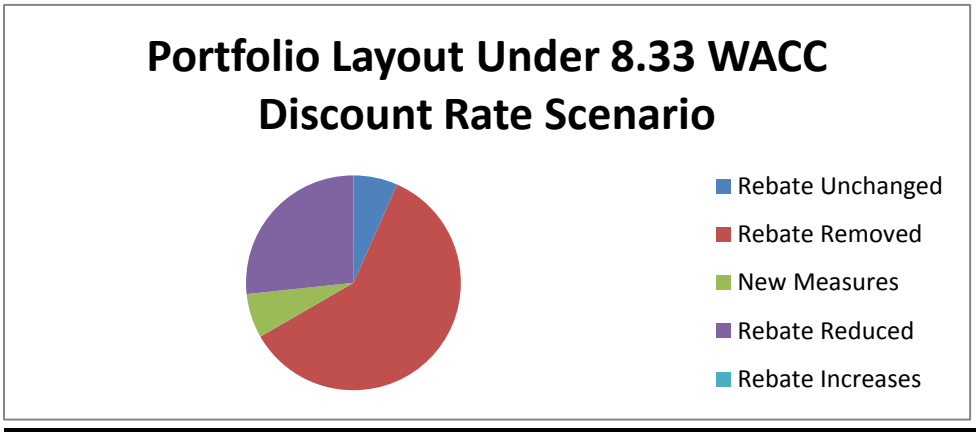
The above chart provides a high-level overview of the portfolio spread available to our customers under an optimized program planning scenario where we set rebate levels at as close to .30 of cost as possible in order to maintain attractive incentives.

Measures remained in the portfolio if they were able to maintain a benefit cost ratio of over 1 at a measure level, and a loaded levelized cost of under $0.41 per therm at the portfolio level under the following conditions:

(a) under the full spread of anticipated residential program expenses;
(b) under a target based from prior year achievements;
(c) Under an incentive level within reach of 30% of incremental costs, per Nexant guidance as reasonable threshold for encouraging update of conservation measure.

For the most part, outcomes were positive with only one measure removed from the portfolio due to strains to cost-effective under the current lowered cost of natural gas. The efficiency levels for two measures — .64 water heaters and 90% efficient furnaces were adjusted upwardly to .67 and 95% respectively, in order to reflect the market, and set the conservation bar higher for our customers to encourage deeper energy savings. Four measures remained unchanged from the current tariff. Three new measures were added, and three rebates were upwardly adjusted due to their extreme cost-effectiveness and in order to help them reach a threshold closer to .30 of measure cost. Five measures experienced downward adjustments in order to balance the portfolio and maintain cost effectiveness overall, but careful attention was paid to ensure the rebates were not reduced to levels that would make them unattractive to customers and thus become purposeless as incentives towards positive conservation behavior.

Figure 6 – 9



The above chart provides a high-level overview of the portfolio spread available to our customers under the Best Possible Outcome program planning scenario under the constraints of the 8.33% WACC discount rate, with rebate levels remaining set at as close to .30 of cost as possible in order to maintain attractive incentives.

Measures remained in the portfolio if they were able to maintain a cost benefit ratio of over 1 at a measure level, and a loaded levelized cost of under $0.41 per therm at the portfolio level under the following conditions:

(a) under the full spread of anticipated residential program expenses;
(b) under a target based from prior year achievements;
(c) Under an incentive level within reach of 30% of incremental costs, per Nexant guidance as reasonable threshold for encouraging update of conservation measure.

Under this scenario, nine rebates needed to be removed since incentive levels and

administrative costs could not be balanced to adequately preserve them and still keep other more cost effective measures remaining in the portfolio. One new measure was added, and one remained unchanged. Four additional measures were decreased but careful attention was paid to ensure the rebates were not reduced to levels that would make them unattractive to customers and thus become purposeless as incentives towards positive conservation behavior. Under this scenario, no measure increases were viable since the portfolio was extremely tight and maintenance of cost-effectiveness precarious.

Again, it is important to emphasize that the Company ran multiple portfolio scenarios under the 8.33% WACC discount rate and the portfolio listing was the most viable, inclusive option available under these circumstances. Based on the reduced offerings the Company strongly recommended moving forward with a portfolio that utilizes the previously accepted 4.17% long term discount rate.

Commercial/Industrial Scenarios

The Nexant potential assessment and TEAPOT modeling tool have allowed the Company to identify viable measures for inclusion in a modified Commercial/Industrial Conservation Program portfolio. The purpose of this exercise was to design a program able to withstand fluctuations in avoided gas costs and maximize the spread of cost-effective and worthy measures for inclusion in the CNGC Conservation Incentive Program.

Savings levels were based from the TEAPOT model. The outcomes were developed by running multiple portfolio scenarios carved out from the master list of measures. Carve-out was based from Nexant's screened achievable cost-effectiveness, with a secondary review of this measure sub-set by the C&I program delivery team. The portfolio was screened in both TEAPOT and in the Company's internal valuation tool. For the purposes of program planning, a viable measure set was defined as one composed of measures identified by Nexant and the Company as viable through its initial measure screen *and* remained viable under the company's best estimates of program expenses and predicted energy savings.

It is important to note the screen conducted with the TEAPOT tool and internal valuation mechanism for the Commercial/Industrial sector was performed **strictly to assess viable prescriptive measures and potential**. TEAPOT can only provide estimated achievable potential based on known measures. However, program experience has clearly demonstrated the prescriptive portion of savings from the CNGC Conservation Program is fairly consistent, with an average of 65% of therm savings coming from custom projects. Therefore the prescriptive portfolio is assumed to represent 35% of total program savings.

All measures identified as viable under Nexant from an Achievable Potential Standpoint were screened under the TRC and UCT utilizing the 8.33% WACC discount rate recommended for commercial programs through UG-121207 policy statement for program planning. An additional screen was run under the Company's 4.17% long term discount rate. This was performed in the Company's standard program planning and cost-effectiveness assessment tool.

Incentive levels had been set to one third of incremental costs as determined by Nexant or ground-level programmatic data. Keeping all incentives in the 30-33% range allowed us to clearly synchronize program offerings with the TEAPOT model which begins a base scenario of Achievable 1 at an assumption of a minimal viable rebate level of 33% of incremental costs, in order to avoid free ridership, or vestigial offerings.

Measures remained in the portfolio if they were able to maintain a benefit cost ratio of over 1 at a measure level, and a loaded levelized cost of less than $0.41 per therm at the portfolio level under the following conditions:

(a) under the full spread of anticipated C&I program expenses;

(b) under a combined prescriptive + customer C&I target developed via TEAPOT (35% of total program savings) + additional proportion of custom savings (assumed at 65% of total C&I program savings). With the exception of the WACC scenario which assumed a greater dependence on C&I (75% C&I/25% prescriptive)

(c) Under an incentive level at least 30% of incremental costs, per Nexant guidance as minimal threshold for encouraging update of conservation measure.

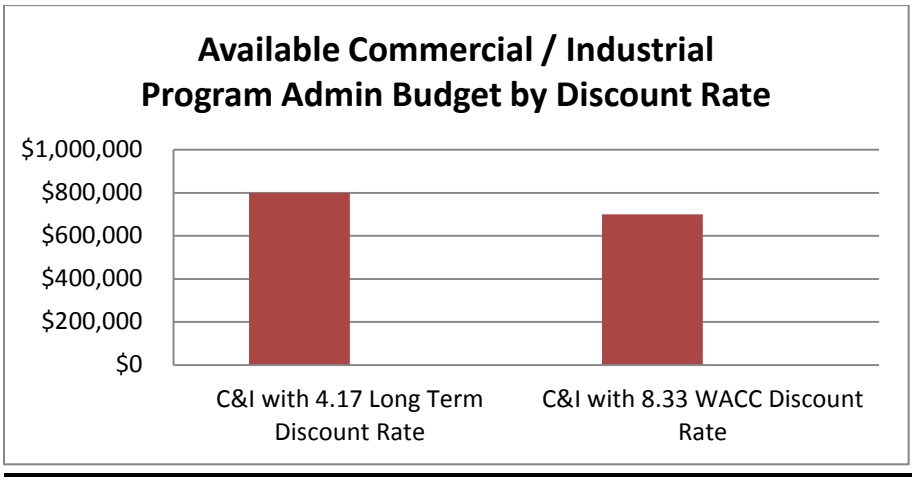
Cascade strives towards aggressive conservation achievements, but at the program development phase, it is essential that we balance optimism and realism. Program developers must set an administrative budget in order to plan and operate programs. This budget must ensure an acceptable ratio of costs balanced with therm savings achievements. Since therm savings offset the costs of administrative investment, the greater the achievement, the more cost-effective our programs. If the budget or therm savings upon which the portfolio is built are unrealistic, we risk developing a scale-dependent portfolio doomed to failure because we designed a program dependent on the savings levels we *hoped* we would achieve, based on abstract modeling, and not based on prior year accomplishments and ground level understanding.

As with the Residential program, the Company analyzed the Best Possible Outcomes for a portfolio designed under the parameters of the WUTC policy statement. The portfolios were optimized for rebate level, budget and measure mix. The following table

demonstrates the maximum viable budget under both a 4.17% Long Term and 8.33% WACC discount rate scenario. For the development of the CIP C&I portfolio, program costs were assumed at the fully budgeted amount for program development contractor, plus an additional buffer for internal administrative expenses and staff time. If at all possible, costs are managed at a level lower than this estimate, but significant cut-backs would require further aggressive administrative restructuring, and therefore would be imprudent to base from a more aspirational budget for the purposes of program planning.

Estimated administrative costs were assumed to be approximately $800k, reflecting the estimated expense of the Lockheed Martin program delivery contract plus a buffer for CNGC staff time and expenses. However, they were lowered to $700k under the WACC out of necessity.

Figure 6 - 10



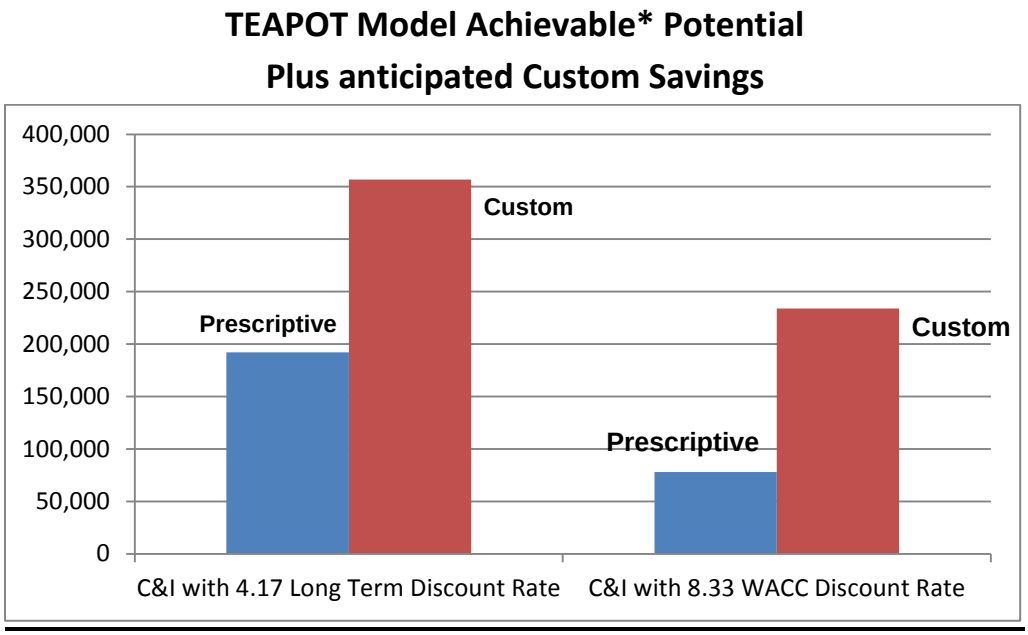
The appropriate budget levels described previously were entered into the cost-effectiveness calculation tool. These costs were balanced against the targets and portfolio offerings available under the respective discount rate scenarios.

Budgets must balance out with a realistic, proportionate level of therm savings. The table below shows the anticipated level of Achievable Potential modeled from TEAPOT. Total achievable therm savings for the Company's modified C&I programs were based from the TEAPOT tool in combination with a best estimate based on previous accomplishments and real experience with program implementation.

All targets and costs utilized in the internal valuation tool reflect the total assumed achievement and expenditure associated with the full program *including* the custom component, which was assumed at 65% of the total achieved savings for the year. However, under WACC scenario, we built in a 75% dependence on custom to

compensate for plummeting cost effectiveness for prescriptive measures.

Figure 6 - 11



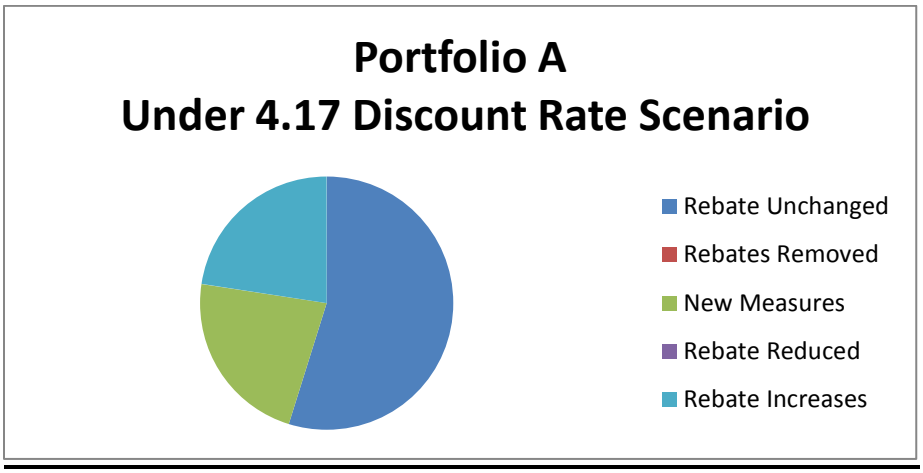
***For program planning Achievable Potential means the likelihood of measure adoption under realistic market and societal conditions in the CNGC service territory. However, Achievable Potential should not be confused with Program Potential, which is influenced by Regulatory Policy and company budgets/tariffs. Cascade aggressively strives towards Achievable Potential, but builds programs against the threshold of lower more Program-realistic targets in order to ensure maintained cost effectiveness.**

Under the Long Term discount rate scenario, total Achievable Potential was approximately 192,091 therms saved from prescriptive measures in an inclusive portfolio, with an additional 356,740 therms achieved through custom incentives. The WACC scenario offered an Achievable Potential threshold of 78,007 TEAPOT-identified therms, and an additional estimate of 234,021 therms saved through custom projects. The prescriptive savings were lower since most prescriptive measures were designed for commercial facilities, and the deepest (but least predictable) savings come from our core industrial customers who gravitate towards custom projects. Industrial measures are harder to standardize since there are a wide range of facility types, processes, and needs to be addressed for these customers.

That said, Achievable Potential identified through TEAPOT may still be overly inclusive as it does not reflect factors such as internal budgeting to meet cost-effectiveness thresholds and external policy impacts.

Thus, while the therm savings identified through TEAPOT (and through traditional custom-to-prescriptive ratios) will be used in the IRP as our aggressive aspirational targets that we strive towards, for the sake of portfolio development, we have adjusted targets to 75% in the 4.17% scenario to set a more realistic minimal threshold that must be met in order for the programs to remain cost-effective. To do otherwise would risk designing a program that buckles under the weight of its own administrative and rebate costs unless an overly optimistic level of savings were achieved.

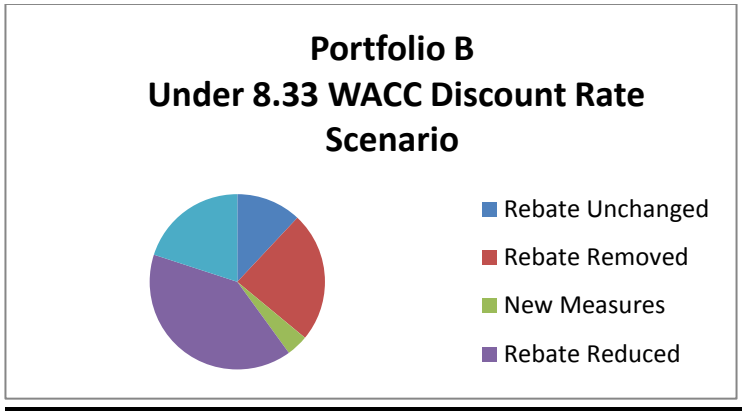
Figure 6 -12



The chart above provides a visualization of the optimized portfolio of measures developed from the TEAPOT model and screened against the avoided gas costs outlined in our most recently acknowledged Integrated Resources Plan. It is important to recognize the key variable driving the differences between the first and second pie chart is the discount rate.

Under the Long Term discount rate scenario, the Company was able to maintain a robust portfolio of prescriptive conservation incentives, retaining 17 measures at their current levels, and increasing the rebate level for 7 measures without negatively impacting program cost-effectiveness. In addition, 7 new measures were added to the list of prescriptive rebates, opening up expanded conservation opportunities. These measures were identified in the Nexant study and by our program delivery team as having a high-likelihood of adaptation if incentives were provided to drive purchase behavior.

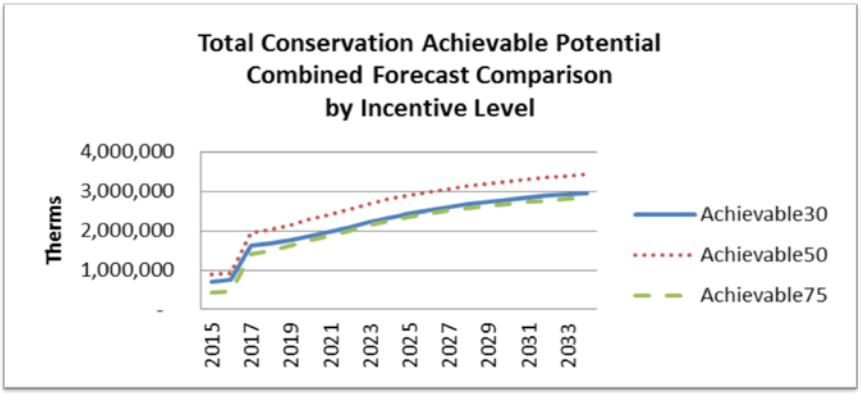
Figure 6 -13

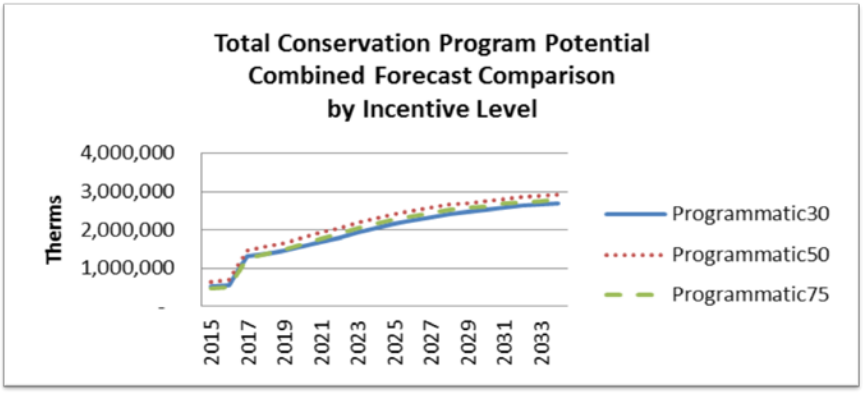


Utilizing the 8.33% WACC discount rate artificially diminishes the perceived value/cost effectiveness of commercial gas conservation measures. The same portfolio that maintained a levelized cost at less than .31 under the long-term discount rate, crumbles under the WACC—all other factors being identical. Therefore, as the previous charts demonstrate, budgets were reduced out of necessity to lower the levelized cost of the portfolio.

Under the WACC scenario, 10 rebates were reduced, 6 removed, and 3 remained unchanged. Five measures were increased and 1 new measure was added.

Combined Total Conservation Forecast Comparison - Short & Long Term						
	75% Incentive Level		50% Incentive Level		30% Incentive Level	
Year	Achievable 75	Programmatic 75	Achievable 50	Programmatic 50	Achievable 30	Programmatic 30
2015	424,476	467,314	882,210	650,990	712,388	526,475
2016	464,676	511,435	929,472	701,882	749,717	561,121
2017	1,399,972	1,275,935	1,941,374	1,466,008	1,616,912	1,310,096
2018	1,500,984	1,378,663	2,040,500	1,559,152	1,687,252	1,381,032
2019	1,614,415	1,493,059	2,154,910	1,669,176	1,770,096	1,464,315
2020	1,749,150	1,630,865	2,292,094	1,799,919	1,875,323	1,571,083
2021	1,873,135	1,761,406	2,414,609	1,922,241	1,974,528	1,676,560
2022	2,002,953	1,898,882	2,546,661	2,053,015	2,088,447	1,796,302
2023	2,134,216	2,042,992	2,676,838	2,182,600	2,209,512	1,927,200
2024	2,253,869	2,167,236	2,806,623	2,310,546	2,329,649	2,049,503
2025	2,350,934	2,279,609	2,900,665	2,408,227	2,428,799	2,161,307
2026	2,435,572	2,367,174	2,994,090	2,501,812	2,520,295	2,254,276
2027	2,510,727	2,447,422	3,073,616	2,578,984	2,602,617	2,339,690
2028	2,585,673	2,528,329	3,155,658	2,657,778	2,685,243	2,424,615
2029	2,632,883	2,583,124	3,201,639	2,703,235	2,737,445	2,482,687
2030	2,676,311	2,622,904	3,255,419	2,753,683	2,786,260	2,526,278
2031	2,725,224	2,679,819	3,303,143	2,796,649	2,838,512	2,583,638
2032	2,770,992	2,719,320	3,362,550	2,848,819	2,898,961	2,636,950
2033	2,806,655	2,759,370	3,395,277	2,881,197	2,927,512	2,666,414
2034	2,843,302	2,795,376	3,438,957	2,919,238	2,962,415	2,698,170





Numbers of Measures Passing Cost-Effectiveness by Incentive Level*

	Residential		
Incentive Level	**30%**	**50%**	**75%**
Nexant Measures (903)	686	537	392
Effect on 30% Current Portfolio Measures		-17%	-33%
Cascade Portfolio Measures (228)	210	171	108
Effect on 30% Current Portfolio Measures		-17%	-45%

	Commercial		
Incentive Level	**30%**	**50%**	**75%**
Nexant Measures (1350)	629	495	395
Effect on 30% Current Portfolio Measures		-10%	-18%
Cascade Portfolio Measures (585)	332	281	234
Effect on 30% Current Portfolio Measures		-9%	-17%

	Industrial		
Incentive Level	**30%**	**50%**	**75%**
Nexant Measures (621)	324	263	206
Effect on 30% Current Portfolio Measures		-10%	-19%
Cascade Portfolio Measures (144)	42	36	12
Effect on 30% Current Portfolio Measures		-4%	-17%

***NOTE:**

"Nexant Measures" refers to the list of potential measures reviewed in the Nexant Conservation Potential Study, provided in Appendix B of Volume III, available in Appendix D of the 2014 IRP.

"Cascade Portfolio Measures" refers to the present portfolio of measures being offered. The current portfolio aims to operate at or near the 30% incentive level.

The cost effective measures by incentive levels reflect the total number of measures passing cost effectiveness (greater than or equal to 0.90) out of the total number of measures, either included in the Nexant study or under the program's current portfolio offerings.

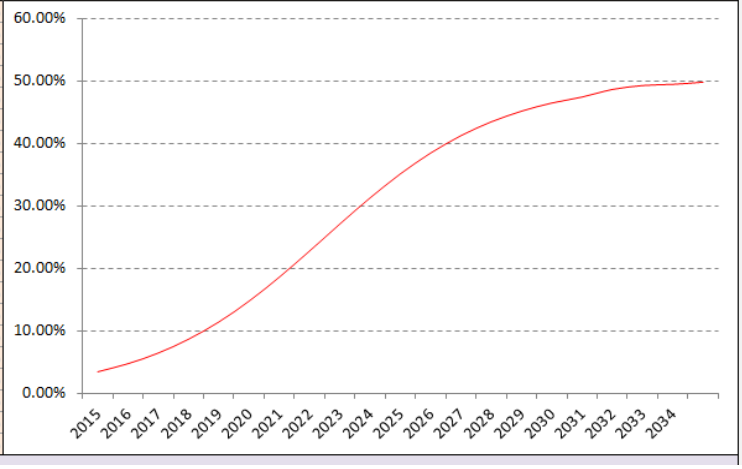
The "Effect on 30% Current Portfolio Measures" rows show the decreases, as a percentage, of cost-effective measures that would be able to be offered if the incentive level changed.

This page does not include Low Income.

Adoption Curve for Each Achievable Scenario and Incentive Level

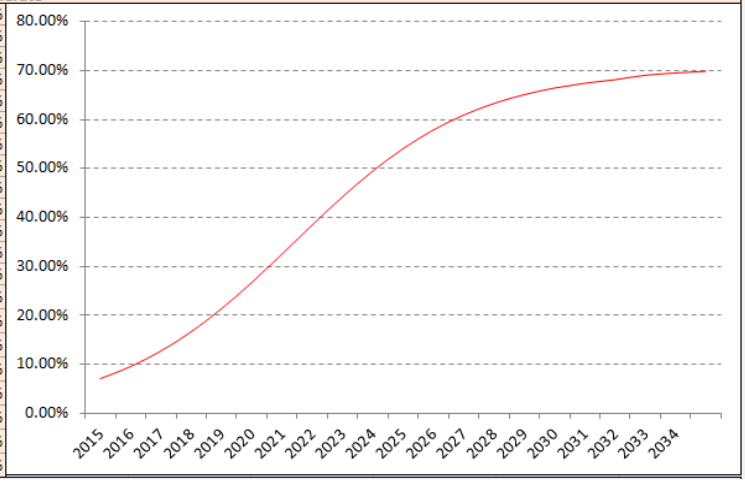
Achievable 1 - Adoption Curve for 30% Incentive Level

Name:	Achievable Base
2015	3.46%
2016	4.76%
2017	6.47%
2018	8.69%
2019	11.46%
2020	14.80%
2021	18.64%
2022	22.84%
2023	27.16%
2024	31.36%
2025	35.20%
2026	38.54%
2027	41.31%
2028	43.53%
2029	45.24%
2030	46.54%
2031	47.50%
2032	48.72%
2033	49.35%
2034	49.54%
	49.88%



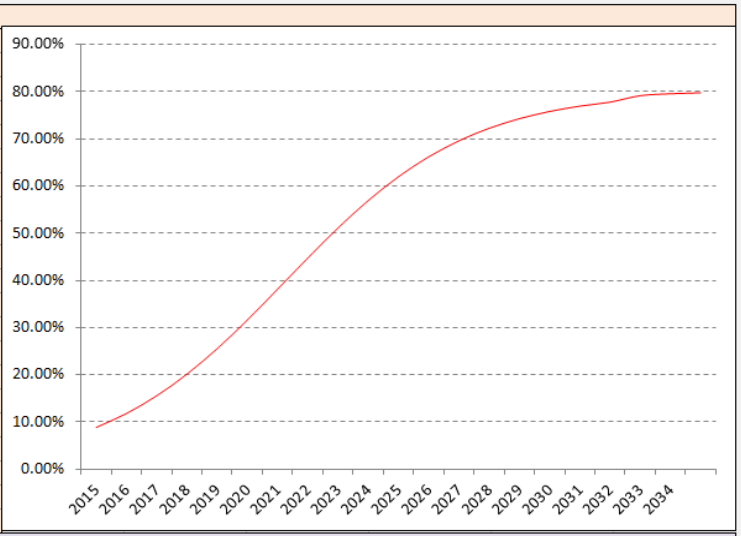
Achievable 2 - Adoption Curve for 50% Incentive Level

Name:	Achievable Moderate
2015	7.07%
2016	9.56%
2017	12.73%
2018	16.67%
2019	21.37%
2020	26.74%
2021	32.55%
2022	38.50%
2023	44.25%
2024	49.51%
2025	54.08%
2026	57.89%
2027	60.93%
2028	63.30%
2029	65.10%
2030	66.44%
2031	67.43%
2032	68.16%
2033	69.05%
2034	69.52%
	69.88%



Achievable 3 - Adoption Curve for 75% Incentive Level

Name:	Achievable High
2015	8.83%
2016	11.80%
2017	15.55%
2018	20.13%
2019	25.53%
2020	31.62%
2021	38.14%
2022	44.76%
2023	51.13%
2024	56.94%
2025	61.99%
2026	66.21%
2027	69.60%
2028	72.25%
2029	74.29%
2030	75.82%
2031	76.96%
2032	77.79%
2033	79.17%
2034	79.57%
	79.78%



Cascade Natural Gas Corporation

Assessment of Achievable Potential & Program Evaluation

Volume 1: Executive Summary

Submitted to Cascade Natural Gas Corporation
Submitted by Nexant, Inc.

February 25, 2014



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1 INTRODUCTION

1.1 OVERVIEW

Cascade Natural Gas Corporation ("Cascade") has offered energy efficiency programs to its customers since the 1990s with expanded programs beginning in 2008. In light of significant changes to codes, costs, technologies, and gas prices that have taken effect in the past four years, Cascade has contracted with Nexant, Inc. ("Nexant") to perform a comprehensive assessment of the technical and achievable natural gas conservation potential within Cascade's Washington service territory for residential, commercial and industrial sectors. This assessment references Cascade's potential assessment conducted in 2006 by the Energy Trust of Oregon, which in turn was refined in 2009 to include Cascade's Washington conservation potential. The assessment conducted in 2006 and refined in 2009 included all of the Cascade Natural Gas service territory in Washington and Oregon. This assessment does not directly build on those reports; and thus represents a new assessment of Cascade's energy efficiency potential. This assessment stands apart from previous studies as a potential assessment for Cascade Natural Gas Washington State service territory only. The findings of this assessment will help inform the development of Cascade's Integrated Resource Planning (IRP) process as well as provide guidance for future program planning and development efforts. In addition to providing potential assessment, Cascade also requested Nexant evaluate energy savings associated with measures installed by participants in Cascade's Conservation Incentive Program during 2011/12.

This report presents results of the technical, economic, and achievable potential for natural gas energy efficiency savings in Cascade's Washington service territory over the next 21 years (2014-2035). Program potential was not included in the study scope, but could be developed by Cascade using the findings of this study and based on regulatory/budgetary parameters, cost-effective thresholds, policy considerations, and decisions on which subset of cost-effective measures to offer to customers going forward. Nexant assessed therm savings realized through Cascade's program to-date, researched natural gas energy efficiency measures to estimate measure-specific savings, costs and lifetimes, and conducted a detailed bottom-up assessment of the Cascade market to provide a credible and transparent estimation of the technical and achievable energy efficiency potential.

1.2 STUDY GOALS

The primary goal of this assessment was to develop a comprehensive assessment of technical and achievable potential for natural gas energy efficiency within Cascade's Washington service territory for customers on Rate Schedules 503, 504, 505, 511, 570 & 577 (residential, commercial and non-transport sales industrial customers). This objective analysis illustrates the remaining savings potential by sector, segment and end use as a means to inform future program design given the declining cost of natural gas. The study also integrated a detailed evaluation and measure savings review of Cascade's conservation portfolio. Key objectives of this study include:

- Provide credible and transparent estimation of the technical and achievable energy efficiency potential by year over the next 21 (2014-2034) years within Cascade's Washington service territory;
- Assess and validate therm savings associated with key measures that qualified for, and received, a conservation incentive in the 2012 program year, and apply findings to determine realistic therm savings potential in Cascade's Washington Service area;
- Provide a user friendly, executable dynamic model that will support the potential assessment and allow for testing of sensitivity of all model inputs and assumptions;
- Develop a final report including summary data tables and graphs reporting incremental and cumulative potential by year from 2014 through 2034.

1.3 Definitions of Potential

This study estimated energy efficiency savings developed into three types of potential: technical potential, economic potential, and achievable potential. Market penetration rates associated with each potential were estimated and included in this assessment. While technical and economic potential are both theoretical limits to efficiency savings, achievable potential embodies a set of assumptions about the decisions consumers make regarding the efficiency of the equipment they purchase. Relevant factors to Cascade's stimulus program were included in the Achievable Potential to simulate a realistic estimate of real-life conditions. Program potential (i.e. the subset of achievable potential attainable given constraints on program budget and implemented measures) is not presented in this report. Volume II, Section 2, details each potential definition.

1.4 Cost Effectiveness Screening

Industry standard cost effectiveness tests were performed to gauge the economic merits of the portfolio. Each test compares the benefits of the energy efficiency metric to their costs defined in terms of net present value of future cash flows. The definitions for the two standard tests used in this analysis are described below.

Total Resource Cost test (TRC). The benefits in this test are the lifetime avoided energy costs and avoided capacity costs. The costs in this test are the incremental measure costs plus all administrative costs spent by the program administrator.

Utility Cost Test (UCT). The benefits in this test are the lifetime avoided energy costs and avoided capacity costs, the same as the TRC benefits. The costs in this test are the program administrator's incentive costs and administrative costs.

Detailed findings are presented in this report using the UCT as the cost-effectiveness screen for economic and achievable potential. As is shown in **Section 6** and **Section 7**, total natural gas savings potential is considerably higher using the UCT when compared with the TRC. This occurs because the

UCT allows more measures to pass the cost-effectiveness threshold of 0.90[1] when compared to the TRC (because it considers only the incentivized portion of a measure's incremental cost). To illustrate this effect, **Table 1-1** below summarizes the number of measures evaluated and the number of measures to pass the UCT and TRC cost-effectiveness test under the base-case scenario of Cascade's current avoided costs, and an incentive rate of 30%.

Table 1-1: Summary of count of measures passing each cost test

	Total Measures	*Passing Measures*	
		TRC	*UCT*
Total All Sectors	***143***	***51***	***96***
Residential Sector	*46*	*16*	*36*
Commercial Sector	*63*	*31*	*47*
Industrial Sector	*34*	*4*	*13*

1.5 Report Organization

This report is organized into three volumes as follows:

- **Volume I: Executive Summary** provides an overview of initial findings from the potential study and outlines the remainder of the report. This document represents Volume 1: Executive Summary.
- **Volume II: Report** provides detailed explanation of methodology, results and findings.
- **Volume III: Appendices** provide detailed tables of data and assumptions utilized in the analyses summarized in this assessment.

2 Analytical Approach

Energy efficiency potential studies involve a number of analytical steps to produce estimates of each type of energy efficiency potential: technical, economic, and achievable. This study utilizes Nexant's in-house developed Microsoft Excel-based modeling tool, TEA-POT (Technical/Economic/Achievable Potential). This modeling tool is built on a platform that provides the ability to run multiple scenarios and re-calculate potential savings based on variable inputs such as sales/load forecasts, natural gas

[1] A cost-effectiveness threshold of 0.90 was used to account for the non-quantifiable environmental benefits of reduced natural gas consumption. This approach aligns with that used by many utilities in the Pacific Northwest.

prices, discount rates, and actual program savings. This model provides Cascade with the utmost transparency into the assumptions and calculations for estimating market potential. TEA-POT has been consistently upgraded and refined over the past several years, with the most recent upgrade occurring in 2012. The major analytical steps are summarized below and specific changes in methodology from one sector to another have been noted throughout this section. The major analytical steps utilized in both the potential study and measure savings review are explained throughout **Volume II, Section 2**.

3 Measure Savings Review Findings

The goal of the measure savings review was to provide a high level assessment of Cascade's process for collecting, organizing program participant data and estimating the associated savings for four key measures in the time period June 1, 2011 – May 31, 2012. This was broken up into three tasks: 1) a desk review of program applications, 2) a telephone call to program participants to verify measure installation and key savings metrics, and 3) a billing analysis of a statistical sample of installed furnace, boiler and water heater installed measures. The findings of these assessments are provided below.

3.1 Desk & Telephone Review Findings

The telephone review verified all participation data and **no errors were found** in the reviewed measures. One of the key findings of the measure savings review is regarding Cascade's methodology for estimating natural gas savings. While utilizing a deemed savings value approach for each measure can be a cost-effective and appropriate approach to estimating savings, it can over or underestimate actual savings.

With the data provided in this analysis – specifically measure savings algorithms used in the potential assessment – Cascade will have the option to refine projected savings estimates with increased specificity by calculating premise-specific natural gas savings for each installed measure. While Cascade is already collecting some of the key savings parameters on its participant application forms (such as house square footage and efficiency of installed measure), Nexant recommends including some additional parameters on the application forms to enable premise-specific calculation estimates of natural gas savings. The following desk review findings may have an impact on reporting of savings:

1. The Cascade participant database documented the efficiency of the replacement measure as the incentivized amount (such as a 0.62 EF water heater), whereas often the efficiency of the installed measure as listed on the application was greater than the incentivized efficiency level. That is, while the application form always listed the actual efficiency of the installed equipment (e.g. EF=0.67), the efficiency of that particular measure would be set to a default value (e.g. EF=0.62) in the Cascade participant database. This implies deemed values were used to project savings, as opposed to premise-specific values, which were often more efficient than the incentivized efficiency level. This practice would conservatively estimate savings. Recording the

actual efficiency value of installed equipment, as opposed to the incentivized efficiency value, would be less conservative but could increase the accuracy of projections and data analysis.

2. The efficiency level of original equipment was not always recorded on the application form, nor whether or not the original equipment was replaced due to failure or for another reason prior to the end of expected equipment life. Savings calculations are dependent upon the efficiency of the base equipment, as well as whether or not the customer replaced the equipment early or upon burn-out. Nexant recommends collecting data on these two factors in the rebate application, and tracking them in the participant database, for inclusion in savings calculations (see **Section** Error! Reference source not found. below).
3. The cost category in the customer database varied in inclusions per measure. Categories included equipment, labor, old equipment disposal, and/or additional work performed. Standardized entries of "equipment costs" and "labor costs", in addition to "extraneous costs" will ensure accurate comparison of measure and installation costs.
4. While Cascade collects participant square footage for its weatherization measures, importing commercial participant facility square footage information into the participant database will facilitate comparative analysis between commercial customers, as facility sizes and types can vary dramatically in the commercial sector.

3.2 Billing Analysis Findings

In an effort to estimate realized savings associated with Cascade's program offerings, Nexant conducted a billing analysis for four key residential and commercial measure offerings. The measures are residential high efficiency furnaces and hot water heaters, and commercial/industrial high efficiency furnaces and boilers. Savings from the final qualified accounts assessed in the billing analysis were compared to estimates from Cascade's deemed measure savings. The findings of this analysis are summarized in **Table 3-1** below.

Table 3-1: Total Participant vs. Billing Analysis Subsample Summary

Source	Metric	Residential		Commercial[2]	
		DHW	Furnace	Furnace	Boiler
Cascade Participant Database	Participants	83	833	18 (Census)	23 (Census)
	Equipment Eff. Installed	65%	90%	Assumed 91%	Assumed 90%
	Cascade Deemed Savings (Therms per Measure)	24	86	272	2644
Qualified Billing Analysis Participants	# of samples	50	53	8	5[3]
	Confidence / Precision	90/8	90/11	90/20	90/30
	Avg. Equipment Eff. Installed	67%	95%	95%	91%
	Average Savings (Therms per Measure)	33	111	349[4]	1566
Actual as a % of Deemed Savings		**138%**	**129%**	**128%**	**59%**

4 Market Segmentation Findings

An important first step in calculating Cascade's energy efficiency potential estimates is to establish baseline energy usage characteristics and disaggregate the market by sector, segment, and end use. The findings of this section represent the control totals to which all energy usage is calibrated in the base year of the study and then forecasted. Further details and assumptions are described in **Volume, 2, Section 4**. Below is a summary of findings.

Total natural gas consumption by eligible residential, commercial and industrial customers for 2012 in Cascade's Washington service territory was 12,256,153 dekatherms[5]. **Table 4-1** shows the overview of

[2] While some commercial participant numbers are too low to obtain statistical accuracy on the results, this is a census of the installed measures therefore this is a summary of the entire sample size for the commercial sector.

[3] This small sample resulted in a 90/30 confidence precision, which decreases the ability to make meaningful conclusions about savings projections for commercial boilers

[4] Premise savings were divided by number of installed units to develop a therms saved per installed unit value. The three other measures were not standardized by installed units and the therms saved values are per premise.

natural gas sales and premises by sector for Cascade in calendar year 2012. While the industrial sales number totals 2,651,868 dekatherms, this number includes only non-transport industrial gas customers and represents only 4% of total industrial natural gas sales.

Table 4-1: Cascade 2012 Natural Gas Consumption & Premise Counts by Sector

Sector	2012 Sales (annual dekatherms)	Premise Count
Residential	11,203,608	171,991
Commercial	7,873,584	23,609
Industrial	2,651,868	10,639
Total	12,256,153	206,239

4.1 RESIDENTIAL SECTOR

Table 4-2 shows the breakdown of energy consumption and building stock by residential segment. Single family homes dominate consumption with an 86% share, with multi-family dwellings at 14% of total residential consumption. Manufactured home (such as mobile home) dwellings comprise less than 1% of total residential consumption.

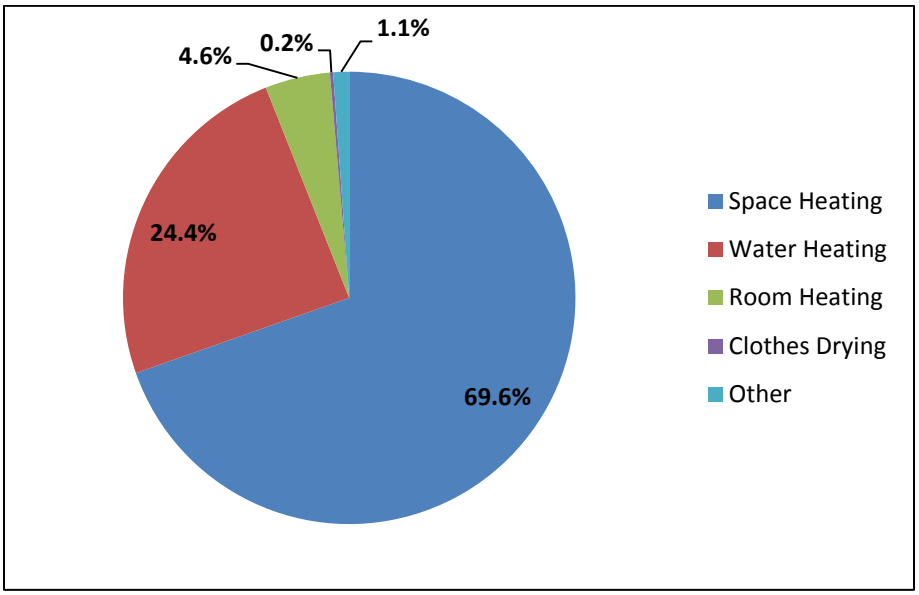
Table 4-2: Residential 2012Natural Gas Consumption & Premise Counts by Segment

Sector	Energy Consumption (annual therms)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Single Family	9,657,510	86.2%	143,058	67.5
Multifamily	1,523,691	13.6%	28,542	53.4
Manufactured	11,204	0.1%	391	28.7
Total	11,203,608	100%	171,991	65.1

Nexant further disaggregated Cascade's residential load by end use. **Figure 4-1** shows the distribution of natural gas consumption by end use for all residential households in Cascade's territory.

[5] Note: Nexant utilized the definition of premise for this study which removes non-building customer accounts, and other miscellaneous loads from its findings. The number of premises, therefore, and the associated natural gas consumption is less than the number of accounts and top-line natural gas sales that Cascade utilizes in its IRP documents. Furthermore, the number of eligible industrial premises and sales is significantly less due to the large share of transport sales – which were removed because they are ineligible for energy efficiency programs.

Figure 4-1: 2012 Residential Natural Gas Consumption by End Use[6]



4.2 COMMERCIAL SECTOR

Table 4-3 shows the distribution of consumption by commercial segment for all eligible premises. The office and retail segments represent the largest share of consumption at 29.6% and 24.2% respectively.

Table 4-3: Commercial 2012 Natural Gas Consumption & Premise Counts by Segment

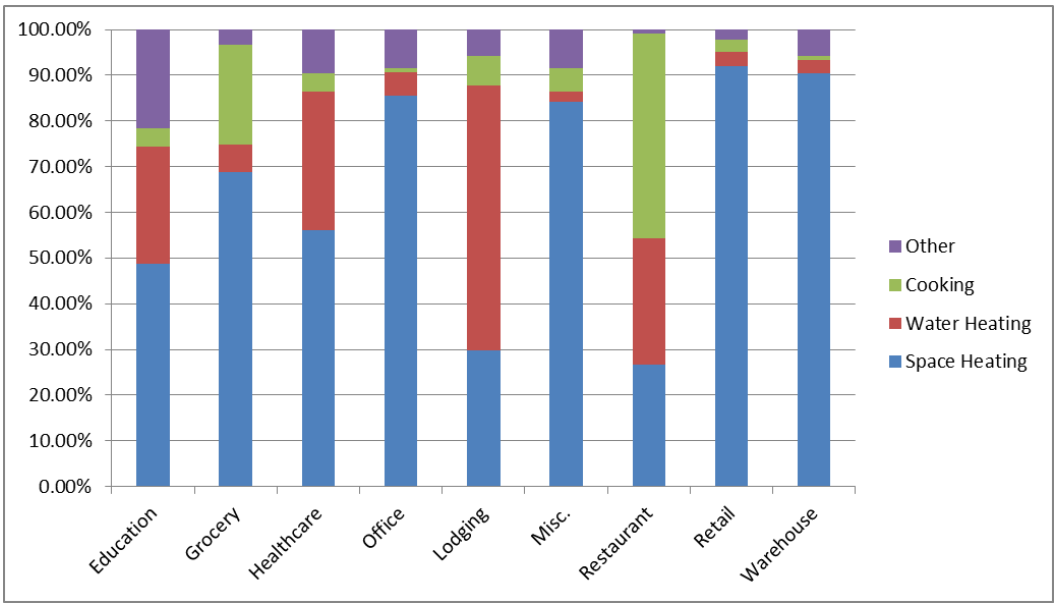
Segment	Energy Consumption (annual dth)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Education	1,191,963	15.1%	994	1,199
Grocery	590,930	7.5%	1,020	579
Healthcare	312,585	4.0%	512	611
Office	2,329,730	29.6%	8,401	277
Lodging	304,013	3.9%	266	1,143
Misc.	386,424	4.9%	2,470	156
Restaurant	650,618	8.3%	1,318	494
Retail	1,904,289	24.2%	7,152	266
Warehouse	203,032	2.6%	936	217
Total	**7,873,584**	**100.0%**	**23,069**	341

Nexant further disaggregated Cascade's commercial load by end use. **Figure 4-2** shows the distribution of natural gas consumption by end use by segment. Space heating represents the largest share for most

[6] Space Heating refers to central heating equipment end uses, such as furnaces and boilers. Room Heating refers to gas hearths / fireplaces.

segments at 71.9% on average; however certain segments such as lodging and restaurants have a higher share of water heating and cooking load respectively.

Figure 4-2: Commercial 2012 Natural Gas Consumption Shares by Segment, by End Use



4.3 INDUSTRIAL SECTOR

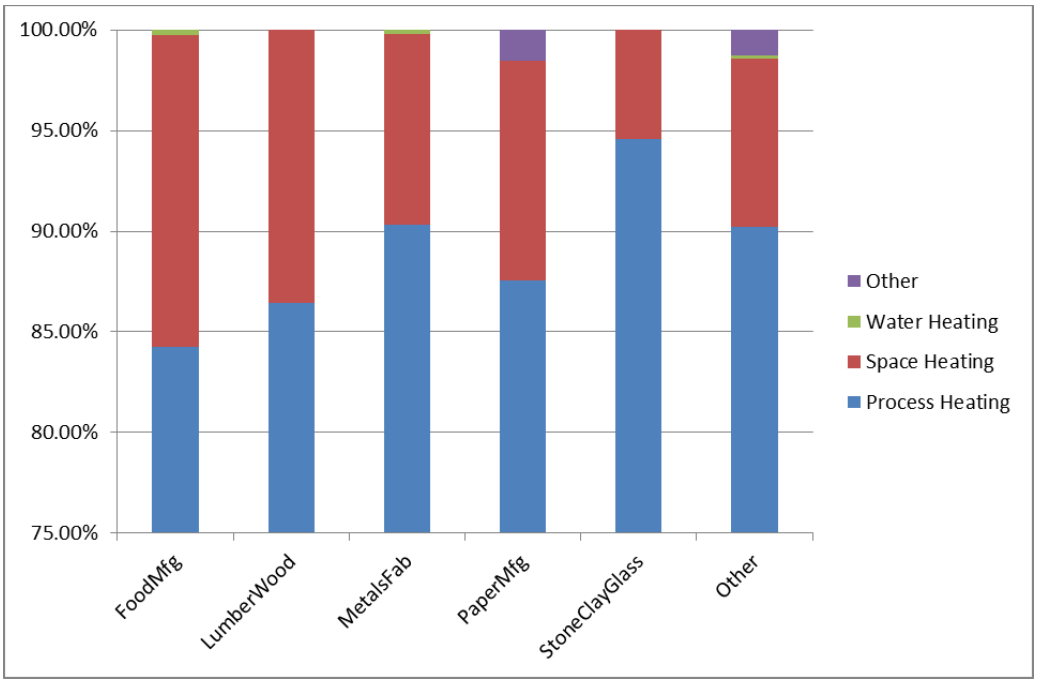
Table 4-4 shows the distribution of consumption by industrial segment for all eligible premises. The food manufacturing segment represents the largest share of energy use at 28.3%, with paper manufacturing representing the smallest share at 2.6% of consumption.

Table 4-4: Industrial 2012 Natural Gas Consumption & Premise Counts by Segment

Segment	Energy Consumption (annual dth)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Food Manufacturing	749,223	28.3%	465	1,611
Lumber, Wood Products	90,689	3.4%	340	267
Primary Metals Manufacturing	509,712	19.2%	1,081	472
Paper Manufacturing	69,240	2.6%	62	1,117
Stone, Clay, Glass Production	276,950	10.4%	446	621
Other	956,055	36.1%	8,245	116
Total	**2,651,868**	**100.0%**	**10,639**	**249**

Nexant further disaggregated Cascade's industrial load by end use. **Figure 4-3** shows the distribution of natural gas consumption by segment by end use. Process heating represents the largest share of end use consumption across all segments at 87.1% on average.

Figure 4-3: 2012 Industrial Natural Gas Consumption by Segment, by End Use



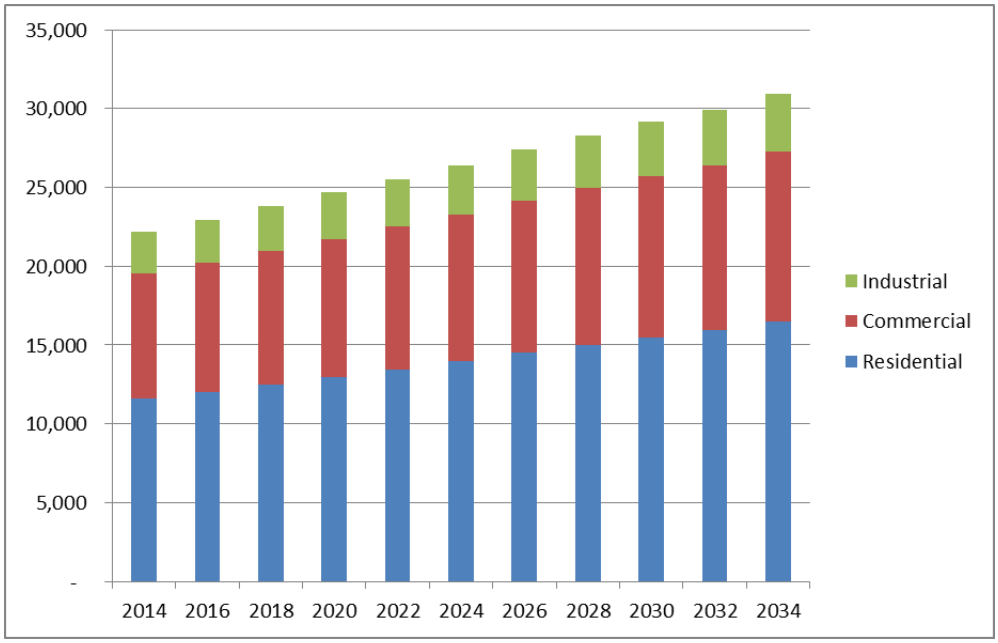
5 BASELINE FORECAST DISAGGREGATION

Table 5-1 and **Figure 5-1** summarize the baseline natural gas sales forecast by sector of eligible DSM sales for Cascade's Washington service territory.

Table 5-1: Natural Gas Consumption by Sector, by Year ('000 dth)

Sector	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034
Residential	11,609	12,023	12,508	12,986	13,454	13,951	14,505	15,001	15,475	15,935	16,506
Commercial	7,919	8,175	8,472	8,757	9,043	9,330	9,672	9,969	10,247	10,463	10,792
Industrial	2,663	2,749	2,849	2,945	3,041	3,138	3,253	3,353	3,446	3,519	3,630
Total	**22,191**	**22,948**	**23,830**	**24,688**	**25,539**	**26,419**	**27,430**	**28,322**	**29,169**	**29,917**	**30,927**

Figure 5-1: Natural Gas Consumption by Sector, by Year ('000 dth)



5.1 Disaggregated Forecast by Sector

Error! Reference source not found. through **Table 5-4** summarize the residential, commercial and industrial l baseline natural gas sales forecast by end use for Cascade's Washington service territory.

Table 5-2: Residential Baseline Natural Gas Consumption by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032
Space Heating	8,079,947	8,368,484	8,706,184	9,038,434	9,364,609	9,710,519	10,096,080	10,440,921	10,771,067	11,091,194
Water Heating	2,831,426	2,932,537	3,050,876	3,167,305	3,281,605	3,402,821	3,537,932	3,658,773	3,774,465	3,886,646
Room Heating	538,556	557,788	580,297	602,443	624,184	647,240	672,939	695,924	717,929	739,267
Clothes Dyer	26,917	27,879	29,004	30,111	31,197	32,350	33,634	34,783	35,883	36,949
Other	131,767	136,473	141,980	147,398	152,718	158,359	164,646	170,270	175,654	180,875
Total	**11,608,614**	**12,023,160**	**12,508,341**	**12,985,691**	**13,454,313**	**13,951,288**	**14,505,232**	**15,000,670**	**15,474,997**	**15,934,930**

Table 5-3: Commercial Natural Gas Baseline Forecast by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034
Space Heating	5,693,885	5,878,143	6,091,708	6,296,486	6,502,141	6,708,487	6,954,140	7,167,620	7,367,969	7,523,039	7,759,600
Water Heating	990,435.79	1,022,487	1,059,636	1,095,257	1,131,030	1,166,923	1,209,654	1,246,788	1,281,638	1,308,612	1,349,761
Cooking	575,922.22	594,559	616,161	636,874	657,675	678,547	703,394	724,987	745,252	760,937	784,864
Other	658,847.40	680,168	704,880	728,575	752,372	776,249	804,673	829,375	852,558	870,501	897,874
Total	**7,919,090**	**8,175,357**	**8,472,386**	**8,757,191**	**9,043,218**	**9,330,206**	**9,671,861**	**9,968,771**	**10,247,417**	**10,463,089**	**10,792,100**

Table 5-4: Industrial Natural Gas Consumption Baseline Forecast by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2032	2034	2014
Space Heating	40,749	42,067	43,596	45,061	46,533	48,010	49,768	51,296	52,729	53,839	55,532
Water Heating	9,322	9,623	9,973	10,308	10,645	10,983	11,385	11,734	12,062	12,316	12,703
Process Heating	2,319,212	2,394,264	2,481,252	2,564,661	2,648,428	2,732,476	2,832,535	2,919,489	3,001,094	3,064,257	3,160,612
Other	294,030	303,545	314,573	325,148	335,768	346,423	359,109	370,133	380,479	388,486	400,702
Total	**2,663,312**	**2,749,499**	**2,849,394**	**2,945,178**	**3,041,373**	**3,137,892**	**3,252,796**	**3,352,651**	**3,446,364**	**3,518,898**	**3,629,549**

6 PORTFOLIO ENERGY EFFICIENCY POTENTIAL

This section provides an overview of the findings for the entire portfolio of natural gas customers in Cascade's Washington service territory. Natural gas energy efficiency findings for technical, economic and achievable potential are presented in two parts. At the beginning of each section, detailed findings are presented for the "base-case" technical, economic, and achievable scenarios. Where findings are broken out by segment (building type) or end use, they are done so under the achievable base case scenario (for appropriate numbering see Error! Reference source not found.). All base case scenarios were run under the following main assumptions:

- Measure cost effectiveness screen: Utility Cost Test (UCT)
- Incentive percentage of incremental cost (for achievable scenarios): 30%, 50% or 75%
- Avoided Costs: Current avoided costs as provided in Appendix H of Cascade's 2012 IRP
- Discount Rate: 8.55%

Findings are then presented under each cost-effectiveness test (UCT vs. TRC). Additional summary findings on each of the 66 scenarios conducted for this study can be found in **Volume 2, Section 6 and Section 7.**

6.1 BASE CASE PORTFOLIO FINDINGS

Table 6-1 and

Figure 6-1 present the estimated technical, economic and achievable savings potential for Cascade's Washington service territory under the Utility Cost Test. First year (2014) natural gas conservation achievable base potential under the UCT screen for all sectors is 139,859 dth, representing 0.63% of baseline sales. It should also be noted that the achievable base savings potential is slightly greater than the achievable moderate savings potential (even though the moderate has a more aggressive adoption curve). This occurs because the measure cost used in the cost-effectiveness test under the achievable moderate scenario (50% of incremental cost) compared to the achievable moderate scenario (30% of incremental) causes more measures to fail cost-effectiveness. The fewer measures passing cost effectiveness has a greater impact on potential than the increased adoption of those measures. **Figure 6-2** shows the changes in Cascade's baseline sales forecast under each of the base case potential scenarios, screened with the UCT.

Table 6-1: Portfolio Energy Efficiency Potential Savings by Base Case Scenario under UCT Screen

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	22,191,016	22,948,017	24,688,061	26,974,698	30,927,487
Cumulative Savings (dth)					
Technical Potential	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential	476,641	1,494,793	3,606,967	6,314,915	10,434,394
Achievable - Base	139,859	437,581	1,130,474	2,243,553	4,448,248
Achievable - Moderate	137,844	441,098	1,180,749	2,384,769	4,677,603
Achievable - High	141,599	446,575	1,153,137	2,239,052	4,160,771
Energy Savings (% of baseline sales)					
Technical Potential	3.35%	10.19%	22.96%	36.82%	53.63%
Economic Potential	2.15%	6.51%	14.61%	23.41%	33.74%
Achievable - Base	0.63%	1.91%	4.58%	8.32%	14.38%
Achievable - Moderate	0.62%	1.92%	4.78%	8.84%	15.12%
Achievable - High	0.64%	1.95%	4.67%	8.30%	13.45%

Figure 6-1: Portfolio Energy Efficiency Potential Savings (% Sales) by Base Case Scenario under UCT Screen

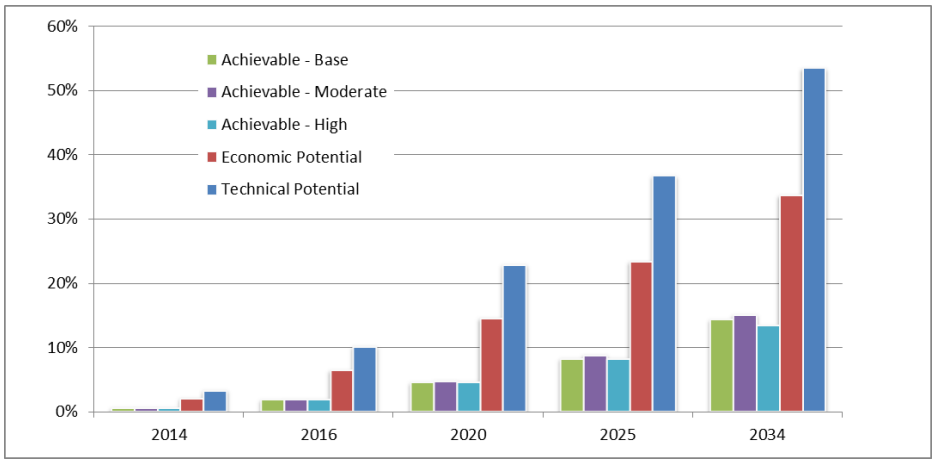
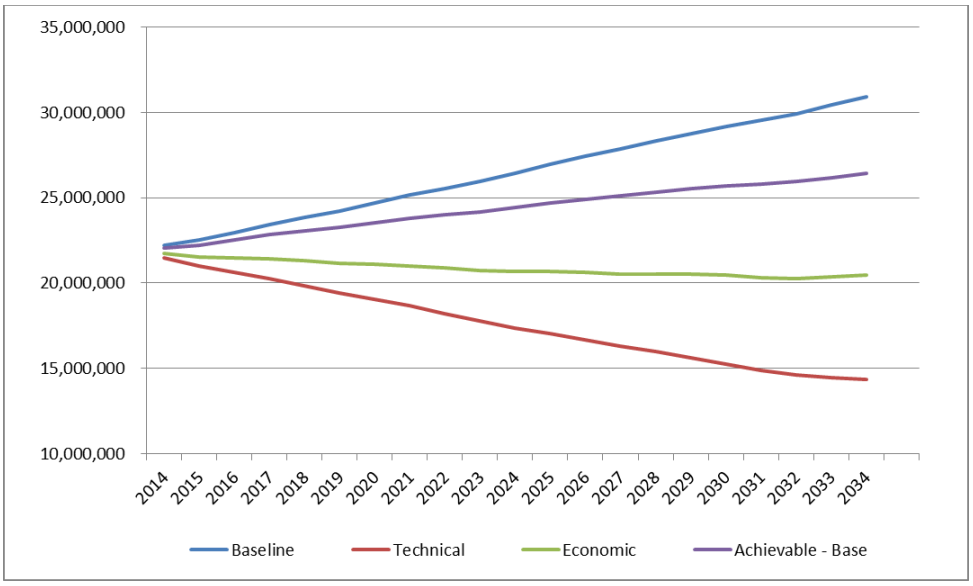


Figure 6-2: 21-year Portfolio Sales Forecast (dth) by Base Case Scenario under UCT Screen



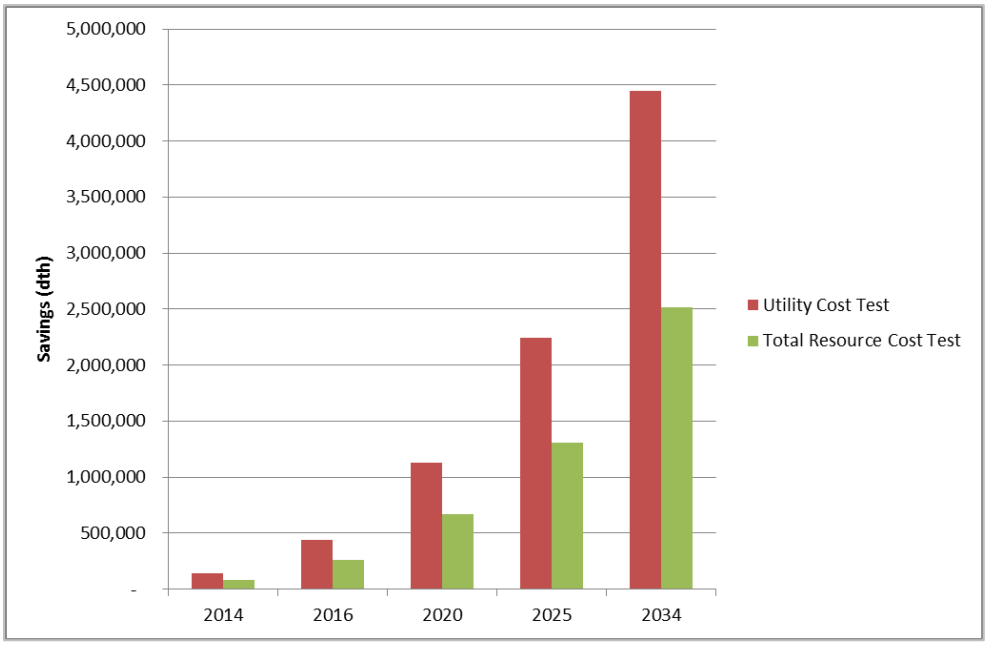
6.2 PORTFOLIO FINDINGS BY COST-EFFECTIVENESS TEST

Table 6-2 and **Figure 6-3** below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. As can be seen there is approximately 40% more savings potential under the achievable base scenario in 2014 under the UCT screen (139,859dth) compared to the TRC screen (83,674 dth). This occurs because the UCT only considers the incentivized portion of the measure cost, thus allowing more measures to pass cost-effectiveness when compared with the TRC screen. It can also be seen that unlike the UCT findings, savings potential increases from achievable base to achievable moderate under the TRC screen because the measure cost is the full incremental cost under all scenarios so the same number of measures are considered under each scenario.

Table 6-2: Portfolio Savings Potential by Base-Case Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (6+28+50)	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential (7+29+51)	476,641	1,494,793	3,606,967	6,314,915	10,434,394
Achievable - Base (8+30+52)	139,859	437,581	1,130,474	2,243,553	4,448,248
Achievable - Moderate (9+31+53)	137,844	441,098	1,180,749	2,384,769	4,677,603
Achievable - High (10+32+54)	141,599	446,575	1,153,137	2,239,052	4,160,771
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (1+23+45)	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential (2+24+46)	280,661	890,127	2,146,790	3,738,374	5,994,207
Achievable - Base (3+25+47)	83,674	261,580	668,838	1,310,576	2,512,861
Achievable - Moderate (4+26+48)	107,728	341,487	891,790	1,754,511	3,321,079
Achievable - High (5+27+49)	142,755	450,536	1,160,443	2,234,333	4,103,135

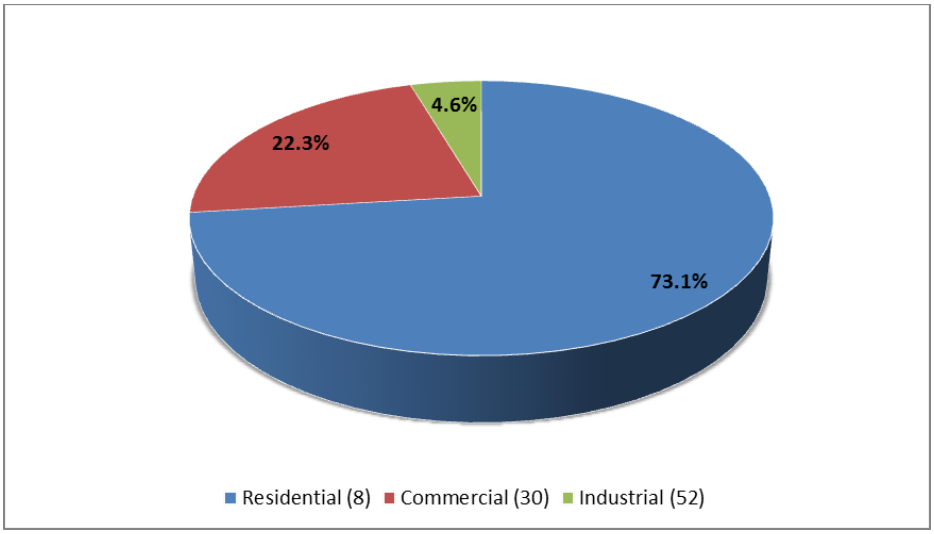
Figure 6-3: Portfolio Achievable Base Potential by Cost-Effectiveness Screen



7 ACHIEVABLE POTENTIAL BY SECTOR

Figure 7-1 shows the distribution of savings by sector for the achievable base scenario. Residential shows the largest potential at 73% of the total, with Commercial representing 22% and Industrial just under 5%.

Figure 7-1: 2014 Achievable Base Savings Potential by Sector under UCT Screen



7.1 Residential Potential Findings

7.1.1 Base Case Residential Findings

Table 7-1 and Figure 7-2 present the estimated cumulative technical, economic and achievable savings potential for the residential sector in Cascade's Washington service territory under the Utility Cost Test (UCT). Cascade's 2014 achievable-base savings potential is estimated at 102,231 dekatherms, reaching 3.1M dekatherms in 2034, representing 0.9% and 18.9% of current year sales respectively.

Table 7-1 Residential Cumulative Natural Gas Savings Potential by Base Case Scenario under the UCT

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	11,608,614	12,023,160	12,985,691	14,246,171	16,505,838
Cumulative Savings (dth)					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	317,391	1,008,519	2,431,359	4,323,971	7,216,991
Achievable - Base	102,231	318,717	809,252	1,601,762	3,115,143
Achievable - Moderate	94,517	302,284	795,012	1,613,675	3,120,243
Achievable - High	94,522	297,154	749,820	1,479,572	2,735,363
Energy Savings (% of baseline sales)					
Technical Potential	4.00%	12.34%	27.78%	45.35%	66.21%
Economic Potential	2.73%	8.39%	18.72%	30.35%	43.72%
Achievable - Base	0.88%	2.65%	6.23%	11.24%	18.87%
Achievable - Moderate	0.81%	2.51%	6.12%	11.33%	18.90%
Achievable - High	0.81%	2.47%	5.77%	10.39%	16.57%

Figure 7-2: Residential Energy Efficiency Potential Savings (% of Sales) by Base Case Scenario (UCT)

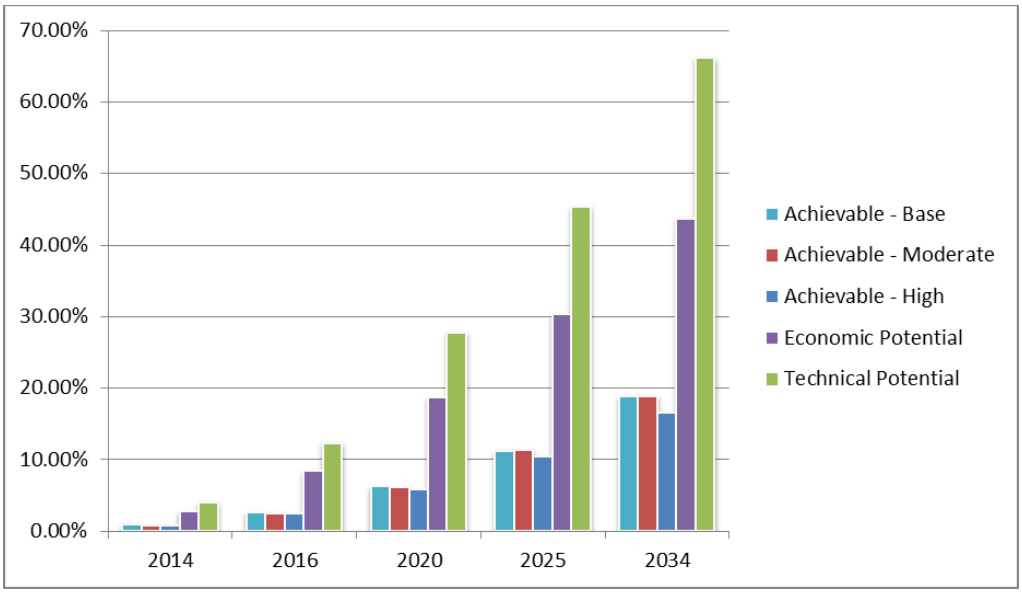


Table 7-2 shows the achievable savings potential when screened at various levelized cost/therm under the UCT test. Given its current program funding threshold of $0.42/levelized cost per therm, Cascade could potentially realize 73,677 dth of savings in 2014 were it to implement all cost-effective residential measures[7].

Table 7-2: 2014 Residential Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.12	$0.22	$0.32	$0.42	$0.53	$0.64	$0.75
Space Heating	17,041	25,794	31,093	44,256	55,419	71,748	72,808
Room Heating	2	2	2	2	2	2	2
Water Heating	29,419	29,419	29,419	29,419	29,419	29,419	29,419
Clothes Drying	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
TOTAL	**46,462**	**55,215**	**60,514**	**73,677**	**84,840**	**101,169**	**102,229**

Figure 7-3 and **Table 7-3** summarizes the savings potential in the residential sector under the achievable-base scenario by segment and by end use. The single family segment shows the most potential for savings both on a total therms basis, and as a percentage of segment sales, while the space heating end use represents the largest share of end use savings at approximately 62% of total savings.

[7] This estimate also precludes other program potential constraints such as available budget, realization of administrative costs, regulatory considerations, among others.

Figure 7-3: Residential 2014 Achievable Base Potential Savings by Segment (UCT)

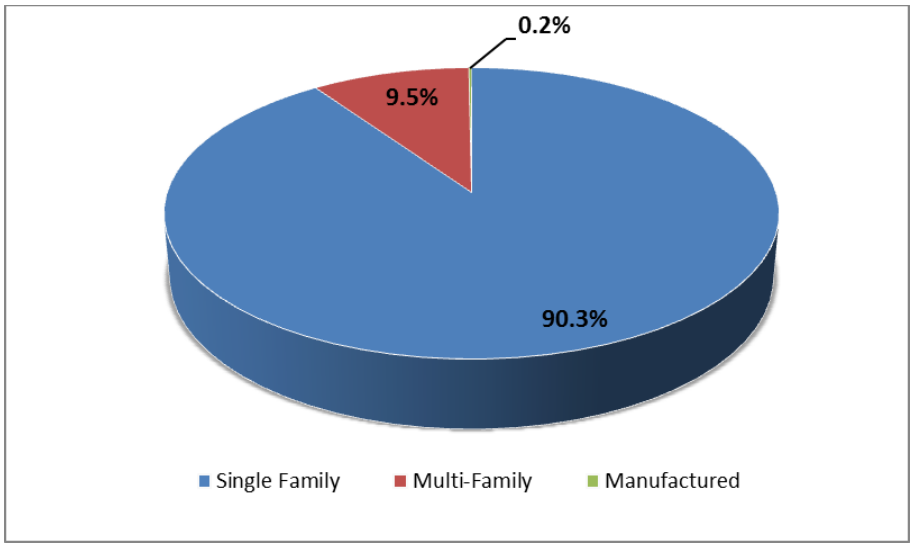


Table 7-3: Residential 2014 Cumulative Achievable Base Savings by Segment, by End Use (UCT)

	Single Family		Multi-Family		Manufactured		TOTAL
End Use	Dekatherms	% of Total	Dekatherms	% of Total	Dekatherms	% of Total	
Space Heating	228,139	62.8%	26,924	61.9%	409	61.1%	**255,472**
Room Heating	50	0.01%	14	0.03%	0	0.01%	**64**
Water Heating	133,727	36.8%	16,398	37.7%	259	38.6%	**150,384**
Clothes Drying	1,266	0.35%	178	0.41%	1	0.22%	**1,445**
% of Sales		**3.7%**		**2.5%**		**3.2%**	**3.5%**

7.1.2 Residential Findings by Cost-Effectiveness Screen

Table 7-4 below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. There is more achievable potential under the UCT test due to its more favorable cost-effectiveness screening methodology with achievable base savings of 102,231 dekatherms in 2014 (compared to 58,075 dekatherms under the TRC). For the Economic and Achievable Base scenarios UCT savings are higher than TRC savings by about 40%. UCT is also higher than TRC in the Achievable Moderate scenario by about 20%, whereas in the Achievable High scenario TRC savings are greater than UCT by about 5%.

Table 7-4: Residential Savings Potential by Base-Case Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	317,391	1,008,519	2,431,359	4,323,971	7,216,991
Achievable - Base	102,231	318,717	809,252	1,601,762	3,115,143
Achievable - Moderate	94,517	302,284	795,012	1,613,675	3,120,243
Achievable - High	94,522	297,154	749,820	1,479,572	2,735,363
Cumulative Savings (dth) based on TRC Screen					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	192,917	622,511	1,498,814	2,686,147	4,412,650
Achievable - Base	58,075	181,825	461,307	934,496	1,824,239
Achievable - Moderate	74,639	237,393	616,349	1,253,558	2,419,570
Achievable - High	98,949	313,235	801,824	1,596,849	2,992,451

7.2 COMMERCIAL POTENTIAL FINDINGS

7.2.1 Base Case Commercial Findings

Table 7-5 and
Figure 7-4 present the estimated technical, economic and achievable savings potential for the commercial sector in Cascade's Washington service territory under the Utility Cost Test. 2014 savings potential in the commercial sector under the achievable base scenario is 31.229 dth, representing 0.39% of current year sales. Under a higher incentive rate of 75%, the 2014 savings potential in the commercial sector under the achievable high scenario increases to 37,461 dth, representing 0.47% of sales.

Table 7-5: Commercial Energy Efficiency Potential by Scenario under UCT Screen (dth)

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	7,919,090	8,175,358	8,757,191	9,525,092	10,792,100
Cumulative Savings (dth)					
Technical Potential (28)	245,635	749,691	1,811,603	1,811,603	4,919,046
Economic Potential (29)	138,153	422,290	1,023,921	1,023,921	2,774,773
Achievable - Base (30)	31,228	99,116	272,356	272,356	1,157,574
Achievable - Moderate (31)	35,705	115,110	324,650	324,650	1,332,303
Achievable - High (32)	37,461	120,085	332,083	332,083	1,214,167
Energy Savings (% of baseline sales)					
Technical Potential	3.10%	9.17%	20.69%	19.02%	45.58%
Economic Potential	1.74%	5.17%	11.69%	10.75%	25.71%
Achievable - Base	0.39%	1.21%	3.11%	2.86%	10.73%
Achievable - Moderate	0.45%	1.41%	3.71%	3.41%	12.35%
Achievable - High	0.47%	1.47%	3.79%	3.49%	11.25%

Figure 7-4: Commercial Energy Efficiency Potential by Scenario under Utility Cost Test

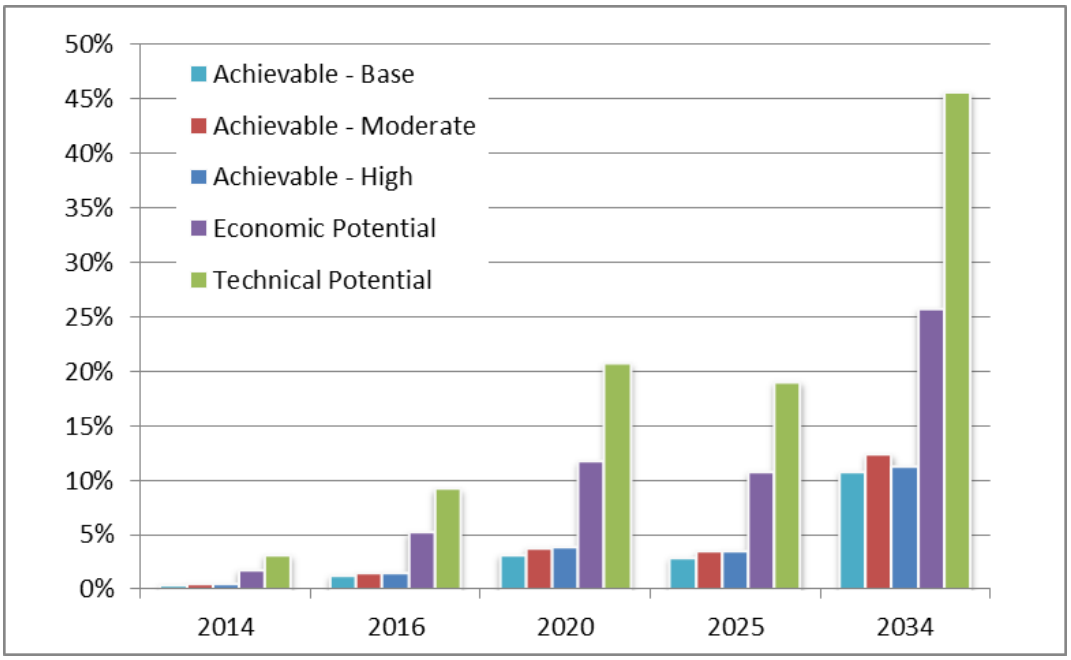


Table 7-6 shows the achievable base savings when screened at various levelized cost/therm under the UCT test. Given its current program threshold of $0.42/levelized cost per therm, it's possible to achieve 27,201 dth in the commercial sector assuming all cost effective measures are pursued.

Table 7-6: Commercial 2014 Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.15	$0.25	$0.35	$0.42	$0.55	$0.65	$0.85
Space Heating	1,534	6,998	8,520	10,758	11,955	12,807	14,133
Water Heating	12,101	13,512	13,736	14,678	14,924	15,339	16,058
Cooking	234	250	254	254	274	274	274
Other	-	515	515	711	711	711	763
TOTAL	**13,870**	**21,274**	**23,024**	**27,201**	**27,864**	**29,131**	**31,228**

Figure 7-5 and **Table 7-7** show the achievable base potential by commercial segment by end use. Achievable base savings is fairly evenly distributed among the various segments with the most residing in education (25%) and the least in warehouses (0.9%). Again, these savings potential align closely with baseline sales. The majority of 2014 savings also reside in space heating (51%) and water heating (45%) across all segments. However, some segments such as restaurants see a higher share of savings potential in the cooking end use (4.3%).

Figure 7-5: 2014 Achievable Base Savings Potential by Commercial Segment (UCT)

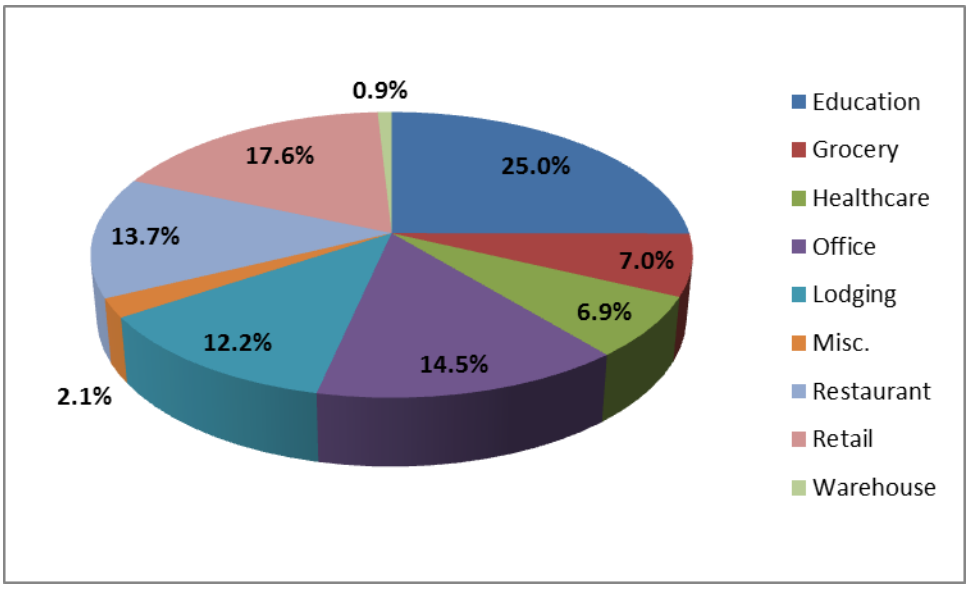


Table 7-7: Commercial 2014 Achievable Base Savings by Commercial Segment, by End Use (dekatherms and % of Total)

End Use	Education		Grocery		Healthcare		Office		Lodging		Misc.		Restaurant		Retail		Warehouse		TOTAL
	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	
Space Heating	1,333	17.0%	1,660	76.1%	335	15.5%	3,705	82.0%	191	5.0%	606	90.5%	957	22.4%	5,116	92.9%	231	85.5%	**14,133**
Water Heating	5,760	73.6%	455	20.9%	1,829	84.3%	813	18.0%	3,567	93.6%	64	9.5%	3,139	73.3%	393	7.1%	39	14.5%	**16,058**
Cooking	19	0.2%	67	3.1%	4	0.2%	-	0.0%	-	0.0%	-	0.0%	184	4.3%	-	0.0%	-	0.0%	**274**
Other	711	9.1%	-	0.0%	-	0.0%	-	0.0%	52	1.4%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**763**
% of Sales	0.6%		0.4%		0.7%		0.2%		1.2%		0.2%		0.6%		0.3%		0.1%		**0.4%**

7.2.2 Commercial Findings by Cost Effectiveness Screen

As noted above, Nexant examined savings potential under both the TRC and UCT screen to comply with WUTC's October 9, 2013 Policy Statement regarding cost screening. **Table 7-8** below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. . Similar to the residential sector, significantly more savings potential is realized under the UCT screen with 31,228 dth in 2014 compared to 20,408 dth under the TRC screen.

Table 7-8: Commercial Savings Potential by Scenario, by Cost-Effectiveness Screen (dth)

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (28)	245,635	749,691	1,811,603	1,811,603	4,919,046
Economic Potential (29)	138,153	422,290	1,023,921	1,023,921	2,774,773
Achievable - Base (30)	31,228	99,116	272,356	272,356	1,157,574
Achievable - Moderate (31)	35,705	115,110	324,650	324,650	1,332,303
Achievable - High (32)	37,461	120,085	332,083	332,083	1,214,167
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (23)	245,635	749,691	1,811,603	3,036,629	4,919,046
Economic Potential (24)	74,703	227,948	552,393	881,742	1,300,918
Achievable - Base (25)	20,408	63,925	169,113	306,647	571,900
Achievable - Moderate (26)	26,581	84,226	227,098	413,413	754,225
Achievable - High (27)	35,136	110,840	294,314	521,315	915,961

7.3 Industrial Potential Findings

7.3.1 Base Case Industrial Findings

Table 7-9, and
Figure 7-6 present the estimated technical, economic and achievable savings potential for the industrial sector in Cascade's Washington service territory under the Utility Cost Test. Cumulative savings by the

year 2034 are projected at 20% of baseline sales for Technical Potential, and this savings potential reduces to 4.8% over the 20 year study horizon for the Achievable Base scenario. As is the case with each sector, the Achievable scenario's projected savings are not necessarily linear with the 'base', 'moderate', and 'high' designations.

Table 7-9: Industrial Energy Efficiency Potential Savings by Base Case Scenario (UCT)

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	2,663,312	2,749,499	2,945,178	3,203,435	3,629,550
Cumulative Savings (dth)					
Technical Potential	34,565	104,656	248,293	434,112	737,634
Economic Potential	21,097	63,985	151,686	268,511	442,629
Achievable - Base	6,400	19,748	48,866	93,998	175,531
Achievable - Moderate	7,621	23,704	61,087	120,160	225,057
Achievable - High	9,616	29,337	71,234	128,528	211,241
Energy Savings (% of baseline sales)					
Technical Potential	1.30%	3.81%	8.43%	13.55%	20.32%
Economic Potential	0.79%	2.33%	5.15%	8.38%	12.20%
Achievable - Base	0.24%	0.72%	1.66%	2.93%	4.84%
Achievable - Moderate	0.29%	0.86%	2.07%	3.75%	6.20%
Achievable - High	0.36%	1.07%	2.42%	4.01%	5.82%

Figure 7-6: Industrial Energy Efficiency Potential Savings (% Sales) by Base Case Scenario (UCT)

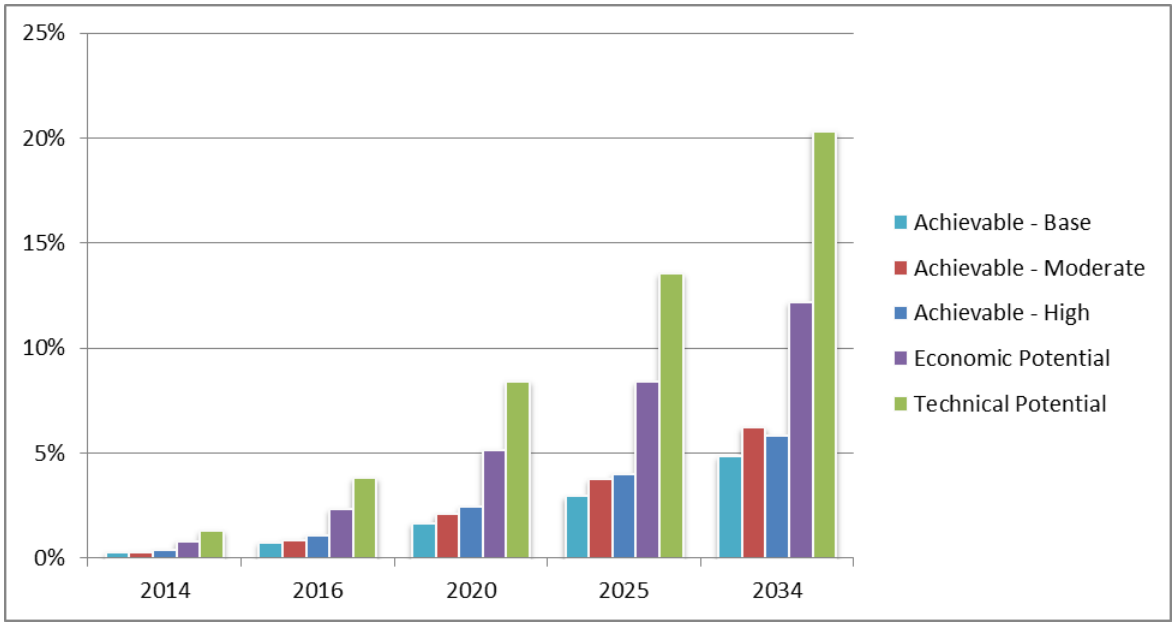


Table 7-10 shows the achievable base savings potential when screened at various levelized cost/therm under the UCT test. When screened at Cascade's current levelized cost threshold of $0.42/therm, it's possible to achieve up to 5,762 dth in the industrial market assuming all cost-effective measures are pursued.

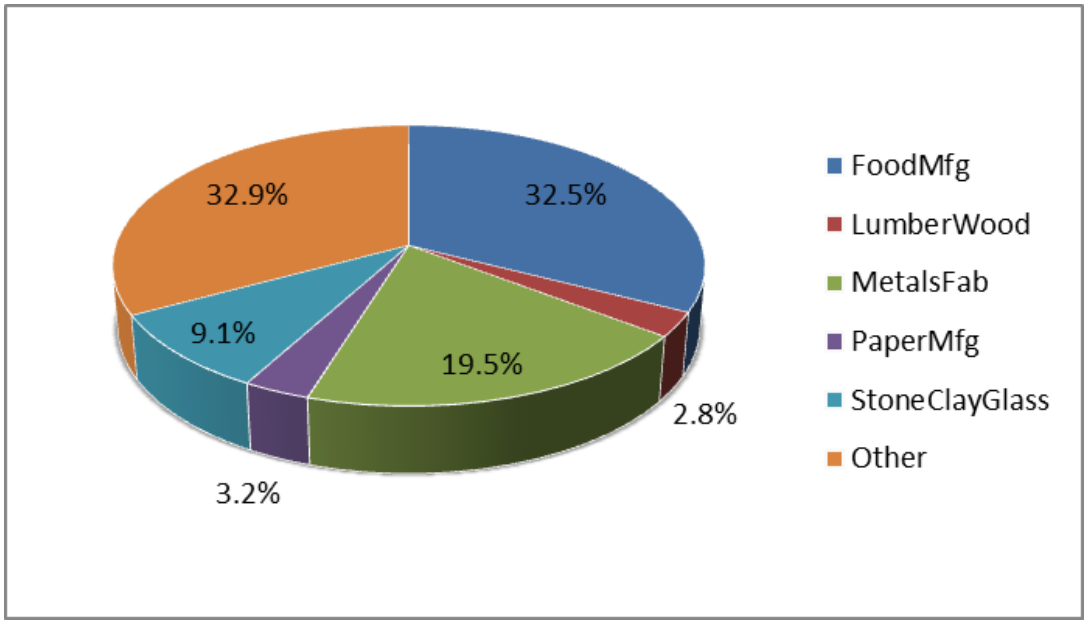
Table 7-10: Industrial 2014 Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.15	$0.25	$0.35	$0.42	$0.55	$0.60	$0.65
Process Heating	5,161	5,161	5,161	5,161	5,340	5,340	5,340
Space Heating	29	594	596	600	985	1,005	1,060
Water Heating	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
TOTAL	**5,191**	**5,755**	**5,757**	**5,762**	**6,325**	**6,345**	**6,400**

Figure 7-7 and

Table 7-11 below summarize the cumulative industrial savings potential by segment by end use. By segment under the achievable base savings scenario, Food Manufacturing and the "Other"[8] category are projected to make up roughly 33% each of total potential savings, while Metals Fabrication makes up the third largest potential savings at 19.5% of the total potential. Process Heating End Use represents the majority of the savings opportunity in all industrial segments. No water heating or "other" end use measures passed cost-effectiveness, and therefore have no achievable potential in the industrial sector.

Figure 7-7: 2014 Achievable Base Savings Potential by Industrial Segment (UCT)



[8] The "Other" industrial segment includes various industries including textiles, petroleum and allied products, printing, chemicals and allied products, leather manufacturing, electronic manufacturing, forestry, among other many other industrial industry facility types.

Table 7-11: 2014 Achievable Base Savings by Industrial Segment, by End Use (UCT)

	FoodMfg		LumberWood		MetalsFab		PaperMfg		StoneClayGlass		Other		TOTAL
End Use	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	
Process Heating	1,642	78.9%	1,061	85.3%	527	90.3%	176	86.0%	527	90.3%	1,800	85.5%	**5,732**
Space Heating	440	21.1%	183	14.7%	57	9.7%	29	14.0%	57	9.7%	304	14.5%	**1,070**
Water Heating	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**-**
Other	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**-**
% of Sales	**0.27%**		**1.35%**		**0.11%**		**0.29%**		**0.21%**		**0.22%**		**0.25%**

7.3.2 Industrial Findings by Cost Effectiveness Test

Table 7-12 below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. As with the other sectors, UCT potential is consistently larger than TRC potential by amounts varying from 8%-37% higher, with 21 year UCT savings ranging from 175,531 dth under the Achievable Base scenario, to 225,057 dth under the Achievable moderate scenario.

Table 7-12: Industrial Savings Potential by Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (50)	34,565	104,656	248,293	434,112	737,634
Economic Potential (51)	21,097	63,985	151,686	268,511	442,629
Achievable - Base (52)	6,400	19,748	48,866	93,998	175,531
Achievable - Moderate (53)	7,621	23,704	61,087	120,160	225,057
Achievable - High (54)	9,616	29,337	71,234	128,528	211,241
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (45)	34,565	104,656	248,293	434,112	737,634
Economic Potential (46)	13,042	39,667	95,583	170,485	280,638
Achievable - Base (47)	5,191	15,830	38,418	69,433	116,722
Achievable - Moderate (48)	6,508	19,868	48,343	87,540	147,284
Achievable - High (49)	8,671	26,461	64,305	116,170	194,724

8 CONCLUSIONS

The results of this study reveal that considerable natural gas energy efficiency opportunities exist for Cascade Natural Gas Corporation in its Washington service territory, despite recent declines in the cost of natural gas, the savings achieved to-date by Cascade's DSM programs, and increasing building standards due to the 2012 Washington State Energy Codes for buildings. Our analysis shows that 137,844 dth of natural gas savings are achievable in 2014 across all sectors when measures are screened using the UCT, increasing to 4.5M dth of cumulative natural gas savings by 2034. These findings should be viewed with the following considerations in mind:

- The natural gas savings potential highlighted in this report does not reflect "program potential", but rather achievable potential which assumes all cost-effective measures are pursued and implemented.
- The achievable potential findings also assume no limitations on program spending to achieve all cost-effective measure savings.
- Administrative costs were not included when screening measures for cost-effectiveness.
- The approach of using the UCT as the cost-effectiveness screen departs from prior potential studies conducted for Cascade. Prior studies for Cascade utilized the TRC cost-effectiveness screen which typically results in less saving potential when compared to the UCT. Nexant has run various scenarios to illustrate the difference in savings potential under both the UCT and TRC cost-effectiveness screen.
- The measure costs utilized for the purposes of the potential assessment are lower resolution than those that would be available by the company for program planning. For program planning purposes the costs may be refined by the company to better reflect costs in their specific service territory.
- This report (**Volume I**) provides summary findings of the base-case and cost-effectiveness screen scenarios. Detailed cumulative natural gas savings potential by sector, by segment, by end use and by year are presented for all 66 scenarios modeled by Nexant in **Vol. III, Appendix B**.

Cascade Natural Gas Corporation

Volume 2:
Assessment of Achievable Potential & Program Evaluation

Submitted to Cascade Natural Gas Corporation
Submitted by Nexant, Inc.

February 25, 2014



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1 INTRODUCTION

1.1 OVERVIEW

Cascade Natural Gas Corporation ("Cascade") has offered energy efficiency programs to its customers since the 1990s with expanded programs beginning in 2008. In light of significant changes to codes, costs, technologies, and gas prices that have taken effect in the past four years, Cascade has contracted with Nexant, Inc. ("Nexant") to perform a comprehensive assessment of the technical and achievable natural gas conservation potential within Cascade's Washington service territory for residential, commercial and industrial sectors. This assessment references Cascade's potential assessment conducted in 2006 by the Energy Trust of Oregon, which in turn was refined in 2009 to include Cascade's Washington conservation potential. The assessment conducted in 2006 and refined in 2009 included all of the Cascade Natural Gas service territory in Washington and Oregon. This assessment does not directly build on those reports; and thus represents a new assessment of Cascade's energy efficiency potential. This assessment stands apart from previous studies as a potential assessment for Cascade Natural Gas Washington State service territory only. The findings of this assessment will help inform the development of Cascade's Integrated Resource Planning (IRP) process as well as provide guidance for future program planning and development efforts. In addition to providing potential assessment, Cascade also requested Nexant evaluate energy savings associated with measures installed by participants in Cascade's Conservation Incentive Program during 2011/12.

This report presents results of the technical, economic, and achievable potential for natural gas energy efficiency savings in Cascade's Washington service territory over the next 21 years (2014-2035). Program potential was not included in the study scope, but could be developed by Cascade using the findings of this study and based on regulatory/budgetary parameters, cost-effective thresholds, policy considerations, and decisions on which subset of cost-effective measures to offer to customers going forward. Nexant assessed therm savings realized through Cascade's program to-date, researched natural gas energy efficiency measures to estimate measure-specific savings, costs and lifetimes, and conducted a detailed bottom-up assessment of the Cascade market to provide a credible and transparent estimation of the technical and achievable energy efficiency potential.

1.2 STUDY GOALS

The primary goal of this assessment was to develop a comprehensive assessment of technical and achievable potential for natural gas energy efficiency within Cascade's Washington service territory for customers on Rate Schedules 503, 504, 505, 511, 570 & 577 (residential, commercial and non-transport sales industrial customers). This objective analysis illustrates the remaining savings potential by sector, segment and end use as a means to inform future program design given the declining cost of natural gas. The study also integrated a detailed evaluation and measure savings review of Cascade's conservation portfolio. Key objectives of this study include:

- Provide credible and transparent estimation of the technical and achievable energy efficiency potential by year over the next 21 (2014-2034) years within Cascade's Washington service territory;
- Assess and validate therm savings associated with key measures that qualified for, and received, a conservation incentive in the 2012 program year, and apply findings to determine realistic therm savings potential in Cascade's Washington Service area;
- Provide a user friendly, executable dynamic model that will support the potential assessment and allow for testing of sensitivity of all model inputs and assumptions;
- Develop a final report including summary data tables and graphs reporting incremental and cumulative potential by year from 2014 through 2034.

1.3 REPORT ORGANIZATION

This report is presented in three volumes as outlined below. This document represents **Volume 2: Assessment of Achievable Potential and Program Evaluation.**

- Volume 1: Executive Summary
- Volume 2: Assessment of Achievable Potential and Program Evaluation
- Volume 3: Detailed Appendices

2 METHODOLOGY

Energy efficiency potential studies involve a number of analytical steps to produce estimates of each type of energy efficiency potential: technical, economic, and achievable. This study utilizes Nexant's in-house developed Microsoft Excel-based modeling tool, TEA-POT (**T**echnical/**E**conomic/**A**chievable **Pot**ential). This modeling tool is built on a platform that provides the ability to run multiple scenarios and re-calculate potential savings based on variable inputs such as sales/load forecasts, natural gas prices, discount rates, and actual program savings. This model provides Cascade with the utmost transparency into the assumptions and calculations for estimating market potential. TEA-POT has been consistently upgraded and refined over the past several years, with the most recent upgrade occurring in 2012. The major analytical steps are summarized below and specific changes in methodology from one sector to another have been noted throughout this section.

2.1 MEASURE SAVINGS REVIEW

A thorough review of Cascade's past evaluated therm savings associated with its DSM programs not only provided critical feedback to Cascade DSM program managers, but also helped provide important baseline savings and participation data that informed both remaining potential as well as the market adoption curves discussed in **Section 2.2.5.4**. Nexant developed a three-pronged approach to review the energy savings for Cascade's current portfolio of natural gas measures for the 2011/2012 program year: 1) A detailed desk review of submitted application forms, 2) Telephone surveys to verify proper measure documentation, installation and savings parameters, and 3) Billing analysis to evaluate pre and post installation energy consumption for relevant measures. The approach is outlined below.

2.1.1 Sample Selection

As a first step in evaluating Cascade's program, Nexant reviewed Cascade's DSM residential and commercial/industrial participation database to design a cost effective sample frame that would provide statistically meaningful findings. The sample was divided into a desk/telephone review sample frame and a billing analysis sample frame for both the residential and commercial sector. Program participants from the period June 1, 2011 through May 31, 2012 were identified as the eligible sample population[1].

The desk/telephone review sample was drawn from all measure categories within each sector. The number of sample points for each stratum is illustrated in **Table 2-1** below along with the estimated confidence/precision of Nexant's findings, assuming a coefficient of variance (Cv) of 0.5 and the available population during the evaluation period. Within each substratum of participants (e.g. residential furnace participants), accounts were selected using a simple random sampling method, except for the

[1] This guaranteed that Nexant has one full year of billing data available pre and post measure installation for the billing analysis discussed in Section 3.1.3.

commercial furnace and boiler participants where all (i.e. census) of the eligible participants were chosen from the evaluation time period.

Table 2-1: Sample Frame for Telephone/Desk Review

Sector	Cascade Sampling Approach	Sample Points	Confidence / Precision[2]	Measure Type
Residential	Desk Reviews	31	90/15	All
	Telephone Reviews	18	90/20	All
Commercial	Desk Reviews	27	90/8	All
	Telephone Reviews	19	90/11	All

2.1.2 Verifying Proper Measure Documentation

As a means to provide additional validity into the saving values reported by Cascade, Nexant conducted a spot-check desk review of a statistical sample of the completed projects in 2012 to ensure the savings methodologies were consistently applied and key parameters were correctly recorded into Cascade's participant database. In total 58 projects were randomly selected for desk review. A sub-sample of 37 participants was then called and a telephone survey conducted to verify installation and savings metrics.

The detailed review for the sample projects aimed to determine 1) if the data files of sampled projects are complete, well-documented, and adequate for calculation and reporting of the savings; and 2) whether the calculation methods used were correctly applied, appropriate, and accurate, and whether or not all necessary fields were properly populated.

Any inconsistencies found during this review are documented (see **Section 3:**

Measure Savings Review Findings). Based on these findings, recommendations are provided on changes to future program documentation approaches, if necessary.

[2] The confidence interval indicates a range within which one can be certain of the outcome. For example, using a 90/15 confidence/precision, indicates that 90% of the time, the results would occur within 15% of the reported value. While a higher 'confidence' infers higher actual confidence in the result, a lower 'precision' infers higher confidence.

2.1.3 Billing Analysis

The billing analysis assessed Furnace and Domestic Hot Water measure installations for residential participants and Furnace and Boiler measure installations for commercial/industrial participants[3]. The actual number of sample points for each stratum is shown in **Table 2-2** along with the estimated confidence/precision, assuming a coefficient of variance (Cv) of 0.5 and the given sample population during the evaluation period. Within each substratum of participants (e.g. residential furnace participants), accounts were selected using a simple random sampling method, except for the commercial furnace and boiler participants where all of the eligible participants were chosen from the evaluation time period.

Table 2-2: Sample Frame for Billing Analysis

Sector	Sample Points	Confidence / Precision	Measure Type
Residential	50	90/8	Water Heater
	53	90/11	Furnace
Commercial	8	90/20	Furnace
	5	90/30	Boiler

Nexant conducted a regression analysis of a sample of 116 projects to evaluate pre- and post-installation energy consumption using customer billing data from the period June 1, 2010 through May 31, 2013. Participants were initially screened to ensure 12 months of consistent billing data and occupancy prior to and after the measure was installed. For example, if there was a change in occupancy during the analysis period, Nexant removed that account from the analysis. For accounts where the billing data looked unusual compared to predictions, Nexant contacted the participants to ask a series of adjusted baseline questions. These questions aimed to determine if there were any notable changes to the baseline inputs for a given measure. For example, a change in the number of occupants[4] or the installation of additional major efficiency measures would deem that customer ineligible for the billing analysis. While Nexant initially targeted a census (i.e. all) commercial participants that received a rebate for a furnace or boiler in the study period, only 13 of the 39 participants were deemed eligible for the evaluation due to reasons listed above.

[3] These measure categories were chosen for the billing analysis not only given their high impact on portfolio savings, but also because they are the most appropriate measures for this type of analysis.

[4] With a different number of people in the household, various occupancy factors such as the amount of water consumed would change by an unknown amount, making the regressions analysis unreliable in predicting energy savings.

Due to limitations in data reporting, all measures were assumed to be replacements when the equipment reached the end of its useful life[5], with the baseline condition considered to be a new standard efficiency measure (2009 WA Code, **Table 2-3**). Measure efficiency inputs were pulled from available data provided in the rebate application form.

Table 2-3: Billing Analysis Baseline Efficiency Assumptions

Sector	Measure Type	Assumed Baseline Efficiency
Residential	Water Heater	58%
	Furnace	80%
Commercial	Furnace	78%
	Boiler	80%

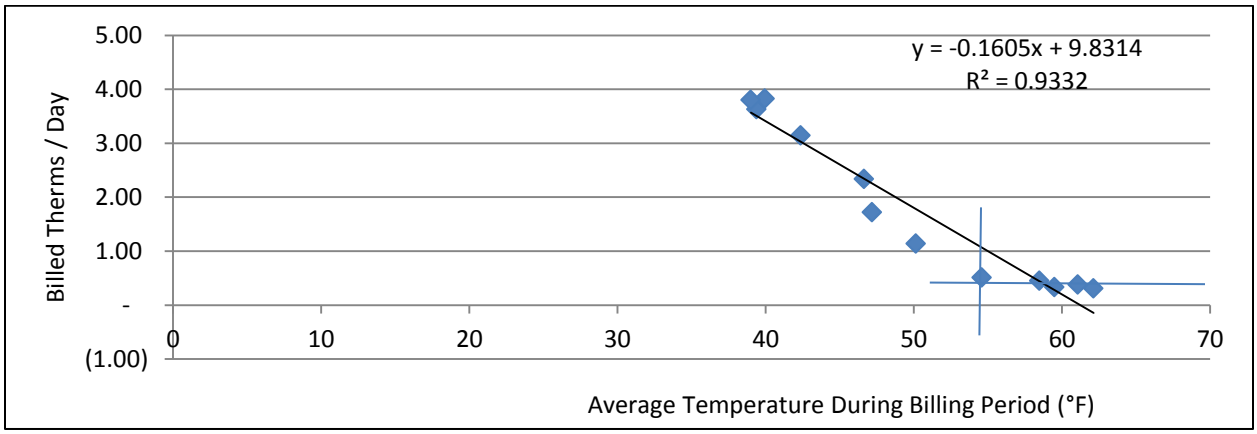
The following method was used to analyze each participant's billing data: Collect gas usage and meter read dates:

1. Collect gas usage and meter read dates.
2. Conduct initial screen to determine the appropriate billing history (12 months pre- and post-retrofit).
3. Determine climate zone specific heating degree days (HDDs) and reference heating temperature as applicable to each utility bill.
    (1) Heating degree days were calculated in the conventional manner. For each day in the observation period (i.e., billing period), the average daily temperature is first computed as the average between the minimum and maximum temperatures over the 24 hours of that day. The number of degree days for a specific day is the difference between the temperature chosen as the reference and the observed mean temperature. For heating, if the mean temperature is higher than the reference temperature, HDD is zero. The HDD for each day is summed across the number of days in the observation period to form the variable in **Equation 2-1**. Typical Mean Year (TMY) temperature values were used for projections.
    (2) As applied in a statistically based analytical framework, the reference temperature (Trc) is defined as the temperature that maximized the explanatory power of the model above (i.e., minimizes sum of squared residuals). Physically, Trc approximates the outdoor temperature above which the heating system must operate to maintain a constant indoor air temperature (D. Belzer, 2007). In this approach, the measure of degree days varies by household, derived from the pattern of actual consumption

[5] A reasonable assumption given that virtually all residential measure adoptions are completed at the end of the equipment's useful life.

rather than being based on some fixed temperature (e.g., 65°F, as a commonly published value)[6]. **Figure 2-1** below demonstrates the x-axis temperature values begin leveling out at the building-specific balance temperature (see blue crosshairs), which is 54° in this instance.

Figure 2-1: Illustration of Project-Specific HDD Threshold



4. Use linear regression of gas usage vs. HDDs to determine the heating load of each residence. The model is formulated as outlined in the equation below:

Equation 2-1: Billing Analysis Linear Regression Formula

$E=a+b\text{HDD}(T_{rc})+e$ where:

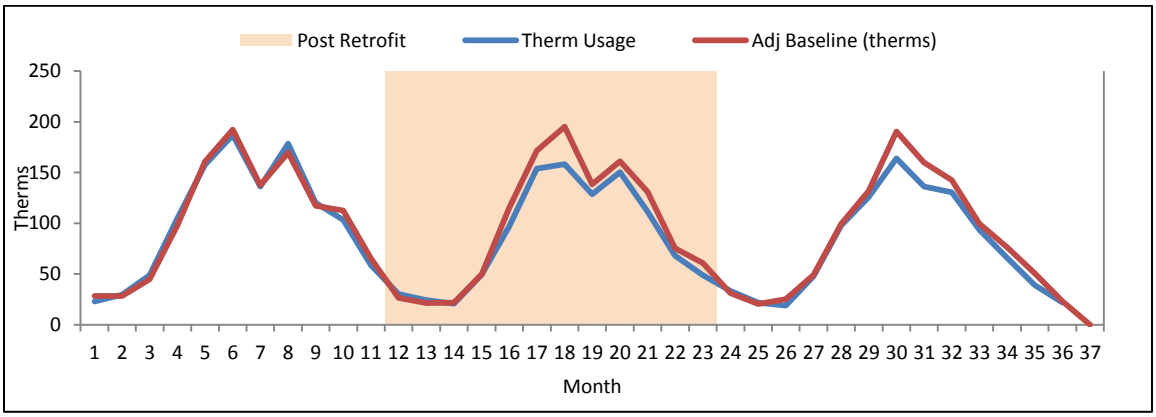
i. E= Energy consumption
ii. *a,b* = regression-model coefficients
iii. HDD = Heating Degree Days
iv. T_{rc}=reference temperature for heating
v. e=error term

In this equation, the *b* coefficient indicates the magnitude of the response of heating energy to changes in outside temperature. It incorporates both the thermal integrity of the structure as well as the efficiency of the heating equipment. Energy consumption for non-space conditioning (base level consumption) is represented by coefficient *a*. If monthly data is used in the equation, then *a* would represent average monthly non-space conditioning energy use. For homes using natural gas for space and water heating, this base-level use primarily results from water heating and cooking.

[6] This premise-specific approach was used for the billing analysis only. For the measure research component of the market potential study, Nexant utilized a fixed temperature of 65°F when estimating therm savings for weather-dependent residential measures. The fixed 65°F building balance temperature aligns with Cascade's IRP methodology.

Following this initial screen, a linear regression of the billing data was compared to projected therms consumption for the account. Should the r^2 values of this linear regression be less than 0.80, the account behavior was considered anomalous and disqualified from the final summary. **Figure 2-2** shows a sample output of the actual and adjusted energy consumption of one of the project analyzed, with an R^2 value of 0.987.

Figure 2-2: Sample Modeled Baseline and Adjusted Energy Consumption.



4. Calculate baseline gas consumption using a ratio of code efficiency to installed efficiency (as described in the rebate application).
5. Verified savings = Baseline gas consumption – Post-retrofit gas consumption.

The final step in the billing analysis compared average determined savings values to Cascade's reported savings values. This data is reported in **Section 3:**

Measure Savings Review Findings**.**

2.2 Energy Efficiency Potential Methodology

The energy efficiency potential in the Cascade's territory can be characterized by levels of opportunity. The ceiling or theoretical maximum is based on commercialized and emerging technologies and behavior measures, whereas the realistic savings that may be achieved through DSM programs reflects real world market constraints such as cost-benefit considerations, market barriers such as regional

economic conditions and customer perspectives, and finally budget and planning constraints. This analysis defines these levels of energy efficiency potential according to the Environmental Protection Agency's (EPA) National Action Plan for Energy Efficiency (NAPEE) [7] as illustrated in **Table 2-4**.

Table 2-4: Energy Efficiency Potential



EPA – National Guide for Resource Planning

- **Technical Potential** is the theoretical maximum amount of energy and capacity that could be displaced by efficiency, regardless of cost and other barriers that may prevent the installation or adoption of an energy-efficiency measure. Technical potential is only constrained by factors such as technical feasibility and applicability of measures.
- **Economic Potential** is the amount of energy and capacity that could be reduced by efficiency by measures that pass a cost-effectiveness test. It is at this screen, that utility discount rates and avoided costs are considered when valuing the costs and benefits of saved energy. The Total Resource Cost (TRC) Test estimates the measure costs to both the utility and customer, while the Utility Cost Test (UCT) estimates the measure costs to the utility. Like Technical Potential, Economic Potential is a theoretical number that assumes immediate implementation of efficiency measures, with no regard for the gradual "ramping up" process of real-life programs. Market barriers are ignored, and only the costs of the efficiency measures themselves are considered.
- **Achievable Potential** is the energy savings that can feasibly be achieved with cost-effective measures through program and policy interventions. For this analysis, Nexant assessed the achievable savings potential given various utility-provided incentive levels of an energy efficient measure's incremental cost. Real-world barriers are also taken into account, such as convincing end-users to adopt energy efficiency measures and the capability of programs and administrators to ramp up program activity over time. Taken together, the incentive level corresponds to a market adoption curve for all applicable measures.

[7] The EPA National Action Plan for Energy Efficiency: http://www.epa.gov/cleanenergy/documents/suca/napee_report.pdf

- **Program Potential** reflects the realistic quantity of energy savings the utility can realize through DSM programs during the horizon defined in the study. Savings delivered by program potential is often less than achievable potential, due to real-world constraints, such as program utility program budgets, cost-effectiveness thresholds, regulatory and policy statements, and decisions on which subset of cost-effective measures a utility ultimately decides to include in its portfolio.

The quantification of these four levels of energy efficiency potential is an iterative process reflecting assumptions on cost effectiveness that drill down the opportunity from the theoretical maximum to realistic program savings. This study explores technical, economic, and achievable conservation potential (program potential is not included in this assessment). That is, this study did not consider budget constraints nor did it consider the actual portfolio of measures offered through Cascade's DSM programs today or in the future. Achievable potential, therefore, reflects the savings potential given an unlimited utility budget to implement all cost-effective measures. It is from this upper-bound, from which Cascade can analyze the program potential given its limited resources to pay for and implement a sub-set of cost-effective measures. Data summarized in each section's supply curve (for example, see *Error! Reference source not found.* and **Table 7-3** for the residential sector), will help Cascade set its internal efficiency goals given the levelized cost of measure savings.

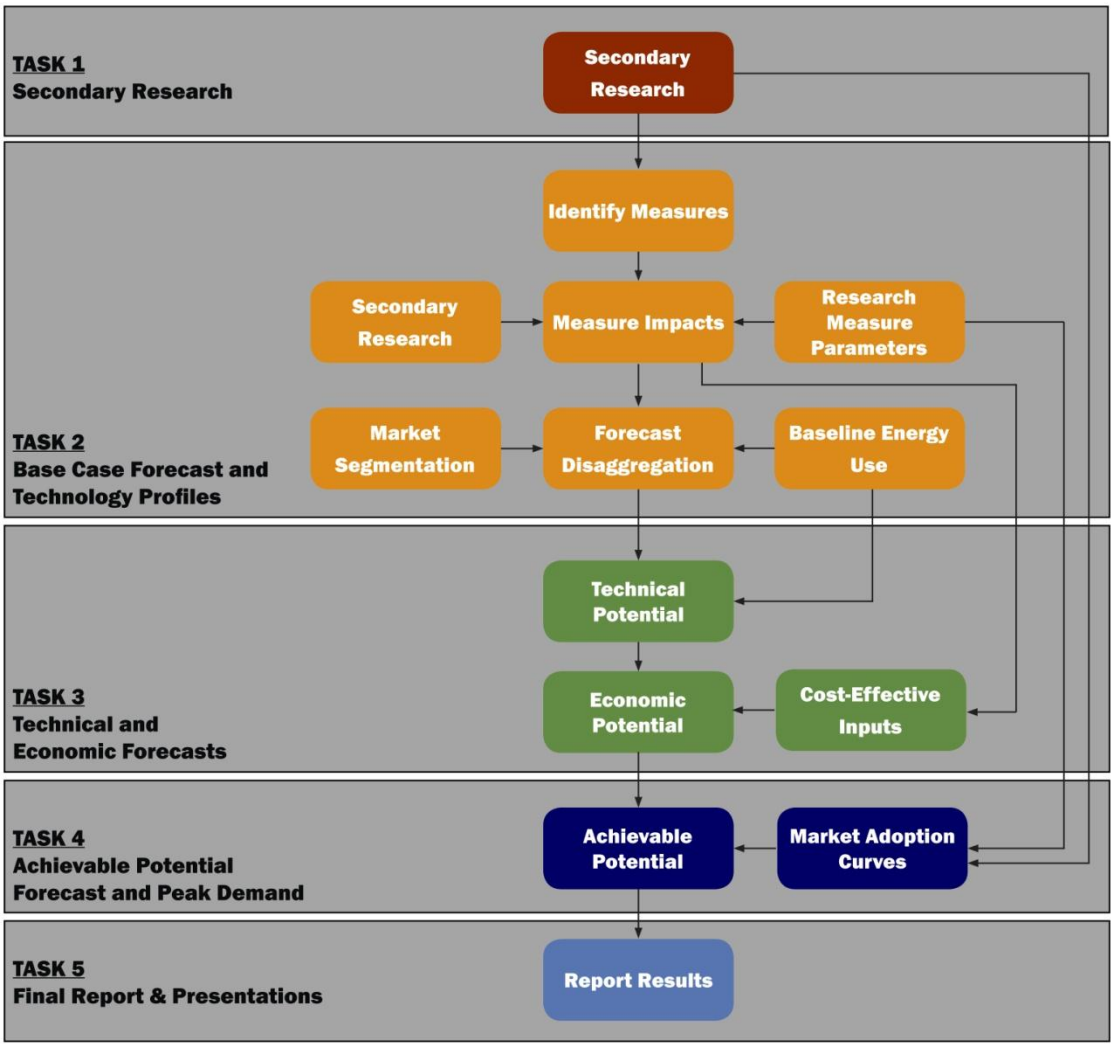
The California Standard Practice Manual[8]provides the methodology for estimating cost effectiveness of energy efficiency measures, bundles, programs or portfolios based on a series of tests representing the perspectives of the utility, customers, and stakeholders. In this potential study, individual measures were screened and bundles were analyzed for cost-effectiveness using the Total Resource Cost (TRC) and Utility Cost Test (UCT) from the Standard Practice Manual.

2.2.1 Quantifying Energy Efficiency Potential

A high level overview of the approach executed for the assessment of the energy saving potential for natural gas in Cascade's Washington service territory is illustrated in **Figure 2-3** and is further detailed throughout the remainder of this section.

[8] California Standard Practice Manual: http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF

Figure 2-3: Approach to Work



2.2.2 End-Use Baseline Sales Forecast

A critical first step in estimating energy efficiency potential is establishing a realistic energy use baseline and end-use saturation numbers from which a 10-year "business as usual" forecast can be built upon. The approach described below outlines this process and is followed by a discussion of the approach to defining the existing energy savings baseline for energy-efficiency measures.

The team utilized a compiled database of information on utility loads and sales forecasts, market data (fuel shares, energy system saturations, and structural characteristics), end-uses (unit energy consumption (UEC), energy use intensities (EUI) and load shapes), technology shares, and measure characteristics (technologies, costs, life, and savings) from existing primary and secondary data sources. The data collection and mining effort involves a search of available secondary sources including:

- Data and policy statements directly applicable to Cascade's Washington service territory, including:
    - 2009 Cascade Gas energy-efficiency potential assessment
    - Cascade's 2012 IRP document
    - Cascade's program participation database
    - Washington Utilities and Transportation Commission's "Policy Statement on the Evaluation of the Cost-effectiveness of Natural Gas Conservation Programs (Docket UG-121207)
- Regional studies, including:
    - Northwest Energy Efficiency Alliance (NEEA) Residential Building Stock Assessment (RBSA)
    - NEEA Commercial Building Stock Assessment (CBSA)
- Washington-specific and pacific northwest sections of National studies, examples including:
    - Residential Energy Consumption Study (RECS, with household characteristics data tables)
    - Commercial Buildings Energy Consumption Study (CBECS)
    - Manufacturing Energy Consumption Study (MECS)
- Energy market characterization and energy-efficiency potential assessments conducted for other natural gas utilities, including:
    - NorthWestern Energy End-Use and Load Profile Study, 2009
    - Ontario Energy Board 2009 Measures and Assumptions for DSM planning
    - CA Database for Energy Efficient Resources (DEER)
    - Illinois Statewide Technical Reference Manual (TRM) 2013
    - Wisconsin Focus on Energy TRM 2012
    - Puget Sound Energy's 2013 IRP document

2.2.3 Load Disaggregation and Forecast Study

After the collection of applicable secondary data sources, the next step is to disaggregate the most recent year of completed sales (2012) into a baseline year. In this study, the team disaggregated end-use loads and technologies and applied them across the study horizon by:

- Determining energy consumption per customer class and segment in baseline year.
- Disaggregating customer class loads into end-use loads, such as space heating.
- Segmenting end-uses loads into technologies, such as furnaces.
- Analyzing and calibrating data to 2012.

- Forecasting the 21-year end-use energy consumption through 2034.

2.2.3.1 Determine Energy Consumption per Customer Class and Segment in Baseline Year

The first step in the forecast disaggregation is to analyze energy loads for the residential, commercial and industrial customer classes. Separate models were developed for the residential, commercial and industrial sector. Segmentation was developed per market segment as follows:

- ***Residential:*** Single-family, multi-family home, and manufactured home.
- ***Commercial:*** Education, Grocery, Healthcare, Office, Lodging, Restaurant, Retail, Warehouse, Misc.
- **Industrial:** Food Manufacturing, Lumber/Wood Products, Primary Metal Manufacturing & Fabrication, Paper Manufacturing, Stone/Clay/Glass Production, Misc.

2.2.3.2 End-Use Load Classification

The next step in the forecast disaggregation analysis is to establish the end-use loads within the residential, commercial and industrial market segments. A sample of the types of end-use loads to be analyzed is found in

Table 2-5**.**

Table 2-5: End-Use Loads by Sector

Residential	Commercial	Industrial
Space Heating	Space Heating	Space Heating
Water Heating	Water Heating	Water Heating
Cooking	Cooking	Process Heating
Room Heating (Gas Fireplace/Hearth)	Other	Other
Clothes Drying	-	-
Other	-	-

2.2.4 Measure List Research

Once the baseline forecast is disaggregated, the next step to assessing market potential was to accurately detail the universe of efficiency measures and their savings, costs and lifetimes. Measures that are currently implemented in Cascade's Gas programs, as well as those measures found in other adjacent utility DSM programs, received careful consideration since these measures have a historical record and vendors have proven processes for implementation. Additionally the Nexant team, through its previous assignments, compiled one of the most comprehensive sets of energy efficiency measures available today. The list of measures can be found in **Section 9.** This list includes measures from Cascade's current portfolio of programs, measures evaluated in the Cascade's 2009 potential study, the California Database for Energy Efficiency Resources (DEER), various technical reference manuals (TRMs),

like those used for the State of Illinois, Wisconsin and the province of Ontario, as well as other measures the Nexant team has characterized in similar studies. From these databases measures that are commonly available, based on well-understood technology, and applicable to the buildings and end-uses, were selected for the measure list. Consideration was also be given to measures that show promise for future viability but have not yet gained a foothold in the market.

Energy efficiency potential adoption in the marketplace can be captured over time through three principal processes:

- **Turnover:** Replacements are made normally in the market when a piece of equipment is at the end of its effective useful life (also referred to as "replace-on-burnout")
- **Early Retirement:** Replacements are made before the end of an equipment's expected useful life(also referred to as "retrofit").
- **New:** When a measures is installed in a newly constructed home or building.

Upon finalization of the energy efficiency measure list data on energy savings, costs, lifetime, and applicability was collected to determine potential measure impacts. This work was performed through a four step process outlined below.

Step 1: Define market classes for application of measures

In line with the disaggregated load forecast, the team defined the applicability of the appropriate fuel type, sectors, market segments, vintages, and end-uses to each of the measures. These classes are defined as follows:

- ***Customer Sectors:*** Residential, commercial and industrial.
- **Market Segments:**
  - *Residential:* Single-family, multi-family home, and manufactured home.
  - *Commercial:* Education, Grocery, Healthcare, Office, Lodging, Restaurant, Retail, Warehouse, Misc.
  - *Industrial:* Food Manufacturing, Lumber/Wood Products, Primary Metal Manufacturing & Fabrication, Paper Manufacturing, Stone/Clay/Glass Production, Misc.
- ***Measure Type:*** Equipment, Non-equipment [9]
- ***Vintages:*** Equipment – Turnover, Retrofit, New
  Non-equipment – Existing, New

[9] Equipment measures are units that actually consume natural gas, such as a furnace. Non-equipment measures do not consume natural gas directly, such as windows or insulation.

Step 2: Screen sectors, segments, and end-uses for eligibility

The Nexant team screened market segments and end-uses for applicability of specific energy efficient strategies. For example, certain commercial end-uses, such as cooking loads, may not be appropriate for segments such as offices and warehouses, and were analyzed only in limited market sectors.

Step 3: Develop base case impacts and costs

For each of the energy efficiency measures on the final list, base case equipment and practices was determined. A description of all base case equipment and practices was documented, along with a description of why that particular base case was the best representation. All base case assumptions and data, such as Washington state building codes and federal standards, were included. Base case assumptions included projected future shifts in the base, such as the upcoming 2015 Federal Standards' impact on water heater code minimums.

Step 4: Develop energy efficiency measure impacts and costs

A description of all energy efficiency (or "change case") measure equipment and practices were also developed. All measure energy savings assumptions and calculation parameters, such as equivalent full load hours (EFLH), were provided and documented for transparency. For each measure, energy savings were estimated as a percentage of base equipment and/or end-use consumption.

In addition to energy savings, incremental measure costs were collected from retailer research, RSMeans (a construction cost database) or calls to local contractors, when appropriate. It should be noted that the measure costs utilized for the purposes of this potential assessment reflect average installation costs across various implementation scenarios and therefore may be at a lower resolution than costs available to Cascade for program planning. For program planning purposes Cascade may opt to refine costs to better reflect costs in their specific service territory. Research was also performed to determine the measure life for each energy efficiency measure based on available datasets.

Limited non-energy benefits will also be assessed as part of the study in the context of both incremental costs and savings. Other measures, such as clothes washers and pre-rinse spray valves, offer water savings in addition to energy savings.

2.2.5 Estimating Energy Savings Potential and Determine Market Potential

Drawing on the previous data compilation, organization, and market analysis tasks, the estimation of market potential is conceptually a straightforward exercise.

2.2.5.1 Develop Baseline Forecast

The baseline forecast is created by combining all of the inputs compiled in prior tasks to obtain average consumption estimates by customer segment, construction vintage and end use, and summing these up to the sector level. The disaggregated forecast data provides the foundation. For example, in the residential sector, the general equation for the DSM baseline forecast is:

Equation 2-2: $$Forecast_{BL} = \sum_{i,j,t} HH_{i,t} \times EUS_{i,j,t} \times UEC_{i,j,t}$$

Where: $HH_{i,t}$ = the number of households of type *i* in year *t*

$EUS_{i,j,t}$ = the saturation of end use type *j* in household type *i* in year *t*

$UEC_{i,j,t}$ = the unit energy consumption of end use *j* in household type *i* in year *t*

2.2.5.2 Estimate Technical Potential

The measure-level inputs were used to estimate technical potential over the planning horizon. This is accomplished by creating an alternate forecast where consumption is reduced by the installation of all technically feasible measures. For technical potential, which represents substitution of all technically feasible measures at the end use level (and following the residential example above), the general equation is:

Equation 2-3: $$Forecast_{TP} = \sum_{i,j,t} HH_{i,t} \times EUS_{i,j,t} \times UEC_{i,j',t}$$

Where: $HH_{i,t}$ = the number of households of type *i* in year *t*

$EUS_{i,j,t}$ = the saturation of end use type *j* in household type *i* in year *t*

$UEC_{i,j',t}$ = the unit energy consumption of end use *j'* (the most efficient end use technology configuration) in household type *i* in year *t*

The technical potential for DSM is simply the difference between Equation 2-2 and Equation 2-3. Because measures anticipated to be installed in the absence of utility intervention are included in the baseline forecast in Equation 2-2 (and, thus, the technical potential forecast), savings due to already occurring conservation were removed from the technical potential estimates.

Addressing Naturally Occurring Energy Efficiency

As noted above, one of the first steps in the potential study is to disaggregate utility sales forecasts, as all estimates of potential are ultimately calibrated back to these forecasts. Therefore, getting the forecasts correct is critical. It is also in the sales forecasts where we incorporate naturally occurring adoption, which is the savings estimated to occur as a result of normal market forces. The analysis team worked with forecasters at Cascade Gas to understand how the baseline sales forecasts incorporate two known sources of naturally occurring adoption:

- Codes and standards
- Efficiency measure baseline penetration

By properly accounting for these factors the potential study estimates the net penetration rates, which represent the difference between the anticipated adoption rates of the efficiency measures after intervention and the "business as usual" adoption rates absent efficiency intervention.[10] This is true even in the technical and economic scenarios, where the efficiency-case penetration will approach 100 percent, and particularly important in the achievable potential analysis, where we estimate the percentage of eligible measures (and associated savings) that can be expected to occur net of baseline penetration rates (people who would buy the efficient technology in the absence of any program intervention).

2.2.5.3 Estimate Economic Potential

The next step is to create an alternative forecast of "economic" DSM potential (i.e., considering the most efficient measures that pass economic screening tests), specifically the Total Resource Cost (TRC) and Utility Cost Test (UCT)[11] were utilized to screen individual measures. Again following the residential example, the general equation is:

Equation 2-4:
$$Forecast_{EP} = \sum_{i,j,t} HH_{i,t} \times EUS_{i,j,t} \times UEC_{i,j",t}$$

Where: $HH_{i,t}$ = the number of households of type *i* in year *t*

$EUS_{i,j,t}$ = the saturation of end use type *j* in household type *i* in year *t*

$UEC_{i,j",t}$ = the unit energy consumption of end use *j"* (the most efficient end use technology configuration *that is also economic*) in household type *i* in year *t*

Similar to the calculation of technical potential, the economic potential for DSM is the difference between **Equation 2-2** and **Equation 2-4.**

Calculating Cost Effectiveness

Nexant determined measure cost-effectiveness using accepted industry-standard cost-effectiveness tests, described below, to gauge the economic merits of the portfolio. Each test compares the benefits of the energy efficiency measures to their costs using its own unique perspectives and definitions in terms of net present value of future cash flows. The two standard tests are:

- ***Total Resource Cost test (TRC).*** The benefits in this test are the lifetime avoided energy costs. The costs in this test are the incremental measure costs.

[10] As defined in the "Guide for Conducting Energy Efficiency Potential Studies: A Resource for the National Action Plan for Energy Efficiency (NAPEE)", November 2007.

[11] Utility Cost Test is also known as Program Administrator Cost (PAC) Test per the California Standard Practice Manual

- ***Utility Cost Test (UCT)***, also called the program administrator cost test (PACT).The benefits in this test are the lifetime avoided energy costs. The costs in this test are the utility's cost of providing the incentives for the measures.

Administrative costs were not included in either cost-effectiveness test, nor were capacity benefits. The cost component of the analysis consists of incremental measure costs and utility program costs. The research team utilized a cost-effectiveness screen of 0.90 to account for a 10% environmental benefit adder as is the general practice in the Pacific Northwest[12]. This taken directly from Docket UG-121207: "The Northwest Power act requires the Washington Utilities Transportation Commission (WUTC) to use a 10 percent adder. 16 U.S.C. § 839a(4)(D). The Energy Dependence Act, RCW 19.285.040(1), requires electric utilities to evaluate cost-effectiveness using the WUTC methodology, so electric utilities in Washington apply a 10 percent conservation adder to Total Resource Cost calculations. WUTC is not aware of an authority that currently allows the use of a 10 percent adder in the natural gas sector."

Nexant then produced estimates of levelized cost-of-conserved-energy (CCE) for each measure by integrating resource data (per-unit costs, savings, and measure life) with baseline building stock data (base-case fuel and end-use saturations, measure applicability factors, and current measure saturations) and baseline energy usage data. Cascade-specific data on avoided costs, distribution losses, discount rates[13], and inflation rates were incorporated for the economic and achievable potential assessments to perform a full cost-benefit analysis for every rate class, sector, customer segment, vintage, end use, and measure combination. These Cascade-specific data assumptions are detailed in **Volume III, Appendix B**.

2.2.5.4 Estimate Achievable Potential

The assessment of realistically achievable energy efficiency potential requires estimating, among other parameters, the rate at which cost-effective measures can be adopted over time. Because program implementation scenarios have a direct influence over such market penetration rates, calculating achievable potential typically incorporates individually developed sets of market penetration curves corresponding to implementation scenarios. These scenarios may be correlated to differing levels of urgency in program implementation, tolerance for rate impacts, macroeconomic conditions, or other situations.

There are important components in the determination of achievable potential:

- ***Customers' willingness to participate.*** The likelihood that customers will participate in energy efficiency programs is a function of several factors, most notably incentive level. Achievable potential was estimated for three different incentive-level scenarios (30%, 50%, and 75% of incremental cost) to examine the variance in expected savings.

[12] Nexant took care in not unilaterally screening out all measures with a TRC below 0.9, as some measures may be included as part of a cost-effective measure bundle.

[13] Cascade's weighted average cost of capital (WACC) of 8.55% was used for all measures in all sectors when screened under UCT, and the U.S. treasury note interest rate of 3.4% was used for residential measures when screened under the TRC.

- ***Uncertainty.*** Filing and planning requirements often necessitate a point-estimate of potential; however, this is not an accurate reflection of the reality of DSM programs. It is preferred to think of achievable potential as a range, or probability distribution, where the point-estimate is the most likely outcome. This distribution defines the lower and upper bounds of expected savings, as well as the most likely value.

2.2.6 Scenarios Evaluated

This assessment of energy efficiency potential for Cascade's Washington service territory considered specific scenarios to understand how variation in several key input parameters would impact the assessment outcomes, including the following parameters:

- Cost-Benefit Test (TRC vs. UCT)
- Avoided Costs
- Incentive Level (30%, 50% and 75% of incremental cost)
- Discount Rate (Cascade's WACC of 8.55% for all measures in all sectors when screened under UCT, and the U.S. treasury note interest rate of 3.4% for residential measures when screened under the TRC)

Table 2-6 summarizes the 22 scenarios that were assessed per sector (66 total for residential, commercial and industrial) for this project.

Table 2-6: Scenarios addressed for each Sector

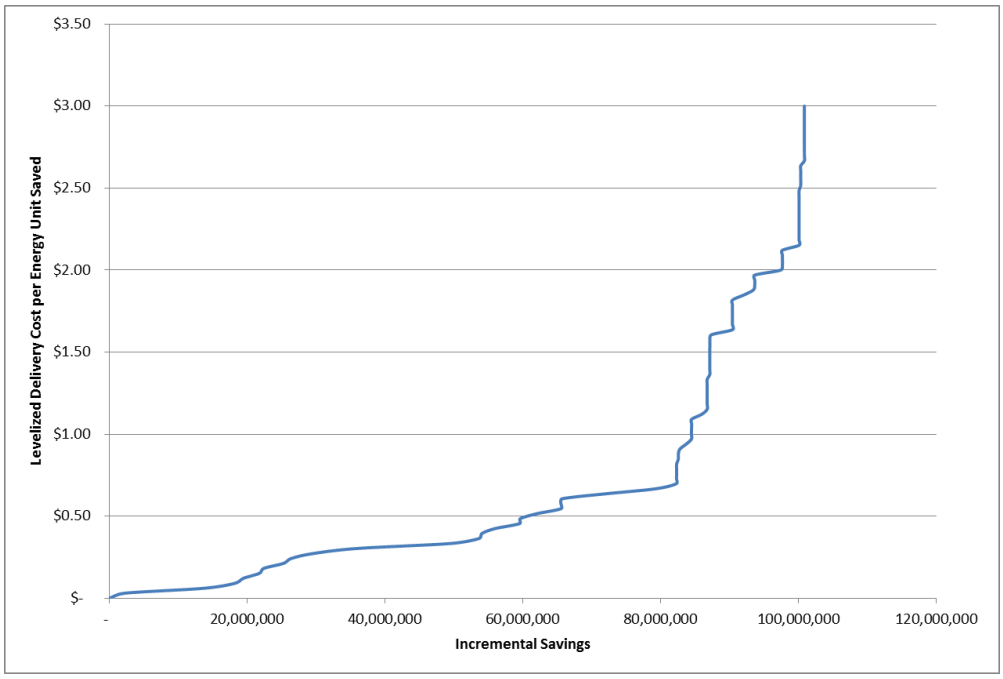
Potential Category	Scenario	Scenario # Res/Com/Ind	Avoided Costs	Incentivized %	Discount Rate	
					Residential	Comm./ Industrial
Base Case – Technical/Economic/Achievable Potential Scenarios under TRC						
Technical	Technical – Base	1 / 23 / 45	Current	n/a	3.40%	8.55%
Economic	Economic – Base	2 / 24 / 46	Current	n/a	3.40%	8.55%
Achievable Potential	Achievable – Base	3 / 25 / 47	Current	30%	3.40%	8.55%
	Achievable – Moderate	4 / 26 / 48	Current	50%	3.40%	8.55%
	Achievable – High	5 / 27 / 49	Current	75%	3.40%	8.55%
Base Case – Technical/Economic/Achievable Scenarios under UCT						
Technical	Technical – Base	6 / 28 / 50	Current	n/a	8.55%	8.55%
Economic	Economic – Base	7 / 29 / 51	Current	n/a	8.55%	8.55%
Achievable Potential	Achievable – Base	8 / 30 / 52	Current	30%	8.55%	8.55%
	Achievable – Moderate	9 / 31 / 53	Current	50%	8.55%	8.55%
	Achievable – High	10 / 32 / 54	Current	75%	8.55%	8.55%
Alternate Base Achievable Scenarios under TRC						
Achievable Potential	Achievable – Base	11 / 33 / 55	+25%	30%	3.40%	8.55%
	Achievable – Base	12 / 34 / 56	+50%	30%	3.40%	8.55%
	Achievable – Base	13 / 35 / 57	+100%	30%	3.40%	8.55%
	Achievable – Base	14 / 36 / 58	-25%	30%	3.40%	8.55%
	Achievable – Base	15 / 37 / 59	-50%	30%	3.40%	8.55%
	Achievable – Base	21 / 43 / 65	Current	30%	4.17%	4.17%
Alternate Base Achievable Scenarios under UCT						
Achievable Potential	Achievable – Base	16 / 38 / 60	+25%	30%	8.55%	8.55%
	Achievable – Base	17 / 39 / 61	+50%	30%	8.55%	8.55%
	Achievable – Base	18 / 40 / 62	+100%	30%	8.55%	8.55%
	Achievable – Base	19 / 41 / 63	-25%	30%	8.55%	8.55%
	Achievable – Base	20 / 42 / 64	-50%	30%	8.55%	8.55%
	Achievable – Base	22 / 44 / 66	Current	30%	4.17%	4.17%

2.2.7 Supply Curves

Finally, a supply curve was developed to show the amount of energy efficiency savings available at different cost levels. A supply curve typically consists of two axes; one that captures the cost per unit of saving a resource (e.g., dollars per lifetime therms saved) and another that shows the amount of savings

that could be achieved at each level of cost. The curve is typically built up across individual measures that are applied to specific base-case practices or technologies by market segment. Savings measures are sorted based on a metric of cost. Total savings available at various levels of cost are calculated incrementally with respect to measures that precede them. Supply curves typically, but not always, end up reflecting diminishing returns, i.e., costs increase rapidly and savings decrease significantly at the end of the curve. **Figure 2-4** shows a sample supply curve demonstrating this effect.

Figure 2-4: Sample Supply Curve



3 MEASURE SAVINGS REVIEW FINDINGS

The goal of the measure savings review was to provide a high level assessment of Cascade's process for collecting, organizing program participant data and estimating the associated savings for four key measures in the time period June 1, 2011 – May 31, 2012. This was broken up into three tasks: 1) a desk review of program applications, 2) a telephone call to program participants to verify measure installation and key savings metrics, and 3) a billing analysis of a statistical sample of installed furnace, boiler and water heater installed measures. The findings of these two assessments are provided below.

3.1 DESK & TELEPHONE MEASURE REVIEW FINDINGS

The desk review compared the participant application to the Cascade participant database in an effort to determine the quality of Cascade's data collection processes and its ability to accurately estimate realized natural gas energy efficiency savings. **Table 3-1** summarizes the actual number of desk and telephone reviews completed.

Table 3-1: Desk and Telephone Review Sample Completion

CASCADE Sampling Approach	Residential Sector			Commercial Sector		
	Sample Points	Confidence/ Precision	Measure Type	Sample Points	Confidence/ Precision	Measure Type
Desk Reviews	31	90/15	All	27	90/8	All
Telephone Reviews	18	90/20	All	19	90/11	All

One of the key findings of the measure savings review is regarding Cascade's methodology for estimating natural gas savings. While utilizing a deemed savings value approach for each measure can be a cost-effective and appropriate approach to estimating savings, it can over or underestimate actual savings. With the data provided in this analysis – specifically measure savings algorithms used in the potential assessment – Cascade will have the option to refine projected savings estimates with increased specificity by calculating premise-specific natural gas savings for each installed measure. While Cascade is already collecting some of the key savings parameters on its participant application forms (such as house square footage and efficiency of installed measure), Nexant recommends including some additional parameters on the application forms to enable premise-specific calculation estimates of natural gas savings. The following desk review findings may have an impact on reporting of savings:

1. The Cascade participant database documented the efficiency of the replacement measure as the incentivized amount (such as a 0.62 EF water heater), whereas often the efficiency of the installed measure as listed on the application was greater than the incentivized efficiency level. That is, while the application form always listed the actual efficiency of the installed equipment

(e.g. EF=0.67), the efficiency of that particular measure would be set to a default value (e.g. EF=0.62) in the Cascade participant database. This implies deemed values were used to project savings, as opposed to premise-specific values, which were often more efficient than the incentivized efficiency level. This practice would conservatively estimate savings. Recording the actual efficiency value of installed equipment, as opposed to the incentivized efficiency value, would be less conservative but could increase the accuracy of projections and data analysis.

2. The efficiency level of original equipment was not always recorded on the application form, nor whether or not the original equipment was replaced due to failure or for another reason prior to the end of expected equipment life. Savings calculations are dependent upon the efficiency of the base equipment, as well as whether or not the customer replaced the equipment early or upon burn-out. Nexant recommends collecting data on these two factors in the rebate application, and tracking them in the participant database, for inclusion in savings calculations (see **Section 3.1.1** below).
3. The cost category in the customer database varied in inclusions per measure. Categories included equipment, labor, old equipment disposal, and/or additional work performed. Standardized entries of "equipment costs" and "labor costs", in addition to "extraneous costs" will ensure accurate comparison of measure and installation costs.
4. While Cascade collects participant square footage for its weatherization measures, importing commercial participant facility square footage information for all measures into the participant database will facilitate comparative analysis between commercial customers, as facility sizes and types can vary dramatically in the commercial sector.

The telephone review verified all participation data and **no errors were found** in the reviewed measures. Additional useful information not requested in the rebate application was gleaned from customers during the telephone review, including:

- **39% of commercial rebate customers were new construction**. Savings algorithms change depending on the age of the installed equipment and the assumed base case. New construction base case is code, but for other circumstances the base case may be an existing unit.
- **11% of commercial rebate customers replaced equipment prior to burn-out**. To be as accurate as possible, equipment replaced prior to burn-out is typically compared to a base-case of the prior unit, not code.
- **24% of residential customers installed multiple gas efficiency measures at once**. As multiple efficiency measures would affect projected savings, this is important information to document for inclusion in analysis.
- **6% of residential customers installed an additional gas efficiency measure** after receiving the rebate for the initial gas efficiency measure. Again, installing additional measures might also impact savings and alter the results of savings calculations for previously installed measures.

3.1.1 Measure Savings Algorithms

As noted above, reporting measure savings on a project-specific basis can significantly increase accuracy. The suggested algorithms below were derived from various Technical Reference Manuals (TRMs) from around the U.S. and were utilized in the potential assessment to estimate savings for applicable measures. The same algorithms can be used by Cascade when estimating project-specific measure savings.

Equation 3-1: Furnace Measure Algorithm[14]

$$\Delta \text{ Therms} = (FLHheat * (Capacity/AFUEbase - Capacity/AFUEee)) / (100{,}000Btu/therm)*DF$$

- Assumptions:
  - FLHheat = Full Load Heating Hours
  - Capacity = Furnace Capacity
  - AFUE = Furnace Efficiency
  - DF = EFLH derate factor (engineering adjustment to account for equipment oversizing)

Equation 3-2: Duct Sealing Algorithm[15]

$$\Delta\text{Therms} = ((DEafter – DEbefore)/ DEafter)) * FLHheat * Capacity) / (100{,}000Btu/therm) / \eta Heat$$

- Assumptions:
  - DE = Duct system distribution efficiency
  - FLHheat = Full Load Heating Hours
  - Capacity = Furnace Capacity
  - ηHeat = Average net heating system efficiency (Equipment Efficiency * Distribution Efficiency)

Equation 3-3: Insulation Measure Algorithm[15]

$$\Delta\text{Therms} = (((1/R\_old - 1/R\_new)*A\_insulated*(1-F/2))*24*HDD)/(\eta Heat*100{,}000 \text{ Btu/therm})$$

- Assumptions:
  - R = insulation R-value
  - A = insulated area
  - F = framing factor to account for area of framing
  - HDD = Heating Degree Days
  - ηHeat = Average net heating system efficiency (Equipment Efficiency * Distribution Efficiency)

Equation 3-4: Water Heater Measure Algorithm[16]

$$\Delta\text{Therms} = W*ECw*\Delta T*(1/EFbase-1/EFeff)*(100{,}000 \text{ Btu/therm})$$

- Assumptions:

[14] Based on the Delaware TRM algorithm (Opinion Dynamics Corporation, 2012)

[15] Based on the Illinois TRM algorithm (State of Illinois, 2012)

[16] Based on Ontario Energy Board algorithm (Navigant Consulting, 2009)

- W = daily household hot water use (gallons)
- ECw = Energy content of water, 8.33 Btu/gallon-°F
- ΔT = Average water heater set point temperature minus incoming water temperature (assumed to be mean ground temperature below frost line)
- EF = water heater efficiency factor

Equation 3-5: Water Flow Restriction Devices Algorithms[16]

Step 1. Calculate Water Consumption Savings

Water Consumption (W) = FuPpl*365*Fp*(Flbase-Fleff/Flbase)*DR

Step 2. Calculate Therms Savings

Therm Consumption = W*8.33*(ΔT)*(1/EF)/100,000 Btu/therm

- Assumptions:
  - FuPpl = Faucet use per capita per day
  - Fp = faucet water consumption as % of total water consumption
  - Fl = Flow rate (gpm)
  - Dr = % water that goes down drain
  - W = Water Savings (gallons)
  - ECw = Energy content of water, 8.33 Btu/gallon-°F
  - ΔT = Average water heater set point temperature minus incoming water temperature (assumed to be mean ground temperature below frost line)
    EF = water heater efficiency factor

3.2 BILLING ANALYSIS FINDINGS

In an effort to estimate realized savings associated with Cascade's program offerings, Nexant conducted a billing analysis for four key residential and commercial measure offerings. The measures are residential high efficiency furnaces and hot water heaters, and commercial/industrial high efficiency furnaces and boilers. Savings from the final qualified accounts assessed in the billing analysis were compared to estimates from Cascade's deemed measure savings. The findings of this analysis are summarized in **Table 3-2** below.

Table 3-2: Total Participant vs. Billing Analysis Subsample Summary

Source	Metric	Residential		Commercial[17]	
		DHW	Furnace	Furnace	Boiler
Cascade Participant Database	Participants	83	833	18 (Census)	23 (Census)
	Equipment Eff. Installed	65%	90%	Assumed 91%	Assumed 90%
	Average Savings (Therms per Measure)	24	86	272	2644
Qualified Billing Analysis Participants	# of participants	50	53	8	5
	Confidence / Precision	90/8	90/11	90/20	90/30
	Avg. Equipment Eff. Installed	67%	95%	95%	91%
	Average Savings (Therms per Measure)	33	111	349[18]	1566
Actual Savings vs. Projected		**39%**	**29%**	**28%**	**-41%**

Nexant found that, on average, actual natural gas savings as assessed from the billing analysis were higher than the estimates provided through Cascade's deemed measures savings. The residential billing analysis of water heater retrofit savings was 39% greater than Cascade projections. This variance is in line with comments from Cascade staff indicating its deemed savings are intentionally conservative estimates. It should be noted that the average projected installed efficiency value of the water heaters used by Cascade was 65%; while actual installed average water efficiency rating was 67%, with several water heaters having efficiency ratings of greater than 90%. This reinforces the need to collect actual installed efficiency values of equipment as discussed in **Section 2.1.2.**

Residential furnace savings were 30% greater than projected. Similar to water heaters, it appears Cascade is using a base level equipment efficiency value of 90% in savings projections, whereas the actual average efficiency of new furnaces installed was 95%. The larger actual savings versus projected likely reflects this conservative assumption.

[17] While some commercial participant numbers are too low to obtain statistical accuracy on the results, this is a census of the installed measures therefore this is a summary of the entire sample size for the commercial sector.

[18] Premise savings were divided by number of installed units to develop a therms saved per installed unit value. The three other measures were not standardized by installed units and the therms saved values are per premise.

Commercial furnace savings were calculated on a per-furnace, per-premise basis, as the number of furnaces installed varied per premise (from 1 to 8 furnaces in the subsample). Nexant billing analysis savings results averaged 28% greater than projected by Cascade's deemed savings estimates. Again, average efficiency values were 95% and it appears Cascade calculations were using the incentivized 91% efficiency value in their assumptions. This conservative assumption and the small sample size could account for the variance.

Commercial boiler savings were 40% less than projected. Several boiler measures didn't qualify for billing analysis due to either billing history disqualifications (such as not having 12 months of utility billing history before and after the installation, or a change in tenants during the required 24 month spread) or excessive variance in consumption behavior from model prediction, creating a small qualified sample size of 5 premises. This small number resulted in a 90/30 confidence precision, which decreases the ability to make meaningful conclusions about savings projections.

4 Market Segmentation Findings

An important first step in calculating Cascade's energy efficiency potential estimates is to establish baseline energy usage characteristics and disaggregate the market by sector, segment, and end use. The findings of this section represent the control totals to which all energy usage is calibrated in the base year of the study and then forecasted. Furthermore, the market segmentation findings provide the foundation of the forecast disaggregation (as described in **Section 5**) which identifies the allocated shares of natural gas sales upon which each energy efficiency measure savings values are applied to.

This section summarizes the market segmentation findings from Nexant's review of 2012 energy (therms) consumption by residential, commercial, and industrial Cascade customers, using the 2012 customer billing database received from Cascade. Residential customer accounts were categorized based on the given premise type. Commercial and Industrial customer accounts were first categorized by the customer class and premise type, then further refined as follows:

- An initial screen based on the standard industrial classification (SIC) code provided in the database.
- Additional analysis was performed to verify, and in many cases, correct the mapping. For example, roughly 18,000 accounts (or 52% of the records) with no SIC code or a code that mapped to an incorrect category were manually reassigned based on other database fields including customer name, premise type, and premise address.
- Only accounts with the following rate codes are included in the below summary: 504, 505, 511, 570, and 577.

Because this analysis presents findings on building premises, findings presented below do not include transmission, substation, telecommunication, or utility rate classes. Finally, consumption thresholds

(Residential: 50 therms, Commercial: 100 therms, Industrial 100 therms) were developed. Consumers below this threshold were assumed to be non-premises (i.e. not eligible for energy efficiency measures) and removed from the summary below. The average premise consumption values (therms per year) for each sector were compared to EIA data for the State of Washington, and found to be in reasonable agreement. Through analysis of Cascade's customer billing data and secondary research, Nexant was able to break out the energy usage by sector, segment and end use.

4.1 2012 Natural Gas Sales Summary

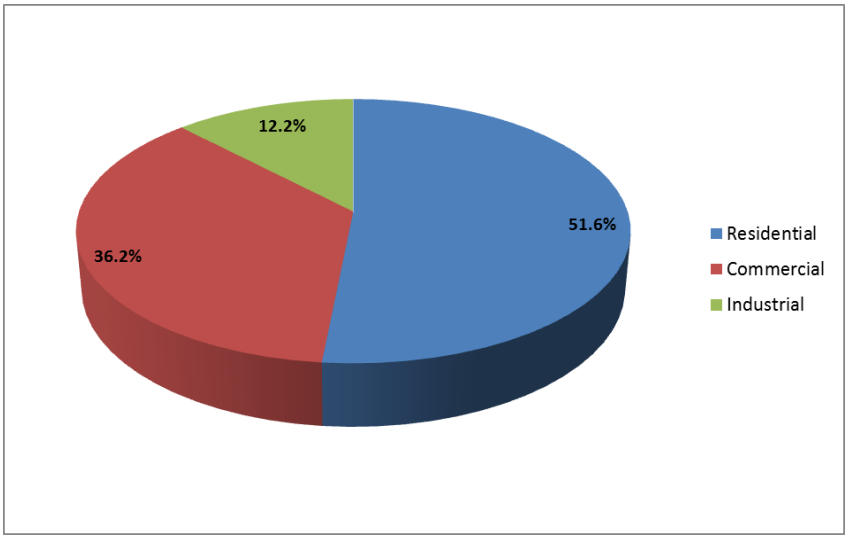
Total natural gas consumption by eligible residential, commercial and industrial customers for 2012 in Cascade's Washington service territory was 14,642,834 dekatherms[19]. **Table 4-1** and **Figure 4-1** show the overview of natural gas sales and premises by sector for Cascade in calendar year 2012. While the industrial sales number totals 2,651,868 dekatherms, this number includes only non-transport industrial gas customers and represents only 4% of total industrial natural gas sales.

Table 4-1: Cascade 2012 Natural Gas Consumption & Premise Counts by Sector

Sector	2012 Sales (annual dekatherms)	Premise Count
Residential	11,203,608	171,991
Commercial	7,873,584	23,609
Industrial	2,651,868	10,639
Total	12,256,153	206,239

[19] Note: Nexant utilized the definition of premise for this study which removes non-building customer accounts, and other miscellaneous loads from its findings. The number of premises, therefore, and the associated natural gas consumption is less than the number of accounts and top-line natural gas sales that Cascade utilizes in its IRP documents. Furthermore, the number of eligible industrial premises and sales is significantly less due to the large share of transport sales – which were removed because they are ineligible for energy efficiency programs.

Figure 4-1: 2012 Natural Gas Consumption by Sector



4.2 Residential Sector Natural Gas Consumption

Table 4-2 shows the breakdown of energy consumption and building stock by residential segment. Single family homes dominate consumption with an 86% share, with multi-family dwellings at 14% of total residential consumption. Manufactured home (such as mobile home) dwellings comprise less than 1% of total residential consumption.

Table 4-2: Residential 2012Natural Gas Consumption & Premise Counts by Segment

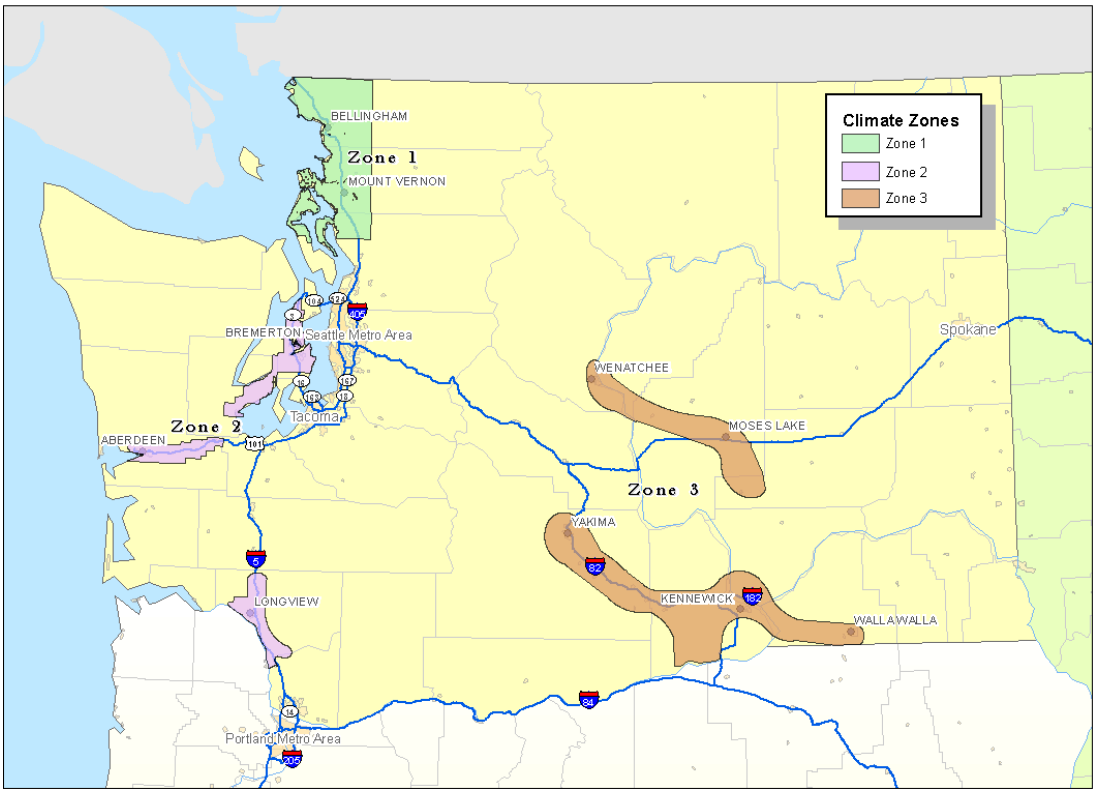
Sector	Energy Consumption (annual therms)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Single Family	9,657,510	86.2%	143,058	67.5
Multifamily	1,523,691	13.6%	28,542	53.4
Manufactured	11,204	0.1%	391	28.7
Total	11,203,608	100%	171,991	65.1

For the residential sector, Nexant also assessed energy efficiency potential by climate zone, and thus it was necessary to parse out energy consumption for each of the three climate zones in Cascade's service territory. The residential natural gas consumption by climate zone is presented in **Table 4-3 and Figure 4-2** shows a map of Cascade's Washington service territory broken out by these climate zones. Climate Zone 2 represents nearly half of all residential energy consumption (47%).

Table 4-3: Residential 2012 Natural Gas Consumption & Premise Counts by Climate Zone

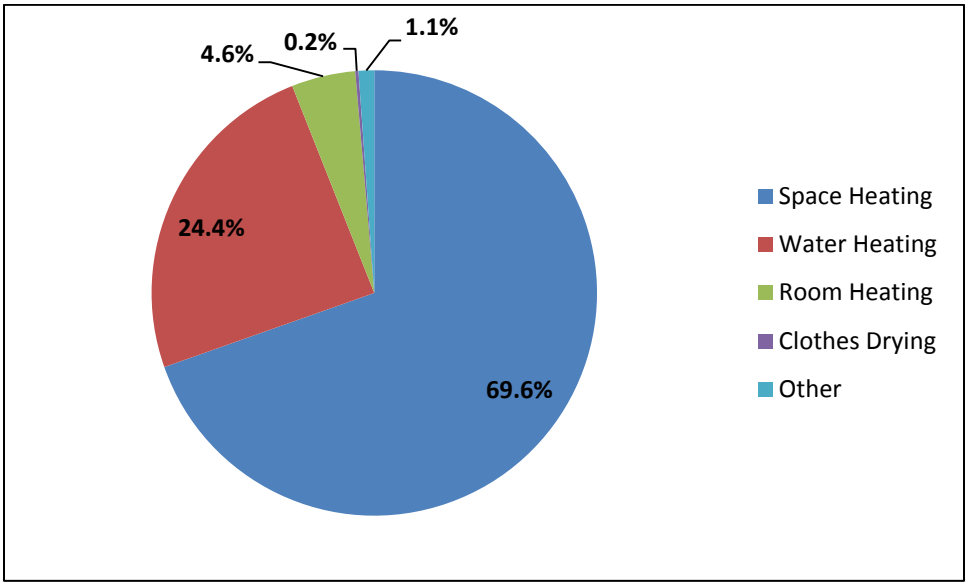
Climate Zone	Energy Consumption (annual therms)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Climate Zone 1	2,912,938	26.0%	40,996	71.1
Climate Zone 2	5,265,696	47.0%	72,241	72.9
Climate Zone 3	3,024,974	27.0%	58,754	51.5
Total	**11,203,608**	**100%**	**171,991**	**65.1**

Figure 4-2: Climate Zone Map of Cascade's Washington Service Territory



Nexant further disaggregated Cascade's residential load by end use. **Figure 4-3** shows the distribution of natural gas consumption by end use for all residential households in Cascade's territory.

Figure 4-3: 2012 Residential Natural Gas Consumption by End Use*



*Space Heating refers to central heating equipment end uses, such as furnaces and boilers. Room Heating refers to gas hearths / fireplaces.

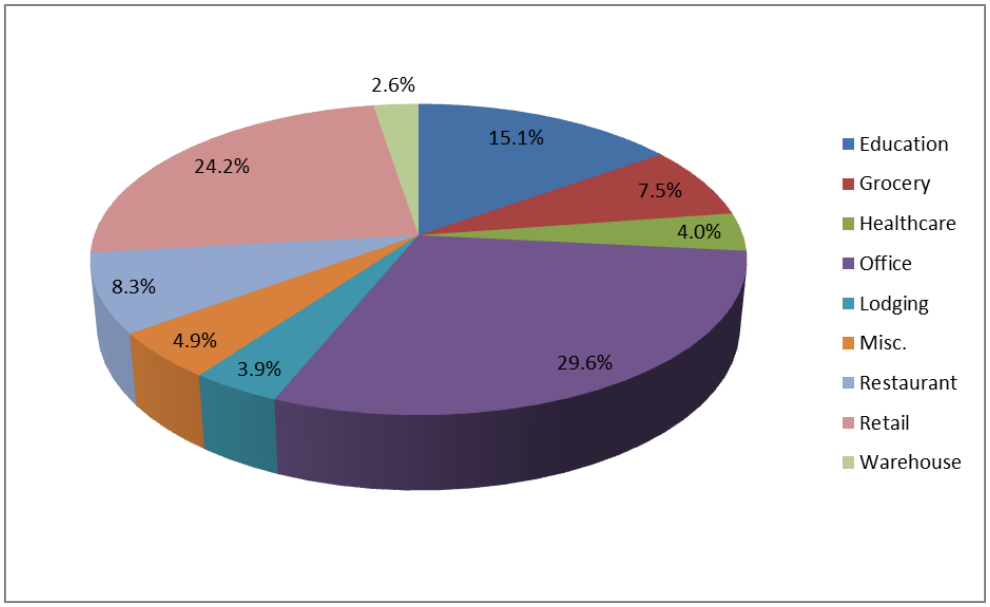
4.3 Commercial Sector Natural Gas Consumption

Table 4-4 and **Figure 4-4** show the distribution of consumption by commercial segment for all eligible premises. The office and retail segments represent the largest share of consumption at 29.6% and 24.2% respectively.

Table 4-4: Commercial 2012 Natural Gas Consumption & Premise Counts by Segment

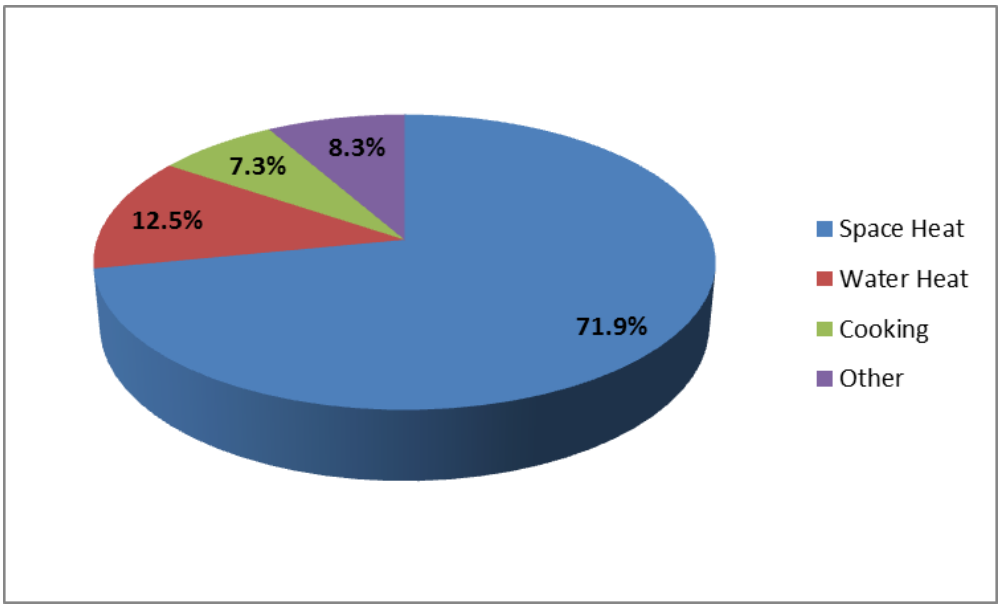
Segment	Energy Consumption (annual dth)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Education	1,191,963	15.1%	994	1,199
Grocery	590,930	7.5%	1,020	579
Healthcare	312,585	4.0%	512	611
Office	2,329,730	29.6%	8,401	277
Lodging	304,013	3.9%	266	1,143
Misc.	386,424	4.9%	2,470	156
Restaurant	650,618	8.3%	1,318	494
Retail	1,904,289	24.2%	7,152	266
Warehouse	203,032	2.6%	936	217
Total	**7,873,584**	**100.0%**	**23,069**	341

Figure 4-4: Commercial 2012 Natural Gas Consumption by Segment



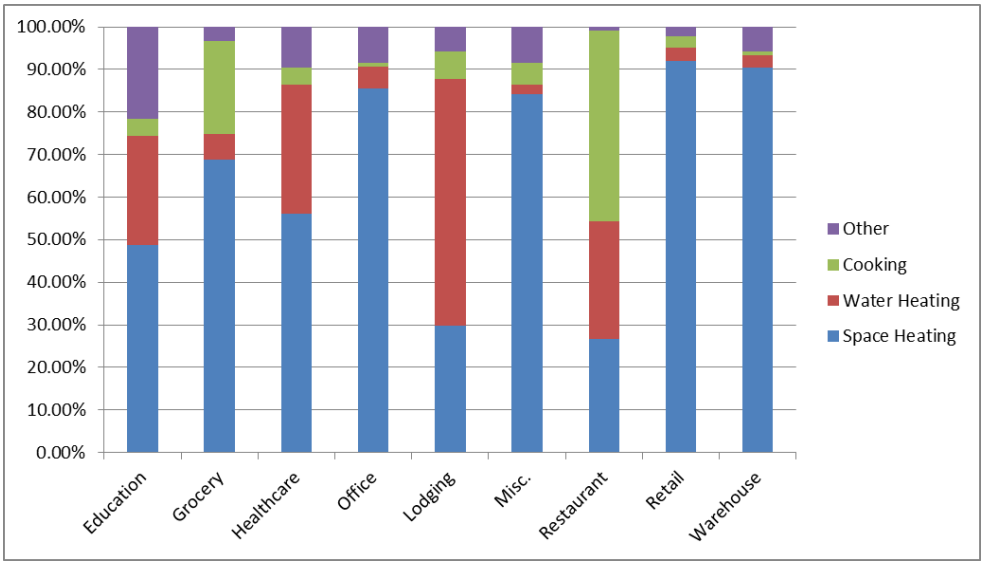
Nexant further disaggregated Cascade's commercial load by end use. **Figure 4-5** and **Figure 4-6** show the distribution of natural gas consumption by end use for all commercial premises and each segment respectively. Space heating represents the largest share at 71.9% of all consumption.

Figure 4-5: Commercial 2012 Natural Gas Consumption by End Use*



***Space Heating refers to central heating equipment end uses, such as furnaces and boilers. Room Heating refers to gas hearths / fireplaces.**

Figure 4-6: Commercial 2012 Natural Gas Consumption Shares by Segment, by End Use



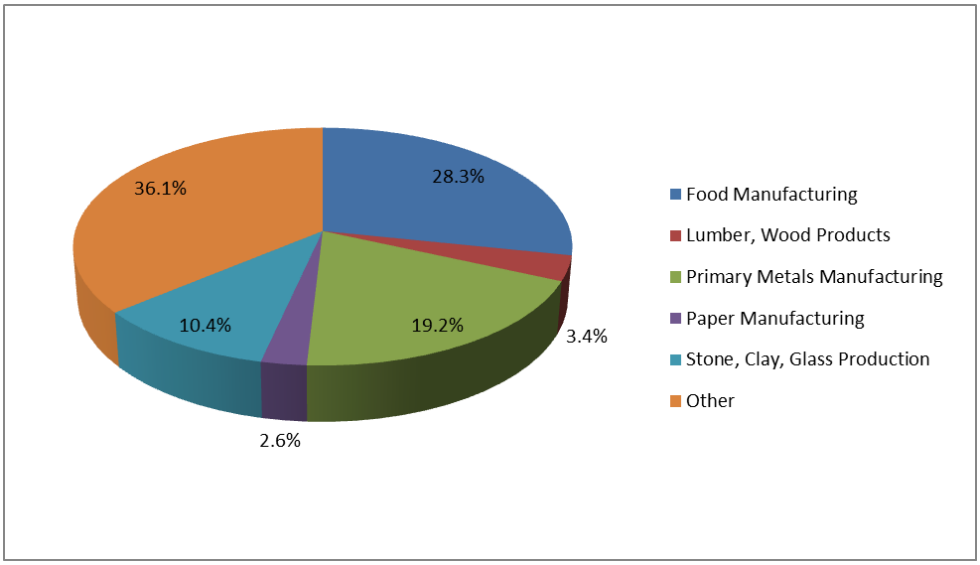
4.4 INDUSTRIAL SECTOR NATURAL GAS CONSUMPTION

Table 4-5 and Figure 4-7 show the distribution of consumption by industrial segment for all eligible premises. The food manufacturing segment represents the largest share of energy use at 28.3%, with paper manufacturing representing the smallest share at 2.6% of consumption.

Table 4-5: Industrial 2012 Natural Gas Consumption & Premise Counts by Segment

Segment	Energy Consumption (annual dth)	Energy Use Share	No. of Premises	Energy Use per Premise (dth)
Food Manufacturing	749,223	28.3%	465	1,611
Lumber, Wood Products	90,689	3.4%	340	267
Primary Metals Manufacturing	509,712	19.2%	1,081	472
Paper Manufacturing	69,240	2.6%	62	1,117
Stone, Clay, Glass Production	276,950	10.4%	446	621
Other	956,055	36.1%	8,245	116
Total	**2,651,868**	**100.0%**	**10,639**	**249**

Figure 4-7: Industrial 2012 Natural Gas Consumption by Segment



Nexant further disaggregated Cascade's industrial load by end use. **Figure 4-8 and Figure 4-9** show the distribution of natural gas consumption by end use for all industrial premises and each segment respectively. Process heating represents the largest share of end use consumption at 87.1% across all segments.

Figure 4-8: 2012 Industrial Natural Gas Consumption by End Use

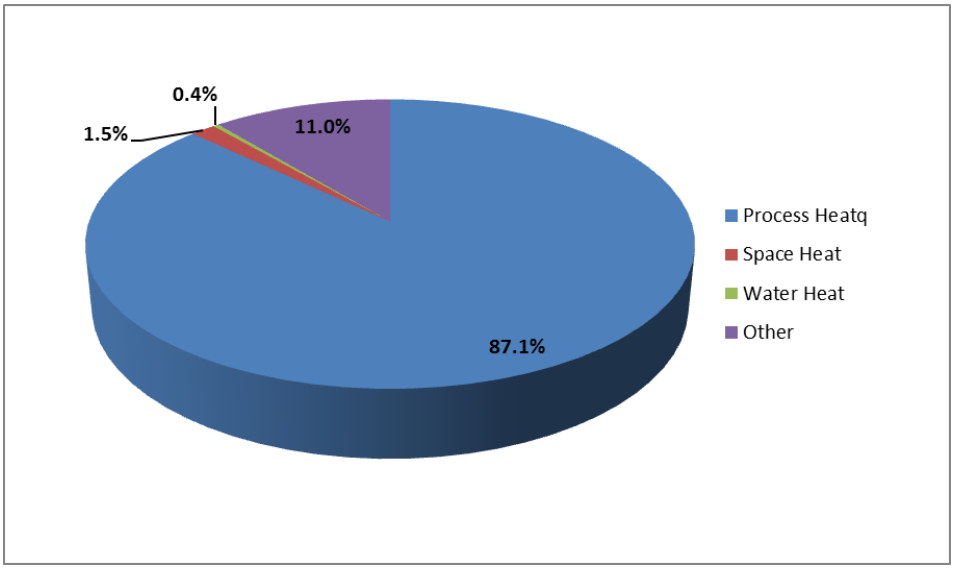
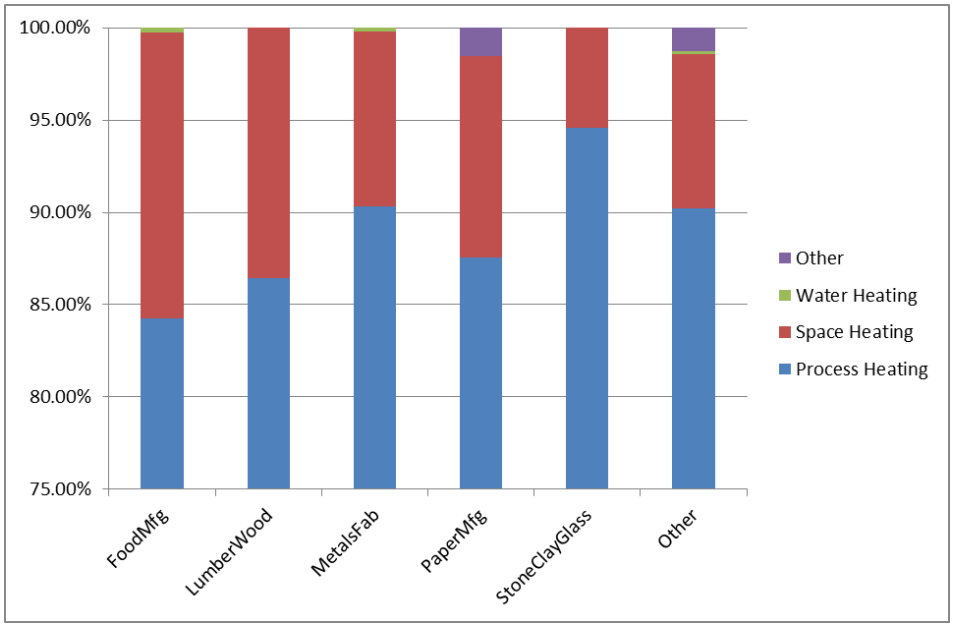


Figure 4-9: 2012 Industrial Natural Gas Consumption by Segment, by End Use



5 BASELINE FORECAST DISAGGREGATION

This section summarizes the baseline forecast disaggregation results in which the market segmentation findings as illustrated in **Section 4** are applied to the baseline natural gas forecast submitted by Cascade. This disaggregated baseline forecast, then, serves as the foundation upon which measure savings shares are applied to the applicable sector, segment, and end use[20].

5.1 BASELINE FORECAST DISAGGREGATION SUMMARY

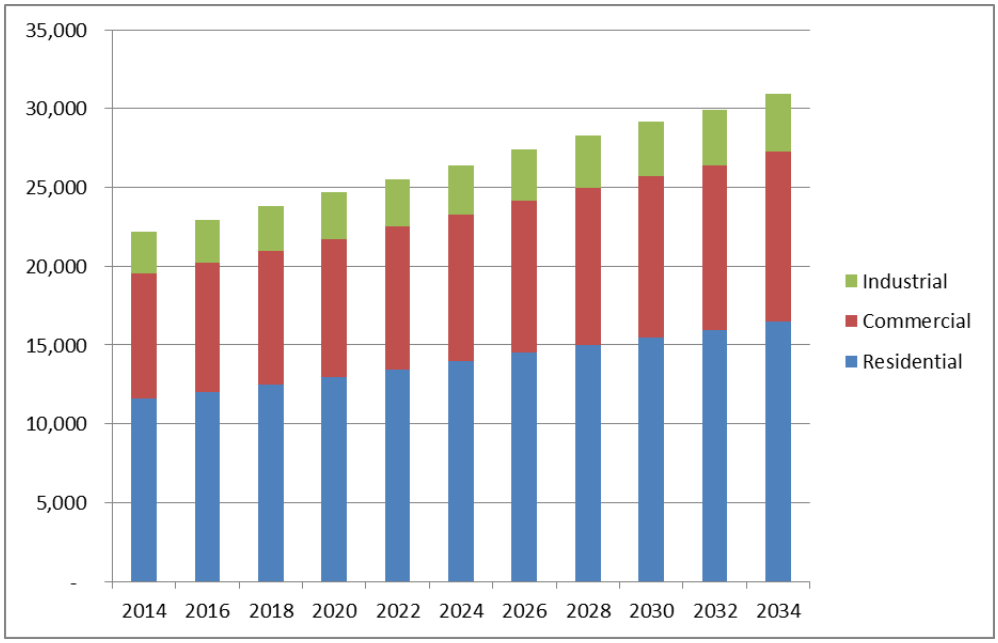
Table 5-1 and **Figure 5-1** summarize the baseline natural gas sales forecast of eligible DSM sales by sector for Cascade's Washington service territory.

[20] The forecast was further disaggregated by equipment type in the TEA-POT model; however, that level of resolution is not included in this report.

Table 5-1: Natural Gas Consumption by Sector, by Year ('000 dth)

Sector	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034
Residential	11,609	12,023	12,508	12,986	13,454	13,951	14,505	15,001	15,475	15,935	16,506
Commercial	7,919	8,175	8,472	8,757	9,043	9,330	9,672	9,969	10,247	10,463	10,792
Industrial	2,663	2,749	2,849	2,945	3,041	3,138	3,253	3,353	3,446	3,519	3,630
Total	**22,191**	**22,948**	**23,830**	**24,688**	**25,539**	**26,419**	**27,430**	**28,322**	**29,169**	**29,917**	**30,927**

Figure 5-1: Natural Gas Consumption by Sector, by Year ('000 dth)



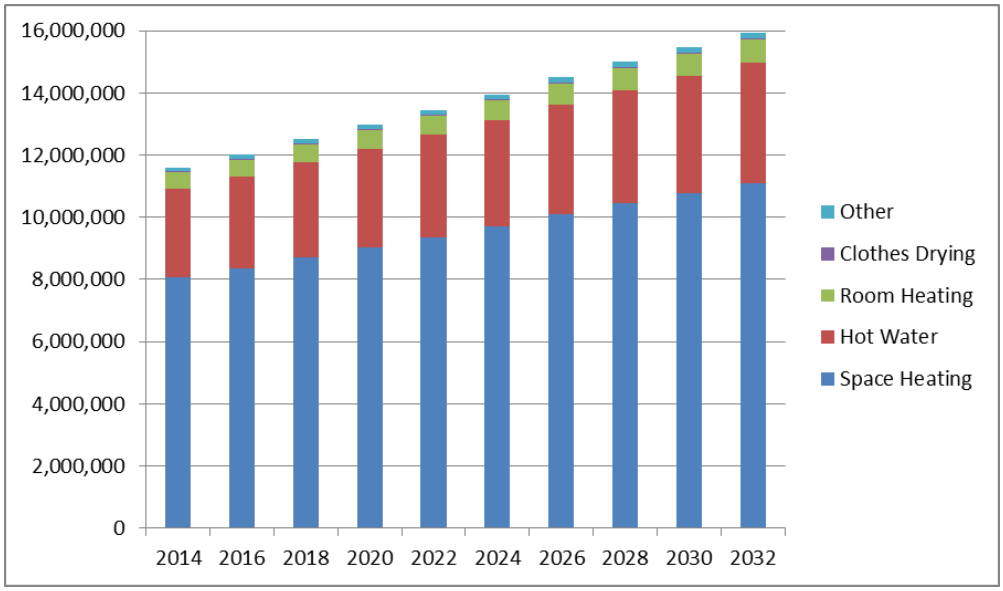
5.2 Residential Sector Forecast

Table 5-2 and **Figure 5-2** summarize the residential baseline natural gas sales forecast by end use, by equipment type for Cascade's Washington service territory. Furnace and Domestic Hot Water equipment types are the two largest consumers, followed by the 'other' space heating equipment category.

Table 5-2: Residential Baseline Natural Gas Consumption by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032
Space Heating	8,079,947	8,368,484	8,706,184	9,038,434	9,364,609	9,710,519	10,096,080	10,440,921	10,771,067	11,091,194
Water Heating	2,831,426	2,932,537	3,050,876	3,167,305	3,281,605	3,402,821	3,537,932	3,658,773	3,774,465	3,886,646
Room Heating	538,556	557,788	580,297	602,443	624,184	647,240	672,939	695,924	717,929	739,267
Clothes Dyer	26,917	27,879	29,004	30,111	31,197	32,350	33,634	34,783	35,883	36,949
Other	131,767	136,473	141,980	147,398	152,718	158,359	164,646	170,270	175,654	180,875
Total	**11,608,614**	**12,023,160**	**12,508,341**	**12,985,691**	**13,454,313**	**13,951,288**	**14,505,232**	**15,000,670**	**15,474,997**	**15,934,930**

Figure 5-2: Residential Natural Gas Baseline Forecast by End Use by Year (dth)



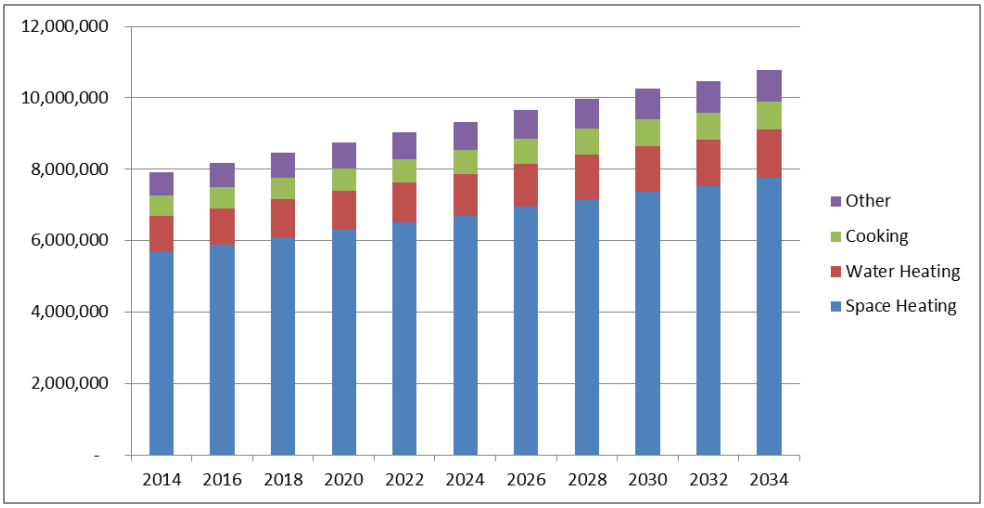
5.3 COMMERCIAL SECTOR FORECAST

Table 5-3 and **Figure 5-3** summarize the commercial baseline natural gas sales forecast by end use, by equipment type for Cascade's Washington service territory.

Table 5-3: Commercial Natural Gas Baseline Forecast by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034
Space Heating	5,693,885	5,878,143	6,091,708	6,296,486	6,502,141	6,708,487	6,954,140	7,167,620	7,367,969	7,523,039	7,759,600
Water Heating	990,435	1,022,487	1,059,636	1,095,257	1,131,030	1,166,923	1,209,654	1,246,788	1,281,638	1,308,612	1,349,761
Cooking	575,922	594,559	616,161	636,874	657,675	678,547	703,394	724,987	745,252	760,937	784,864
Other	658,847	680,168	704,880	728,575	752,372	776,249	804,673	829,375	852,558	870,501	897,874
Total	7,919,090	8,175,357	8,472,386	8,757,191	9,043,218	9,330,206	9,671,861	9,968,771	10,247,417	10,463,089	10,792,100

Figure 5-3: Commercial Natural Gas Baseline Forecast by End Use by Year (dth)



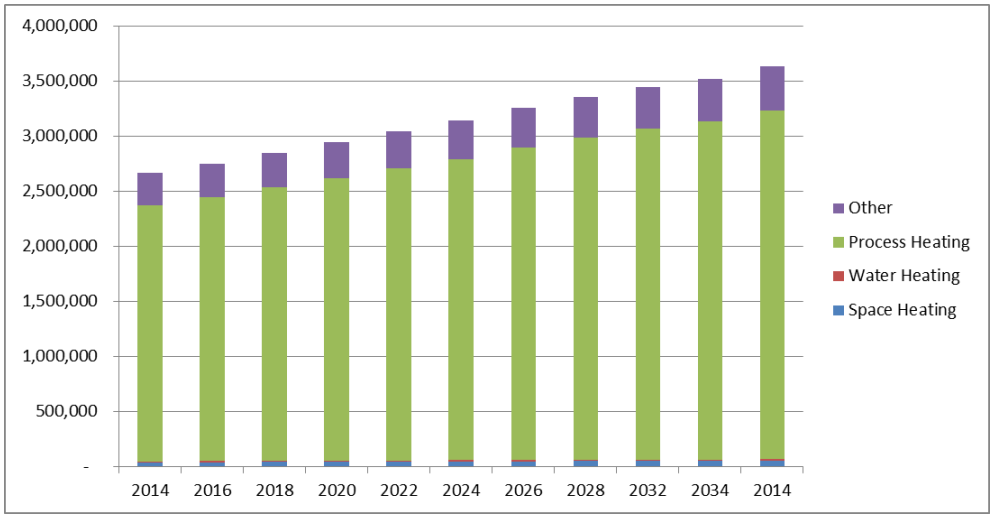
5.4 INDUSTRIAL SECTOR FORECAST

Table 5-4 and **Figure 5-4** summarize the industrial baseline natural gas sales forecast by end use, by equipment type for Cascade's Washington service territory.

Table 5-4: Industrial Natural Gas Consumption Baseline Forecast by End Use by Year (dth)

End Use	2014	2016	2018	2020	2022	2024	2026	2028	2032	2034	2014
Space Heating	40,749	42,067	43,596	45,061	46,533	48,010	49,768	51,296	52,729	53,839	55,532
Water Heating	9,322	9,623	9,973	10,308	10,645	10,983	11,385	11,734	12,062	12,316	12,703
Process Heating	2,319,212	2,394,264	2,481,252	2,564,661	2,648,428	2,732,476	2,832,535	2,919,489	3,001,094	3,064,257	3,160,612
Other	294,030	303,545	314,573	325,148	335,768	346,423	359,109	370,133	380,479	388,486	400,702
Total	**2,663,312**	**2,749,499**	**2,849,394**	**2,945,178**	**3,041,373**	**3,137,892**	**3,252,796**	**3,352,651**	**3,446,364**	**3,518,898**	**3,629,549**

Figure 5-4: Industrial Natural Gas Baseline Forecast by End Use by Year (dth)



6 PORTFOLIO ENERGY EFFICIENCY POTENTIAL

This section provides an overview of the findings for the entire portfolio of natural gas customers in Cascade's Washington service territory. Natural gas energy efficiency findings for technical, economic and achievable potential are presented in two parts. At the beginning of each section, detailed findings are presented for the "base-case" technical, economic, and achievable scenarios. Where findings are broken out by segment (building type) or end use, they are done so under the achievable base case scenario (for appropriate numbering see **Table 2-6**). All base case scenarios were run under the following main assumptions:

- Measure cost effectiveness screen: Utility Cost Test (UCT)
- Incentive percentage of incremental cost (for achievable scenarios): 30%, 50% or 75%
- Avoided Costs: Current avoided costs as provided in Appendix H of Cascade's 2012 IRP
- Discount Rate: 8.55%

Summary findings are then presented for various achievable potential scenarios given variations in 1) measure screening approach (based on cost-effectiveness test), 2) avoided costs, and 3) discount rate. Again, **Table 2-6** above illustrates the 22 scenarios (per sector) Nexant examined under the utility cost test (UCT) and TRC for each sector – residential, commercial and industrial (for a total of 66 scenarios for the three sectors presented). Detailed summary tables for savings potential for all scenarios are provided in **Volume III, Appendix C**.

6.1 Base Case Technical/Economic/Achievable Potential Findings

Table 6-1 and **Figure 6-1** present the estimated technical, economic and achievable savings potential for Cascade's Washington service territory under the Utility Cost Test. First year (2014) natural gas conservation achievable base potential under the UCT screen for all sectors is 139,859 dth, representing 0.63% of baseline sales. It should also be noted that the achievable base savings potential is slightly greater than the achievable moderate savings potential (even though the moderate has a more aggressive adoption curve). This occurs because the measure cost used in the cost-effectiveness test under the achievable moderate scenario (50% of incremental cost) compared to the achievable moderate scenario (30% of incremental) causes more measures to fail cost-effectiveness. The fewer measures passing cost effectiveness has a greater impact on potential than the increased adoption of those measures. **Figure 6-2** shows the changes in Cascade's baseline sales forecast under each of the base case potential scenarios, screened with the UCT.

Table 6-1: Portfolio Energy Efficiency Potential Savings by Base Case Scenario under UCT Screen

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	22,191,016	22,948,017	24,688,061	26,974,698	30,927,487
Cumulative Savings (dth)					
Technical Potential	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential	476,641	1,494,793	3,606,967	6,314,915	10,434,394
Achievable - Base	139,859	437,581	1,130,474	2,243,553	4,448,248
Achievable - Moderate	137,844	441,098	1,180,749	2,384,769	4,677,603
Achievable - High	141,599	446,575	1,153,137	2,239,052	4,160,771
Energy Savings (% of baseline sales)					
Technical Potential	3.35%	10.19%	22.96%	36.82%	53.63%
Economic Potential	2.15%	6.51%	14.61%	23.41%	33.74%
Achievable - Base	0.63%	1.91%	4.58%	8.32%	14.38%
Achievable - Moderate	0.62%	1.92%	4.78%	8.84%	15.12%
Achievable - High	0.64%	1.95%	4.67%	8.30%	13.45%

Figure 6-1: Portfolio Energy Efficiency Potential Savings (% Sales) by Base Case Scenario under UCT Screen

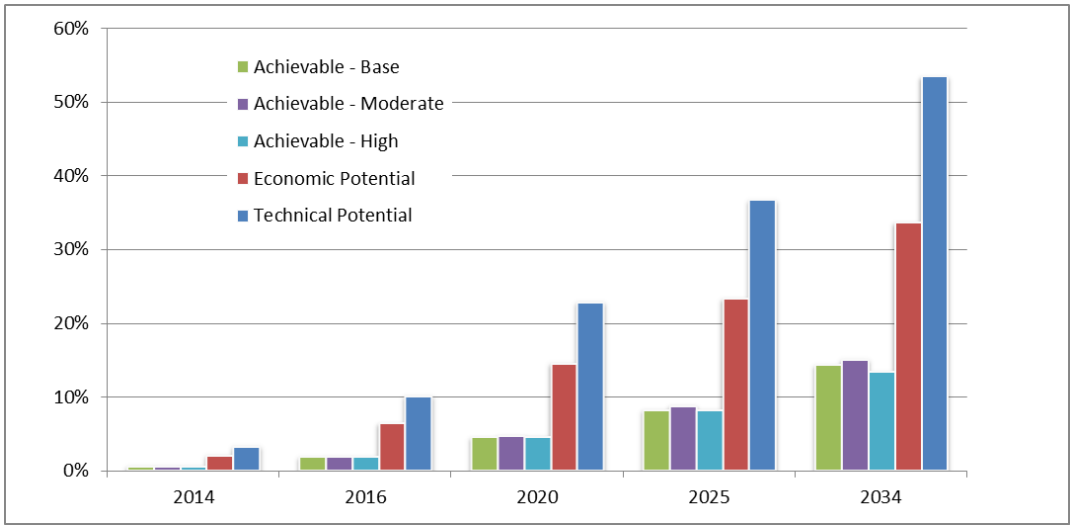
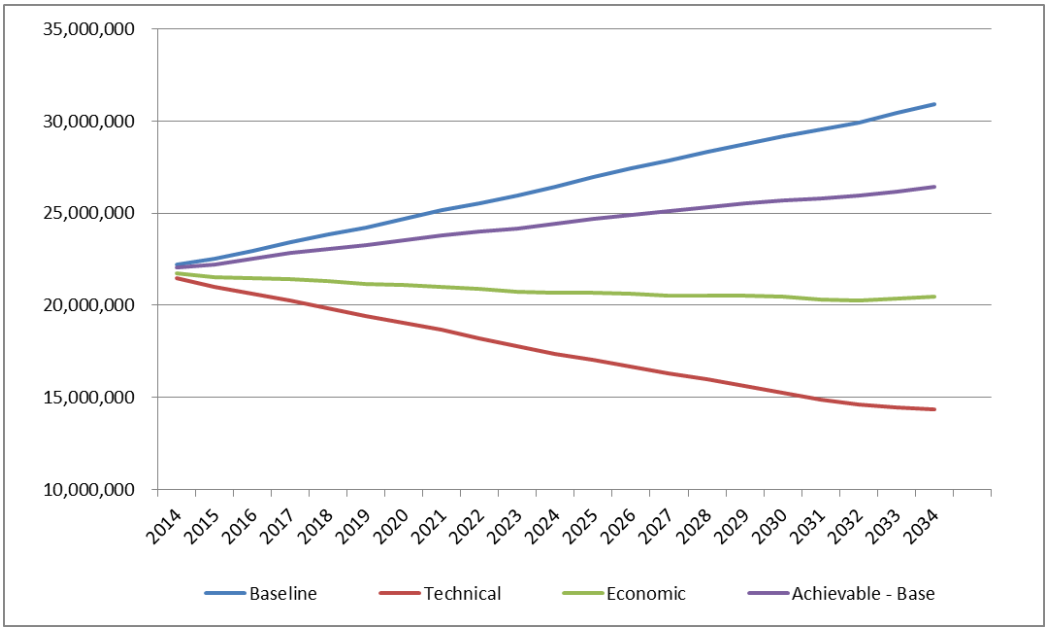


Figure 6-2: 21-year Portfolio Sales Forecast (dth) by Base Case Scenario under UCT Screen



6.2 Alternate Achievable Base Potential Findings

With the decrease in the cost of natural gas there is additional scrutiny over the cost-effectiveness of natural gas efficiency measures. There are several commonly used methodologies available to utilities to estimate cost effectiveness including the utility cost test and total resource cost test. The

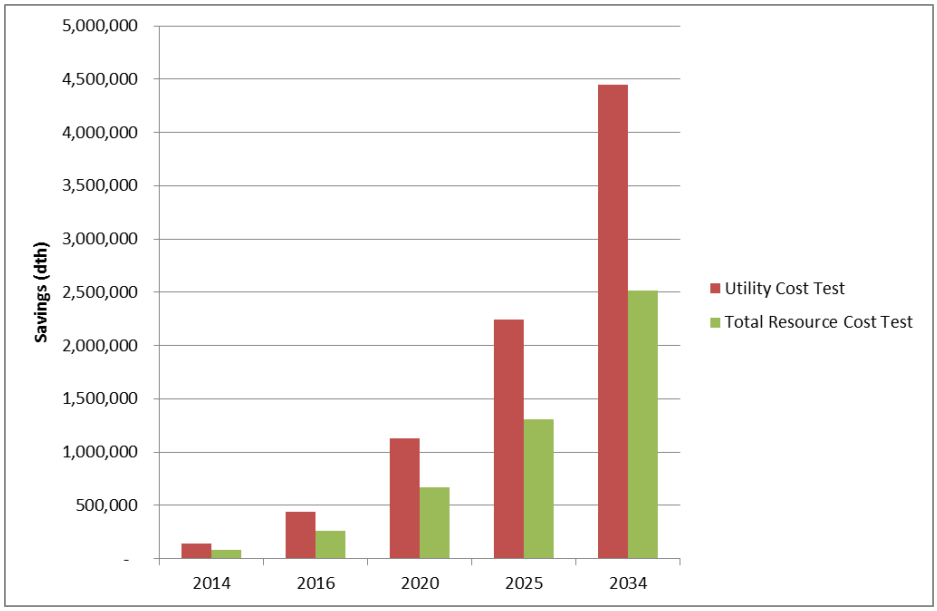
Washington Utilities and Transportation Commission's October 9, 2013 Policy Statement states the WUTC is "…unwilling to allow utilities to end natural gas conservation programs as a result of an unbalanced or incomplete TRC analysis…Accordingly, the UCT is an acceptable option when a properly balanced TRC is not available."[21]. To address this policy statement, Nexant examined savings potential under both screens. **Table 6-2** and **Figure 6-3** below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. As can be seen there is approximately 40% more savings potential under the achievable base scenario in 2014 under the UCT screen (139,859dth) compared to the TRC screen (83,674 dth). This occurs because the UCT only considers the incentivized portion of the measure cost, thus allowing more measures to pass cost-effectiveness when compared with the TRC screen. It can also be seen that unlike the UCT findings, savings potential increases from achievable base to achievable moderate because the measure cost is the full incremental cost under all scenarios so the same number of measures are considered under each scenario.

Table 6-2: Portfolio Savings Potential by Base-Case Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (6+28+50)	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential (7+29+51)	476,641	1,494,793	3,606,967	6,314,915	10,434,394
Achievable - Base (8+30+52)	139,859	437,581	1,130,474	2,243,553	4,448,248
Achievable - Moderate (9+31+53)	137,844	441,098	1,180,749	2,384,769	4,677,603
Achievable - High (10+32+54)	141,599	446,575	1,153,137	2,239,052	4,160,771
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (1+23+45)	744,155	2,337,526	5,667,873	9,931,037	16,585,195
Economic Potential (2+24+46)	280,661	890,127	2,146,790	3,738,374	5,994,207
Achievable - Base (3+25+47)	83,674	261,580	668,838	1,310,576	2,512,861
Achievable - Moderate (4+26+48)	107,728	341,487	891,790	1,754,511	3,321,079
Achievable - High (5+27+49)	142,755	450,536	1,160,443	2,234,333	4,103,135

[21] Docket UG-121207, pg. 14, paragraph 36.
http://wutc.wa.gov/rms2.nsf/177d98baa5918c7388256a550064a61e/cceb91c1dd54c04788257bff0066ff99!OpenDocument

Figure 6-3: Portfolio Achievable Base Savings Potential by Base-Case Scenario, by Cost-Effectiveness Screen



As mentioned above, recent volatility in the price of natural gas is having a significant impact on the cost-effectiveness of many natural gas efficiency measures. The avoided cost of procuring and delivering natural gas (calculated as a benefit in the cost-effectiveness screen) is directly related to this volatility. Thus, Nexant also assessed differences in 2014 achievable base portfolio savings potential given variations in avoided costs under both the UCT and TRC test (**Table 6-3**). These scenarios illustrate the sensitivity of total savings potential given uncertainty in the forecasted cost of natural gas (thus the avoided costs) for Cascade.

Table 6-3: 2014 Portfolio Achievable Base Potential by Cost Effectiveness Test, by Avoided Cost Scenario

Scenario (UCT #'s / TRC #'s)	Cumulative Savings by UCT Screen (dth)	Cumulative Savings by TRC Screen (dth)
Achievable Base Avoided Costs (8+30+52 / 3+25+47)	139,859	83,674
Avoided Costs +25% (16+38+60 / 11+33+55)	147,672	90,458
Avoided Costs +50% (17+39+61 / 12+34+56)	151,415	113,293
Avoided Costs +75% (18+40+62 / 13+35+57)	152,696	133,288
Avoided Costs -25% (19+41+63 / 14+36+58)	128,080	74,383
Avoided Costs -50% (20+42+64 / 15+37+59)	89,785	65,239

Finally, **Table 6-4** and **Table 6-5** summarize the differences in achievable base savings potential over time given variations in the corporate discount rate used by Cascade. Nexant used Cascade's weighted average cost of capital of 8.55% to screen measures as the base-case assumption for all scenarios under

the UCT screen (a 3.4% discount rate was used for the residential TRC screen). An alternate discount rate of 4.17% (Cascade's long term discount rate utilized for DSM planning and program reporting) was used to assess impact on savings potential as illustrated below.

Table 6-4: Portfolio Achievable Base Savings Potential (dth) by Discount Rate under UCT Screen

Scenario	2014	2016	2020	2025	2034
Base Case Discount Rate of 8.55% (Scenario #'s 8+30+52)	139,859	437,581	1,130,474	1,968,116	4,448,248
Discount Rate of 4.17% (Scenario #'s 22+44+66)	147,918	462,390	1,192,431	2,053,210	4,672,363

Table 6-5: Portfolio Achievable Base Savings Potential (dth) by Discount Rate under TRC Screen

Scenario	2014	2016	2020	2025	2034
Base Case Discount Rate of 3.4% (res), 8.55% (C&I) (Scenario #'s 3+25+47)	83,674	261,580	668,838	1,310,576	2,512,861
Discount Rate of 4.17% (Scenario #'s 21+43+65)	85,424	266,665	680,809	1,335,733	2,573,978

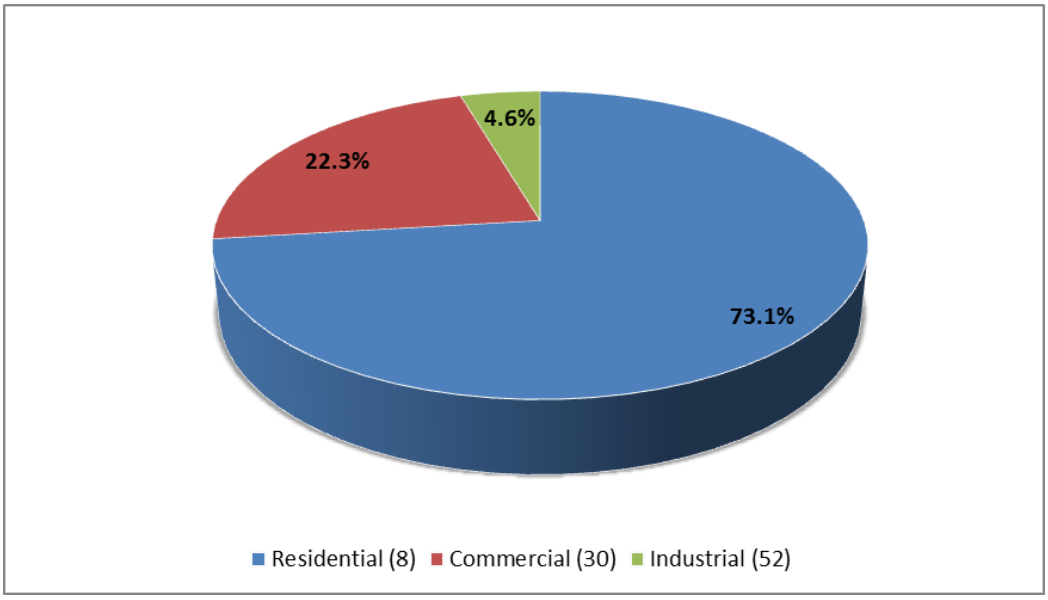
7 ACHIEVABLE POTENTIAL BY SECTOR

Table 7-1 presents the cumulative estimated energy efficiency achievable savings potential for the residential, commercial and industrial sectors under the UCT cost-effectiveness screen. As noted earlier, achievable potential decreases from the achievable base to the achievable high scenario. This occurs because under the UCT cost-effectiveness screen, the utility incurs a higher proportion of the measure's incremental cost in the achievable high scenario (75% incentive) as compared to the achievable base scenario (30% incentive). This increase in the cost to the utility is causing more measures to fail the cost-effective screen, which is outweighing the increased adoption of the measures which do pass. **Figure 7-1** shows the same distribution of savings by sector for the achievable base scenario. Residential shows the largest potential at 73% of the total, with Commercial representing 22% and Industrial just under 5%.

Table 7-1: Cumulative Natural Gas Savings Potential by Achievable Scenario, by Sector (UCT) [22]

	2014	2016	2020	2025	2034
Achievable - Base Cumulative Savings (dth)					
Residential (8)	102,231	318,717	809,252	1,601,762	3,115,143
Commercial (30)	31,228	99,116	272,356	547,792	1,157,574
Industrial (52)	6,400	19,748	48,866	93,998	175,531
Achievable - Moderate Cumulative Savings (dth)					
Residential (4)	74,639	237,393	616,349	1,253,558	2,419,570
Commercial (26)	26,581	84,226	227,098	413,413	754,225
Industrial (48)	6,508	19,868	48,343	87,540	147,284
Achievable - Aggressive Cumulative Savings (dth)					
Residential (5)	98,949	313,235	801,824	1,596,849	2,992,451
Commercial (27)	35,136	110,840	294,314	521,315	915,961
Industrial (49)	8,671	26,461	64,305	116,170	194,724

Figure 7-1: 2014 Achievable Base Savings Potential by Sector under UCT Screen



[22] The scenario number is listed in parenthesis for reference to **Table 2-6**

7.1 Residential Energy Efficiency Potential Findings

Sector specific findings for the residential sector are presented below. Similar to the portfolio section, detailed findings are presented first for the base-case technical, economic and achievable-base potential scenarios. It should be noted that all findings in the base-case scenario are run under the UCT cost effectiveness screen and the following main assumptions:

- Cost Effectiveness Screen: UCT
- Incentive Level: 30% (Achievable Base), then 50% and 75%
- Avoided Costs: Current
- Discount Rate: 8.55%[23]

Summary findings are then presented for the alternate achievable-base potential scenarios given changes in cost-effectiveness screen, avoided cost and discount rate.

7.1.1 Base Case Technical/Economic/Achievable Savings Potential Findings

Table 7-2 and Figure 7-2 present the estimated cumulative technical, economic and achievable savings potential for the residential sector in Cascade's Washington service territory under the Utility Cost Test (UCT). Cascade's 2014 achievable-base savings potential is estimated at 102,231 dekatherms, reaching 3.1M dekatherms in 2034, representing 0.9% and 18.9% of current year sales respectively.

Table 7-2 Residential Cumulative Natural Gas Savings Potential by Base Case Scenario under the UCT

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	11,608,614	12,023,160	12,985,691	14,246,171	16,505,838
Cumulative Savings (dth)					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	317,391	1,008,519	2,431,359	4,323,971	7,216,991
Achievable - Base	102,231	318,717	809,252	1,601,762	3,115,143
Achievable - Moderate	94,517	302,284	795,012	1,613,675	3,120,243
Achievable - High	94,522	297,154	749,820	1,479,572	2,735,363
Energy Savings (% of baseline sales)					
Technical Potential	4.00%	12.34%	27.78%	45.35%	66.21%
Economic Potential	2.73%	8.39%	18.72%	30.35%	43.72%
Achievable - Base	0.88%	2.65%	6.23%	11.24%	18.87%
Achievable - Moderate	0.81%	2.51%	6.12%	11.33%	18.90%
Achievable - High	0.81%	2.47%	5.77%	10.39%	16.57%

[23] While a 8.55% discount rate is used for all the base-case scenarios under the UCT, a 3.4% discount rate was used when screening residential measures under the TRC. Moreover, a scenario was also run to assess residential potential using a 4.17% discount rate.

Figure 7-2: Residential Energy Efficiency Potential Savings (% of Sales) by Base Case Scenario (UCT)

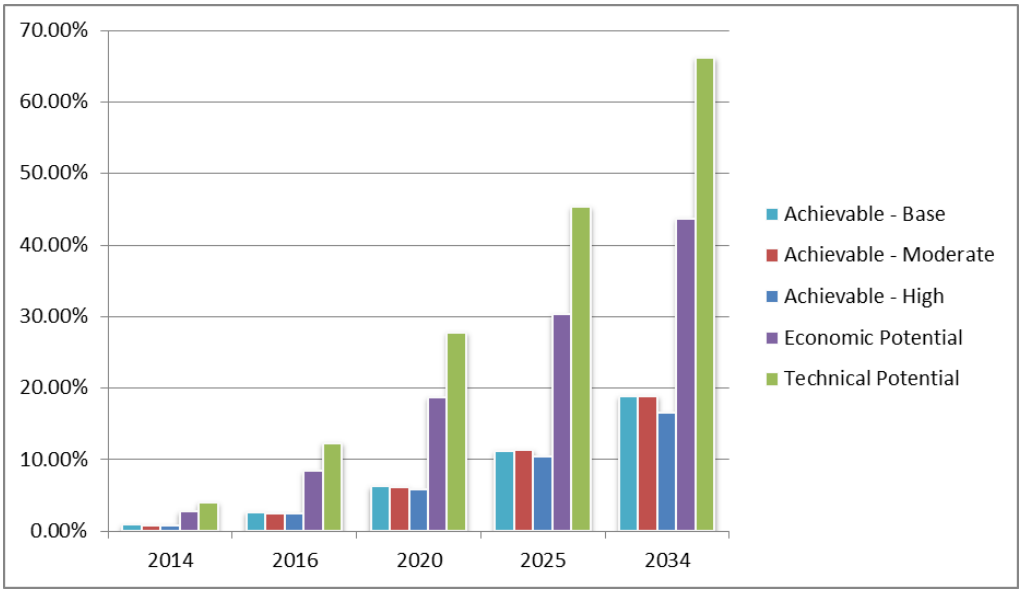


Figure 7-3 illustrates the technical savings potential in the residential sector along various points along the supply curve. These findings suggest that Cascade can obtain a large share of the total residential energy savings (81.5M therms) at a screened levelized cost of $0.75 or less with diminishing savings returns thereafter. **Table 7-3** shows the achievable savings potential when screened at various levelized cost/therm under the UCT test. Given its current program funding threshold of $0.42/levelized cost per therm, Cascade could potentially realize 73,677 dth of savings in 2014 were it to implement all cost-effective residential measures.

Figure 7-3: Residential Technical Potential Supply Curve under UCT

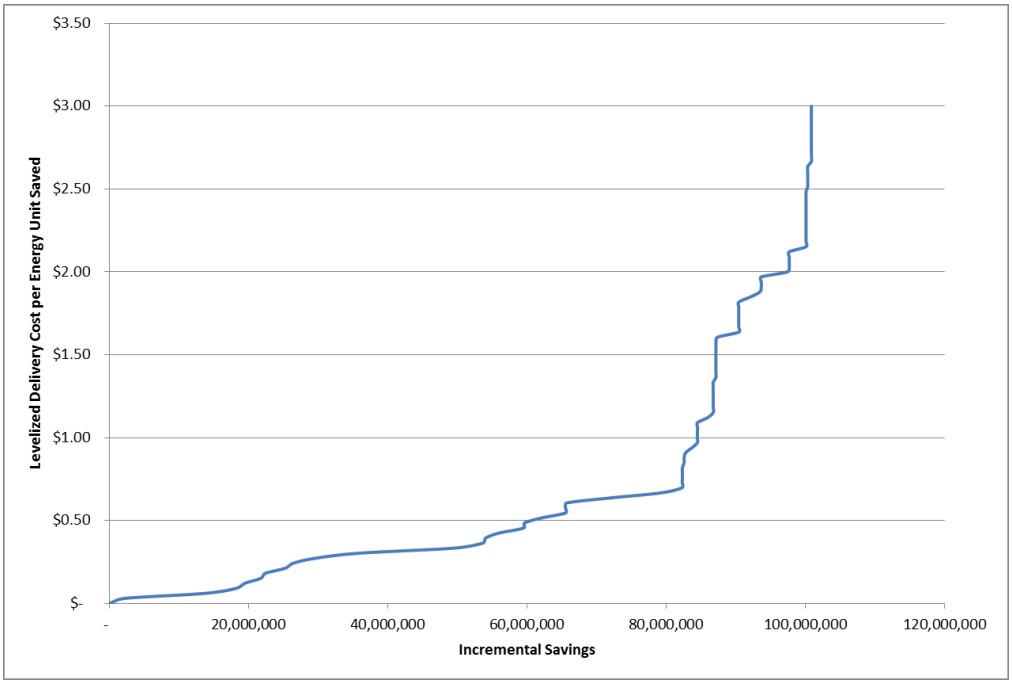


Table 7-3 2014 Residential Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.12	$0.22	$0.32	$0.42	$0.53	$0.64	$0.75
Space Heating	17,041	25,794	31,093	44,256	55,419	71,748	72,808
Room Heating	2	2	2	2	2	2	2
Water Heating	29,419	29,419	29,419	29,419	29,419	29,419	29,419
Clothes Drying	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
TOTAL	**46,462**	**55,215**	**60,514**	**73,677**	**84,840**	**101,169**	**102,229**

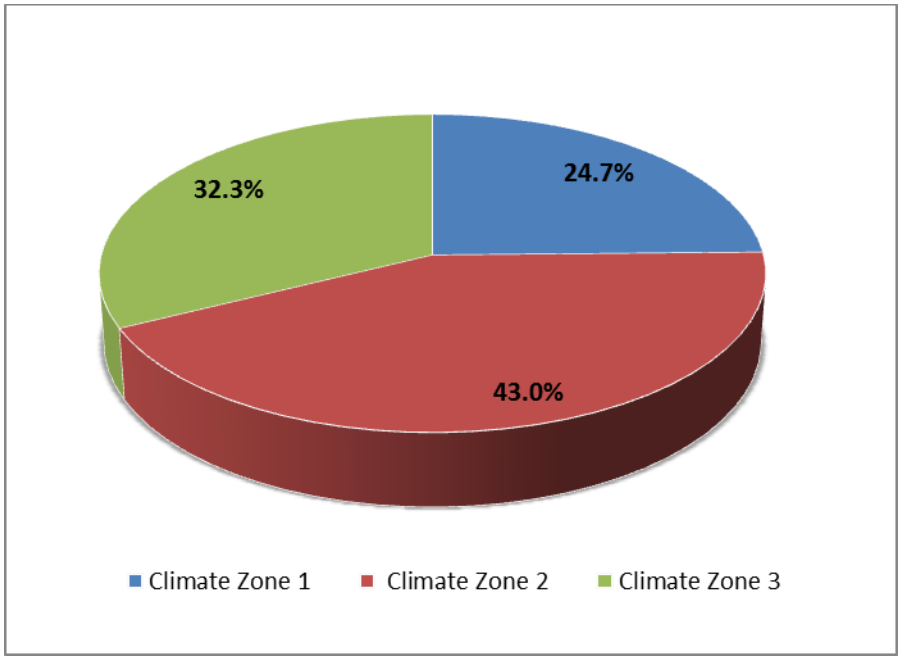
7.1.1.1 Residential Savings Potential by Climate Zone

Table 7-4 and **Figure 7-4** below summarize the cumulative residential savings potential by scenario and by segment. Climate Zone 2 demonstrates the most savings potential at 43% of the total (in line with total sales), followed by Climate Zone 3 (32%) then Climate Zone 1 (25%). These findings generally align with the baseline sales forecast in each climate zone (i.e. the more sales, the more savings potential); however, it can be seen that as a percentage of sales the most potential resides in climate zone 3 (0.93% of sales for the achievable base scenario).

Table 7-4: Residential 2014 Cumulative Natural Gas Savings by Climate Zone by Base Case Scenario (UCT)

	1	2	3	TOTAL
Baseline Sales Forecast (dth)	2,970,456	5,087,390	3,550,768	**11,608,614**
Cumulative Savings (dth)				
Technical Potential	114,926	202,507	146,522	**463,954**
Economic Potential	78,881	137,542	100,969	**317,391**
Achievable - Base	25,256	43,929	33,046	**102,231**
Achievable - Moderate	25,530	35,856	33,132	**94,517**
Achievable - High	23,775	40,128	30,619	**94,522**
Energy Savings (% of baseline sales)				
Technical Potential	3.87%	3.98%	4.13%	**4.00%**
Economic Potential	2.66%	2.70%	2.84%	**2.73%**
Achievable - Base	0.85%	0.86%	0.93%	**0.88%**
Achievable - Moderate	0.86%	0.70%	0.93%	**0.81%**
Achievable - High	0.80%	0.79%	0.86%	**0.81%**

Figure 7-4: Residential 2014 Achievable Base Savings Potential by Climate Zone (UCT)



7.1.1.2 Residential Savings Potential by Segment

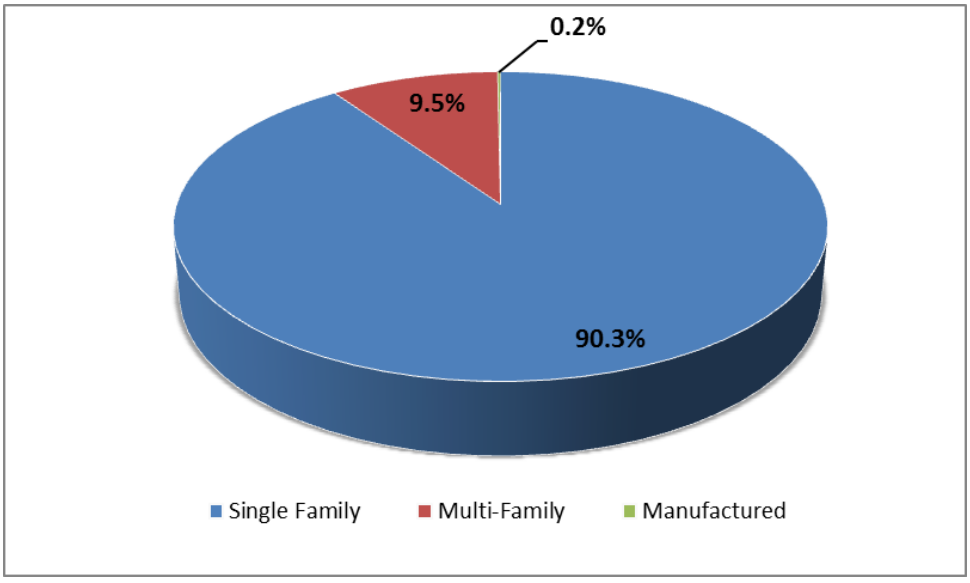
Table 7-5 and **Figure 7-5** below summarize the cumulative residential base-case savings potential by scenario and by segment. The single family segment shows the most potential for savings both on a total therms basis, and as a percentage of segment sales. As shown in

, manufactured homes represent the smallest share of savings, at 0.2% of the residential sector. Again, these savings percentage align largely with the baseline sales forecast in each segment, as shown earlier in **Table 4-2** (manufactured homes represent 0.1% of the energy consumption of the residential sector).

Table 7-5: Residential 2014 Base Case Savings Potential by Residential Segment by Scenario (UCT)

	Single Family	Multi-Family	Manufactured	TOTAL
Baseline Forecast (dth)	9,851,460	1,736,502	20,651	**11,608,614**
Energy Savings (dth)				
Technical Potential	417,130	46,052	772	**463,954**
Economic Potential	282,983	33,878	530	**317,391**
Achievable - Base	92,301	9,760	169	**102,231**
Achievable - Moderate	84,620	9,755	142	**94,517**
Achievable - High	84,890	9,513	118	**94,522**
Energy Savings as % of Baseline Sales				
Technical Potential	4.23%	2.65%	3.74%	**4.00%**
Economic Potential	2.87%	1.95%	2.57%	**2.73%**
Achievable - Base	0.94%	0.56%	0.82%	**0.88%**
Achievable - Moderate	0.86%	0.56%	0.69%	**0.81%**
Achievable - High	0.86%	0.55%	0.57%	**0.81%**

Figure 7-5: Residential 2014 Achievable Base Potential Savings by Segment (UCT)



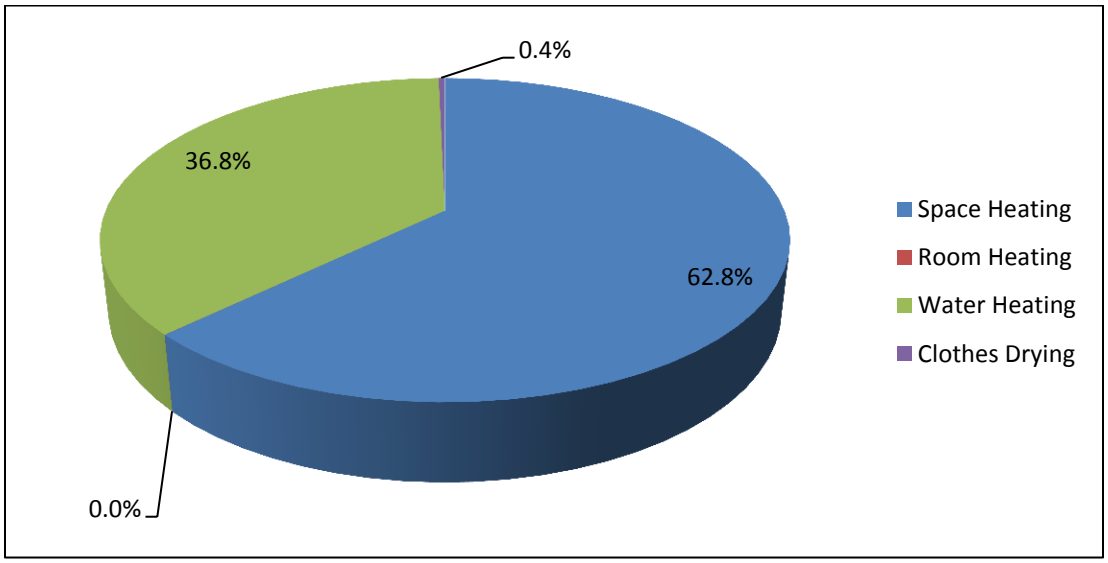
7.1.1.3 Residential Savings Potential by End Use

Table 7-6 summarizes the savings potential in the residential sector under the achievable-base scenario by segment and by end use, while **Figure 7-6** illustrates the 2014 achievable savings potential by residential end use. Space heating represents the largest share of saving potential across all segments at 62.8%, followed by water heating at 36.8%. Room heating and clothes drying make up the remainder.

Table 7-6: Residential 2014 Cumulative Achievable Base Savings by Segment, by End Use (UCT)

	Single Family		Multi-Family		Manufactured		TOTAL
End Use	Dekatherms	% of Total	Dekatherms	% of Total	Dekatherms	% of Total	
Space Heating	228,139	62.8%	26,924	61.9%	409	61.1%	**255,472**
Room Heating	50	0.01%	14	0.03%	0	0.01%	**64**
Water Heating	133,727	36.8%	16,398	37.7%	259	38.6%	**150,384**
Clothes Drying	1,266	0.35%	178	0.41%	1	0.22%	**1,445**
% of Sales		**3.7%**		**2.5%**		**3.2%**	**3.5%**

Figure 7-6: Residential 2014 Achievable Base Potential Savings by End Use (UCT)



7.1.2 Alternate Achievable Savings Potential Findings

As described in **Section 6.2 Alternate Achievable Base Potential Findings**, Nexant complied with the Washington Utilities and Transportation Commission's October 9, 2013 Policy Statement addressing cost-effectiveness by examining savings potential under both the TRC and UCT screen. **Table 7-7** below

illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. There is more achievable potential under the UCT test due to its more favorable cost-effectiveness screening methodology with achievable base savings of 102,231 dekatherms in 2014 (compared to 58,075 dekatherms under the TRC). As noted earlier, achievable potential decreases from the achievable base to the achievable high scenario because under the UCT test, fewer measures are passing the achievable high cost effectiveness screen (utility pays a 75% incentive) than compared with the achievable base scenario (utility pays 30% incentive). This increase in the cost to the utility is causing more measures to fail the cost-effective screen, which is outweighing the increased adoption of the measures which do pass. For the Economic and Achievable Base scenarios UCT savings are higher than TRC savings by about 40%. UCT is also higher than TRC in the Achievable Moderate scenario by about 20%, whereas in the Achievable High scenario TRC savings are greater than UCT by about 5%.

Table 7-7: Residential Savings Potential by Base-Case Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	317,391	1,008,519	2,431,359	4,323,971	7,216,991
Achievable - Base	102,231	318,717	809,252	1,601,762	3,115,143
Achievable - Moderate	94,517	302,284	795,012	1,613,675	3,120,243
Achievable - High	94,522	297,154	749,820	1,479,572	2,735,363
Cumulative Savings (dth) based on TRC Screen					
Technical Potential	463,954	1,483,179	3,607,978	6,460,296	10,928,515
Economic Potential	192,917	622,511	1,498,814	2,686,147	4,412,650
Achievable - Base	58,075	181,825	461,307	934,496	1,824,239
Achievable - Moderate	74,639	237,393	616,349	1,253,558	2,419,570
Achievable - High	98,949	313,235	801,824	1,596,849	2,992,451

The next scenarios illustrate the sensitivity of total savings potential given uncertainty in the forecasted cost of natural gas (thus the avoided costs) for Cascade. **Table 7-8** compares 2014 savings results of the UCT test vs. the TRC under various avoided cost scenarios. UCT savings are greatest by roughly 40% over TRC under the following scenarios: Current Avoided Costs, Avoided Costs +25%, and Avoided Costs -25%. However, the savings potential under the UCT is only 4% greater than the TRC when Avoided Costs are increased by +100%.

Table 7-8: Residential 2014 Achievable Base Potential by Cost Effectiveness Test, by Avoided Cost Scenario

Scenario (30% Incentive)	Cumulative 2-yr Savings by UCT Screen (dth)	Cumulative 2-yr Savings by TRC Screen (dth)	Difference in Therms (UCT-TRC)
Current Avoided Costs (8, 3)	102,231	58,075	44,156
Avoided Costs +25% (16, 11)	105,136	63,345	41,790
Avoided Costs +50% (17, 12)	105,137	84,542	20,595
Avoided Costs +100% (18, 13	105,446	101,683	3,763
Avoided Costs -25% (19, 14)	93,769	54,914	38,855
Avoided Costs -50% (20, 15)	59,157	48,260	10,897

Table 7-9 summarizes the differences in achievable base savings potential given variations in the corporate discount rate used by Cascade under the UCT and TRC screen respectively. Nexant used Cascade's weighted average cost of capital of 8.55% to screen residential measures as the base-case assumption under the UCT screen, and 3.4% under the TRC screen. An alternate discount rate of 4.17% was used to assess impact on savings potential for both cost-effectiveness screens. Using a 4.17% discount rate increases 2014 potential by 3% under the UCT, while it reduces potential by 1.7% under the TRC.

Table 7-9: Residential Achievable Base Savings Potential by Discount Rate under UCT and TRC Screen (dth)

Scenario	2014	2016	2020	2025	2034
UCT Screen					
Base Case Discount Rate of 8.55% (8)	102,231	318,717	809,252	1,601,762	3,115,143
Discount Rate of 4.17% (22)	105,301	328,232	833,403	1,648,602	3,212,676
TRC Screen					
Base Case Discount Rate of 3.4% (3)	58,075	181,825	461,307	934,496	1,824,239
Discount Rate of 4.17% (21)	57,088	177,597	442,776	878,733	1,669,872

7.1.3 Residential Achievable Potential Benefits & Costs

Table 7-10 and **Table 7-11** summarize benefit-cost ratios associated with the achievable potential scenarios given variations in avoided costs screened under the UCT and TRC respectively. The residential sector UCT ratio ranges from 2.01 to 4.35 depending on the avoided costs, while the TRC benefits range from $1,612,661 to $15,815,917, with costs ranging from $758,517 to $7,376,411. The TRC ratio ranges from 1.92 to 2.81 depending on avoided cost. Again, the UCT screen considers less costs (especially under lower incentive rates as is the case with the base case scenario assumption of 30% incentive rates), and thus has a more favorable benefit cost ration when compared to the TRC test (which considers the full incremental cost of each measure).

Table 7-10: Residential 2014 UCT Ratios for Achievable Potential by Avoided Cost Scenario

Scenario	UCT Benefits	UCT Costs	UCT Ratio
Base Avoided Costs (8)	$ 5,208,577	$ 2,219,358	2.35
Avoided Costs +25% (16)	$ 6,730,392	$ 2,457,045	2.74
Avoided Costs +50% (17)	$ 8,076,595	$ 2,457,161	3.29
Avoided Costs +100% (18)	$ 10,798,665	$ 2,483,598	4.35
Avoided Costs -25% (19)	$ 3,484,687	$ 1,733,075	2.01
Avoided Costs -50% (20)	$ 1,411,965	$ 469,090	3.01

Table 7-11: Residential 2014 TRC Ratios for Achievable Potential by Avoided Cost Scenario

Scenario	TRC Benefits	TRC Costs	TRC Ratio
Base Avoided Costs (3)	$ 4,136,066	$ 1,470,327	2.81
Avoided Costs +25% (11)	$ 5,886,079	$ 2,204,442	2.67
Avoided Costs +50% (12)	$ 9,984,223	$ 5,195,834	1.92
Avoided Costs +100% (13)	$ 15,815,917	$ 7,376,411	2.14
Avoided Costs -25% (14)	$ 2,846,545	$ 1,148,480	2.48
Avoided Costs -50% (15)	$ 1,612,661	$ 758,517	2.13

Finally, **Table 7-12** summarizes the total acquisition costs ($/therm saved) to achieve the residential savings associated with each achievable scenario under the UCT and TRC cost tests, respectively. Acquisition cost per therm saved range from $1.30 to $2.17 under the UCT and $2.06 to $2.62 under the TRC.

Table 7-12: Residential 2014 Acquisition Costs for Achievable Potential Scenarios (UCT and TRC)

Scenario	UCT Costs	Savings (therms	Acquisition Cost
Achievable Base	$ 2,219,358	1,022,309	$ 2.17
Achievable Moderate	$ 1,809,078	945,173	$ 1.91
Achievable Aggressive	$ 1,231,523	945,219	$ 1.30
Scenario	TRC Costs	Savings (therms	Acquisition Cost
Achievable Base	$ 1,470,327	580,753	$ 2.53
Achievable Moderate	$ 1,959,148	746,388	$ 2.62
Achievable Aggressive	$ 2,037,064	989,486	$ 2.06

7.2 COMMERCIAL ENERGY EFFICIENCY POTENTIAL

Sector specific findings for the commercial sector are provided below. Similar to the portfolio and residential section, findings are presented first for the base-case technical, economic and achievable

potential; and then for the alternate achievable potential scenarios given changes in cost-effectiveness screen, avoided cost and discount rate.

7.2.1 Base Case Technical/Economic/Achievable Savings Potential Findings

Table 7-13 and **Figure 7-7** present the estimated technical, economic and achievable savings potential for the commercial sector in Cascade's Washington service territory under the Utility Cost Test. 2014 savings potential in the commercial sector under the achievable base scenario is 31,229 dth, representing 0.39% of current year sales. Under a higher incentive rate of 75%, the 2014 savings potential in the commercial sector under the achievable high scenario increases to 37,461 dth, representing 0.47% of sales.

Table 7-13: Commercial Energy Efficiency Potential by Scenario under UCT Screen (dth)

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	7,919,090	8,175,358	8,757,191	9,525,092	10,792,100
Cumulative Savings (dth)					
Technical Potential (28)	245,635	749,691	1,811,603	1,811,603	4,919,046
Economic Potential (29)	138,153	422,290	1,023,921	1,023,921	2,774,773
Achievable - Base (30)	31,228	99,116	272,356	272,356	1,157,574
Achievable - Moderate (31)	35,705	115,110	324,650	324,650	1,332,303
Achievable - High (32)	37,461	120,085	332,083	332,083	1,214,167
Energy Savings (% of baseline sales)					
Technical Potential	3.10%	9.17%	20.69%	19.02%	45.58%
Economic Potential	1.74%	5.17%	11.69%	10.75%	25.71%
Achievable - Base	0.39%	1.21%	3.11%	2.86%	10.73%
Achievable - Moderate	0.45%	1.41%	3.71%	3.41%	12.35%
Achievable - High	0.47%	1.47%	3.79%	3.49%	11.25%

Figure 7-7: Commercial Energy Efficiency Potential by Scenario under Utility Cost Test

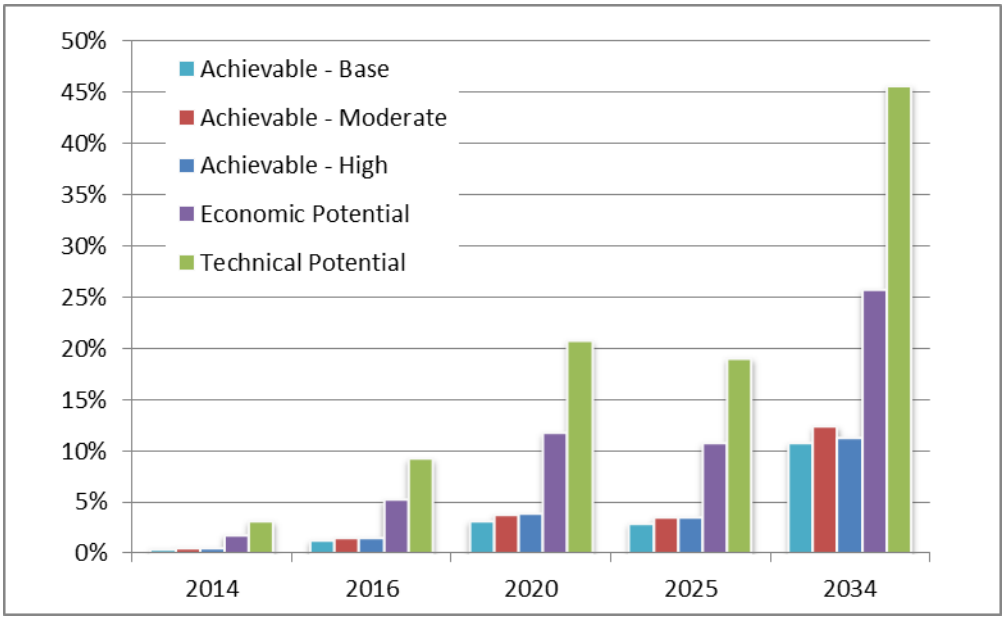


Figure 7-8 illustrates the 2014 technical savings potential supply curve. These findings suggest that Cascade can obtain a large share of the total commercial energy savings (29,131 dth) at a screened levelized cost of $0.65/therm or less with diminishing savings returns thereafter. **Table 7-14** shows the achievable base savings when screened at various levelized cost/therm under the UCT test. Given its current program threshold of $0.42/levelized cost per therm, it's possible to achieve 27,201 dth in the commercial sector assuming all cost effective measures are pursued.

Figure 7-8: Commercial Technical Potential Supply Curve under UCT

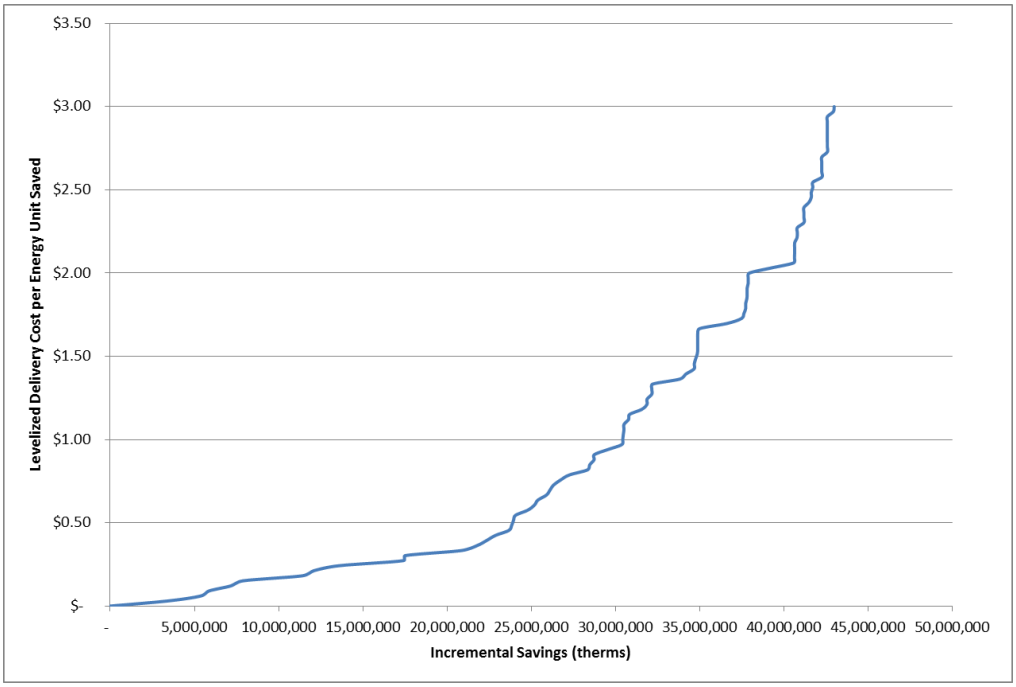


Table 7-14: Commercial 2014 Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.15	$0.25	$0.35	$0.42	$0.55	$0.65	$0.85
Space Heating	1,534	6,998	8,520	10,758	11,955	12,807	14,133
Water Heating	12,101	13,512	13,736	14,678	14,924	15,339	16,058
Cooking	234	250	254	254	274	274	274
Other	-	515	515	711	711	711	763
TOTAL	**13,870**	**21,274**	**23,024**	**27,201**	**27,864**	**29,131**	**31,228**

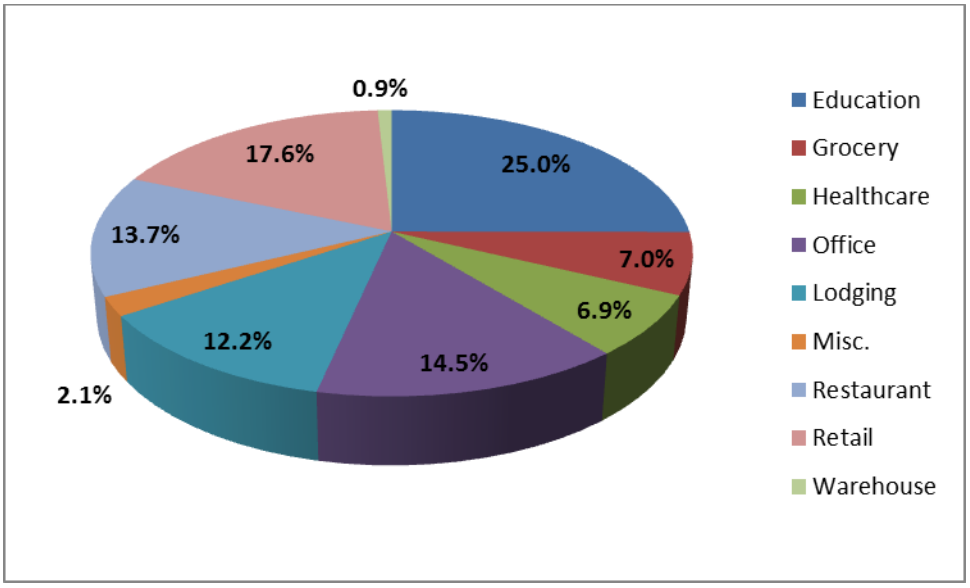
7.2.1.1 Commercial Savings Potential by Segment

Table 7-15 below summarizes the cumulative Commercial savings potential by scenario and by segment. Achievable base savings is fairly evenly distributed among the various segments with the most residing in education (25%) and the least in warehouses (0.9%). Again, these savings potential align closely with baseline sales. However, when viewed as a percentage of sales basis, the lodging segment has the highest savings potential at 1.25% of segment sales.

Table 7-15: 2014 Commercial Savings Potential by Scenario, by Segment (UCT)

	Education	Grocery	Healthcare	Office	Lodging	Misc.	Restaurant	Retail	Warehouse	TOTAL
Baseline Forecast (dth)	1,198,852	594,346	314,392	2,343,195	305,770	388,657	654,378	1,915,295	204,206	**7,919,090**
Energy Savings (dth)										
Technical Potential (28)	38,857	17,366	12,191	62,451	14,259	9,016	29,912	56,554	5,028	**245,635**
Economic Potential (29)	29,819	10,144	7,777	24,012	12,819	4,105	19,733	27,480	2,265	**138,153**
Achievable - Base (30)	7,822	2,182	2,169	4,517	3,810	670	4,280	5,509	270	**31,228**
Achievable - Moderate (31)	8,088	2,102	2,194	5,574	4,870	812	5,245	6,490	331	**35,705**
Achievable - High (32)	8,830	2,197	2,623	5,209	6,162	307	6,254	5,591	288	**37,461**
Energy Savings as % of Baseline Sales										
Technical Potential	3.24%	2.92%	3.88%	2.67%	4.66%	2.32%	4.57%	2.95%	2.46%	**3.10%**
Economic Potential	2.49%	1.71%	2.47%	1.02%	4.19%	1.06%	3.02%	1.43%	1.11%	**1.74%**
Achievable - Base	0.65%	0.37%	0.69%	0.19%	1.25%	0.17%	0.65%	0.29%	0.13%	**0.39%**
Achievable - Moderate	0.67%	0.35%	0.70%	0.24%	1.59%	0.21%	0.80%	0.34%	0.16%	**0.45%**
Achievable - High	0.74%	0.37%	0.83%	0.22%	2.02%	0.08%	0.96%	0.29%	0.14%	**0.47%**

Figure 7-9: 2014 Achievable Base Savings Potential by Commercial Segment (UCT)



7.2.1.2 Commercial Savings Potential by End Use

Figure 7-10 illustrates the savings potential in the commercial sector under the achievable-base scenario by segment and by end use. **Table 7-16** shows the 2014 achievable savings potential by commercial end use. The majority of savings reside in space heating (51%) and water heating (45%) across all segments. However, some segments such as restaurants see a higher share of savings potential in the cooking end use (4.3%).

Figure 7-10: Commercial 2014 Achievable Base Savings Potential by Commercial End Use (UCT)

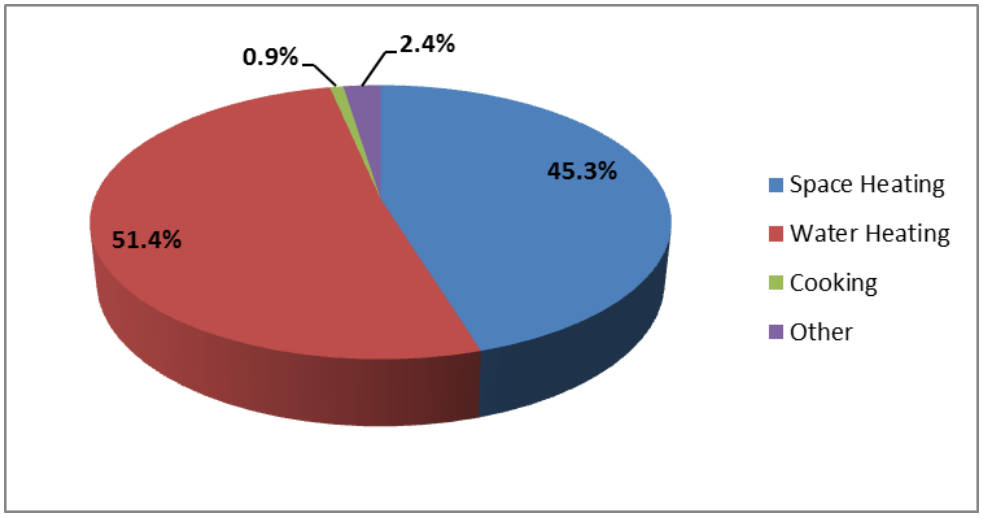


Table 7-16: Commercial 2014 Cumulative Achievable Base Savings by Commercial Segment, by End Use (dekatherms and % of Total)

End Use	Education		Grocery		Healthcare		Office		Lodging		Misc.		Restaurant		Retail		Warehouse		TOTAL
	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	
Space Heating	1,333	17.0%	1,660	76.1%	335	15.5%	3,705	82.0%	191	5.0%	606	90.5%	957	22.4%	5,116	92.9%	231	85.5%	**14,133**
Water Heating	5,760	73.6%	455	20.9%	1,829	84.3%	813	18.0%	3,567	93.6%	64	9.5%	3,139	73.3%	393	7.1%	39	14.5%	**16,058**
Cooking	19	0.2%	67	3.1%	4	0.2%	-	0.0%	-	0.0%	-	0.0%	184	4.3%	-	0.0%	-	0.0%	**274**
Other	711	9.1%	-	0.0%	-	0.0%	-	0.0%	52	1.4%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**763**
% of Sales	0.6%		0.4%		0.7%		0.2%		1.2%		0.2%		0.6%		0.3%		0.1%		**0.4%**

7.2.2 Alternate Achievable Savings Potential Findings

As described in **Section 6.2**, Nexant examined savings potential under both the TRC and UCT screen to comply with WUTC's October 9, 2013 Policy Statement regarding cost screening. **Table 7-17** below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. Similar to the residential sector, significantly more savings potential is realized under the UCT screen with 31,228 dth in 2014 compared to 20,408 dth under the TRC screen.

Table 7-17: Commercial Savings Potential by Scenario, by Cost-Effectiveness Screen (dth)

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (28)	245,635	749,691	1,811,603	1,811,603	4,919,046
Economic Potential (29)	138,153	422,290	1,023,921	1,023,921	2,774,773
Achievable - Base (30)	31,228	99,116	272,356	272,356	1,157,574
Achievable - Moderate (31)	35,705	115,110	324,650	324,650	1,332,303
Achievable - High (32)	37,461	120,085	332,083	332,083	1,214,167
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (23)	245,635	749,691	1,811,603	3,036,629	4,919,046
Economic Potential (24)	74,703	227,948	552,393	881,742	1,300,918
Achievable - Base (25)	20,408	63,925	169,113	306,647	571,900
Achievable - Moderate (26)	26,581	84,226	227,098	413,413	754,225
Achievable - High (27)	35,136	110,840	294,314	521,315	915,961

Nexant also assessed differences in 2014 achievable base savings potential given variations in avoided costs under both the UCT and TRC test (**Table 7-18)**. These scenarios illustrate the sensitivity of total savings potential given uncertainty in the forecasted cost of natural gas (thus the avoided costs) for Cascade.

Table 7-18: Commercial 2014 Achievable Base Potential by Cost Effectiveness Test, by Avoided Cost Scenario

Scenario (UCT #/ TRC #)	2014 Savings by UCT Screen (dth)	2014 Savings by TRC Screen (dth)	Difference in dth (UCT-TRC)
Current Avoided Costs/30% (30/25)	31,228	20,408	10,820
Avoided Costs +25% (38/33)	35,868	21,355	14,513
Avoided Costs +50% (39/34)	39,503	22,993	16,510
Avoided Costs +75% (40/35)	40,410	25,843	14,567
Avoided Costs -25% (41/36)	28,308	14,279	14,030
Avoided Costs -50% (42/37)	24,870	11,789	13,081

Table 7-19 summarizes the differences in achievable base savings potential given variations in the corporate discount rate used by Cascade under the UCT and TRC screen respectively. Per the recommendations provided by the Washington Utilities and Transportation Commission in the October 9, 2013 Policy Statement, Nexant used Cascade's weighted average cost of capital of 8.55% to screen measures as the base-case assumption for all scenarios. An alternate discount rate of 4.17% was used to assess impact on savings potential. Potential increases by approximately 16% and 11% when going from the 8.55% to 4.17% discount rate under the UCT and TRC screen, respectively.

Table 7-19: Commercial Achievable Base Savings Potential by Discount Rate (UCT and TRC)

Scenario	2014	2016	2020	2025	2034
UCT Screen					
Base Case Discount Rate of 8.55% (30)	31,228	99,116	272,356	547,792	1,157,574
Discount Rate of 4.17% (44)	36,139	114,173	309,589	309,589	1,282,239
TRC Screen					
Base Case Discount Rate of 8.55% (25)	20,408	63,925	169,113	306,647	571,900
Discount Rate of 4.17% (43)	22,578	71,513	195,457	380,152	777,474

7.2.3 Commercial Achievable Potential Benefits & Costs

Table 7-20 and **Table 7-21** summarize the associated cost-benefit ratios associated with the achievable potential scenarios given variations in avoided costs screened under the UCT and TRC respectively.

Table 7-20: Commercial 2014 UCT Achievable Potential Ratios by Avoided Cost Scenario

Scenario	UCT Benefits	UCT Costs	UCT Ratio
Base Avoided Costs (30)	$ 1,337,436	$ 533,881	2.5
Avoided Costs +25% (38)	$ 1,968,539	$ 837,284	2.4
Avoided Costs +50% (39)	$ 2,635,439	$ 1,119,598	2.4
Avoided Costs +75% (40)	$ 3,169,520	$ 1,217,843	2.6
Avoided Costs -25% (41)	$ 876,628	$ 363,912	2.4
Avoided Costs -50% (42)	$ 489,934	$ 239,557	2.0

Table 7-21: Commercial 2014 TRC Achievable Potential Ratios by Avoided Cost Scenario

Scenario	TRC Benefits	TRC Costs	TRC Ratio
Base Avoided Costs (25)	$ 722,400	$ 392,424	1.8
Avoided Costs +25% (33)	$ 966,385	$ 455,139	2.1
Avoided Costs +50% (34)	$ 1,304,296	$ 607,203	2.1
Avoided Costs +75% (35)	$ 1,802,684	$ 892,712	2.0
Avoided Costs -25% (36)	$ 352,790	$ 144,440	2.4
Avoided Costs -50% (37)	$ 176,746	$ 61,968	2.9

Finally, **Table 7-22** and **Table 7-23** summarize the total costs projected to be paid by Cascade to achieve the savings associated with the achievable base, moderate, and aggressive scenarios for 2014 and the associated savings under the UCT and TRC costs tests, respectively. The acquisition costs ($/therm-saved) under each scenario are also presented. The acquisition costs under the UCT range from $1.37 to $1.93/therm-saved. While the acquisition costs are slightly higher under the TRC screen, ranging from $1.52 to $1.95/therm-saved.

Table 7-22: Commercial 2014 Acquisition Costs for Achievable Potential Scenarios (UCT)

Scenario	UCT Costs	Savings (therms)	Acquisition Cost ($/therm)
Achievable Base (30)	$ 533,880.91	312,284	$ 1.71
Achievable Moderate (31)	$ 690,255.13	357,052	$ 1.93
Achievable Aggressive (32)	$ 513,840.96	374,614	$ 1.37

Table 7-23: Commercial 2014 Acquisition Costs for Achievable Potential Scenarios (TRC)

Scenario	TRC Costs	Savings (therms)	Acquisition Cost ($/therm)
Achievable Base (25)	$ 392,424.31	204,080	$ 1.92
Achievable Moderate (26)	$ 517,628.38	265,814	$ 1.95
Achievable Aggressive (27)	$ 535,150.01	351,358	$ 1.52

7.3 Industrial Energy Efficiency Potential

Sector specific findings for the industrial sector are provided below. Similar to the portfolio section, findings are presented first for the base-case technical, economic and achievable potential; and then for the alternate achievable potential scenarios given changes in cost-effectiveness screen, avoided cost and discount rate.

7.3.1 Base Case Technical/Economic/Achievable Savings Potential Findings

Table 7-24, and **Figure 7-11** present the estimated technical, economic and achievable savings potential for the industrial sector in Cascade's Washington's service territory under the Utility Cost Test. Cumulative savings by the year 2034 are projected at 20% of baseline sales for Technical Potential, and this savings potential reduces to 4.8% over the 20 year study horizon for the Achievable Base scenario. As is the case with each sector, the Achievable scenario's projected savings are not necessarily linear with the 'base', 'moderate', and 'high' designations.

Table 7-24: Industrial Energy Efficiency Potential Savings by Base Case Scenario (UCT)

	2014	2016	2020	2025	2034
Baseline Sales Forecast (dth)	2,663,312	2,749,499	2,945,178	3,203,435	3,629,550
Cumulative Savings (dth)					
Technical Potential	34,565	104,656	248,293	434,112	737,634
Economic Potential	21,097	63,985	151,686	268,511	442,629
Achievable - Base	6,400	19,748	48,866	93,998	175,531
Achievable - Moderate	7,621	23,704	61,087	120,160	225,057
Achievable - High	9,616	29,337	71,234	128,528	211,241
Energy Savings (% of baseline sales)					
Technical Potential	1.30%	3.81%	8.43%	13.55%	20.32%
Economic Potential	0.79%	2.33%	5.15%	8.38%	12.20%
Achievable - Base	0.24%	0.72%	1.66%	2.93%	4.84%
Achievable - Moderate	0.29%	0.86%	2.07%	3.75%	6.20%
Achievable - High	0.36%	1.07%	2.42%	4.01%	5.82%

Figure 7-11: Industrial Energy Efficiency Potential Savings (% Sales) by Base Case Scenario (UCT)

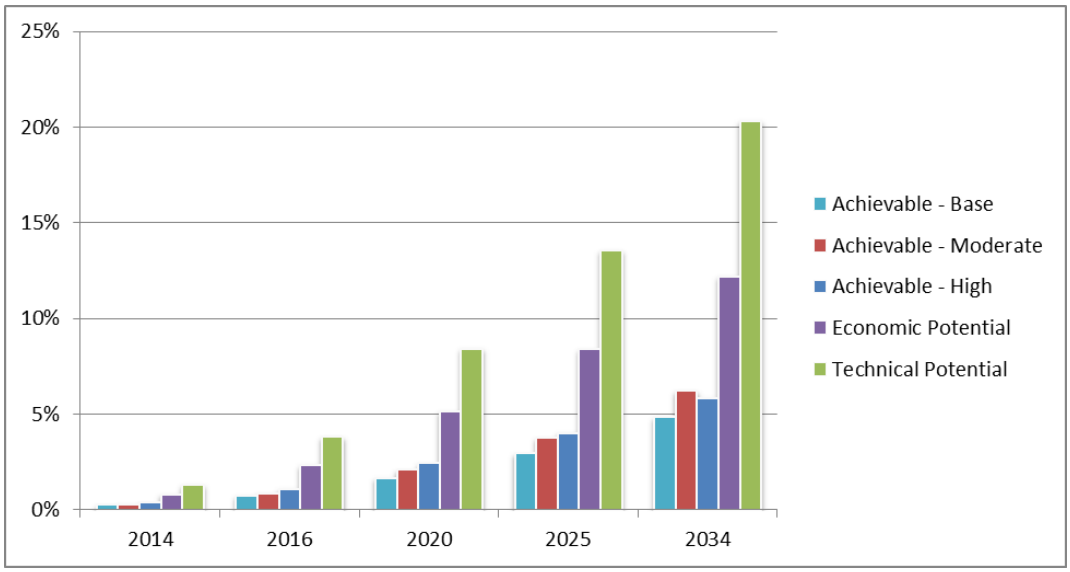


Figure 7-12 illustrates the achievable savings potential along various points of the industrial technical potential supply curve. These findings suggest that Cascade can obtain a large share of the total industrial energy savings (170,554 dekatherms) at a screened levelized cost of $0.42/therm or less with diminishing savings returns thereafter. **Table 7-25** shows the achievable base savings potential when screened at various levelized cost/therm under the UCT test. When screened at Cascade's current levelized cost threshold of $0.42/therm, it's possible to achieve up to 170,554 dth in the industrial market assuming all cost-effective measures are pursued.

Figure 7-12: Industrial Technical Potential Supply Curve under UCT

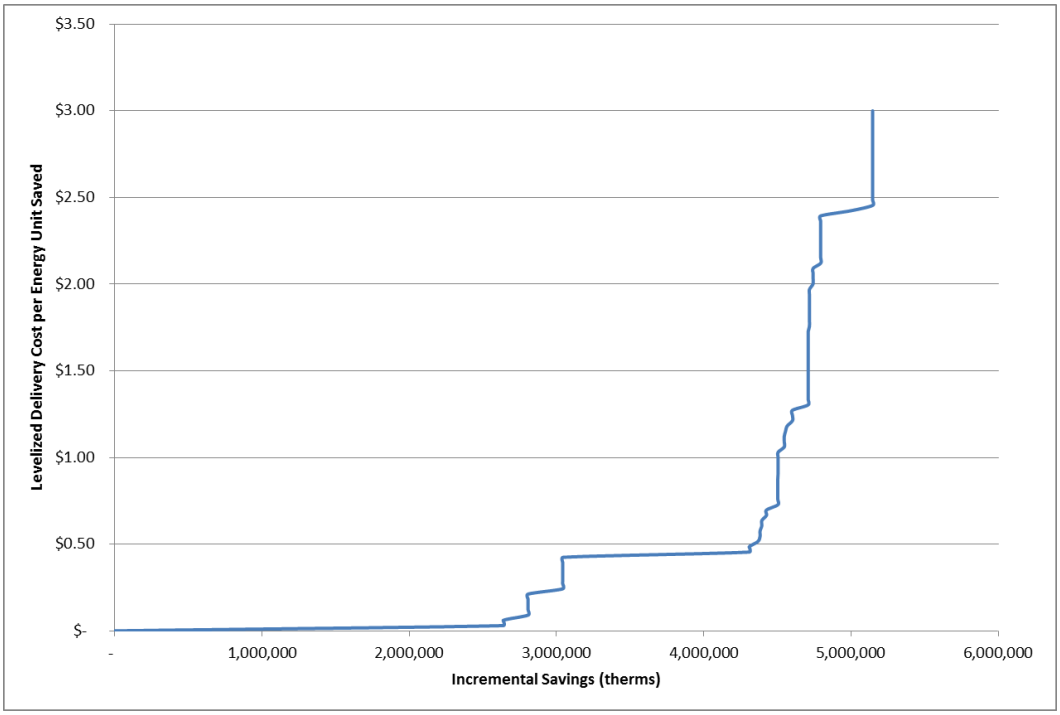


Table 7-25: Industrial 2014 Achievable Potential (dth) Screened by Levelized Cost ($/therm) under UCT

	Screened at Levelized Cost of:						
	$0.15	$0.25	$0.35	$0.42	$0.55	$0.65	$0.85
Process Heating	110,782	110,782	110,782	150,842	150,842	150,842	150,842
Space Heating	5,939	15,796	15,849	19,712	22,846	24,689	24,689
Water Heating	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
TOTAL	**116,721**	**126,578**	**126,631**	**170,554**	**173,688**	**175,531**	**175,531**

7.3.1.1 Industrial Savings Potential by Segment

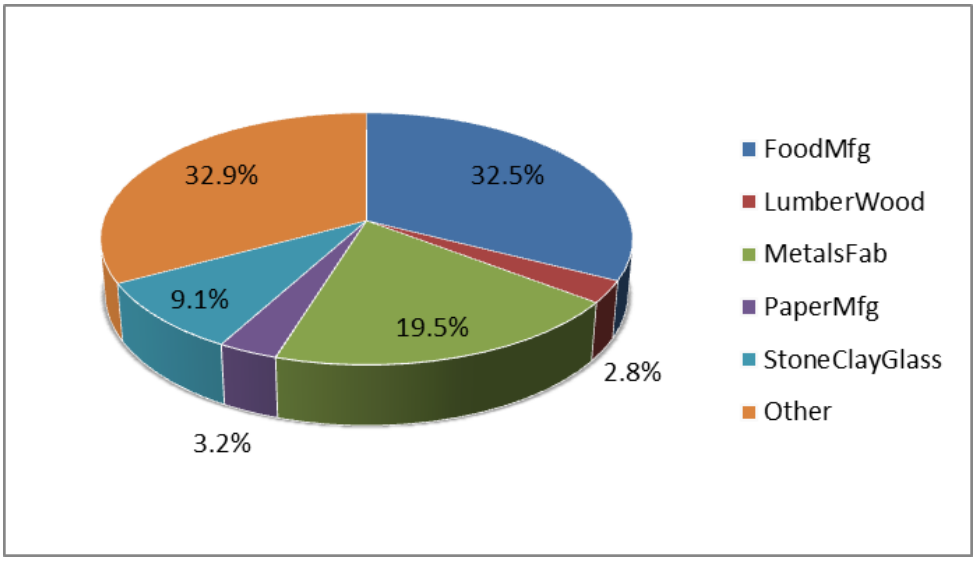
Table 7-26 and Figure 7-13 below summarize the cumulative industrial savings potential by scenario and by segment. As a percent of baseline sales, the Achievable Base potential scenario represents 0.24% of baseline sales. By segment under the achievable base savings scenario, Food Manufacturing and the "Other" category[24] are projected to make up roughly 33% each of total potential savings, while Metals Fabrication makes up the third largest potential savings at 19.5% of the total potential.

[24] The "Other" industrial segment includes various industries including textiles, petroleum and allied products, printing, chemicals and allied products, leather manufacturing, electronic manufacturing, forestry, among other many other industrial industry types.

Table 7-26: 2014 Base Case Savings Potential by Scenario by Industrial Segment

	FoodMfg	LumberWood	MetalsFab	PaperMfg	StoneClayGlass	Other	TOTAL
Baseline Forecast (dth)	752,456	91,080	511,912	69,538	278,145	960,181	**2,663,312**
Energy Savings (dth)							
Technical Potential	10,838	1,126	6,635	989	3,265	11,712	**34,565**
Economic Potential	6,694	639	4,084	638	1,976	7,066	**21,097**
Achievable - Base	2,082	181	1,245	204	583	2,104	**6,400**
Achievable - Moderate	2,424	208	1,494	245	717	2,533	**7,621**
Achievable - High	3,078	259	1,886	312	899	3,182	**9,616**
Energy Savings as % of Baseline Sales							
Technical Potential	1.44%	1.24%	1.30%	1.42%	1.17%	1.22%	**1.30%**
Economic Potential	0.89%	0.70%	0.80%	0.92%	0.71%	0.74%	**0.79%**
Achievable - Base	0.28%	0.20%	0.24%	0.29%	0.21%	0.22%	**0.24%**
Achievable - Moderate	0.32%	0.23%	0.29%	0.35%	0.26%	0.26%	**0.29%**
Achievable - High	0.41%	0.28%	0.37%	0.45%	0.32%	0.33%	**0.36%**

Figure 7-13: 2014 Achievable Base Savings Potential by Industrial Segment (UCT)



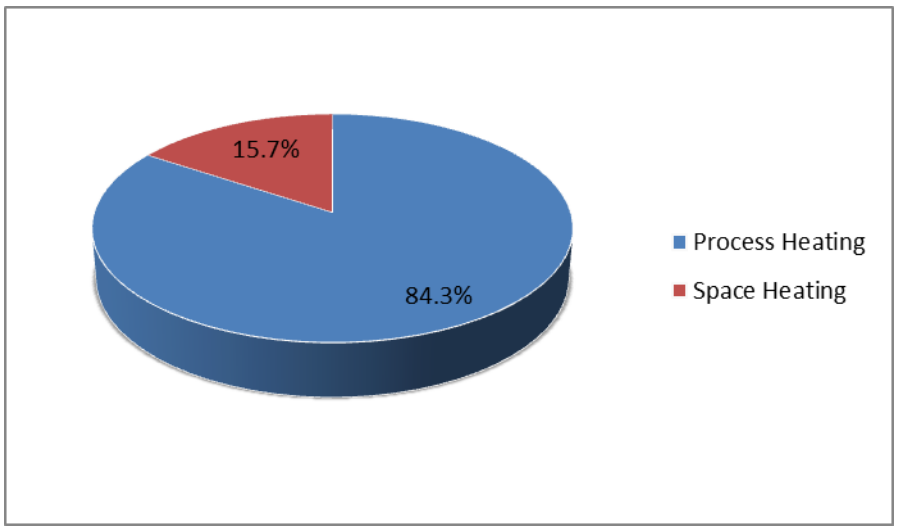
7.3.1.2 Industrial Savings Potential by End Use

Table 7-27 summarizes the savings potential in the industrial sector under the achievable-base scenario by segment and by end use. Process Heating End Use represents the majority of the savings opportunity in all industrial segments. No water heating or "other" end use measures passed cost-effectiveness, and therefore have no achievable potential in the industrial sector. **Figure 7-14** shows the 2014 achievable savings potential by industrial end use with process heat representing 84.3% of savings potential across all segments.

Table 7-27: 2014 Achievable Base Savings by Industrial Segment, by End Use (UCT)

	FoodMfg		LumberWood		MetalsFab		PaperMfg		StoneClayGlass		Other		TOTAL
End Use	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	dth	% of Total	
Process Heating	1,642	78.9%	1,061	85.3%	527	90.3%	176	86.0%	527	90.3%	1,800	85.5%	**5,732**
Space Heating	440	21.1%	183	14.7%	57	9.7%	29	14.0%	57	9.7%	304	14.5%	**1,070**
Water Heating	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**-**
Other	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	**-**
% of Sales	**0.27%**		**1.35%**		**0.11%**		**0.29%**		**0.21%**		**0.22%**		**0.25%**

Figure 7-14: Achievable Base Savings Potential by Industrial End Use (UCT)



7.3.2 Alternate Achievable Savings Potential Findings

As described in **Section 6.2**, Nexant examined savings potential under both the TRC and UCT screen to comply with WUTC's October 9, 2013 Policy Statement regarding cost screening. **Table 7-28** below illustrates the differences in cumulative savings potential based on whether the UCT or TRC test is used to screen measure cost effectiveness. As with the other sectors, UCT potential is consistently larger than TRC potential by amounts varying from 8%-37% higher, with 21 year UCT savings ranging from 175,531 dth under the Achievable Base scenario, to 225,057 dth under the Achievable moderate scenario. 21-year TRC savings range from 116,722 dth under the Achievable Base scenario, to 147,284 dth under the Achievable moderate scenario.

Table 7-28: Industrial Savings Potential by Scenario, by Cost-Effectiveness Screen

	2014	2016	2020	2025	2034
Cumulative Savings (dth) based on UCT Screen					
Technical Potential (50)	34,565	104,656	248,293	434,112	737,634
Economic Potential (51)	21,097	63,985	151,686	268,511	442,629
Achievable - Base (52)	6,400	19,748	48,866	93,998	175,531
Achievable - Moderate (53)	7,621	23,704	61,087	120,160	225,057
Achievable - High (54)	9,616	29,337	71,234	128,528	211,241
Cumulative Savings (dth) based on TRC Screen					
Technical Potential (45)	34,565	104,656	248,293	434,112	737,634
Economic Potential (46)	13,042	39,667	95,583	170,485	280,638
Achievable - Base (47)	5,191	15,830	38,418	69,433	116,722
Achievable - Moderate (48)	6,508	19,868	48,343	87,540	147,284
Achievable - High (49)	8,671	26,461	64,305	116,170	194,724

Nexant also assessed differences in 2014 savings potential given variations in avoided costs under both the UCT and TRC test (**Table 7-29**). These scenarios illustrate the sensitivity of total savings potential given uncertainty in the forecasted cost of natural gas (thus the avoided costs) for Cascade. While savings potential increases when avoided costs are increased (given increases in the price of natural gas), the increase is smaller under the UCT when compared to the TRC scenarios.

Table 7-29: Industrial 2014 Achievable Base Potential by Cost Effectiveness Test, by Avoided Cost

Scenario (UCT #/ TRC #)	2014 Savings by UCT Screen (dth)	2014 Savings by TRC Screen (dth)	Difference in Therms (UCT-TRC)
Current Avoided Costs/30% (52/47)	6,400	5,191	1,209
Avoided Costs +25% (60/55)	6,668	5,758	911
Avoided Costs +50% (61/56)	6,775	5,758	1,017
Avoided Costs +75% (62/57)	6,840	5,762	1,079
Avoided Costs -25% (63/58)	6,003	5,191	813
Avoided Costs -50% (64/59)	5,758	5,191	567

Table 7-30 summarizes the differences in achievable base savings potential given variations in the corporate discount rate used by Cascade under the UCT and TRC screen respectively. Per the recommendations provided by the Washington Utilities and Transportation Commission in the October 9, 2013 Policy Statement, Nexant used Cascade's weighted average cost of capital of 8.55% to screen measures as the base-case assumption for all scenarios. An alternate discount rate of 4.17% was used to assess impact on savings potential. Savings potential is slightly higher under the 4.17% discount rate, with the difference between savings on an annual basis under the UCT screen varying by less than 1%,

whereas the difference is greater under the TRC screen, with savings hovering near 10% greater for the 4.17% discount rate than the 8.55%.

Table 7-30: Industrial Achievable Base Savings Potential by Discount Rate by Cost Effectiveness Screen

Scenario	2014	2016	2020	2025	2034
UCT Screen					
Base Case Discount Rate of 8.55% (52)	6,400	19,748	48,866	93,998	175,531
Discount Rate of 4.17% (66)	6,478	19,985	49,439	95,020	177,448
TRC Screen					
Base Case Discount Rate of 8.55% (47)	5,191	15,830	38,418	69,433	116,722
Discount Rate of 4.17% (65)	5,758	17,555	42,576	76,848	126,632

7.3.3 Industrial Achievable Potential Benefits & Costs

Table 7-31 and **Table 7-32** summarize the associated cost-benefit ratios of the industrial achievable potential scenarios given variations in avoided costs screened under the UCT and TRC respectively. With avoided costs ranging from 50% below base to 75% above base, the UCT Ratio ranges from 9.2 to 10.1, while the TRC Ratio ranges from 5.8 to 11.5. The cost-benefit ratios are higher in the industrial sector because those measures that passed where non-equipment measures and had a very favorable cost-benefit ratio.

Table 7-31: Industrial 2014 UCT Ratios for Achievable Potential Base Scenario

Scenario	UCT Benefits	UCT Costs	UCT Ratio
Base Avoided Costs (52)	$ 319,626	$ 31,919	10.0
Avoided Costs +25% (60)	$ 409,242	$ 41,869	9.8
Avoided Costs +50% (61)	$ 500,729	$ 51,765	9.7
Avoided Costs +75% (62)	$ 591,179	$ 58,677	10.1
Avoided Costs -25% (63)	$ 234,858	$ 25,615	9.2
Avoided Costs -50% (64)	$ 149,435	$ 15,909	9.4

Table 7-32: Industrial 2014 TRC Ratios for Achievable Potential Base Scenario

Scenario	TRC Benefits	TRC Costs	TRC Ratio
Base Avoided Costs (47)	$ 274,201	$ 23,834	11.5
Avoided Costs +25% (55)	$ 373,588	$ 53,031	7.0
Avoided Costs +50% (56)	$ 448,306	$ 53,031	8.5
Avoided Costs +75% (57)	$ 523,460	$ 53,510	9.8
Avoided Costs -25% (58)	$ 205,649	$ 23,833	8.6
Avoided Costs -50% (59)	$ 137,100	$ 23,833	5.8

Table 7-34 and Table 7-34 summarize the total costs projected to be paid by Cascade to achieve the savings associated with achievable base, moderate and aggressive scenarios in 2014 under the TRC and UCT scenarios, respectively. The acquisition costs[25] ($/therm-saved) under each scenario are also presented. UCT savings range from 63,997 therms to 96,158 and with acquisition costs ranging from $0.50 – $0.76 $/therm; while TRC savings range from 51,906 to 86,710 therms and acquisition costs range from $0.35 - $0.46 $/therm.

Table 7-33: Industrial 2014 Acquisition Costs for Achievable Potential Scenarios (UCT)

Scenario	UCT Costs	Savings (therms)	Acquisition Cost ($/therm)
Achievable Base (52)	$ 31,919.00	63,997	$ 0.50
Achievable Moderate (53)	$ 57,973.89	76,212	$ 0.76
Achievable Aggressive (54)	$ 50,161.41	96,158	$ 0.52

Table 7-34: Industrial 2 Acquisition Costs for Achievable Potential Scenarios (TRC)

Scenario	TRC Costs	Savings (therms)	Acquisition Cost ($/therm)
Achievable Base (47)	$ 23,834.07	51,906	$ 0.46
Achievable Moderate (48)	$ 30,152.38	65,081	$ 0.46
Achievable Aggressive (49)	$ 30,385.36	86,710	$ 0.35

[25] Acquisition costs in this study do not include administrative expenses.

8 CONCLUSIONS

The results of this study reveal that considerable natural gas energy efficiency opportunities exist for Cascade Natural Gas Corporation in its Washington service territory, despite recent declines in the cost of natural gas, the savings achieved to-date by Cascade's DSM programs, and increasing building standards due to the 2012 Washington State Energy Codes for buildings. Our analysis shows that 137,844 dth of natural gas savings are achievable in 2014 across all sectors when measures are screened using the UCT, increasing to 4.5M dth of cumulative natural gas savings by 2034. These findings should be viewed with the following considerations in mind:

- The natural gas savings potential highlighted in this report does not reflect "program potential", but rather achievable potential which assumes all cost-effective measures are pursued and implemented.
- The achievable potential findings also assume no limitations on program spending to achieve all cost-effective measure savings.
- Administrative costs were not included when screen measures for cost-effectiveness.
- The approach of using the UCT as the cost-effectiveness screen departs from prior potential studies conducted for Cascade. Prior studies for Cascade utilized the TRC cost-effectiveness screen which typically results in less saving potential when compared to the UCT. Nexant has run various scenarios to illustrate the difference in savings potential under both the UCT and TRC cost-effectiveness screen.
- The measure costs utilized for the purposes of the potential assessment are lower resolution than those that would be available by the company for program planning. For program planning purposes the costs may be refined by the company to better reflect costs in their specific service territory.
- This report (**Volume II**) provides summary findings on each of the 66 scenarios modeled under this research. Detailed cumulative natural gas savings potential by sector, by segment, by end use and by year are presented for all 66 scenarios modeled by Nexant in **Vol. III, Appendix B**.

9 ENERGY EFFICIENCY MEASURES EXAMINED

9.1 MEASURES EXAMINED

Nexant examined a total of 190 measures for all sectors combined. 39 residential measures were included in this study. For the non-residential sector, there were 134 total measures included in the potential energy savings analysis. Of these 134 measures, 36 were considered in the industrial model and 63 were included in the commercial model. Therefore the total number of measures included in the model is 125, yet many measures had overlap between different sectors and segments and therefore may appear in the summary as one measure. **Table 9-1** through **Table 9-3** provides a brief description of the types of measures included for each end use in the residential, commercial and industrial model respectively. The list of measures was developed based on a review of Cascade's current measure offerings, measures examined in the 2009 Potential Assessment for Cascade, and measures included in other contemporary natural gas potential assessments, along with individual measures recommended by either Nexant or Cascade staff.

Table 9-1: Summary of Residential Measures

End Use	Measure Type	Measure Name
Space Heating	Non-Equipment	Air sealing
Space Heating	Non-Equipment	Attic/ceiling insulation
Space Heating	Non-Equipment	Boiler controls
Space Heating	Non-Equipment	Boiler repair/maintenance
Space Heating	Non-Equipment	Built Green Home
Space Heating	Equipment	Condensing Boiler
Space Heating	Non-Equipment	Duct sealing
Space Heating	Non-Equipment	Energy Star Certified Home / E*+
Space Heating	Non-Equipment	Entryway doors
Space Heating	Non-Equipment	Exterior wall insulation
Space Heating	Non-Equipment	Floor insulation
Space Heating	Non-Equipment	Furnace repair/maintenance
Space Heating	Equipment	Natural Gas Heat Pump
Space Heating	Non-Equipment	Heat recovery ventilator
Space Heating	Equipment	High Efficiency Boiler
Space Heating	Equipment	High efficiency Combination Domestic Hot Water and Hydronic Space Heating System
Space Heating	Equipment	High efficiency furnace 90%+ AFUE
Space Heating	Equipment	High efficiency furnace 95%+ AFUE
Space Heating	Non-Equipment	Insulation, basement side wall
Space Heating	Non-Equipment	Programmable thermostat
Space Heating	Non-Equipment	Slab insulation R-0 to R-5 (4 ft.)
Space Heating	Non-Equipment	Window treatments
Space Heating	Non-Equipment	Window upgrade U≤0.3
Water Heating	Equipment	Condensing Domestic Hot Water
Water Heating	Equipment	Condensing High Efficiency Natural Gas Tankless Water Heater
Water Heating	Equipment	Conventional High Efficiency Natural Gas Water Heater
Water Heating	Non-Equipment	Drain water heat recovery
Water Heating	Non-Equipment	ENERGY STAR dishwasher
Water Heating	Non-Equipment	Faucet aerators
Water Heating	Equipment	Heat Pump Water Heater
Water Heating	Non-Equipment	Hot water pipe insulation
Water Heating	Non-Equipment	Hot water temperature setback
Water Heating	Non-Equipment	Low-flow showerheads (1.5 GPM , 1.75 GPM max)
Water Heating	Equipment	Solar Hot Water Heater
Room Heating	Equipment	High efficiency Natural Gas Hearth 80%+ AFUE

Clothes Drying	Equipment	High efficiency clothes washer
Other	Equipment	High Efficiency Pool/Spa heating boilers

Table 9-2: Summary of Commercial Measures

End Use	Measure Type	Measure Name
Space Heating	Equipment	Boiler Economizer
Space Heating	Non-Equipment	Boiler pipe insulation
Space Heating	Non-Equipment	Recirculation controls
Space Heating	Equipment	Boiler Steam Trap
Space Heating	Equipment	Boiler vent damper
Space Heating	Equipment	Combination HVAC/hot water delivery
Space Heating	Equipment	Demand-controlled ventilation
Space Heating	Equipment	Direct fired radiant heating
Space Heating	Non-Equipment	Duct sealing & insulation
Space Heating	Non-Equipment	Energy management system optimization
Space Heating	Non-Equipment	Floor insulation
Space Heating	Equipment	Heat Pump (Natural Gas)
Space Heating	Non-Equipment	Heat exchanger
Space Heating	Equipment	High efficiency condensing boiler
Space Heating	Equipment	High efficiency condensing furnace - min. 91% AFUE
Space Heating	Equipment	High efficiency condensing unit heater - min 92% AFUE
Space Heating	Equipment	High efficiency non-condensing unit heater - min 86% AFUE
Space Heating	Non-Equipment	HVAC controls
Space Heating	Non-Equipment	HVAC system commissioning
Space Heating	Equipment	power burner
Space Heating	Non-Equipment	Roof insulation (retrofit only)
Space Heating	Equipment	Solar wall systems
Space Heating	Equipment	Steam System Efficiency Improvements
Space Heating	Non-Equipment	Variable Volume Air System
Space Heating	Non-Equipment	Wall insulation (retrofit only)
Space Heating	Non-Equipment	Windows – see definitions for iterations
Water Heating	Equipment	Domestic hot water tank - condensing tank - min 91% eff
Water Heating	Equipment	Domestic hot water tankless water heater Energy Star .82
Water Heating	Equipment	Drainwater heat recovery
Water Heating	Non-Equipment	Energy Star Door Type Dishwasher Low Temp Gas
Water Heating	Non-Equipment	Faucet aerators
Water Heating	Equipment	Heat Pump Water Heater
Water Heating	Non-Equipment	Heat recovery
Water Heating	Non-Equipment	High efficiency commercial gas clothes washer 1.8 MEF

Water Heating	Equipment	High efficiency water heater
Water Heating	Non-Equipment	Hot water pipe insulation
Water Heating	Non-Equipment	Hot water temperature reset
Water Heating	Non-Equipment	Low Flow Pre-rinse Spray Valves
Water Heating	Non-Equipment	Low-flow showerheads
Water Heating	Non-Equipment	Motion Faucet Controls
Water Heating	Non-Equipment	Multi-Tank Conveyor Low Temp Dishwasher
Water Heating	Equipment	Ozone injection laundry systems
Water Heating	Non-Equipment	Pool cover
Water Heating	Equipment	Pool/Spa solar heat
Water Heating	Non-Equipment	Recirculation controls
Water Heating	Equipment	Solar Hot Water Heater
Water Heating	Equipment	Storage Water Heater
Water Heating	Non-Equipment	Waste Water Heat Exchanger
Cooking	Equipment	Combination Oven
Cooking	Equipment	Conveyor Oven
Cooking	Equipment	ENERGY STAR Convection Oven
Cooking	Equipment	ENERGY STAR Gas Fryer
Cooking	Equipment	ENERGY STAR Griddle
Cooking	Equipment	High efficiency steam cooker

Table 9-3: Summary of Industrial Measures

End Use	Measure Type	Measure Name
Process	Equipment	Efficient Boiler
Process	Equipment	Efficient Burners
Process	Equipment	Efficient Process Furnace
Process	Non-Equipment	Improved Controls
Process	Non-Equipment	Process Heating O&M
Space	Non-Equipment	Boiler repair/maintenance
Space	Equipment	Boiler Steam Trap
Space	Equipment	Boiler vent damper
Space	Non-Equipment	Demand-controlled ventilation
Space	Equipment	Direct fired radiant heating
Space	Non-Equipment	Duct sealing
Space	Non-Equipment	Energy management system optimization
Space	Non-Equipment	Heat exchanger
Space	Equipment	High efficiency condensing boiler - Min. 90% therm. Eff. &
Space	Equipment	High efficiency condensing furnace - min. 91% AFUE
Space	Equipment	High efficiency condensing unit heater - min 92% AFUE
Space	Equipment	High efficiency non-condensing unit heater - min 86% AFUE
Space	Non-Equipment	HVAC controls

Space	Non-Equipment	HVAC system commissioning
Space	Equipment	Refrigeration system superheat recovery HVAC
Space	Non-Equipment	Roof insulation (retrofit only)
Space	Non-Equipment	Space Heating O&M
Space	Equipment	Steam System Efficiency Improvements
Space	Non-Equipment	Wall insulation (retrofit only)
Space	Non-Equipment	Waste Water Heat Exchanger
Space	Non-Equipment	Windows- see definitions for iterations
Water	Equipment	Refrigeration system superheat recovery DHW

9.2 MEASURE DEFINITIONS

The following section provides summary definitions of each of the measures evaluated as part of this potential assessment. Measures are organized by sector, by end use.

9.2.1 Residential

9.2.1.1 Space Heating

Air sealing: This measure creates pressure boundaries in the shell of the home and reduces air leaks through strategic use and application of air-sealing materials which prevent air movement and subsequent heat loss.

Attic/ceiling insulation: Insulation is added to the attic/ceiling as a thermal boundary. insulating the attic includes air sealing. The following iterations were included in this analysis: R-0 to R-49 assumed no prior attic/ceiling insulation. R-11 to R-49 assumed an existing R-11 level of insulation. R-19 to R-49 assumed the prior insulated condition to be R-19.

Basement Floor insulation & Crawlspace insulation - R-30 or higher: R-30 insulation is added to the basement or crawlspace floor.

Boiler controls: Boiler reset controls capable of resetting boiler supply water temperature in an inverse linear fashion with outdoor air temperature.

Boiler repair/maintenance: This measure pertains to boiler diagnostic testing, repair, and tune-up which ensures the boiler will run smoothly and efficiently.

Built Green Home: Many features of a built green home are environmental-impact related, but not necessarily energy related. Therefore a base Energy Star Home Efficiency was assumed (R-44 insulation vs. R-38 base, 92 AFUE furnace vs. 78 AFUE base, 62 EF water heater vs. 57 EF base, and ACH reduction from 7.08 (base) to 4.6. In addition to these Energy Star Home efficiency measures, the following were

added for the Built Green Home energy savings algorithms: Duct insulation to R-11 vs. R-6.8 base, R-26 wall insulation vs. R-13 base, upgrade to energy star clothes washer and dishwasher.

Condensing Boiler: This measure pertains to the installation of a condensing boiler that has a high efficiency (typically greater than 90%) which is achieved by using the waste heat in the flue gases to pre-heat the cold water entering the boiler.

Duct Sealing: This measure is associated with performing duct sealing using mastic sealant or metal tape to the distribution system of homes with either central air conditioning using a ducted system. This measure prevents heat loss through leaky duct work.

Entryway door: Installation of an entryway door that has a lower U-value than the Washington Code specifications. Lower U-value correlates with better insulation capabilities which prevent heat loss.

Exterior wall R-0 to Blow-in R-13 insulation: Blow-in cellulose insulation is usually applied to exterior walls, or walls that provide a thermal barrier inside the home. Since walls in most homes represent more exterior surface area than the floors or ceilings, they present more opportunity to lose and gain heat.

Furnace repair/maintenance: Repair or replace any deteriorating components to ensure furnace runs efficiently.

Heat recovery ventilator: Installation of an Energy Star qualified air to air heat recovery ventilator; the counter-flow provides improved climate control, while saving energy through reduction of heating (and cooling) requirements by mixing outbound air with inbound air.

High Efficiency Boiler: This measure involves installation of a high efficiency or condensing boiler that improves efficiency by recovering "waste heat" which usually exits a house from the flue of a conventional boiler. It does this by condensing the water vapor produced in the combustion process and using the heat from this condensation thereby extracting more usable heat for use in the building

High efficiency Combination Domestic Hot Water and Hydronic Space Heating System using pre-approved Tankless Water Heater: Hydronic systems transfer heat through thermal radiation, thereby reducing air temperature stratification. Thermal heat heats the objects in the home which is more efficient than heating the air in the home.

High efficiency furnace 90%+ AFUE: High efficiency furnace features may include improved heat exchangers and modulating multi-stage burners. Washington State Energy Code efficiencies are AFUE 80 for equipment that meets code, and 76 AFUE for stock equipment. Two measure iterations were run in this analysis: a 90% efficiency furnace and a 95% efficient furnace.

High Efficiency Pool/Spa heating boilers: Installation of a high efficiency or condensing boiler that improves efficiency by recovering "waste heat" that usually exits the facility from the flue of a

conventional boiler. These boilers function by condensing the water vapor produced in the combustion process and using the heat from this condensation. Baseline efficiencies are 80% for equipment that meets code, and 75% for stock equipment.

Insulation, basement side wall: Add R-13 insulation to the basement or crawlspace side wall.

Programmable Thermostat: This measure characterizes the household energy savings from the installation of a new or reprogramming of an existing programmable thermostat for reduced heating energy consumption through temperature set-back (while unoccupied or during reduced demand times).

Slab insulation R-0 to R-5 (4 ft.): Installing R-5 insulation value of a depth of 4 ft. down on the perimeter to an existing slab with no additional insulation.

Window treatments: Glazing installed onto the window resulting in a U-value of 0.44.

Window upgrade U<0.3: Upgrading windows resulting in a U-value less than or equal to 0.30. This measure reduces the heat transfer through the windows.

9.2.1.2 Water Heating

Condensing Domestic Hot Water: Unlike a regular gas water heater, a condensing DHW unit captures the combustion gas and utilizes the residual heat in the combustion gas to heat the water in the storage tank. A gas condensing water heater is designed with greater surface area flue. The heat and combustion gases have much farther to travel before they exit the water tank, so more heat is transferred to the water in the tank. Energy Factor (EF) typically > 0.80. Measure replaces stock EF 0.54 water heater or EF 0.62 water heater that meets Washington State Energy Code.

Condensing High Efficiency Natural Gas Tankless Water Heater: This unit achieves savings by eliminating standby losses in stand-alone or tank-type water heaters and through higher efficiency than baseline storage hot water heaters. Minimum efficiency for the Tankless Water Heater is generally 0.80. Measure replaces stock EF 0.54 water heater or EF 0.62 water heater that meets code.

Conventional High Efficiency Natural Gas Water Heater: This measure characterizes the purchase and installation of a new efficient gas-fired water heater, in place of a code or existing residential unit. Natural gas savings are generated from the higher efficiency (EF>0.62) water heater. Measure replaces stock EF 0.54 water heater or code EF 0.62 water heater.

Drain water heat recovery: 80%–90% of the energy used to heat water in a home goes down the drain with used hot water. Drain-water heat recovery systems reduce the amount of energy needed for water heating by capturing heat from the used water to preheat cold water entering the water heater or going to other water fixtures.

ENERGY STAR dishwasher: An Energy Star certified dishwasher uses less water per cycle which correlates to therms saved per year through reduced water heat.

Hot water pipe insulation: Adding insulation to both the hot and cold domestic hot water pipes. Insulating helps reduce standby losses. Default savings are provided per 3 feet of length and are appropriate up to 6 feet of the hot water pipe and 3 feet of the cold. Existing pipes are assumed to be un-insulated (R-0).

Hot water temperature setback: The thermostat setting of a hot water tank is lowered to 120 degrees. The baseline condition is a hot water tank with a thermostat setting that is higher than 120 degrees, typically systems with settings of 130 degrees or higher.

Low Flow Faucet aerators*:* Installation of a low flow faucet aerator in a household kitchen or bath faucet fixture. Gas savings are generated from a maximum flow rate of 1.5 compared to a standard 2.2 gpm faucet.

Low Flow Showerheads: Installation of a low flow showerhead in a single or multi-family household. Gas savings are generated from a maximum flow rate of 2.0 gpm compared to a standard 2.5 gpm showerhead

Solar Hot Water Heater: This measure assumes that a gas water heater is replaced with a solar water heater with backup, reducing the water heating load by about 60%. Solar water heating system includes a storage tank and solar collector. Replaces stock EF 0.54 water heater.

9.2.1.3 Room Heating

High efficiency Natural Gas Hearth +80% AFUE: Efficient alternative to a masonry fireplace via reduced air infiltration by removing the fireplace, and adding an 80%+ efficiency appliance. Overall space heating reduction is the result.

High efficiency Natural Gas Hearth +70% FE (Fireplace Efficiency)**:** Efficiency alternative to masonry fireplace by reducing air infiltration by removing the fireplace and replacing it with a 70%+ efficiency appliance. Overall space heating reduction is the result.

9.2.1.4 Clothes Drying

High efficiency clothes washer: Efficient clothes washers use one-third the water of standard clothes washers. Efficient clothes washers also shorten drying time due to high speed spin cycles, which reduce the water content of washed clothes.

9.2.1.5 Others

ENERGY STAR Certified Home + U.30 Window Glazing: A home can earn the ENERGY STAR certificate by completing the following: thermal enclosure system, high efficiency heating and cooling system, ,energy-efficient lighting and appliances, and U 0.30 glazing.

ENERGY STAR Plus Certified Home (Gas, with or without AC): ENERGY STAR Certified Home + U.30 Glazing (as above), with the following added efficiency alternates: R-44 Ceiling Insulation, 92 AFUE furnace, 0.62 EF water heater, <0.46 Air Changes per Hour.

Home Performance with ENERGY STAR: Completion of three measures listed below triggers a cash incentive:

Shell: Attic, Floor or Wall Insulation

Sealing: PECS, Duct Sealing and Insulation, Whole House Air Sealing

Water Heat: High-Efficiency Water Heat

Space Heat: High-Efficiency Furnace, HE Boilers, Combination Hydronic Heat or Fuel Conversion

9.2.2 Commercial

9.2.2.1 Space Heating

Boiler Economizer: Economizers are heat exchange devices that heat fluids, (usually water), up to, but not normally beyond the boiling point of the fluid. Economizers are so named because they can make use of the enthalpy in fluid streams that are hot, but not hot enough to be used in a boiler, thereby recovering more useful enthalpy and improving the boiler's efficiency.

Boiler pipe insulation: Insulate Boiler Pipes, 2" diameter with 1" R-4 insulation or better. Savings compared to a standard un-insulated boiler pipe.

Boiler repair/maintenance: This measure pertains to boiler diagnostic testing, repair, and tune-up to improve boiler operational efficiency.

Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig: Replacement of a leaking steam trap. A proper working trap keeps steam lines free of condensate. Condensate can cause damage to valves, piping, and equipment, reducing operational efficiency and equipment life.

Boiler vent damper - min. 1000 kBtu input: A vent damper prevents conditioned air from being pulled into the flue (exiting the building) when the heating appliance is not running. When there's a demand for heat and the furnace or boiler starts to run, the damper opens to improve draw.

Demand-controlled ventilation: Installation of a demand controlled ventilation system to adjust outside air quantities in response to measured CO_2 levels. Conventional ventilation supply ventilated air based

on assumed, rather than actual, occupancy. This often results in over-ventilation, wasting both money and energy. Demand-controlled ventilation monitors conditions in every zone, and then delivers the required ventilation where it is needed.

Direct fired radiant heating: This measure involves the installation of a low intensity gas-fired radiant heater. It is more efficient than baseboard heating and usually more efficient than forced-air heating because it eliminates duct losses.

Duct sealing & insulation: This measure prevents air leaks through duct work via duct sealing, by using a sealant such as mastic or metal tape, or replacing the air distribution with a new system entirely. This applies only to facilities with a ducted heating system.

***Energy management system optimization*:** Energy management system optimization involves using system appropriate automation hardware and software to detect and identify opportunities for savings and implement catered solutions.

Floor Insulation: R-30 insulation is added to the basement or crawlspace floor. Assumed base-case minimum of R-4.94.

Gas Engine-drive Heat Pumps: This measure provides space heating and cooling using an advanced natural gas engine in place of an electric motor. Variable –speed engine controls allow the GHP to closely follow the load and maintain efficiency. Heat recovery from engine cooling jacket and exhaust supplements the GHP output during heating mode. (Electric heat pumps require inefficient resistant heating to supplement the heat pump output at low outdoor temperatures).

***Heat Exchanger*:** Traditional systems that condition air use the air only once, and then exhaust it. Much of this energy can be recovered by installing heat-recovery coils in the exhaust air handlers. This heat exchanger can precondition the outside air coming into the building, recovering energy without risking contamination.

High efficiency condensing boiler - Min. 90% therm. Eff. & 300 kBtu input: Installing a new high efficiency, gas-fired condensing boiler in a commercial location. Gas savings achieved through the utilization of a sealed combustion chamber and multiple heat exchangers that remove a significant portion of the waste heat from flue gasses. Because multiple heat exchangers are used to remove waste heat from the escaping flue gasses, some of the flue gasses condense and must be drained. Baseline efficiencies are 80% for equipment that meets code, and 75% for stock equipment.

High efficiency condensing furnace - min. 91% AFUE: The installation of a new high efficiency, gas-fired condensing furnace in a commercial location. Savings achieved through the utilization of a sealed, super insulated combustion chamber, more efficient burners, and multiple heat exchangers that remove a significant portion of waste heat from flue gasses. This system produces condensate which must be drained. The base case is a standard furnace with AFUE of 78.

High efficiency condensing unit heater - min 92% AFUE: This measure applies to a gas fired condensing unit heater installed in a commercial application. A heat exchanger is attached to the condensing unit heater to capture heat and vapor from the exhaust gases. That heat, instead of being flushed outside, is turned back into useable heat circulating inside the heated space. Baseline equipment is a new unit heater meeting 2012 WA energy code minimum efficiency.

High efficiency non-condensing unit heater - min 86% AFUE: This measure applies to a gas fired non-condensing unit heater installed in a commercial application. Hot gases generated from combustion of hydrogen are directly vented to the outside. Baseline equipment is a new unit heater meeting 2012 WA energy code minimum efficiency.

HVAC controls: The installation of the following: Programmable Thermostats, Energy Management Systems or Direct Digital Control systems. These options enable more efficient control of the HVAC system.

HVAC system commissioning: HVAC System Commissioning is a systematic, documented process that includes inspection and testing conducted to confirm that the buildings systems are being operated and maintained in conformance with the design intent. Buildings that are not properly commissioned can suffer from high energy costs, poor indoor air quality, poor system control, and many other mechanical problems.

Power Burner: This measure involves a condensing, integrated water heater/boiler with an AFUE of $\geq$ 90%, with Power Burner. Baseline equipment is condensing, integrated water heater/boiler with an AFUE of $\geq$ 90%, with standard atmospheric burner.

Roof insulation (retrofit only) - Tier 1: Min R-30: Addition of roof insulation to minimum R-30 to replace existing insulation that is less than R-11.

Roof insulation (retrofit only) - Tier 2: Min R-45: Addition of roof insulation to minimum R-45 to replace existing insulation that is less than R-11.

Solar Wall: Installation of solar wall which captures solar heat to pre-warm air for space heating. The solar heat cuts down on the amount of natural gas needed for space heating.

Steam System Efficiency Improvements: This measure includes assessing and adding or replacing main line air vents. Assess and replace radiator vents. Upgrade boiler control system to averaging system with indoor and outdoor sensors.

Variable Volume Air System: A mechanical HVAC system responsible for serving multiple zones which control the temperature in a zone by regulating the quantity of warm or cooled air supplied. The fan capacity has variable-speed drives, which reduces energy consumption versus constant volume systems.

Wall insulation (retrofit only) - Tier 1: Min R-11: Installation of exterior wall Insulation that is greater than R-11 to replace existing insulation that is less than R-4.

Wall insulation (retrofit only) - Tier 2: Min R-19: Installation of exterior wall Insulation that is greater than R-19 to replace existing insulation that is less than R-4.

Waste Water Heat Exchanger: A waste water heat exchanger recovers waste heat by pre-warming incoming water with the waste water in a separately contained unit which prohibits contamination while allowing heat transfer.

Windows- add argon to vinyl Low-E: This measure involves adding vinyl low-E Glass and Argon gas between layers of window glass for superior thermal efficiency. Baseline equipment is a vinyl-framed window with low-E glass installed, no argon fill.

Windows- Add Low E and Argon to vinyl tint: Same as the measure above except the windows are tinted. Baseline is vinyl framed-tinted window with argon gas fill, but not Low-E.

Windows- Add Low E to vinyl tint: addition of low-e glass to vinyl tint windows. Baseline is vinyl-framed, tinted window with (not low-E).

Windows- non-tinted AL code to class 36: Improvements of window to AL code class 36. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- non-tinted AL code to class 40: Improvements of window to AL code class 40. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- non-tinted AL code to class 45: Improvements of window to AL code class 45. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- tinted AL code to class 36: Improvements of window to AL code class 36. Baseline equipment is an aluminum-framed tinted code window.

Windows- tinted AL code to class 40: Improvements of window to AL code class 40. Baseline equipment is an aluminum-framed tinted code window.

9.2.2.2 Water Heating

Combination HVAC/hot water delivery: new high efficiency condensing boiler for water and space heating to replace existing standard boiler with thermal efficiency 75% for existing, plus >75,000 BTU gas water heater EF 0.80.

Domestic hot water - condensing tank - min 91% efficiency: Unlike a regular gas water heater, the condensing DHW captures the combustion gas and utilizes the captured gas to heat the water in the

storage tank. A gas condensing water heater has its flue designed with greater surface area. The heat and combustion gases have much farther to travel before they exit the water tank, so more heat is transferred to the water in the tank. Typically EF > 0.80. Measure replaces stock EF 0.54 water heater or code EF 0.62 water heater.

Domestic hot water tankless water heater ENERGY STAR EF 0.82 efficiency: This measure achieves savings by eliminating the standby losses that occur in stand-alone or tank-type water heaters. Efficiency for the Tankless Water Heater is generally EF > 0.80. Measure replaces stock EF 0.54 water heater or code EF 0.62 water.

Drainwater heat recovery: Drain-water heat recovery systems reduce the amount of energy needed for water heating by capturing the heat from used drainwater and using it to preheat cold water entering the water heater or going to other water fixtures.

ENERGY STAR Door Type Dishwasher Low Temp Gas: Replace a standard door-type energy star dishwasher with a low temperature door-type single tank energy star dishwasher. Significant reduction in water heating cost. Water use for the efficient equipment is 1.18 gallons/rack compared to a conventional 2.1 gallons/rack.

Faucet aerators: Install low flow faucet aerators. New installation flow rate assumptions are≤ 1.5 gpm for bathrooms, and ≤ 2.2 GPM for kitchens. Stock equipment flow rate assumption is 3.0 gpm.

High efficiency commercial gas clothes washer 1.8 MEF: Installation of high efficiency commercial gas clothes washer, 2.2 MEF, and 3.3-4.3 cubic feet capacity. Measure replaces standard commercial gas clothes washer 1.6 MEF.

High efficiency water heater: This measure characterizes the purchase and installation of a new efficient gas-fired water heater, in place of an existing commercial unit. Natural gas savings are generated from the higher efficiency (EF > 0.62) water heater. Measure replaces stock EF 0.54 water heater or code EF 0.62 water heater.

Hot water pipe insulation: Adding insulation to both the hot and cold water pipes. Insulating helps reduce standby losses. Default savings are provided per 3 feet of length and are appropriate up to 6 feet of the hot water pipe and 3 feet of the cold water pipe. Existing pipes are assumed to be un-insulated (R-0).

Hot water temperature reset: The thermostat setting of a hot water tank is lowered to 120 degrees. The baseline condition is a hot water tank with a thermostat setting that is higher than 120 degrees, typically systems with settings of 130 degrees or higher.

Low-flow Pre-Rinse Spray Valve: Installation of low flow pre rinse spray valve, < 1.06 gpm, clean ability performance of <26 seconds per plate. The baseline equipment efficiency value for code is 1.6 gpm, stock is 1.9 gpm.

Low-flow showerheads: Installation of a low flow showerhead ≤ 2.0 gpm in a commercial setting. Replaces stock showerhead with 3.0 gpm flow rate.

Motion Faucet Controls: Installation of a motion controlled faucet with an average assumed flow duration of 12 seconds versus a standard faucet with an assumed average flow duration of 15 seconds.

Multi-Tank Conveyor Low Temp Dishwasher: Installation of a low-temperature multi-tank conveyor dishwasher to replace a standard multi-tank conveyor dishwasher. Water use for the efficient equipment is 0.54 gallons/rack compared to a conventional 1.04 gallons/rack.

Ozone injection laundry systems: Installation of washing machine with ozone injection system, allowing use of cold water. Baseline equipment is a standard washing machine without ozone injection. This measure saves the amount of energy required to heat water for a standard laundry system.

Pool cover: This measure involves a standard thermal pool cover which should have a minimum insulation value of R-12 to meet code requirement. Baseline equipment is a pool without cover. This measure reduces wasted heat when the pool is not occupied.

Pool/Spa solar heat: This measure assumes that a gas water heater is replaced with a solar water heater with backup. Solar water heating system includes a solar collector, the pool or spa is the storage. Measure replaces stock EF 0.54 water heater or code EF 0.62 water heater.

Solar Hot Water Heater: This measure assumes that a gas water heater is replaced with a solar water heater with backup. Solar water heating system includes a storage tank and solar collector. Measure replaces stock EF 0.54 water heater or code EF 0.62 water heater.

Storage Water Heater: Installation of a water heater with heating capacity > 75,000 Btuh, thermal efficiency (TE) ≥ 88% to replace baseline equipment with TE ≥ 80%.

9.2.2.3 Cooking

Combination Oven: Installation of combination convection with steam oven with cooking efficiency ≥ 38% and a convection mode cooking efficiency ≥ 44% to replace a standard combination convection and steam oven. Baseline model has a gas cooking energy efficiency of 35%.

Conveyor Oven: Installation of natural gas conveyor oven with a tested baking energy efficiency > 42% to replace existing deck oven.

ENERGY STAR Convection Oven: Installation of an energy star convection oven with cooking efficiency ≥ 44% to replace a natural gas convection oven that is not ENERGY STAR certified. Baseline efficiencies are 30% for equipment that meets code, and 25% for stock equipment.

ENERGY STAR Gas Fryer: Installation of a natural gas fired ENERGY STAR fryer with cooking energy efficiency of 50% to replace a natural gas fryer that is not ENERGY STAR certified. Baseline efficiencies are 35% for equipment that meets code, and 30% for stock equipment.

ENERGY STAR Griddle: Installation of a natural gas fired ENERGY STAR griddle with cooking energy efficiency of 38% to replace a natural gas fryer that is not ENERGY STAR certified with 32% efficiency.

High efficiency steam cooker: Installation of an ENERGY STAR® qualified gas steam cooker with 38% minimum cooking energy efficiency at heavy load (potato) cooking capacity to replace non-ENERGY STAR® commercial steamer. Baseline efficiencies are 18% for equipment that meets code, and 15% for stock equipment.

9.2.3 Industrial

9.2.3.1 Process Heating

Efficient Boiler: Upgrading boiler to higher efficiency model of AFUE >=90%, Standard boiler has no upgrades.

Efficient Burners: The boiler burner combines fuel and air in proper proportions for combustion and enables the fuel-air mixture to burn stably to give a specified flame size and shape. Efficient burners are designed to maximize combustion efficiency while minimizing the release of emissions.

Efficient Process Furnace: An industrial process furnace provides heat for a process, or can serve as a reactor to provide the heat of a reaction. Efficient process heaters reduce the energy consumption required to complete these results via 1) controlling the air-fuel ratio, 2) enhancing heat transfer within the furnace, 3) containing heat within the furnace by reducing leakage, 4) recovering waste heat, and 5) using sensors and controls to optimize the four previous process areas.

Improved process heating control: Improved process heating control measures improve the fuel/air mixture for optimum combustion of input fuels. Baseline equipment is standard process heating controls.

Process Heating O&M: Improve efficiency through maintaining optimum flame temperatures, monitoring levels of oxygen in flue gas, etc. Base-case involves no operations and maintenance measures.

9.2.3.2 Space Heating

Boiler repair/maintenance: Boiler diagnostic testing, repair, and tune-up. Base-case involves an existing boiler without diagnostic testing, repair, or tune-up for the prior two years.

Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig: Replacement of a leaking stream trap. A proper working trap keeps steam lines free of condensate. Condensate can cause damage to valves, piping, and equipment, reducing efficiency and equipment life.

Boiler vent damper - min. 1000 kBtu input: Installation of a vent damper to a boiler or furnace is an easy way to cut energy losses. The damper prevents conditioned air exfiltration via the flue when the heating appliance is not running.

Demand-controlled ventilation: Installation of a demand controlled ventilation system to adjust outside air quantities in response to measured CO_2 levels. Conventional ventilation supply ventilates air based on assumed, rather than actual, occupancy. This often results in over-ventilation. Demand-controlled ventilation monitors conditions in every zone, and then delivers the required ventilation where it is needed.

Direct fired radiant heating: This measure involves the installation of a low intensity gas fired radiant heater. It is more efficient than baseboard heating and usually more efficient than forced-air heating via eliminating duct losses.

Duct sealing: This measure prevents air leaks through duct work via duct sealing, either using a sealant such as mastic or metal tape, or replacing the air distribution with a new system entirely. This applies only to facilities with a ducted heating system.

***Energy management system optimization*:** Energy management system optimization involves using system appropriate automation hardware and software to detect and identify opportunities for savings and implement catered solutions.

Heat Exchanger: A heat exchanger recovers waste heat by pre-warming incoming medium with the waste exhaust medium in a separately contained unit which prohibits contamination while allowing heat transfer.

High efficiency condensing boiler - Min. 90% therm. Eff. & 300 kBtu input: This measure involves installation of a high efficiency or condensing boiler that improves efficiency by recovering “waste heat” that usually exits from the flue of a conventional boiler. Alternatively, the measure unit re-uses the heat from condensation. Baseline efficiencies are 80% for equipment that meets code, and 75% for stock equipment.

High efficiency condensing furnace - min. 91% AFUE: The installation of a new high efficiency, gas-fired condensing furnace in a commercial location. Savings achieved through the utilization of a sealed, super

insulated combustion chamber, more efficient burners, and multiple heat exchangers that remove a significant portion of the waste heat from the flue gasses. Because multiple heat exchangers are used to remove waste heat from the escaping flue gasses, some of the flue gasses condense and must be drained. This measure replaces a standard furnace with AFUE of 78.

High efficiency condensing unit heater - min 92% AFUE: This measure applies to a gas fired condensing unit heater installed in a commercial application. A heat exchanger is attached to the condensing unit heater to capture heat and vapor from the exhaust gases. That heat, instead of being flushed outside, is turned back into useable heat circulating inside the heated space. Baseline equipment is a new unit heater meeting 2012 WA energy code minimum efficiency.

High efficiency non-condensing unit heater - min 86% AFUE: This measure applies to a gas fired non-condensing unit heater installed in a commercial application. Hot gases generated from combustion of hydrogen are directly vented to the outside. There is no condensate. Baseline equipment is a new unit heater meeting 2012 WA energy code minimum efficiency.

HVAC controls: The installation of the following: Programmable Thermostats, EMS or DDS systems. These systems enable more efficient control of the HVAC system.

HVAC system commissioning: HVAC System Commissioning is a systematic, documented process that includes inspection and testing conducted to confirm that a buildings system are capable of being operated and maintained in conformance with the design intent. Buildings that are not properly commissioned can suffer from high energy costs, poor indoor air quality, poor system control, and many other mechanical problems.

Refrigeration system superheat recovery HVAC: Heat released from the refrigerant is recovered from the compressor and is used to pre-heat HVAC feeds.

Roof insulation (retrofit only) - Tier 1: Min R-30: Addition of roof insulation to minimum R-30 to replace existing insulation that is less than R-11.

Roof insulation (retrofit only) - Tier 2: Min R-45: Addition of roof insulation to minimum R-45 to replace existing insulation that is less than R-11.

Space Heating O&M: Improve efficiency through maintaining optimum flame temperatures, monitoring levels of oxygen in flue gas, boiler insulation, waste heat recover, burner efficiency improvements, etc. Base case involves no operations and maintenance measures.

Steam System Efficiency Improvements: This measure includes assessing and adding or replacing main line air and radiator vents, and upgrading the boiler control system to averaging system with indoor and outdoor sensors. The damper opens to improve draw.

Wall insulation (retrofit only) - Tier 1: Min R-11: Installation of exterior wall Insulation that is greater than R-11 to replace existing insulation that is less than R-4.

Wall insulation (retrofit only) - Tier 2: Min R-19: Installation of exterior wall Insulation that is greater than R-19 to replace existing insulation that is less than R-4.

Waste Water Heat Exchanger: A waste water heat exchanger recovers waste heat by pre-warming incoming water with the waste water in a separately contained unit which prohibits contamination while allowing heat transfer.

Windows- add argon to vinyl Low-E: This measure involves adding vinyl low-E Glass and Argon gas between layers of window glass for superior thermal efficiency. Baseline equipment is a vinyl-framed window with low-E glass installed, no argon fill.

Windows- Add Low E and Argon to vinyl tint: Same as the measure above except the windows are tinted. Baseline is vinyl framed-tinted window with argon gas fill, but not Low-E.

Windows- Add Low E to vinyl tint: addition of low-e glass to vinyl tint windows. Baseline is vinyl-framed, tinted window (not low-E).

Windows- non-tinted AL code to class 36: Improvements of window to AL code class 36. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- non-tinted AL code to class 40: Improvements of window to AL code class 40. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- non-tinted AL code to class 45: Improvements of window to AL code class 45. Baseline equipment is an aluminum-framed non-tinted code window.

Windows- tinted AL code to class 36: Improvements of window to AL code class 36. Baseline equipment is an aluminum-framed tinted code window.

Windows- tinted AL code to class 40: Improvements of window to AL code class 40. Baseline equipment is an aluminum-framed tinted code window.

9.2.3.3 Water Heating

Refrigeration system superheat recovery: A superheat recovery system recovers concentrated high temperature heat from compressor condenser discharge and pumps the recovered heat into a hot water tank to save on water heating energy.

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Cascade Natural Gas Corporation

Assessment of Achievable Potential & Program Evaluation

Volume 3: Appendices

Submitted to Cascade Natural Gas Corporation
Submitted by Nexant, Inc.

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APPENDIX C DETAILED FINDINGS BY SCENARIO C-1

- **Annual Avoided Energy Costs (Current):**

Year	Avoided Cost ($)	Year	Avoided Cost ($)
2014	$0.460	**2029**	$0.720
2015	$0.510	**2030**	$0.750
2016	$0.510	**2031**	$0.800
2017	$0.510	**2032**	$0.820
2018	$0.520	**2033**	$0.840
2019	$0.550	**2034**	$0.860
2020	$0.560	**2035**	$0.880
2021	$0.570	**2036**	$0.900
2022	$0.620	**2037**	$0.930
2023	$0.630	**2038**	$0.950
2024	$0.650	**2039**	$0.980
2025	$0.650	**2040**	$1.000
2026	$0.690	**2041**	$1.030
2027	$0.720	**2042**	$1.050
2028	$0.730	**2043**	$1.080

- **Avoided Capacity Costs**: n/a
- **Inflation Rate:** 2.60%
- **Discount Rate (s):** Commercial and Industrial: 8.55% UCT and TRC
  Residential: 3.4% TRC, 8.55% UCT
- **Distribution Loss Rate:** 0.1959%

Appendix B Detailed Measure Assumptions

Details on each of the residential, commercial and industrial measures researched with savings, costs and EULs for all measure permutations are presented below. While Nexant modeled energy savings potential at the premise (i.e. building) level, measure savings (therms) and costs are presented at both the premise as well as the incremental unit level to aid with program planning. Measures in the tables below are organized by sector – residential, commercial, then industrial. Within each sector, measures are sorted alphabetically first by end use, then measure name, then segment, and finally vintage. Definitions for each vintage category are provided below:

- **Turnover:** A measure is installed at the end of existing equipment's expected useful life (EUL). In other words, the existing measure is replaced on burn-out. For this measure vintage, measure savings are calculated compared to code (where applicable). Costs are calculated as the incremental cost over the code minimum cost.

- **New:** A measure is installed as a new building is constructed. For this measure vintage, measure savings are calculated compared to code (where applicable). Costs are calculated as the incremental cost over the code minimum cost.

- **Early Retirement**: A measure is installed before the end of the existing equipment's expected useful life (EUL). In other words, the customer replaces the equipment while it's still operational. For this measure vintage, measure savings are calculated compared to the existing equipment or non-equipment baseline energy consumption (generally lower than code). Costs are estimated as the full cost of the installed measure.

It should be noted that the measure costs utilized for the purposes of this potential assessment reflect average installation costs across various implementation scenarios and therefore may be at a lower resolution than costs available to Cascade for program planning. For program planning purposes Cascade may opt to refine costs to better reflect costs in their specific service territory.

B.1 Residential Sector Measures

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Clothes Washer	Residential	Early Retirement	Mfg_CZ1	1	Clothes Drying	11.0	55.0%	per premise	6	$1,056	per unit	6	$1,056
Residential Clothes Washer	Residential	Turnover	Mfg_CZ1	1	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Clothes Washer	Residential	Early Retirement	Mfg_CZ2	2	Clothes Drying	11.0	55.0%	per premise	6	$1,056	per unit	6	$1,056
Residential Clothes Washer	Residential	Turnover	Mfg_CZ2	2	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Clothes Washer	Residential	Early Retirement	Mfg_CZ3	3	Clothes Drying	11.0	55.0%	per premise	6	$1,056	per unit	6	$1,056
Residential Clothes Washer	Residential	Turnover	Mfg_CZ3	3	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Clothes Washer	Residential	Early Retirement	Multi_CZ1	1	Clothes Drying	11.0	55.0%	per premise	5	$1,056	per unit	5	$1,056
Residential Clothes Washer	Residential	Turnover	Multi_CZ1	1	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Clothes Washer	Residential	Early Retirement	Multi_CZ2	2	Clothes Drying	11.0	55.0%	per premise	5	$1,056	per unit	5	$1,056
Residential Clothes Washer	Residential	Turnover	Multi_CZ2	2	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Clothes Washer	Residential	Early Retirement	Multi_CZ3	3	Clothes Drying	11.0	55.0%	per premise	5	$1,056	per unit	5	$1,056
Residential Clothes Washer	Residential	Turnover	Multi_CZ3	3	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Clothes Washer	Residential	Early Retirement	Single_CZ 1	1	Clothes Drying	11.0	55.0%	per premise	7	$1,056	per unit	7	$1,056
Residential Clothes Washer	Residential	Turnover	Single_CZ 1	1	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
Residential Clothes Washer	Residential	Early Retirement	Single_CZ 2	2	Clothes Drying	11.0	55.0%	per premise	7	$1,056	per unit	7	$1,056

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Clothes Washer	Residential	Turnover	Single_CZ 2	2	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
Residential Clothes Washer	Residential	Early Retirement	Single_CZ 3	3	Clothes Drying	11.0	55.0%	per premise	7	$1,056	per unit	7	$1,056
Residential Clothes Washer	Residential	Turnover	Single_CZ 3	3	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
Residential Energy Star Clothes Washer	Residential	New	Mfg_CZ1	1	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Energy Star Clothes Washer	Residential	New	Mfg_CZ2	2	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Energy Star Clothes Washer	Residential	New	Mfg_CZ3	3	Clothes Drying	11.0	55.0%	per premise	6	$396	per unit	6	$396
Residential Energy Star Clothes Washer	Residential	New	Multi_CZ1	1	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Energy Star Clothes Washer	Residential	New	Multi_CZ2	2	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Energy Star Clothes Washer	Residential	New	Multi_CZ3	3	Clothes Drying	11.0	55.0%	per premise	5	$396	per unit	5	$396
Residential Energy Star Clothes Washer	Residential	New	Single_CZ 1	1	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
Residential Energy Star Clothes Washer	Residential	New	Single_CZ 2	2	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
Residential Energy Star Clothes Washer	Residential	New	Single_CZ 3	3	Clothes Drying	11.0	55.0%	per premise	7	$396	per unit	7	$396
High Efficiency Spa / Pool Heating Boiler	Residential	Turnover	Single_CZ 1	1	Other	20.0	11.1%	per premise	498	$630	per unit	498	$630
High Efficiency Spa / Pool Heating Boiler	Residential	Turnover	Single_CZ 2	2	Other	20.0	11.1%	per premise	584	$630	per unit	584	$630
High Efficiency Spa / Pool Heating Boiler	Residential	Turnover	Single_CZ 3	3	Other	20.0	11.1%	per premise	563	$630	per unit	563	$630

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Mfg_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Mfg_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Mfg_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Mfg_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Mfg_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Mfg_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Mfg_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Mfg_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Mfg_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Multi_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Multi_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Multi_CZ1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Multi_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Multi_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Multi_CZ2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Multi_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Multi_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Multi_CZ3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Single_CZ 1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Single_CZ 1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Single_CZ 1	1	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Single_CZ 2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Single_CZ 2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Single_CZ 2	2	Room Heating	20.0	11.1%	per premise	74	$600	per unit	74	$600
High Efficiency Hearth - 80% AFUE	Residential	Early Retirement	Single_CZ 3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	New	Single_CZ 3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
High Efficiency Hearth - 80% AFUE	Residential	Turnover	Single_CZ 3	3	Room Heating	20.0	11.1%	per premise	76	$600	per unit	76	$600
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	27.5%	per premise	116	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Mfg_CZ1	1	Space Heating	27.5	27.9%	per premise	110	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	26.3%	per premise	111	$461	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Attic/Ceiling Insulation R-0 to R49	Residential	New	Mfg_CZ2	2	Space Heating	27.5	26.7%	per premise	106	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	31.0%	per premise	131	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Mfg_CZ3	3	Space Heating	27.5	31.4%	per premise	124	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	21.6%	per premise	116	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Multi_CZ1	1	Space Heating	27.5	21.9%	per premise	110	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	20.7%	per premise	111	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Multi_CZ2	2	Space Heating	27.5	20.9%	per premise	106	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	24.4%	per premise	131	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Multi_CZ3	3	Space Heating	27.5	24.6%	per premise	124	$461	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	34.0%	per premise	194	$768	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Single_CZ 1	1	Space Heating	27.5	34.4%	per premise	184	$768	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	32.5%	per premise	185	$768	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Single_CZ 2	2	Space Heating	27.5	32.9%	per premise	176	$768	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	38.3%	per premise	218	$768	per sf installed	0	$1
Attic/Ceiling Insulation R-0 to R49	Residential	New	Single_CZ 3	3	Space Heating	27.5	38.8%	per premise	207	$768	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	8.5%	per premise	36	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Mfg_CZ1	1	Space Heating	27.5	8.6%	per premise	34	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	8.1%	per premise	34	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Mfg_CZ2	2	Space Heating	27.5	8.2%	per premise	32	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	9.5%	per premise	40	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Mfg_CZ3	3	Space Heating	27.5	9.6%	per premise	38	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	6.6%	per premise	36	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Multi_CZ1	1	Space Heating	27.5	6.7%	per premise	34	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	6.3%	per premise	34	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Multi_CZ2	2	Space Heating	27.5	6.4%	per premise	32	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	7.5%	per premise	40	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Multi_CZ3	3	Space Heating	27.5	7.6%	per premise	38	$372	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	10.4%	per premise	59	$621	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Single_CZ 1	1	Space Heating	27.5	10.6%	per premise	56	$621	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	10.0%	per premise	57	$621	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Attic/Ceiling Insulation R-11 to R49	Residential	New	Single_CZ 2	2	Space Heating	27.5	10.1%	per premise	54	$621	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	11.8%	per premise	67	$621	per sf installed	0	$1
Attic/Ceiling Insulation R-11 to R49	Residential	New	Single_CZ 3	3	Space Heating	27.5	11.9%	per premise	64	$621	per sf installed	0	$1
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	3.5%	per premise	15	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Mfg_CZ1	1	Space Heating	27.5	3.6%	per premise	14	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	3.4%	per premise	14	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Mfg_CZ2	2	Space Heating	27.5	3.4%	per premise	13	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	4.0%	per premise	17	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Mfg_CZ3	3	Space Heating	27.5	4.0%	per premise	16	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	2.8%	per premise	15	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Multi_CZ1	1	Space Heating	27.5	2.8%	per premise	14	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	2.6%	per premise	14	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Multi_CZ2	2	Space Heating	27.5	2.7%	per premise	13	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	3.1%	per premise	17	$196	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Multi_CZ3	3	Space Heating	27.5	3.1%	per premise	16	$196	per sf installed	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	4.3%	per premise	25	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Single_CZ 1	1	Space Heating	27.5	4.4%	per premise	23	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	4.1%	per premise	24	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Single_CZ 2	2	Space Heating	27.5	4.2%	per premise	22	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	4.9%	per premise	28	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-18 to R38	Residential	New	Single_CZ 3	3	Space Heating	27.5	4.9%	per premise	26	$327	per sf installed	0	$0
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	3.9%	per premise	16	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	3.7%	per premise	16	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	4.4%	per premise	18	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	3.0%	per premise	16	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	New	Multi_CZ1	1	Space Heating	27.5	3.1%	per premise	15	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	2.9%	per premise	16	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	New	Multi_CZ2	2	Space Heating	27.5	3.5%	per premise	17	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	3.4%	per premise	18	$294	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	New	Multi_CZ3	3	Space Heating	27.5	3.5%	per premise	17	$294	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	4.8%	per premise	27	$490	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	4.6%	per premise	26	$490	per sf installed	0	$1
Attic/Ceiling Insulation R-19 to R49	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	5.4%	per premise	31	$490	per sf installed	0	$1
Basement Insulation, Side Wall	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	19.3%	per premise	81	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	18.5%	per premise	78	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	21.8%	per premise	92	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	15.1%	per premise	81	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	14.5%	per premise	78	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	17.1%	per premise	92	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	14.3%	per premise	81	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	13.7%	per premise	78	$87	per sf installed	0	$0
Basement Insulation, Side Wall	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	16.1%	per premise	92	$87	per sf installed	0	$0
Boiler Controls	Residential	Existing	Mfg_CZ1	1	Space Heating	20.0	10.6%	per premise	63	$599	per unit	63	$599
Boiler Controls	Residential	New	Mfg_CZ1	1	Space Heating	20.0	10.6%	per premise	60	$599	per unit	60	$599
Boiler Controls	Residential	Existing	Mfg_CZ2	2	Space Heating	20.0	10.6%	per premise	61	$599	per unit	61	$599

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Boiler Controls	Residential	New	Mfg_CZ2	2	Space Heating	20.0	10.6%	per premise	58	$599	per unit	58	$599
Boiler Controls	Residential	Existing	Mfg_CZ3	3	Space Heating	20.0	10.6%	per premise	64	$599	per unit	64	$599
Boiler Controls	Residential	New	Mfg_CZ3	3	Space Heating	20.0	10.6%	per premise	60	$599	per unit	60	$599
Boiler Controls	Residential	Existing	Multi_CZ1	1	Space Heating	20.0	10.6%	per premise	56	$599	per unit	56	$599
Boiler Controls	Residential	New	Multi_CZ1	1	Space Heating	20.0	10.6%	per premise	53	$599	per unit	53	$599
Boiler Controls	Residential	Existing	Multi_CZ2	2	Space Heating	20.0	10.6%	per premise	55	$599	per unit	55	$599
Boiler Controls	Residential	New	Multi_CZ2	2	Space Heating	20.0	10.6%	per premise	52	$599	per unit	52	$599
Boiler Controls	Residential	Existing	Multi_CZ3	3	Space Heating	20.0	10.6%	per premise	56	$599	per unit	56	$599
Boiler Controls	Residential	New	Multi_CZ3	3	Space Heating	20.0	10.6%	per premise	54	$599	per unit	54	$599
Boiler Controls	Residential	Existing	Single_CZ 1	1	Space Heating	20.0	10.6%	per premise	84	$599	per unit	84	$599
Boiler Controls	Residential	New	Single_CZ 1	1	Space Heating	20.0	10.6%	per premise	80	$599	per unit	80	$599
Boiler Controls	Residential	Existing	Single_CZ 2	2	Space Heating	20.0	10.6%	per premise	82	$599	per unit	82	$599
Boiler Controls	Residential	New	Single_CZ 2	2	Space Heating	20.0	10.6%	per premise	78	$599	per unit	78	$599
Boiler Controls	Residential	Existing	Single_CZ 3	3	Space Heating	20.0	10.6%	per premise	85	$599	per unit	85	$599
Boiler Controls	Residential	New	Single_CZ 3	3	Space Heating	20.0	10.6%	per premise	80	$599	per unit	80	$599

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Boiler Repair/Tune-Up	Residential	Existing	Mfg_CZ1	1	Space Heating	4.0	2.1%	per premise	13	$150	per unit	13	$150
Boiler Repair/Tune-Up	Residential	Existing	Mfg_CZ2	2	Space Heating	4.0	2.1%	per premise	12	$150	per unit	12	$150
Boiler Repair/Tune-Up	Residential	Existing	Mfg_CZ3	3	Space Heating	4.0	2.1%	per premise	13	$150	per unit	13	$150
Boiler Repair/Tune-Up	Residential	Existing	Multi_CZ1	1	Space Heating	4.0	2.4%	per premise	13	$150	per unit	13	$150
Boiler Repair/Tune-Up	Residential	Existing	Multi_CZ2	2	Space Heating	4.0	2.4%	per premise	12	$150	per unit	12	$150
Boiler Repair/Tune-Up	Residential	Existing	Multi_CZ3	3	Space Heating	4.0	2.4%	per premise	13	$150	per unit	13	$150
Boiler Repair/Tune-Up	Residential	Existing	Single_CZ 1	1	Space Heating	4.0	1.6%	per premise	13	$150	per unit	13	$150
Boiler Repair/Tune-Up	Residential	Existing	Single_CZ 2	2	Space Heating	4.0	1.6%	per premise	12	$150	per unit	12	$150
Boiler Repair/Tune-Up	Residential	Existing	Single_CZ 3	3	Space Heating	4.0	1.6%	per premise	13	$150	per unit	13	$150
Condensing Boiler	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	21.0	20.8%	per premise	125	$3,279	per unit	125	$3,279
Condensing Boiler	Residential	New	Mfg_CZ1	1	Space Heating	21.0	16.7%	per premise	95	$1,747	per unit	95	$1,747
Condensing Boiler	Residential	Turnover	Mfg_CZ1	1	Space Heating	21.0	16.7%	per premise	95	$1,747	per unit	95	$1,747
Condensing Boiler	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	21.0	20.8%	per premise	121	$3,279	per unit	121	$3,279
Condensing Boiler	Residential	New	Mfg_CZ2	2	Space Heating	21.0	16.7%	per premise	92	$1,747	per unit	92	$1,747
Condensing Boiler	Residential	Turnover	Mfg_CZ2	2	Space Heating	21.0	16.7%	per premise	92	$1,747	per unit	92	$1,747

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing Boiler	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	21.0	20.8%	per premise	125	$3,279	per unit	125	$3,279
Condensing Boiler	Residential	New	Mfg_CZ3	3	Space Heating	21.0	16.7%	per premise	95	$1,747	per unit	95	$1,747
Condensing Boiler	Residential	Turnover	Mfg_CZ3	3	Space Heating	21.0	16.7%	per premise	95	$1,747	per unit	95	$1,747
Condensing Boiler	Residential	Early Retirement	Multi_CZ1	1	Space Heating	21.0	20.8%	per premise	111	$3,279	per unit	111	$3,279
Condensing Boiler	Residential	New	Multi_CZ1	1	Space Heating	21.0	16.7%	per premise	84	$1,747	per unit	84	$1,747
Condensing Boiler	Residential	Turnover	Multi_CZ1	1	Space Heating	21.0	16.7%	per premise	84	$1,747	per unit	84	$1,747
Condensing Boiler	Residential	Early Retirement	Multi_CZ2	2	Space Heating	21.0	20.8%	per premise	108	$3,279	per unit	108	$3,279
Condensing Boiler	Residential	New	Multi_CZ2	2	Space Heating	21.0	16.7%	per premise	82	$1,747	per unit	82	$1,747
Condensing Boiler	Residential	Turnover	Multi_CZ2	2	Space Heating	21.0	16.7%	per premise	82	$1,747	per unit	82	$1,747
Condensing Boiler	Residential	Early Retirement	Multi_CZ3	3	Space Heating	21.0	20.8%	per premise	111	$3,279	per unit	111	$3,279
Condensing Boiler	Residential	New	Multi_CZ3	3	Space Heating	21.0	16.7%	per premise	85	$1,747	per unit	85	$1,747
Condensing Boiler	Residential	Turnover	Multi_CZ3	3	Space Heating	21.0	16.7%	per premise	85	$1,747	per unit	85	$1,747
Condensing Boiler	Residential	Early Retirement	Single_CZ 1	1	Space Heating	21.0	20.8%	per premise	166	$3,279	per unit	166	$3,279
Condensing Boiler	Residential	New	Single_CZ 1	1	Space Heating	21.0	16.7%	per premise	126	$1,747	per unit	126	$1,747
Condensing Boiler	Residential	Turnover	Single_CZ 1	1	Space Heating	21.0	16.7%	per premise	126	$1,747	per unit	126	$1,747

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing Boiler	Residential	Early Retirement	Single_CZ 2	2	Space Heating	21.0	20.8%	per premise	162	$3,279	per unit	162	$3,279
Condensing Boiler	Residential	New	Single_CZ 2	2	Space Heating	21.0	16.7%	per premise	123	$1,747	per unit	123	$1,747
Condensing Boiler	Residential	Turnover	Single_CZ 2	2	Space Heating	21.0	16.7%	per premise	123	$1,747	per unit	123	$1,747
Condensing Boiler	Residential	Early Retirement	Single_CZ 3	3	Space Heating	21.0	20.8%	per premise	167	$3,279	per unit	167	$3,279
Condensing Boiler	Residential	New	Single_CZ 3	3	Space Heating	21.0	16.7%	per premise	127	$1,747	per unit	127	$1,747
Condensing Boiler	Residential	Turnover	Single_CZ 3	3	Space Heating	21.0	16.7%	per premise	127	$1,747	per unit	127	$1,747
Duct Sealing & Insulation	Residential	Existing	Mfg_CZ1	1	Space Heating	20.0	6.1%	per premise	26	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	New	Mfg_CZ1	1	Space Heating	20.0	1.3%	per premise	5	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	Existing	Mfg_CZ2	2	Space Heating	20.0	5.9%	per premise	25	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	New	Mfg_CZ2	2	Space Heating	20.0	1.3%	per premise	5	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	Existing	Mfg_CZ3	3	Space Heating	20.0	6.1%	per premise	26	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	New	Mfg_CZ3	3	Space Heating	20.0	1.3%	per premise	5	$704	per sf installed	0	$2
Duct Sealing & Insulation	Residential	Existing	Multi_CZ1	1	Space Heating	20.0	4.8%	per premise	26	$480	per sf installed	0	$1
Duct Sealing & Insulation	Residential	New	Multi_CZ1	1	Space Heating	20.0	1.0%	per premise	5	$480	per sf installed	0	$1
Duct Sealing & Insulation	Residential	Existing	Multi_CZ2	2	Space Heating	20.0	4.6%	per premise	25	$480	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Duct Sealing & Insulation	Residential	New	Multi_CZ2	2	Space Heating	20.0	1.0%	per premise	5	$480	per sf installed	0	$1
Duct Sealing & Insulation	Residential	Existing	Multi_CZ3	3	Space Heating	20.0	4.8%	per premise	26	$480	per sf installed	0	$1
Duct Sealing & Insulation	Residential	New	Multi_CZ3	3	Space Heating	20.0	1.0%	per premise	5	$480	per sf installed	0	$1
Duct Sealing & Insulation	Residential	Existing	Single_CZ 1	1	Space Heating	20.0	4.9%	per premise	28	$749	per sf installed	0	$1
Duct Sealing & Insulation	Residential	New	Single_CZ 1	1	Space Heating	20.0	1.0%	per premise	6	$749	per sf installed	0	$1
Duct Sealing & Insulation	Residential	Existing	Single_CZ 2	2	Space Heating	20.0	4.7%	per premise	27	$749	per sf installed	0	$1
Duct Sealing & Insulation	Residential	New	Single_CZ 2	2	Space Heating	20.0	1.0%	per premise	5	$749	per sf installed	0	$1
Duct Sealing & Insulation	Residential	Existing	Single_CZ 3	3	Space Heating	20.0	4.9%	per premise	28	$749	per sf installed	0	$1
Duct Sealing & Insulation	Residential	New	Single_CZ 3	3	Space Heating	20.0	1.0%	per premise	6	$749	per sf installed	0	$1
Energy Star Home	Residential	New	Single_CZ 1	1	Space Heating	7.5	27.0%	per premise	206	$1,142	per building	206	$1,142
Energy Star Home	Residential	New	Single_CZ 2	2	Space Heating	7.5	27.0%	per premise	200	$1,142	per building	200	$1,142
Energy Star Home	Residential	New	Single_CZ 3	3	Space Heating	7.5	27.0%	per premise	207	$1,142	per building	207	$1,142
Entryway Door	Residential	Existing	Mfg_CZ1	1	Space Heating	25.0	2.3%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Mfg_CZ1	1	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Mfg_CZ2	2	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Entryway Door	Residential	New	Mfg_CZ2	2	Space Heating	25.0	2.5%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Mfg_CZ3	3	Space Heating	25.0	2.0%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Mfg_CZ3	3	Space Heating	25.0	2.2%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Multi_CZ1	1	Space Heating	25.0	2.3%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Multi_CZ1	1	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Multi_CZ2	2	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Multi_CZ2	2	Space Heating	25.0	2.5%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Multi_CZ3	3	Space Heating	25.0	2.0%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Multi_CZ3	3	Space Heating	25.0	2.2%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Single_CZ 1	1	Space Heating	25.0	2.3%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Single_CZ 1	1	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Single_CZ 2	2	Space Heating	25.0	2.4%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Single_CZ 2	2	Space Heating	25.0	2.5%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	Existing	Single_CZ 3	3	Space Heating	25.0	2.0%	per premise	13	$200	per unit	13	$200
Entryway Door	Residential	New	Single_CZ 3	3	Space Heating	25.0	2.2%	per premise	13	$200	per unit	13	$200

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Mfg_CZ1	1	Space Heating	25.0	25.5%	per premise	108	$1,998	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Mfg_CZ2	2	Space Heating	25.0	24.4%	per premise	103	$1,998	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Mfg_CZ3	3	Space Heating	25.0	28.8%	per premise	121	$1,998	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Multi_CZ1	1	Space Heating	25.0	19.3%	per premise	104	$1,929	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Multi_CZ2	2	Space Heating	25.0	18.5%	per premise	99	$1,929	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Multi_CZ3	3	Space Heating	25.0	21.8%	per premise	117	$1,929	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Single_CZ 1	1	Space Heating	25.0	20.6%	per premise	117	$2,171	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Single_CZ 2	2	Space Heating	25.0	19.7%	per premise	112	$2,171	per sf installed	0	$2
Floor & Crawlspace Insulation R-4.94 to R30	Residential	Existing	Single_CZ 3	3	Space Heating	25.0	23.2%	per premise	132	$2,171	per sf installed	0	$2
Furnace Repair/Tune-Up	Residential	Existing	Mfg_CZ1	1	Space Heating	4.0	5.8%	per premise	33	$150	per furnace	33	$150
Furnace Repair/Tune-Up	Residential	Existing	Mfg_CZ2	2	Space Heating	4.0	5.8%	per premise	32	$150	per furnace	32	$150
Furnace Repair/Tune-Up	Residential	Existing	Mfg_CZ3	3	Space Heating	4.0	5.8%	per premise	33	$150	per furnace	33	$150
Furnace Repair/Tune-Up	Residential	Existing	Multi_CZ1	1	Space Heating	4.0	6.5%	per premise	33	$150	per furnace	33	$150
Furnace Repair/Tune-Up	Residential	Existing	Multi_CZ2	2	Space Heating	4.0	5.8%	per premise	28	$150	per furnace	28	$150
Furnace Repair/Tune-Up	Residential	Existing	Multi_CZ3	3	Space Heating	4.0	5.8%	per premise	29	$150	per furnace	29	$150

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Furnace Repair/Tune-Up	Residential	Existing	Single_CZ 1	1	Space Heating	4.0	5.8%	per premise	44	$150	per furnace	44	$150
Furnace Repair/Tune-Up	Residential	Existing	Single_CZ 2	2	Space Heating	4.0	5.8%	per premise	43	$150	per furnace	43	$150
Furnace Repair/Tune-Up	Residential	Existing	Single_CZ 3	3	Space Heating	4.0	5.8%	per premise	44	$150	per furnace	44	$150
Heat Recovery Ventilator	Residential	Existing	Mfg_CZ1	1	Space Heating	20.0	12.9%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Mfg_CZ1	1	Space Heating	20.0	13.5%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Mfg_CZ2	2	Space Heating	20.0	13.2%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Mfg_CZ2	2	Space Heating	20.0	13.9%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Mfg_CZ3	3	Space Heating	20.0	12.9%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Mfg_CZ3	3	Space Heating	20.0	13.6%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Multi_CZ1	1	Space Heating	20.0	14.5%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Multi_CZ1	1	Space Heating	20.0	15.2%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Multi_CZ2	2	Space Heating	20.0	14.9%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Multi_CZ2	2	Space Heating	20.0	15.7%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Multi_CZ3	3	Space Heating	20.0	14.5%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Multi_CZ3	3	Space Heating	20.0	15.3%	per premise	77	$442	per unit	77	$442

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Heat Recovery Ventilator	Residential	Existing	Single_CZ 1	1	Space Heating	20.0	9.6%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Single_CZ 1	1	Space Heating	20.0	10.1%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Single_CZ 2	2	Space Heating	20.0	9.9%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Single_CZ 2	2	Space Heating	20.0	10.5%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	Existing	Single_CZ 3	3	Space Heating	20.0	9.7%	per premise	77	$442	per unit	77	$442
Heat Recovery Ventilator	Residential	New	Single_CZ 3	3	Space Heating	20.0	10.2%	per premise	77	$442	per unit	77	$442
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	20.0	15.6%	per premise	93	$1,706	per unit	93	$1,706
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	20.0	15.6%	per premise	93	$1,706	per unit	93	$1,706
High Efficiency Boiler	Residential	New	Mfg_CZ1	1	Space Heating	20.0	11.1%	per premise	63	$630	per unit	63	$630
High Efficiency Boiler	Residential	New	Mfg_CZ1	1	Space Heating	20.0	11.1%	per premise	63	$630	per unit	63	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ1	1	Space Heating	20.0	11.1%	per premise	63	$630	per unit	63	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ1	1	Space Heating	20.0	11.1%	per premise	63	$630	per unit	63	$630
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	20.0	15.6%	per premise	90	$1,706	per unit	90	$1,706
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	20.0	15.6%	per premise	90	$1,706	per unit	90	$1,706
High Efficiency Boiler	Residential	New	Mfg_CZ2	2	Space Heating	20.0	11.1%	per premise	61	$630	per unit	61	$630

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Boiler	Residential	New	Mfg_CZ2	2	Space Heating	20.0	11.1%	per premise	61	$630	per unit	61	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ2	2	Space Heating	20.0	11.1%	per premise	61	$630	per unit	61	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ2	2	Space Heating	20.0	11.1%	per premise	61	$630	per unit	61	$630
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	20.0	15.6%	per premise	94	$1,706	per unit	94	$1,706
High Efficiency Boiler	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	20.0	15.6%	per premise	94	$1,706	per unit	94	$1,706
High Efficiency Boiler	Residential	New	Mfg_CZ3	3	Space Heating	20.0	11.1%	per premise	64	$630	per unit	64	$630
High Efficiency Boiler	Residential	New	Mfg_CZ3	3	Space Heating	20.0	11.1%	per premise	64	$630	per unit	64	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ3	3	Space Heating	20.0	11.1%	per premise	64	$630	per unit	64	$630
High Efficiency Boiler	Residential	Turnover	Mfg_CZ3	3	Space Heating	20.0	11.1%	per premise	64	$630	per unit	64	$630
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ1	1	Space Heating	20.0	15.6%	per premise	83	$1,706	per unit	83	$1,706
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ1	1	Space Heating	20.0	15.6%	per premise	83	$1,706	per unit	83	$1,706
High Efficiency Boiler	Residential	New	Multi_CZ1	1	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	New	Multi_CZ1	1	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ1	1	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ1	1	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ2	2	Space Heating	20.0	15.6%	per premise	80	$1,706	per unit	80	$1,706
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ2	2	Space Heating	20.0	15.6%	per premise	80	$1,706	per unit	80	$1,706
High Efficiency Boiler	Residential	New	Multi_CZ2	2	Space Heating	20.0	11.1%	per premise	55	$630	per unit	55	$630
High Efficiency Boiler	Residential	New	Multi_CZ2	2	Space Heating	20.0	11.1%	per premise	55	$630	per unit	55	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ2	2	Space Heating	20.0	11.1%	per premise	55	$630	per unit	55	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ2	2	Space Heating	20.0	11.1%	per premise	55	$630	per unit	55	$630
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ3	3	Space Heating	20.0	15.6%	per premise	83	$1,706	per unit	83	$1,706
High Efficiency Boiler	Residential	Early Retirement	Multi_CZ3	3	Space Heating	20.0	15.6%	per premise	83	$1,706	per unit	83	$1,706
High Efficiency Boiler	Residential	New	Multi_CZ3	3	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	New	Multi_CZ3	3	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ3	3	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	Turnover	Multi_CZ3	3	Space Heating	20.0	11.1%	per premise	56	$630	per unit	56	$630
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 1	1	Space Heating	20.0	15.6%	per premise	124	$1,706	per unit	124	$1,706
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 1	1	Space Heating	20.0	15.6%	per premise	124	$1,706	per unit	124	$1,706
High Efficiency Boiler	Residential	New	Single_CZ 1	1	Space Heating	20.0	11.1%	per premise	84	$630	per unit	84	$630

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Boiler	Residential	New	Single_CZ 1	1	Space Heating	20.0	11.1%	per premise	84	$630	per unit	84	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 1	1	Space Heating	20.0	11.1%	per premise	84	$630	per unit	84	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 1	1	Space Heating	20.0	11.1%	per premise	84	$630	per unit	84	$630
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 2	2	Space Heating	20.0	15.6%	per premise	121	$1,706	per unit	121	$1,706
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 2	2	Space Heating	20.0	15.6%	per premise	121	$1,706	per unit	121	$1,706
High Efficiency Boiler	Residential	New	Single_CZ 2	2	Space Heating	20.0	11.1%	per premise	82	$630	per unit	82	$630
High Efficiency Boiler	Residential	New	Single_CZ 2	2	Space Heating	20.0	11.1%	per premise	82	$630	per unit	82	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 2	2	Space Heating	20.0	11.1%	per premise	82	$630	per unit	82	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 2	2	Space Heating	20.0	11.1%	per premise	82	$630	per unit	82	$630
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 3	3	Space Heating	20.0	15.6%	per premise	125	$1,706	per unit	125	$1,706
High Efficiency Boiler	Residential	Early Retirement	Single_CZ 3	3	Space Heating	20.0	15.6%	per premise	125	$1,706	per unit	125	$1,706
High Efficiency Boiler	Residential	New	Single_CZ 3	3	Space Heating	20.0	11.1%	per premise	85	$630	per unit	85	$630
High Efficiency Boiler	Residential	New	Single_CZ 3	3	Space Heating	20.0	11.1%	per premise	85	$630	per unit	85	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 3	3	Space Heating	20.0	11.1%	per premise	85	$630	per unit	85	$630
High Efficiency Boiler	Residential	Turnover	Single_CZ 3	3	Space Heating	20.0	11.1%	per premise	85	$630	per unit	85	$630

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	21.0	49.8%	per premise	490	$11,978	per unit	490	$11,978
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Mfg_CZ1	1	Space Heating	21.0	46.7%	per premise	433	$971	per unit	433	$971
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Mfg_CZ1	1	Space Heating	21.0	46.7%	per premise	433	$10,458	per unit	433	$10,458
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	21.0	50.1%	per premise	482	$11,978	per unit	482	$11,978
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Mfg_CZ2	2	Space Heating	21.0	47.1%	per premise	426	$971	per unit	426	$971
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Mfg_CZ2	2	Space Heating	21.0	47.1%	per premise	426	$10,458	per unit	426	$10,458
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	21.0	49.7%	per premise	491	$11,978	per unit	491	$11,978
High efficiency combination domestic hot water and hydronic space heating system	Residential	New	Mfg_CZ3	3	Space Heating	21.0	46.6%	per premise	434	$971	per unit	434	$971

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
using pre-approved tankless water heater													
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Mfg_CZ3	3	Space Heating	21.0	46.6%	per premise	434	$10,458	per unit	434	$10,458
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Multi_CZ1	1	Space Heating	21.0	46.9%	per premise	436	$14,061	per unit	436	$14,061
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Multi_CZ1	1	Space Heating	21.0	43.7%	per premise	384	$971	per unit	384	$971
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Multi_CZ1	1	Space Heating	21.0	43.7%	per premise	384	$12,541	per unit	384	$12,541
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Multi_CZ2	2	Space Heating	21.0	47.2%	per premise	429	$14,061	per unit	429	$14,061
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Multi_CZ2	2	Space Heating	21.0	44.0%	per premise	377	$971	per unit	377	$971
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Multi_CZ2	2	Space Heating	21.0	44.0%	per premise	377	$12,541	per unit	377	$12,541

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Multi_CZ3	3	Space Heating	21.0	46.9%	per premise	438	$14,061	per unit	438	$14,061
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Multi_CZ3	3	Space Heating	21.0	43.7%	per premise	385	$971	per unit	385	$971
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Multi_CZ3	3	Space Heating	21.0	43.7%	per premise	385	$12,541	per unit	385	$12,541
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Single_CZ 1	1	Space Heating	21.0	50.2%	per premise	537	$27,163	per unit	537	$27,163
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Single_CZ 1	1	Space Heating	21.0	47.2%	per premise	475	$1,716	per unit	475	$1,716
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Single_CZ 1	1	Space Heating	21.0	47.2%	per premise	475	$25,643	per unit	475	$25,643
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Single_CZ 2	2	Space Heating	21.0	50.6%	per premise	529	$27,163	per unit	529	$27,163
High efficiency combination domestic hot water and hydronic space heating system	Residential	New	Single_CZ 2	2	Space Heating	21.0	47.5%	per premise	468	$1,716	per unit	468	$1,716

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
using pre-approved tankless water heater													
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Single_CZ 2	2	Space Heating	21.0	47.5%	per premise	468	$25,643	per unit	468	$25,643
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Early Retirement	Single_CZ 3	3	Space Heating	21.0	50.2%	per premise	539	$27,163	per unit	539	$27,163
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	New	Single_CZ 3	3	Space Heating	21.0	47.1%	per premise	476	$1,716	per unit	476	$1,716
High efficiency combination domestic hot water and hydronic space heating system using pre-approved tankless water heater	Residential	Turnover	Single_CZ 3	3	Space Heating	21.0	47.1%	per premise	476	$25,643	per unit	476	$25,643
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	18.0	11.7%	per premise	90	$1,282	per unit	90	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Mfg_CZ1	1	Space Heating	18.0	9.7%	per premise	71	$465	per unit	71	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Mfg_CZ1	1	Space Heating	18.0	9.7%	per premise	71	$465	per unit	71	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	18.0	11.7%	per premise	90	$1,282	per unit	90	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Mfg_CZ2	2	Space Heating	18.0	9.8%	per premise	71	$465	per unit	71	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Mfg_CZ2	2	Space Heating	18.0	9.8%	per premise	71	$465	per unit	71	$465

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	18.0	11.7%	per premise	91	$1,282	per unit	91	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Mfg_CZ3	3	Space Heating	18.0	9.7%	per premise	71	$465	per unit	71	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Mfg_CZ3	3	Space Heating	18.0	9.7%	per premise	71	$465	per unit	71	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Multi_CZ1	1	Space Heating	18.0	11.5%	per premise	93	$1,282	per unit	93	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Multi_CZ1	1	Space Heating	18.0	9.5%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Multi_CZ1	1	Space Heating	18.0	9.5%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Multi_CZ2	2	Space Heating	18.0	11.6%	per premise	92	$1,282	per unit	92	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Multi_CZ2	2	Space Heating	18.0	9.6%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Multi_CZ2	2	Space Heating	18.0	9.6%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Multi_CZ3	3	Space Heating	18.0	11.5%	per premise	93	$1,282	per unit	93	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Multi_CZ3	3	Space Heating	18.0	9.5%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Multi_CZ3	3	Space Heating	18.0	9.5%	per premise	73	$465	per unit	73	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Single_CZ 1	1	Space Heating	18.0	11.1%	per premise	101	$1,282	per unit	101	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Single_CZ 1	1	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Single_CZ 1	1	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Single_CZ 2	2	Space Heating	18.0	11.2%	per premise	100	$1,282	per unit	100	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Single_CZ 2	2	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Single_CZ 2	2	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465
High Efficiency Furnace 90 AFUE	Residential	Early Retirement	Single_CZ 3	3	Space Heating	18.0	11.1%	per premise	101	$1,282	per unit	101	$1,282
High Efficiency Furnace 90 AFUE	Residential	New	Single_CZ 3	3	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465
High Efficiency Furnace 90 AFUE	Residential	Turnover	Single_CZ 3	3	Space Heating	18.0	9.1%	per premise	78	$465	per unit	78	$465
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	18.0	15.5%	per premise	120	$1,874	per unit	120	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Mfg_CZ1	1	Space Heating	18.0	13.7%	per premise	101	$1,024	per unit	101	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Mfg_CZ1	1	Space Heating	18.0	13.7%	per premise	101	$1,024	per unit	101	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	18.0	15.6%	per premise	119	$1,874	per unit	119	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Mfg_CZ2	2	Space Heating	18.0	13.8%	per premise	100	$1,024	per unit	100	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Mfg_CZ2	2	Space Heating	18.0	13.8%	per premise	100	$1,024	per unit	100	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	18.0	15.5%	per premise	120	$1,874	per unit	120	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Mfg_CZ3	3	Space Heating	18.0	13.7%	per premise	101	$1,024	per unit	101	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Mfg_CZ3	3	Space Heating	18.0	13.7%	per premise	101	$1,024	per unit	101	$1,024

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Multi_CZ1	1	Space Heating	18.0	15.3%	per premise	123	$1,874	per unit	123	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Multi_CZ1	1	Space Heating	18.0	13.5%	per premise	103	$1,024	per unit	103	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Multi_CZ1	1	Space Heating	18.0	13.5%	per premise	103	$1,024	per unit	103	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Multi_CZ2	2	Space Heating	18.0	15.4%	per premise	123	$1,874	per unit	123	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Multi_CZ2	2	Space Heating	18.0	13.6%	per premise	103	$1,024	per unit	103	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Multi_CZ2	2	Space Heating	18.0	13.6%	per premise	103	$1,024	per unit	103	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Multi_CZ3	3	Space Heating	18.0	15.3%	per premise	124	$1,874	per unit	124	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Multi_CZ3	3	Space Heating	18.0	13.5%	per premise	104	$1,024	per unit	104	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Multi_CZ3	3	Space Heating	18.0	13.5%	per premise	104	$1,024	per unit	104	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Single_CZ 1	1	Space Heating	18.0	14.7%	per premise	133	$1,874	per unit	133	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Single_CZ 1	1	Space Heating	18.0	12.9%	per premise	111	$1,024	per unit	111	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Single_CZ 1	1	Space Heating	18.0	12.9%	per premise	111	$1,024	per unit	111	$1,024
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Single_CZ 2	2	Space Heating	18.0	14.8%	per premise	132	$1,874	per unit	132	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Single_CZ 2	2	Space Heating	18.0	13.0%	per premise	110	$1,024	per unit	110	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Single_CZ 2	2	Space Heating	18.0	13.0%	per premise	110	$1,024	per unit	110	$1,024

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Furnace 95 AFUE	Residential	Early Retirement	Single_CZ 3	3	Space Heating	18.0	14.7%	per premise	134	$1,874	per unit	134	$1,874
High Efficiency Furnace 95 AFUE	Residential	New	Single_CZ 3	3	Space Heating	18.0	12.9%	per premise	111	$1,024	per unit	111	$1,024
High Efficiency Furnace 95 AFUE	Residential	Turnover	Single_CZ 3	3	Space Heating	18.0	12.9%	per premise	111	$1,024	per unit	111	$1,024
Natural Gas Heat Pump	Residential	Early Retirement	Mfg_CZ1	1	Space Heating	21.0	36.7%	per premise	220	$8,026	per unit	220	$8,026
Natural Gas Heat Pump	Residential	New	Mfg_CZ1	1	Space Heating	21.0	33.3%	per premise	190	$6,787	per unit	190	$6,787
Natural Gas Heat Pump	Residential	Turnover	Mfg_CZ1	1	Space Heating	21.0	33.3%	per premise	190	$6,787	per unit	190	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Mfg_CZ2	2	Space Heating	21.0	36.7%	per premise	213	$8,026	per unit	213	$8,026
Natural Gas Heat Pump	Residential	New	Mfg_CZ2	2	Space Heating	21.0	33.3%	per premise	184	$6,787	per unit	184	$6,787
Natural Gas Heat Pump	Residential	Turnover	Mfg_CZ2	2	Space Heating	21.0	33.3%	per premise	184	$6,787	per unit	184	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Mfg_CZ3	3	Space Heating	21.0	36.7%	per premise	221	$8,026	per unit	221	$8,026
Natural Gas Heat Pump	Residential	New	Mfg_CZ3	3	Space Heating	21.0	33.3%	per premise	191	$6,787	per unit	191	$6,787
Natural Gas Heat Pump	Residential	Turnover	Mfg_CZ3	3	Space Heating	21.0	33.3%	per premise	191	$6,787	per unit	191	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Multi_CZ1	1	Space Heating	21.0	36.7%	per premise	195	$8,026	per unit	195	$8,026
Natural Gas Heat Pump	Residential	New	Multi_CZ1	1	Space Heating	21.0	33.3%	per premise	169	$6,787	per unit	169	$6,787
Natural Gas Heat Pump	Residential	Turnover	Multi_CZ1	1	Space Heating	21.0	33.3%	per premise	169	$6,787	per unit	169	$6,787

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Natural Gas Heat Pump	Residential	Early Retirement	Multi_CZ2	2	Space Heating	21.0	36.7%	per premise	190	$8,026	per unit	190	$8,026
Natural Gas Heat Pump	Residential	New	Multi_CZ2	2	Space Heating	21.0	33.3%	per premise	164	$6,787	per unit	164	$6,787
Natural Gas Heat Pump	Residential	Turnover	Multi_CZ2	2	Space Heating	21.0	33.3%	per premise	164	$6,787	per unit	164	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Multi_CZ3	3	Space Heating	21.0	36.7%	per premise	196	$8,026	per unit	196	$8,026
Natural Gas Heat Pump	Residential	New	Multi_CZ3	3	Space Heating	21.0	33.3%	per premise	169	$6,787	per unit	169	$6,787
Natural Gas Heat Pump	Residential	Turnover	Multi_CZ3	3	Space Heating	21.0	33.3%	per premise	169	$6,787	per unit	169	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Single_CZ 1	1	Space Heating	21.0	36.7%	per premise	293	$8,026	per unit	293	$8,026
Natural Gas Heat Pump	Residential	New	Single_CZ 1	1	Space Heating	21.0	33.3%	per premise	253	$6,787	per unit	253	$6,787
Natural Gas Heat Pump	Residential	Turnover	Single_CZ 1	1	Space Heating	21.0	33.3%	per premise	253	$6,787	per unit	253	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Single_CZ 2	2	Space Heating	21.0	36.7%	per premise	284	$8,026	per unit	284	$8,026
Natural Gas Heat Pump	Residential	New	Single_CZ 2	2	Space Heating	21.0	33.3%	per premise	246	$6,787	per unit	246	$6,787
Natural Gas Heat Pump	Residential	Turnover	Single_CZ 2	2	Space Heating	21.0	33.3%	per premise	246	$6,787	per unit	246	$6,787
Natural Gas Heat Pump	Residential	Early Retirement	Single_CZ 3	3	Space Heating	21.0	36.7%	per premise	294	$8,026	per unit	294	$8,026
Natural Gas Heat Pump	Residential	New	Single_CZ 3	3	Space Heating	21.0	33.3%	per premise	254	$6,787	per unit	254	$6,787
Natural Gas Heat Pump	Residential	Turnover	Single_CZ 3	3	Space Heating	21.0	33.3%	per premise	254	$6,787	per unit	254	$6,787

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Programmable Thermostat	Residential	Existing	Mfg_CZ1	1	Space Heating	11.0	2.4%	per premise	10	$52	per unit	10	$52
Programmable Thermostat	Residential	New	Mfg_CZ1	1	Space Heating	11.0	1.9%	per premise	8	$22	per unit	8	$22
Programmable Thermostat	Residential	Existing	Mfg_CZ2	2	Space Heating	11.0	2.3%	per premise	10	$52	per unit	10	$52
Programmable Thermostat	Residential	New	Mfg_CZ2	2	Space Heating	11.0	1.9%	per premise	7	$22	per unit	7	$22
Programmable Thermostat	Residential	Existing	Mfg_CZ3	3	Space Heating	11.0	2.7%	per premise	12	$52	per unit	12	$52
Programmable Thermostat	Residential	New	Mfg_CZ3	3	Space Heating	11.0	2.2%	per premise	9	$22	per unit	9	$22
Programmable Thermostat	Residential	Existing	Multi_CZ1	1	Space Heating	11.0	1.9%	per premise	10	$52	per unit	10	$52
Programmable Thermostat	Residential	New	Multi_CZ1	1	Space Heating	11.0	1.5%	per premise	8	$22	per unit	8	$22
Programmable Thermostat	Residential	Existing	Multi_CZ2	2	Space Heating	11.0	1.8%	per premise	10	$52	per unit	10	$52
Programmable Thermostat	Residential	New	Multi_CZ2	2	Space Heating	11.0	1.5%	per premise	7	$22	per unit	7	$22
Programmable Thermostat	Residential	Existing	Multi_CZ3	3	Space Heating	11.0	2.2%	per premise	12	$52	per unit	12	$52
Programmable Thermostat	Residential	New	Multi_CZ3	3	Space Heating	11.0	1.7%	per premise	9	$22	per unit	9	$22
Programmable Thermostat	Residential	Existing	Single_CZ 1	1	Space Heating	11.0	7.1%	per premise	40	$52	per unit	40	$52
Programmable Thermostat	Residential	New	Single_CZ 1	1	Space Heating	11.0	5.6%	per premise	30	$22	per unit	30	$22
Programmable Thermostat	Residential	Existing	Single_CZ 2	2	Space Heating	11.0	6.8%	per premise	38	$52	per unit	38	$52

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Programmable Thermostat	Residential	New	Single_CZ 2	2	Space Heating	11.0	5.4%	per premise	29	$22	per unit	29	$22
Programmable Thermostat	Residential	Existing	Single_CZ 3	3	Space Heating	11.0	8.0%	per premise	45	$52	per unit	45	$52
Programmable Thermostat	Residential	New	Single_CZ 3	3	Space Heating	11.0	6.4%	per premise	34	$22	per unit	34	$22
Residential Air Sealing	Residential	Existing	Mfg_CZ1	1	Space Heating	13.0	17.7%	per premise	75	$750	per building	75	$750
Residential Air Sealing	Residential	New	Mfg_CZ1	1	Space Heating	13.0	0.9%	per premise	4	$750	per building	4	$750
Residential Air Sealing	Residential	Existing	Mfg_CZ2	2	Space Heating	13.0	16.9%	per premise	71	$750	per building	71	$750
Residential Air Sealing	Residential	New	Mfg_CZ2	2	Space Heating	13.0	0.9%	per premise	3	$750	per building	3	$750
Residential Air Sealing	Residential	Existing	Mfg_CZ3	3	Space Heating	13.0	19.9%	per premise	84	$750	per building	84	$750
Residential Air Sealing	Residential	New	Mfg_CZ3	3	Space Heating	13.0	1.0%	per premise	4	$750	per building	4	$750
Residential Air Sealing	Residential	Existing	Multi_CZ1	1	Space Heating	13.0	13.9%	per premise	75	$750	per building	75	$750
Residential Air Sealing	Residential	New	Multi_CZ1	1	Space Heating	13.0	0.7%	per premise	4	$750	per building	4	$750
Residential Air Sealing	Residential	Existing	Multi_CZ2	2	Space Heating	13.0	13.3%	per premise	71	$750	per building	71	$750
Residential Air Sealing	Residential	New	Multi_CZ2	2	Space Heating	13.0	0.7%	per premise	3	$750	per building	3	$750
Residential Air Sealing	Residential	Existing	Multi_CZ3	3	Space Heating	13.0	15.6%	per premise	84	$750	per building	84	$750
Residential Air Sealing	Residential	New	Multi_CZ3	3	Space Heating	13.0	0.8%	per premise	4	$750	per building	4	$750

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Air Sealing	Residential	Existing	Single_CZ 1	1	Space Heating	13.0	13.1%	per premise	75	$750	per building	75	$750
Residential Air Sealing	Residential	New	Single_CZ 1	1	Space Heating	13.0	0.7%	per premise	4	$750	per building	4	$750
Residential Air Sealing	Residential	Existing	Single_CZ 2	2	Space Heating	13.0	12.5%	per premise	71	$750	per building	71	$750
Residential Air Sealing	Residential	New	Single_CZ 2	2	Space Heating	13.0	0.6%	per premise	3	$750	per building	3	$750
Residential Air Sealing	Residential	Existing	Single_CZ 3	3	Space Heating	13.0	14.8%	per premise	84	$750	per building	84	$750
Residential Air Sealing	Residential	New	Single_CZ 3	3	Space Heating	13.0	0.7%	per premise	4	$750	per building	4	$750
Residential Built Green Home	Residential	New	Single_CZ 1	1	Space Heating	7.5	27.4%	per premise	209	$1,142	per building	209	$1,142
Residential Built Green Home	Residential	New	Single_CZ 2	2	Space Heating	7.5	27.4%	per premise	203	$1,142	per building	203	$1,142
Residential Built Green Home	Residential	New	Single_CZ 3	3	Space Heating	7.5	27.4%	per premise	210	$1,142	per building	210	$1,142
Residential Slab Insulation	Residential	Existing	Mfg_CZ1	1	Space Heating	30.0	5.7%	per premise	24	$369	per home	24	$369
Residential Slab Insulation	Residential	New	Mfg_CZ1	1	Space Heating	30.0	6.1%	per premise	24	$260	per home	24	$260
Residential Slab Insulation	Residential	Existing	Mfg_CZ2	2	Space Heating	30.0	5.5%	per premise	23	$369	per home	23	$369
Residential Slab Insulation	Residential	New	Mfg_CZ2	2	Space Heating	30.0	5.8%	per premise	23	$260	per home	23	$260
Residential Slab Insulation	Residential	Existing	Mfg_CZ3	3	Space Heating	30.0	6.5%	per premise	27	$369	per home	27	$369
Residential Slab Insulation	Residential	New	Mfg_CZ3	3	Space Heating	30.0	6.9%	per premise	27	$260	per home	27	$260

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Slab Insulation	Residential	Existing	Multi_CZ1	1	Space Heating	30.0	4.5%	per premise	24	$335	per home	24	$335
Residential Slab Insulation	Residential	New	Multi_CZ1	1	Space Heating	30.0	4.8%	per premise	24	$292	per home	24	$292
Residential Slab Insulation	Residential	Existing	Multi_CZ2	2	Space Heating	30.0	4.3%	per premise	23	$335	per home	23	$335
Residential Slab Insulation	Residential	New	Multi_CZ2	2	Space Heating	30.0	4.6%	per premise	23	$292	per home	23	$292
Residential Slab Insulation	Residential	Existing	Multi_CZ3	3	Space Heating	30.0	5.1%	per premise	27	$335	per home	27	$335
Residential Slab Insulation	Residential	New	Multi_CZ3	3	Space Heating	30.0	5.4%	per premise	27	$292	per home	27	$292
Residential Slab Insulation	Residential	Existing	Single_CZ 1	1	Space Heating	30.0	3.6%	per premise	21	$396	per home	21	$396
Residential Slab Insulation	Residential	New	Single_CZ 1	1	Space Heating	30.0	3.8%	per premise	21	$322	per home	21	$322
Residential Slab Insulation	Residential	Existing	Single_CZ 2	2	Space Heating	30.0	3.5%	per premise	20	$396	per home	20	$396
Residential Slab Insulation	Residential	New	Single_CZ 2	2	Space Heating	30.0	3.7%	per premise	20	$322	per home	20	$322
Residential Slab Insulation	Residential	Existing	Single_CZ 3	3	Space Heating	30.0	4.1%	per premise	23	$396	per home	23	$396
Residential Slab Insulation	Residential	New	Single_CZ 3	3	Space Heating	30.0	4.3%	per premise	23	$322	per home	23	$322
Residential Wall Insulation - R11	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	27.0%	per premise	114	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Mfg_CZ1	1	Space Heating	27.5	27.3%	per premise	108	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	25.8%	per premise	109	$476	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Wall Insulation - R11	Residential	New	Mfg_CZ2	2	Space Heating	27.5	26.1%	per premise	103	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	30.4%	per premise	128	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Mfg_CZ3	3	Space Heating	27.5	30.8%	per premise	122	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	21.2%	per premise	114	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Multi_CZ1	1	Space Heating	27.5	21.4%	per premise	108	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	20.3%	per premise	109	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Multi_CZ2	2	Space Heating	27.5	20.5%	per premise	103	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	23.9%	per premise	128	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Multi_CZ3	3	Space Heating	27.5	24.2%	per premise	122	$476	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	33.3%	per premise	190	$793	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Single_CZ 1	1	Space Heating	27.5	33.7%	per premise	180	$793	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	31.9%	per premise	181	$793	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Single_CZ 2	2	Space Heating	27.5	32.3%	per premise	172	$793	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	37.6%	per premise	214	$793	per sf installed	0	$1
Residential Wall Insulation - R11	Residential	New	Single_CZ 3	3	Space Heating	27.5	38.0%	per premise	203	$793	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Wall Insulation - R13	Residential	Existing	Mfg_CZ1	1	Space Heating	27.5	29.4%	per premise	124	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Mfg_CZ1	1	Space Heating	27.5	4.0%	per premise	16	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Mfg_CZ2	2	Space Heating	27.5	28.1%	per premise	118	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Mfg_CZ2	2	Space Heating	27.5	3.8%	per premise	15	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Mfg_CZ3	3	Space Heating	27.5	33.1%	per premise	140	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Mfg_CZ3	3	Space Heating	27.5	4.5%	per premise	18	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Multi_CZ1	1	Space Heating	27.5	23.0%	per premise	124	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Multi_CZ1	1	Space Heating	27.5	3.1%	per premise	16	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Multi_CZ2	2	Space Heating	27.5	22.0%	per premise	118	$793	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Multi_CZ2	2	Space Heating	27.5	3.0%	per premise	15	$793	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Multi_CZ3	3	Space Heating	27.5	26.0%	per premise	140	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Multi_CZ3	3	Space Heating	27.5	3.5%	per premise	18	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Single_CZ 1	1	Space Heating	27.5	36.3%	per premise	206	$793	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Single_CZ 1	1	Space Heating	27.5	4.9%	per premise	26	$793	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Single_CZ 2	2	Space Heating	27.5	34.7%	per premise	197	$476	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Wall Insulation - R13	Residential	New	Single_CZ 2	2	Space Heating	27.5	4.7%	per premise	25	$476	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	Existing	Single_CZ 3	3	Space Heating	27.5	40.9%	per premise	233	$793	per sf installed	0	$1
Residential Wall Insulation - R13	Residential	New	Single_CZ 3	3	Space Heating	27.5	5.5%	per premise	29	$793	per sf installed	0	$1
Residential Window Upgrade	Residential	Existing	Mfg_CZ1	1	Space Heating	24.3	1.4%	per premise	6	$4,500	per home	6	$4,500
Residential Window Upgrade	Residential	New	Mfg_CZ1	1	Space Heating	24.3	0.8%	per premise	3	$453	per installed sf	0	$3
Residential Window Upgrade	Residential	Existing	Mfg_CZ2	2	Space Heating	24.3	1.5%	per premise	7	$4,500	per home	7	$4,500
Residential Window Upgrade	Residential	New	Mfg_CZ2	2	Space Heating	24.3	0.7%	per premise	3	$453	per installed sf	0	$3
Residential Window Upgrade	Residential	Existing	Mfg_CZ3	3	Space Heating	24.3	1.7%	per premise	7	$4,500	per home	7	$4,500
Residential Window Upgrade	Residential	New	Mfg_CZ3	3	Space Heating	24.3	0.8%	per premise	3	$453	per installed sf	0	$3
Residential Window Upgrade	Residential	Existing	Multi_CZ1	1	Space Heating	24.3	0.5%	per premise	3	$4,500	per home	3	$4,500
Residential Window Upgrade	Residential	New	Multi_CZ1	1	Space Heating	24.3	0.3%	per premise	2	$453	per installed sf	0	$6
Residential Window Upgrade	Residential	Existing	Multi_CZ2	2	Space Heating	24.3	0.6%	per premise	3	$4,500	per home	3	$4,500
Residential Window Upgrade	Residential	New	Multi_CZ2	2	Space Heating	24.3	0.3%	per premise	1	$453	per installed sf	0	$6
Residential Window Upgrade	Residential	Existing	Multi_CZ3	3	Space Heating	24.3	0.6%	per premise	3	$4,500	per home	3	$4,500

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Window Upgrade	Residential	New	Multi_CZ3	3	Space Heating	24.3	0.3%	per premise	2	$453	per installed sf	0	$6
Residential Window Upgrade	Residential	Existing	Single_CZ 1	1	Space Heating	24.3	1.5%	per premise	9	$4,500	per home	9	$4,500
Residential Window Upgrade	Residential	New	Single_CZ 1	1	Space Heating	24.3	0.8%	per premise	5	$453	per installed sf	0	$2
Residential Window Upgrade	Residential	Existing	Single_CZ 2	2	Space Heating	24.3	1.7%	per premise	10	$4,500	per home	10	$4,500
Residential Window Upgrade	Residential	New	Single_CZ 2	2	Space Heating	24.3	0.8%	per premise	4	$453	per installed sf	0	$2
Residential Window Upgrade	Residential	Existing	Single_CZ 3	3	Space Heating	24.3	1.8%	per premise	10	$4,500	per home	10	$4,500
Residential Window Upgrade	Residential	New	Single_CZ 3	3	Space Heating	24.3	0.9%	per premise	5	$453	per installed sf	0	$2
Window Glazing	Residential	Existing	Mfg_CZ1	1	Space Heating	10.0	0.6%	per premise	3	$800	per installed sf	(2)	$5
Window Glazing	Residential	Existing	Mfg_CZ2	2	Space Heating	10.0	0.8%	per premise	3	$800	per installed sf	(2)	$5
Window Glazing	Residential	Existing	Mfg_CZ3	3	Space Heating	10.0	0.8%	per premise	3	$800	per installed sf	(2)	$5
Window Glazing	Residential	Existing	Multi_CZ1	1	Space Heating	10.0	0.2%	per premise	1	$800	per installed sf	(5)	$10
Window Glazing	Residential	Existing	Multi_CZ2	2	Space Heating	10.0	0.3%	per premise	2	$800	per installed sf	(5)	$10
Window Glazing	Residential	Existing	Multi_CZ3	3	Space Heating	10.0	0.3%	per premise	2	$800	per installed sf	(5)	$10

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Window Glazing	Residential	Existing	Single_CZ 1	1	Space Heating	10.0	0.6%	per premise	4	$800	per installed sf	(1)	$3
Window Glazing	Residential	Existing	Single_CZ 2	2	Space Heating	10.0	0.8%	per premise	5	$800	per installed sf	(1)	$3
Window Glazing	Residential	Existing	Single_CZ 3	3	Space Heating	10.0	0.9%	per premise	5	$800	per installed sf	(1)	$3
Combination Boiler and Hot Water Heater	Residential	New	Multi_CZ1	1	Water Heating	20.0	11.4%	per premise	5,036	$23,452	per unit	5,036	$23,452
Combination Boiler and Hot Water Heater	Residential	Turnover	Multi_CZ2	2	Water Heating	20.0	11.4%	per premise	5,036	$23,452	per unit	5,036	$23,452
Combination Boiler and Hot Water Heater	Residential	Early Retirement	Multi_CZ3	3	Water Heating	20.0	11.4%	per premise	5,036	$23,452	per unit	5,036	$23,452
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Mfg_CZ1	1	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Mfg_CZ1	1	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Mfg_CZ2	2	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Mfg_CZ2	2	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Mfg_CZ3	3	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Mfg_CZ3	3	Water Heating	18.0	17.0%	per premise	34	$733	per unit	34	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Multi_CZ1	1	Water Heating	18.0	28.0%	per premise	47	$1,364	per unit	47	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Multi_CZ1	1	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Multi_CZ1	1	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Multi_CZ2	2	Water Heating	18.0	28.0%	per premise	47	$1,364	per unit	47	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Multi_CZ2	2	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Multi_CZ2	2	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Multi_CZ3	3	Water Heating	18.0	28.0%	per premise	47	$1,364	per unit	47	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Multi_CZ3	3	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Multi_CZ3	3	Water Heating	18.0	17.0%	per premise	26	$733	per unit	26	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Single_CZ 1	1	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Single_CZ 1	1	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Single_CZ 1	1	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Single_CZ 2	2	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Single_CZ 2	2	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Single_CZ 2	2	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Early Retirement	Single_CZ 3	3	Water Heating	18.0	28.0%	per premise	62	$1,364	per unit	62	$1,364
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	New	Single_CZ 3	3	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.82 EF)	Residential	Turnover	Single_CZ 3	3	Water Heating	18.0	17.0%	per premise	33	$733	per unit	33	$733
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Mfg_CZ1	1	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Mfg_CZ1	1	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Mfg_CZ2	2	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Mfg_CZ2	2	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Mfg_CZ3	3	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Mfg_CZ3	3	Water Heating	18.0	28.0%	per premise	54	$1,171	per unit	54	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Multi_CZ1	1	Water Heating	18.0	37.0%	per premise	63	$1,739	per unit	63	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Multi_CZ1	1	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Multi_CZ1	1	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Multi_CZ2	2	Water Heating	18.0	37.0%	per premise	63	$1,739	per unit	63	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Multi_CZ2	2	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Multi_CZ2	2	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Multi_CZ3	3	Water Heating	18.0	37.0%	per premise	63	$1,739	per unit	63	$1,739

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Multi_CZ3	3	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Multi_CZ3	3	Water Heating	18.0	28.0%	per premise	41	$1,171	per unit	41	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Single_CZ 1	1	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Single_CZ 1	1	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Single_CZ 1	1	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Single_CZ 2	2	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Single_CZ 2	2	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Single_CZ 2	2	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Early Retirement	Single_CZ 3	3	Water Heating	18.0	37.0%	per premise	82	$1,739	per unit	82	$1,739
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	New	Single_CZ 3	3	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Condensing High Efficiency Natural Gas Tankless Water Heater (0.91 EF)	Residential	Turnover	Single_CZ 3	3	Water Heating	18.0	28.0%	per premise	53	$1,171	per unit	53	$1,171
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Mfg_CZ1	1	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Mfg_CZ1	1	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Mfg_CZ2	2	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Mfg_CZ2	2	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Mfg_CZ3	3	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Mfg_CZ3	3	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Multi_CZ1	1	Water Heating	16.0	15.6%	per premise	26	$540	per unit	26	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Multi_CZ1	1	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Multi_CZ1	1	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Multi_CZ2	2	Water Heating	16.0	15.6%	per premise	26	$540	per unit	26	$540

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Multi_CZ2	2	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Multi_CZ2	2	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Multi_CZ3	3	Water Heating	16.0	15.6%	per premise	26	$540	per unit	26	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Multi_CZ3	3	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Multi_CZ3	3	Water Heating	16.0	3.1%	per premise	5	$10	per unit	5	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Single_CZ 1	1	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Single_CZ 1	1	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Single_CZ 1	1	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Single_CZ 2	2	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Single_CZ 2	2	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Single_CZ 2	2	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Early Retirement	Single_CZ 3	3	Water Heating	16.0	15.6%	per premise	35	$540	per unit	35	$540

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	New	Single_CZ 3	3	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.64)	Residential	Turnover	Single_CZ 3	3	Water Heating	16.0	3.1%	per premise	6	$10	per unit	6	$10
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Mfg_CZ1	1	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Mfg_CZ1	1	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Mfg_CZ2	2	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Mfg_CZ2	2	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Mfg_CZ3	3	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Mfg_CZ3	3	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Multi_CZ1	1	Water Heating	16.0	19.4%	per premise	33	$768	per unit	33	$768

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Multi_CZ1	1	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Multi_CZ1	1	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Multi_CZ2	2	Water Heating	16.0	19.4%	per premise	33	$768	per unit	33	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Multi_CZ2	2	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Multi_CZ2	2	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Multi_CZ3	3	Water Heating	16.0	19.4%	per premise	33	$768	per unit	33	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Multi_CZ3	3	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Multi_CZ3	3	Water Heating	16.0	7.5%	per premise	11	$139	per unit	11	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Single_CZ 1	1	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Single_CZ 1	1	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Single_CZ 1	1	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Single_CZ 2	2	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Single_CZ 2	2	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Single_CZ 2	2	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Early Retirement	Single_CZ 3	3	Water Heating	16.0	19.4%	per premise	43	$768	per unit	43	$768
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	New	Single_CZ 3	3	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Conventional High Efficiency Natural Gas Water Heater (EF=.67)	Residential	Turnover	Single_CZ 3	3	Water Heating	16.0	7.5%	per premise	14	$139	per unit	14	$139
Drain Water Heat Recovery	Residential	Existing	Mfg_CZ1	1	Water Heating	30.0	16.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Mfg_CZ1	1	Water Heating	30.0	14.0%	per premise	23	$645	per unit	23	$645
Drain Water Heat Recovery	Residential	Existing	Mfg_CZ2	2	Water Heating	30.0	16.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Mfg_CZ2	2	Water Heating	30.0	14.0%	per premise	23	$645	per unit	23	$645
Drain Water Heat Recovery	Residential	Existing	Mfg_CZ3	3	Water Heating	30.0	16.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Mfg_CZ3	3	Water Heating	30.0	14.0%	per premise	23	$645	per unit	23	$645
Drain Water Heat Recovery	Residential	Existing	Multi_CZ1	1	Water Heating	30.0	8.3%	per premise	15	$645	per unit	15	$645
Drain Water Heat Recovery	Residential	New	Multi_CZ1	1	Water Heating	30.0	7.0%	per premise	11	$645	per unit	11	$645
Drain Water Heat Recovery	Residential	Existing	Multi_CZ2	2	Water Heating	30.0	8.3%	per premise	15	$645	per unit	15	$645

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Drain Water Heat Recovery	Residential	New	Multi_CZ2	2	Water Heating	30.0	7.0%	per premise	11	$645	per unit	11	$645
Drain Water Heat Recovery	Residential	Existing	Multi_CZ3	3	Water Heating	30.0	8.3%	per premise	15	$645	per unit	15	$645
Drain Water Heat Recovery	Residential	New	Multi_CZ3	3	Water Heating	30.0	7.0%	per premise	11	$645	per unit	11	$645
Drain Water Heat Recovery	Residential	Existing	Single_CZ 1	1	Water Heating	30.0	15.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Single_CZ 1	1	Water Heating	30.0	13.1%	per premise	23	$645	per unit	23	$645
Drain Water Heat Recovery	Residential	Existing	Single_CZ 2	2	Water Heating	30.0	15.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Single_CZ 2	2	Water Heating	30.0	13.1%	per premise	23	$645	per unit	23	$645
Drain Water Heat Recovery	Residential	Existing	Single_CZ 3	3	Water Heating	30.0	15.5%	per premise	30	$645	per unit	30	$645
Drain Water Heat Recovery	Residential	New	Single_CZ 3	3	Water Heating	30.0	13.1%	per premise	23	$645	per unit	23	$645
Energy Star Dishwasher	Residential	Existing	Mfg_CZ1	1	Water Heating	11.0	4.1%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Mfg_CZ1	1	Water Heating	11.0	3.4%	per premise	5	$100	per unit	5	$100
Energy Star Dishwasher	Residential	Existing	Mfg_CZ2	2	Water Heating	11.0	4.1%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Mfg_CZ2	2	Water Heating	11.0	3.4%	per premise	5	$100	per unit	5	$100
Energy Star Dishwasher	Residential	Existing	Mfg_CZ3	3	Water Heating	11.0	4.1%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Mfg_CZ3	3	Water Heating	11.0	3.4%	per premise	5	$100	per unit	5	$100

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Energy Star Dishwasher	Residential	Existing	Multi_CZ1	1	Water Heating	11.0	3.1%	per premise	6	$505	per unit	6	$505
Energy Star Dishwasher	Residential	New	Multi_CZ1	1	Water Heating	11.0	2.6%	per premise	4	$100	per unit	4	$100
Energy Star Dishwasher	Residential	Existing	Multi_CZ2	2	Water Heating	11.0	3.1%	per premise	6	$505	per unit	6	$505
Energy Star Dishwasher	Residential	New	Multi_CZ2	2	Water Heating	11.0	2.6%	per premise	4	$100	per unit	4	$100
Energy Star Dishwasher	Residential	Existing	Multi_CZ3	3	Water Heating	11.0	3.1%	per premise	6	$505	per unit	6	$505
Energy Star Dishwasher	Residential	New	Multi_CZ3	3	Water Heating	11.0	2.6%	per premise	4	$100	per unit	4	$100
Energy Star Dishwasher	Residential	Existing	Single_CZ 1	1	Water Heating	11.0	4.3%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Single_CZ 1	1	Water Heating	11.0	3.6%	per premise	6	$100	per unit	6	$100
Energy Star Dishwasher	Residential	Existing	Single_CZ 2	2	Water Heating	11.0	4.3%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Single_CZ 2	2	Water Heating	11.0	3.6%	per premise	6	$100	per unit	6	$100
Energy Star Dishwasher	Residential	Existing	Single_CZ 3	3	Water Heating	11.0	4.3%	per premise	8	$505	per unit	8	$505
Energy Star Dishwasher	Residential	New	Single_CZ 3	3	Water Heating	11.0	3.6%	per premise	6	$100	per unit	6	$100
Faucet Aerators	Residential	Existing	Mfg_CZ1	1	Water Heating	10.0	2.7%	per premise	5	$10	per unit	2	$5
Faucet Aerators	Residential	New	Mfg_CZ1	1	Water Heating	10.0	1.2%	per premise	2	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Mfg_CZ2	2	Water Heating	10.0	2.7%	per premise	5	$10	per unit	2	$5

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Faucet Aerators	Residential	New	Mfg_CZ2	2	Water Heating	10.0	1.2%	per premise	2	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Mfg_CZ3	3	Water Heating	10.0	2.7%	per premise	5	$10	per unit	2	$5
Faucet Aerators	Residential	New	Mfg_CZ3	3	Water Heating	10.0	1.2%	per premise	2	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Multi_CZ1	1	Water Heating	10.0	2.0%	per premise	4	$10	per unit	2	$5
Faucet Aerators	Residential	New	Multi_CZ1	1	Water Heating	10.0	0.9%	per premise	1	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Multi_CZ2	2	Water Heating	10.0	2.0%	per premise	4	$10	per unit	2	$5
Faucet Aerators	Residential	New	Multi_CZ2	2	Water Heating	10.0	0.9%	per premise	1	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Multi_CZ3	3	Water Heating	10.0	2.0%	per premise	4	$10	per unit	2	$5
Faucet Aerators	Residential	New	Multi_CZ3	3	Water Heating	10.0	0.9%	per premise	1	$10	per unit	1	$5
Faucet Aerators	Residential	Existing	Single_CZ 1	1	Water Heating	10.0	2.5%	per premise	5	$17	per unit	1	$5
Faucet Aerators	Residential	New	Single_CZ 1	1	Water Heating	10.0	1.1%	per premise	2	$17	per unit	1	$5
Faucet Aerators	Residential	Existing	Single_CZ 2	2	Water Heating	10.0	2.5%	per premise	5	$17	per unit	1	$5
Faucet Aerators	Residential	New	Single_CZ 2	2	Water Heating	10.0	1.1%	per premise	2	$17	per unit	1	$5
Faucet Aerators	Residential	Existing	Single_CZ 3	3	Water Heating	10.0	2.5%	per premise	5	$17	per unit	1	$5
Faucet Aerators	Residential	New	Single_CZ 3	3	Water Heating	10.0	1.1%	per premise	2	$17	per unit	1	$5

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Heat Pump Water Heater	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	16.0	65.2%	per premise	145	$5,147	per unit	145	$5,147
Heat Pump Water Heater	Residential	New	Mfg_CZ1	1	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Mfg_CZ1	1	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	16.0	65.2%	per premise	145	$5,147	per unit	145	$5,147
Heat Pump Water Heater	Residential	New	Mfg_CZ2	2	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Mfg_CZ2	2	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	16.0	65.2%	per premise	145	$5,147	per unit	145	$5,147
Heat Pump Water Heater	Residential	New	Mfg_CZ3	3	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Mfg_CZ3	3	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Multi_CZ1	1	Water Heating	16.0	65.2%	per premise	110	$5,147	per unit	110	$5,147
Heat Pump Water Heater	Residential	New	Multi_CZ1	1	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486
Heat Pump Water Heater	Residential	Turnover	Multi_CZ1	1	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Multi_CZ2	2	Water Heating	16.0	65.2%	per premise	110	$5,147	per unit	110	$5,147
Heat Pump Water Heater	Residential	New	Multi_CZ2	2	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486
Heat Pump Water Heater	Residential	Turnover	Multi_CZ2	2	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Heat Pump Water Heater	Residential	Early Retirement	Multi_CZ3	3	Water Heating	16.0	65.2%	per premise	110	$5,147	per unit	110	$5,147
Heat Pump Water Heater	Residential	New	Multi_CZ3	3	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486
Heat Pump Water Heater	Residential	Turnover	Multi_CZ3	3	Water Heating	16.0	60.0%	per premise	89	$4,486	per unit	89	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Single_CZ 1	1	Water Heating	16.0	65.2%	per premise	144	$5,147	per unit	144	$5,147
Heat Pump Water Heater	Residential	New	Single_CZ 1	1	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Single_CZ 1	1	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Single_CZ 2	2	Water Heating	16.0	65.2%	per premise	144	$5,147	per unit	144	$5,147
Heat Pump Water Heater	Residential	New	Single_CZ 2	2	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Single_CZ 2	2	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Early Retirement	Single_CZ 3	3	Water Heating	16.0	65.2%	per premise	144	$5,147	per unit	144	$5,147
Heat Pump Water Heater	Residential	New	Single_CZ 3	3	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
Heat Pump Water Heater	Residential	Turnover	Single_CZ 3	3	Water Heating	16.0	60.0%	per premise	116	$4,486	per unit	116	$4,486
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	15.0	40.7%	per premise	89	$1,813	per unit	89	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Mfg_CZ1	1	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater	Residential	Turnover	Mfg_CZ1	1	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
(0.90 EF), 40 gallon													
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	15.0	40.7%	per premise	89	$1,813	per unit	89	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Mfg_CZ2	2	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Mfg_CZ2	2	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	15.0	40.7%	per premise	89	$1,813	per unit	89	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Mfg_CZ3	3	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Mfg_CZ3	3	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Multi_CZ1	1	Water Heating	15.0	40.7%	per premise	68	$1,813	per unit	68	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Multi_CZ1	1	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Multi_CZ1	1	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Multi_CZ2	2	Water Heating	15.0	40.7%	per premise	68	$1,813	per unit	68	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Multi_CZ2	2	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Multi_CZ2	2	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Multi_CZ3	3	Water Heating	15.0	40.7%	per premise	68	$1,813	per unit	68	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Multi_CZ3	3	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Multi_CZ3	3	Water Heating	15.0	31.9%	per premise	53	$1,185	per unit	53	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Single_CZ 1	1	Water Heating	15.0	40.7%	per premise	88	$1,813	per unit	88	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Single_CZ 1	1	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Single_CZ 1	1	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Single_CZ 2	2	Water Heating	15.0	40.7%	per premise	88	$1,813	per unit	88	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Single_CZ 2	2	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Single_CZ 2	2	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Early Retirement	Single_CZ 3	3	Water Heating	15.0	40.7%	per premise	88	$1,813	per unit	88	$1,813
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	New	Single_CZ 3	3	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
High Efficiency Condensing Natural Gas Water Heater (0.90 EF), 40 gallon	Residential	Turnover	Single_CZ 3	3	Water Heating	15.0	31.9%	per premise	70	$1,185	per unit	70	$1,185
Hot Water Heater Temperature Setback	Residential	Existing	Mfg_CZ1	1	Water Heating	2.0	17.4%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Mfg_CZ1	1	Water Heating	2.0	1.9%	per premise	3	$5	per water heater	3	$5
Hot Water Heater Temperature Setback	Residential	Existing	Mfg_CZ2	2	Water Heating	2.0	17.4%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Mfg_CZ2	2	Water Heating	2.0	1.9%	per premise	3	$5	per water heater	3	$5
Hot Water Heater Temperature Setback	Residential	Existing	Mfg_CZ3	3	Water Heating	2.0	17.4%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Mfg_CZ3	3	Water Heating	2.0	1.9%	per premise	3	$5	per water heater	3	$5
Hot Water Heater Temperature Setback	Residential	Existing	Multi_CZ1	1	Water Heating	2.0	13.2%	per premise	24	$5	per water heater	24	$5
Hot Water Heater Temperature Setback	Residential	New	Multi_CZ1	1	Water Heating	2.0	1.4%	per premise	2	$5	per water heater	2	$5
Hot Water Heater Temperature Setback	Residential	Existing	Multi_CZ2	2	Water Heating	2.0	13.2%	per premise	24	$5	per water heater	24	$5
Hot Water Heater Temperature Setback	Residential	New	Multi_CZ2	2	Water Heating	2.0	1.4%	per premise	2	$5	per water heater	2	$5
Hot Water Heater Temperature Setback	Residential	Existing	Multi_CZ3	3	Water Heating	2.0	13.2%	per premise	24	$5	per water heater	24	$5
Hot Water Heater Temperature Setback	Residential	New	Multi_CZ3	3	Water Heating	2.0	1.4%	per premise	2	$5	per water heater	2	$5
Hot Water Heater Temperature Setback	Residential	Existing	Single_CZ 1	1	Water Heating	2.0	16.2%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Single_CZ 1	1	Water Heating	2.0	1.8%	per premise	3	$5	per water heater	3	$5

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Hot Water Heater Temperature Setback	Residential	Existing	Single_CZ 2	2	Water Heating	2.0	16.2%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Single_CZ 2	2	Water Heating	2.0	1.8%	per premise	3	$5	per water heater	3	$5
Hot Water Heater Temperature Setback	Residential	Existing	Single_CZ 3	3	Water Heating	2.0	16.2%	per premise	32	$5	per water heater	32	$5
Hot Water Heater Temperature Setback	Residential	New	Single_CZ 3	3	Water Heating	2.0	1.8%	per premise	3	$5	per water heater	3	$5
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Mfg_CZ1	1	Water Heating	10.0	29.0%	per premise	53	$53	per unit	53	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Mfg_CZ1	1	Water Heating	10.0	14.0%	per premise	22	$53	per unit	22	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Mfg_CZ2	2	Water Heating	10.0	29.0%	per premise	53	$53	per unit	53	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Mfg_CZ2	2	Water Heating	10.0	14.0%	per premise	22	$53	per unit	22	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Mfg_CZ3	3	Water Heating	10.0	29.0%	per premise	53	$53	per unit	53	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Mfg_CZ3	3	Water Heating	10.0	14.0%	per premise	22	$53	per unit	22	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Multi_CZ1	1	Water Heating	10.0	22.0%	per premise	40	$45	per unit	86	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Multi_CZ1	1	Water Heating	10.0	10.0%	per premise	17	$45	per unit	54	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Multi_CZ2	2	Water Heating	10.0	22.0%	per premise	40	$45	per unit	86	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Multi_CZ2	2	Water Heating	10.0	10.0%	per premise	17	$45	per unit	54	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Multi_CZ3	3	Water Heating	10.0	22.0%	per premise	40	$45	per unit	86	$53

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Low Flow Showerhead (1.5 GPM max)	Residential	New	Multi_CZ3	3	Water Heating	10.0	10.0%	per premise	17	$45	per unit	54	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Single_CZ 1	1	Water Heating	10.0	27.0%	per premise	52	$68	per unit	7	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Single_CZ 1	1	Water Heating	10.0	13.0%	per premise	22	$68	per unit	(12)	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Single_CZ 2	2	Water Heating	10.0	27.0%	per premise	52	$68	per unit	7	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Single_CZ 2	2	Water Heating	10.0	13.0%	per premise	22	$68	per unit	(12)	$53
Low Flow Showerhead (1.5 GPM max)	Residential	Existing	Single_CZ 3	3	Water Heating	10.0	27.0%	per premise	52	$68	per unit	7	$53
Low Flow Showerhead (1.5 GPM max)	Residential	New	Single_CZ 3	3	Water Heating	10.0	13.0%	per premise	22	$68	per unit	(12)	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Mfg_CZ1	1	Water Heating	10.0	21.0%	per premise	51	$53	per unit	51	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Mfg_CZ1	1	Water Heating	10.0	3.0%	per premise	6	$53	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Mfg_CZ2	2	Water Heating	10.0	21.0%	per premise	51	$53	per unit	51	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Mfg_CZ2	2	Water Heating	10.0	3.0%	per premise	6	$53	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Mfg_CZ3	3	Water Heating	10.0	21.0%	per premise	51	$53	per unit	51	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Mfg_CZ3	3	Water Heating	10.0	3.0%	per premise	6	$53	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Multi_CZ1	1	Water Heating	10.0	16.0%	per premise	38	$45	per unit	84	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Multi_CZ1	1	Water Heating	10.0	2.0%	per premise	5	$45	per unit	40	$53

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Multi_CZ2	2	Water Heating	10.0	16.0%	per premise	38	$45	per unit	84	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Multi_CZ2	2	Water Heating	10.0	2.0%	per premise	5	$45	per unit	40	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Multi_CZ3	3	Water Heating	10.0	16.0%	per premise	38	$45	per unit	84	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Multi_CZ3	3	Water Heating	10.0	2.0%	per premise	5	$45	per unit	40	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Single_CZ 1	1	Water Heating	10.0	20.0%	per premise	50	$68	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Single_CZ 1	1	Water Heating	10.0	3.0%	per premise	6	$68	per unit	(25)	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Single_CZ 2	2	Water Heating	10.0	20.0%	per premise	50	$68	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Single_CZ 2	2	Water Heating	10.0	3.0%	per premise	6	$68	per unit	(25)	$53
Low Flow Showerhead (2.0 GPM max)	Residential	Existing	Single_CZ 3	3	Water Heating	10.0	20.0%	per premise	50	$68	per unit	6	$53
Low Flow Showerhead (2.0 GPM max)	Residential	New	Single_CZ 3	3	Water Heating	10.0	3.0%	per premise	6	$68	per unit	(25)	$53
Residential Hot Water Pipe Insulation	Residential	Existing	Mfg_CZ1	1	Water Heating	10.0	3.3%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Mfg_CZ1	1	Water Heating	10.0	3.7%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Mfg_CZ2	2	Water Heating	10.0	3.3%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Mfg_CZ2	2	Water Heating	10.0	0.1%	per premise	0	$6	per 6' of pipe insulation	0	$6

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Hot Water Pipe Insulation	Residential	Existing	Mfg_CZ3	3	Water Heating	10.0	3.3%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Mfg_CZ3	3	Water Heating	10.0	0.1%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Multi_CZ1	1	Water Heating	10.0	2.5%	per premise	5	$12	per 6' of pipe insulation	2	$6
Residential Hot Water Pipe Insulation	Residential	New	Multi_CZ1	1	Water Heating	10.0	3.8%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Multi_CZ2	2	Water Heating	10.0	2.5%	per premise	5	$12	per 6' of pipe insulation	2	$6
Residential Hot Water Pipe Insulation	Residential	New	Multi_CZ2	2	Water Heating	10.0	0.2%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Multi_CZ3	3	Water Heating	10.0	2.5%	per premise	5	$12	per 6' of pipe insulation	2	$6
Residential Hot Water Pipe Insulation	Residential	New	Multi_CZ3	3	Water Heating	10.0	0.2%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Single_CZ 1	1	Water Heating	10.0	3.1%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Single_CZ 1	1	Water Heating	10.0	3.5%	per premise	0	$6	per 6' of pipe insulation	0	$6
Residential Hot Water Pipe Insulation	Residential	Existing	Single_CZ 2	2	Water Heating	10.0	3.1%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Single_CZ 2	2	Water Heating	10.0	0.1%	per premise	0	$6	per 6' of pipe insulation	0	$6

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Residential Hot Water Pipe Insulation	Residential	Existing	Single_CZ 3	3	Water Heating	10.0	3.1%	per premise	6	$12	per 6' of pipe insulation	3	$6
Residential Hot Water Pipe Insulation	Residential	New	Single_CZ 3	3	Water Heating	10.0	0.1%	per premise	0	$6	per 6' of pipe insulation	0	$6
Solar Hot Water Heater	Residential	Early Retirement	Mfg_CZ1	1	Water Heating	17.5	58.7%	per premise	121	$6,500	per unit	121	$6,500
Solar Hot Water Heater	Residential	New	Mfg_CZ1	1	Water Heating	17.5	52.5%	per premise	102	$6,036	per unit	102	$6,036
Solar Hot Water Heater	Residential	Turnover	Mfg_CZ1	1	Water Heating	17.5	52.5%	per premise	102	$6,036	per unit	102	$6,036
Solar Hot Water Heater	Residential	Early Retirement	Mfg_CZ2	2	Water Heating	17.5	61.8%	per premise	128	$6,500	per unit	128	$6,500
Solar Hot Water Heater	Residential	New	Mfg_CZ2	2	Water Heating	17.5	56.1%	per premise	109	$6,036	per unit	109	$6,036
Solar Hot Water Heater	Residential	Turnover	Mfg_CZ2	2	Water Heating	17.5	56.1%	per premise	109	$6,036	per unit	109	$6,036
Solar Hot Water Heater	Residential	Early Retirement	Mfg_CZ3	3	Water Heating	17.5	72.6%	per premise	152	$6,500	per unit	152	$6,500
Solar Hot Water Heater	Residential	New	Mfg_CZ3	3	Water Heating	17.5	68.5%	per premise	133	$6,036	per unit	133	$6,036
Solar Hot Water Heater	Residential	Turnover	Mfg_CZ3	3	Water Heating	17.5	68.5%	per premise	133	$6,036	per unit	133	$6,036
Solar Hot Water Heater	Residential	Early Retirement	Multi_CZ1	1	Water Heating	17.5	81.4%	per premise	130	$6,900	per unit	130	$6,900
Solar Hot Water Heater	Residential	New	Multi_CZ1	1	Water Heating	17.5	78.6%	per premise	116	$6,436	per unit	116	$6,436
Solar Hot Water Heater	Residential	Turnover	Multi_CZ1	1	Water Heating	17.5	78.6%	per premise	116	$6,436	per unit	116	$6,436
Solar Hot Water Heater	Residential	Early Retirement	Multi_CZ2	2	Water Heating	17.5	84.9%	per premise	136	$6,900	per unit	136	$6,900

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incre-mental Cost ($)	Unit	Savings UEC (Thm/Unit) calculated	Incremental Cost ($/Unit)
Solar Hot Water Heater	Residential	New	Multi_CZ2	2	Water Heating	17.5	82.7%	per premise	122	$6,436	per unit	122	$6,436
Solar Hot Water Heater	Residential	Turnover	Multi_CZ2	2	Water Heating	17.5	82.7%	per premise	122	$6,436	per unit	122	$6,436
Solar Hot Water Heater	Residential	Early Retirement	Multi_CZ3	3	Water Heating	17.5	99.7%	per premise	161	$6,900	per unit	161	$6,900
Solar Hot Water Heater	Residential	New	Multi_CZ3	3	Water Heating	17.5	99.6%	per premise	147	$6,436	per unit	147	$6,436
Solar Hot Water Heater	Residential	Turnover	Multi_CZ3	3	Water Heating	17.5	99.6%	per premise	147	$6,436	per unit	147	$6,436
Solar Hot Water Heater	Residential	Early Retirement	Single_CZ 1	1	Water Heating	17.5	59.0%	per premise	123	$6,500	per unit	123	$6,500
Solar Hot Water Heater	Residential	New	Single_CZ 1	1	Water Heating	17.5	53.0%	per premise	102	$6,036	per unit	102	$6,036
Solar Hot Water Heater	Residential	Turnover	Single_CZ 1	1	Water Heating	17.5	53.0%	per premise	102	$6,036	per unit	102	$6,036
Solar Hot Water Heater	Residential	Early Retirement	Single_CZ 2	2	Water Heating	17.5	62.2%	per premise	130	$6,500	per unit	130	$6,500
Solar Hot Water Heater	Residential	New	Single_CZ 2	2	Water Heating	17.5	56.6%	per premise	109	$6,036	per unit	109	$6,036
Solar Hot Water Heater	Residential	Turnover	Single_CZ 2	2	Water Heating	17.5	56.6%	per premise	109	$6,036	per unit	109	$6,036
Solar Hot Water Heater	Residential	Early Retirement	Single_CZ 3	3	Water Heating	17.5	73.1%	per premise	154	$6,500	per unit	154	$6,500
Solar Hot Water Heater	Residential	New	Single_CZ 3	3	Water Heating	17.5	69.1%	per premise	133	$6,036	per unit	133	$6,036
Solar Hot Water Heater	Residential	Turnover	Single_CZ 3	3	Water Heating	17.5	69.1%	per premise	133	$6,036	per unit	133	$6,036

B.2 Commercial Sector Measures

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Oven	Commercial	Early Retirement	Education	All	Cooking	12.0	26.3%	per premise	128	$54,348	per unit	56	$23,822
Combination Oven	Commercial	New	Education	All	Cooking	12.0	26.3%	per premise	128	$9,810	per unit	56	$4,300
Combination Oven	Commercial	Turnover	Education	All	Cooking	12.0	26.3%	per premise	128	$9,810	per unit	56	$4,300
Combination Oven	Commercial	Early Retirement	Grocery	All	Cooking	12.0	26.3%	per premise	333	$23,822	per unit	333	$23,822
Combination Oven	Commercial	New	Grocery	All	Cooking	12.0	26.3%	per premise	333	$4,300	per unit	333	$4,300
Combination Oven	Commercial	Turnover	Grocery	All	Cooking	12.0	26.3%	per premise	333	$4,300	per unit	333	$4,300
Combination Oven	Commercial	Early Retirement	Healthcare	All	Cooking	12.0	26.3%	per premise	65	$32,307	per unit	48	$23,822
Combination Oven	Commercial	New	Healthcare	All	Cooking	12.0	26.3%	per premise	65	$5,831	per unit	48	$4,300
Combination Oven	Commercial	Turnover	Healthcare	All	Cooking	12.0	26.3%	per premise	65	$5,831	per unit	48	$4,300
Combination Oven	Commercial	Early Retirement	Misc.	All	Cooking	12.0	26.3%	per premise	21	$40,332	per unit	12	$23,822
Combination Oven	Commercial	New	Misc.	All	Cooking	12.0	26.3%	per premise	21	$7,280	per unit	12	$4,300
Combination Oven	Commercial	Turnover	Misc.	All	Cooking	12.0	26.3%	per premise	21	$7,280	per unit	12	$4,300
Combination Oven	Commercial	Early Retirement	Restaurant	All	Cooking	12.0	26.3%	per premise	587	$75,876	per unit	184	$23,822
Combination Oven	Commercial	New	Restaurant	All	Cooking	12.0	26.3%	per premise	587	$13,696	per unit	184	$4,300
Combination Oven	Commercial	Turnover	Restaurant	All	Cooking	12.0	26.3%	per premise	587	$13,696	per unit	184	$4,300
Conveyor Oven	Commercial	Early Retirement	Education	All	Cooking	16.0	11.0%	per premise	53	$56,487	per unit	23	$24,760

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Conveyor Oven	Commercial	New	Education	All	Cooking	16.0	11.0%	per premise	53	$4,106	per unit	23	$1,800
Conveyor Oven	Commercial	Turnover	Education	All	Cooking	16.0	11.0%	per premise	53	$4,106	per unit	23	$1,800
Conveyor Oven	Commercial	Early Retirement	Grocery	All	Cooking	16.0	11.0%	per premise	139	$24,760	per unit	139	$24,760
Conveyor Oven	Commercial	New	Grocery	All	Cooking	16.0	11.0%	per premise	139	$1,800	per unit	139	$1,800
Conveyor Oven	Commercial	Turnover	Grocery	All	Cooking	16.0	11.0%	per premise	139	$1,800	per unit	139	$1,800
Conveyor Oven	Commercial	Early Retirement	Healthcare	All	Cooking	16.0	11.0%	per premise	27	$33,578	per unit	20	$24,760
Conveyor Oven	Commercial	New	Healthcare	All	Cooking	16.0	11.0%	per premise	27	$2,441	per unit	20	$1,800
Conveyor Oven	Commercial	Turnover	Healthcare	All	Cooking	16.0	11.0%	per premise	27	$2,441	per unit	20	$1,800
Conveyor Oven	Commercial	Early Retirement	Lodging	All	Cooking	16.0	11.0%	per premise	83	$90,532	per unit	23	$24,760
Conveyor Oven	Commercial	New	Lodging	All	Cooking	16.0	11.0%	per premise	83	$6,581	per unit	23	$1,800
Conveyor Oven	Commercial	Turnover	Lodging	All	Cooking	16.0	11.0%	per premise	83	$6,581	per unit	23	$1,800
Conveyor Oven	Commercial	Early Retirement	Misc.	All	Cooking	16.0	11.0%	per premise	9	$41,919	per unit	5	$24,760
Conveyor Oven	Commercial	New	Misc.	All	Cooking	16.0	11.0%	per premise	9	$3,047	per unit	5	$1,800
Conveyor Oven	Commercial	Turnover	Misc.	All	Cooking	16.0	11.0%	per premise	9	$3,047	per unit	5	$1,800
Conveyor Oven	Commercial	Early Retirement	Office	All	Cooking	16.0	11.0%	per premise	3	$34,931	per unit	2	$24,760
Conveyor Oven	Commercial	New	Office	All	Cooking	16.0	11.0%	per premise	3	$2,539	per unit	2	$1,800

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Conveyor Oven	Commercial	Turnover	Office	All	Cooking	16.0	11.0%	per premise	3	$2,539	per unit	2	$1,800
Conveyor Oven	Commercial	Early Retirement	Restaurant	All	Cooking	16.0	11.0%	per premise	246	$78,862	per unit	77	$24,760
Conveyor Oven	Commercial	New	Restaurant	All	Cooking	16.0	11.0%	per premise	246	$5,733	per unit	77	$1,800
Conveyor Oven	Commercial	Turnover	Restaurant	All	Cooking	16.0	11.0%	per premise	246	$5,733	per unit	77	$1,800
ENERGY STAR Convection Oven	Commercial	Early Retirement	Education	All	Cooking	12.0	33.0%	per premise	160	$6,230	per unit	70	$2,731
ENERGY STAR Convection Oven	Commercial	New	Education	All	Cooking	12.0	29.1%	per premise	141	$114	per unit	62	$50
ENERGY STAR Convection Oven	Commercial	Turnover	Education	All	Cooking	12.0	29.1%	per premise	141	$114	per unit	62	$50
ENERGY STAR Convection Oven	Commercial	Early Retirement	Grocery	All	Cooking	12.0	33.0%	per premise	417	$2,731	per unit	417	$2,731
ENERGY STAR Convection Oven	Commercial	New	Grocery	All	Cooking	12.0	29.1%	per premise	368	$50	per unit	368	$50
ENERGY STAR Convection Oven	Commercial	Turnover	Grocery	All	Cooking	12.0	29.1%	per premise	368	$50	per unit	368	$50
ENERGY STAR Convection Oven	Commercial	Early Retirement	Healthcare	All	Cooking	12.0	33.0%	per premise	81	$3,704	per unit	60	$2,731
ENERGY STAR Convection Oven	Commercial	New	Healthcare	All	Cooking	12.0	29.1%	per premise	71	$68	per unit	53	$50
ENERGY STAR Convection Oven	Commercial	Turnover	Healthcare	All	Cooking	12.0	29.1%	per premise	71	$68	per unit	53	$50
ENERGY STAR Convection Oven	Commercial	Early Retirement	Restaurant	All	Cooking	12.0	33.0%	per premise	736	$8,698	per unit	231	$2,731
ENERGY STAR Convection Oven	Commercial	New	Restaurant	All	Cooking	12.0	29.1%	per premise	649	$159	per unit	204	$50
ENERGY STAR Convection Oven	Commercial	Turnover	Restaurant	All	Cooking	12.0	29.1%	per premise	649	$159	per unit	204	$50

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Energy Star Fryer	Commercial	Early Retirement	Education	All	Cooking	12.0	36.9%	per premise	179	$1,122	per unit	179	$1,122
Energy Star Fryer	Commercial	New	Education	All	Cooking	12.0	30.7%	per premise	149	$560	per unit	149	$560
Energy Star Fryer	Commercial	Turnover	Education	All	Cooking	12.0	30.7%	per premise	149	$560	per unit	149	$560
Energy Star Fryer	Commercial	Early Retirement	Grocery	All	Cooking	12.0	36.9%	per premise	466	$1,122	per unit	466	$1,122
Energy Star Fryer	Commercial	New	Grocery	All	Cooking	12.0	30.7%	per premise	388	$560	per unit	388	$560
Energy Star Fryer	Commercial	Turnover	Grocery	All	Cooking	12.0	30.7%	per premise	388	$560	per unit	388	$560
Energy Star Fryer	Commercial	Early Retirement	Healthcare	All	Cooking	12.0	36.9%	per premise	91	$1,122	per unit	91	$1,122
Energy Star Fryer	Commercial	New	Healthcare	All	Cooking	12.0	30.7%	per premise	75	$560	per unit	75	$560
Energy Star Fryer	Commercial	Turnover	Healthcare	All	Cooking	12.0	30.7%	per premise	75	$560	per unit	75	$560
Energy Star Fryer	Commercial	Early Retirement	Restaurant	All	Cooking	12.0	36.9%	per premise	823	$3,019	per unit	306	$1,122
Energy Star Fryer	Commercial	New	Restaurant	All	Cooking	12.0	30.7%	per premise	685	$1,507	per unit	255	$560
Energy Star Fryer	Commercial	Turnover	Restaurant	All	Cooking	12.0	30.7%	per premise	685	$1,507	per unit	255	$560
Energy Star Griddle	Commercial	Early Retirement	Education	All	Cooking	12.0	17.5%	per premise	85	$6,056	per unit	85	$6,056
Energy Star Griddle	Commercial	New	Education	All	Cooking	12.0	12.3%	per premise	60	$360	per unit	60	$360
Energy Star Griddle	Commercial	Turnover	Education	All	Cooking	12.0	12.3%	per premise	60	$360	per unit	60	$360
Energy Star Griddle	Commercial	Early Retirement	Grocery	All	Cooking	12.0	17.5%	per premise	222	$6,056	per unit	222	$6,056

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Energy Star Griddle	Commercial	New	Grocery	All	Cooking	12.0	12.3%	per premise	155	$360	per unit	155	$360
Energy Star Griddle	Commercial	Turnover	Grocery	All	Cooking	12.0	12.3%	per premise	155	$360	per unit	155	$360
Energy Star Griddle	Commercial	Early Retirement	Healthcare	All	Cooking	12.0	17.5%	per premise	43	$6,056	per unit	43	$6,056
Energy Star Griddle	Commercial	New	Healthcare	All	Cooking	12.0	12.3%	per premise	30	$360	per unit	30	$360
Energy Star Griddle	Commercial	Turnover	Healthcare	All	Cooking	12.0	12.3%	per premise	30	$360	per unit	30	$360
Energy Star Griddle	Commercial	Early Retirement	Restaurant	All	Cooking	12.0	17.5%	per premise	391	$19,289	per unit	123	$6,056
Energy Star Griddle	Commercial	New	Restaurant	All	Cooking	12.0	12.3%	per premise	274	$1,147	per unit	86	$360
Energy Star Griddle	Commercial	Turnover	Restaurant	All	Cooking	12.0	12.3%	per premise	274	$1,147	per unit	86	$360
High efficiency steam cooker	Commercial	Early Retirement	Education	All	Cooking	12.0	57.5%	per premise	279	$8,817	per unit	279	$8,817
High efficiency steam cooker	Commercial	New	Education	All	Cooking	12.0	52.6%	per premise	256	$870	per unit	256	$870
High efficiency steam cooker	Commercial	Turnover	Education	All	Cooking	12.0	52.6%	per premise	256	$870	per unit	256	$870
High efficiency steam cooker	Commercial	Early Retirement	Healthcare	All	Cooking	12.0	57.5%	per premise	141	$8,817	per unit	141	$8,817
High efficiency steam cooker	Commercial	New	Healthcare	All	Cooking	12.0	52.6%	per premise	129	$870	per unit	129	$870
High efficiency steam cooker	Commercial	Turnover	Healthcare	All	Cooking	12.0	52.6%	per premise	129	$870	per unit	129	$870
High efficiency steam cooker	Commercial	Early Retirement	Restaurant	All	Cooking	12.0	57.5%	per premise	1,283	$8,817	per unit	1,283	$8,817
High efficiency steam cooker	Commercial	New	Restaurant	All	Cooking	12.0	52.6%	per premise	1,174	$870	per unit	1,174	$870

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High efficiency steam cooker	Commercial	Turnover	Restaurant	All	Cooking	12.0	52.6%	per premise	1,174	$870	per unit	1,174	$870
Pool Cover	Commercial	Existing	Education	All	Other	6.0	55.9%	per premise	1,462	$8,610	per unit	1,462	$8,610
Pool Cover	Commercial	New	Education	All	Other	6.0	55.9%	per premise	1,462	$8,610	per unit	1,462	$8,610
Pool Cover	Commercial	Existing	Lodging	All	Other	6.0	55.9%	per premise	368	$8,610	per unit	368	$8,610
Pool Cover	Commercial	New	Lodging	All	Other	6.0	55.9%	per premise	368	$8,610	per unit	368	$8,610
Pool Spa Solar Heat	Commercial	Existing	Education	All	Other	30.0	64.4%	per premise	1,683	$9,504	per unit	1,683	$9,504
Pool Spa Solar Heat	Commercial	New	Education	All	Other	30.0	64.4%	per premise	1,683	$9,504	per unit	1,683	$9,504
Pool Spa Solar Heat	Commercial	Existing	Lodging	All	Other	30.0	64.4%	per premise	424	$9,504	per unit	424	$9,504
Pool Spa Solar Heat	Commercial	New	Lodging	All	Other	30.0	64.4%	per premise	424	$9,504	per unit	424	$9,504
Boiler Pipe Insulation	Commercial	Existing	Education	All	Space Heating	20.0	1.8%	per premise	106	$600	per boiler	53	$300
Boiler Pipe Insulation	Commercial	Existing	Grocery	All	Space Heating	20.0	1.8%	per premise	72	$300	per boiler	72	$300
Boiler Pipe Insulation	Commercial	Existing	Healthcare	All	Space Heating	20.0	1.8%	per premise	62	$900	per boiler	21	$300
Boiler Pipe Insulation	Commercial	Existing	Lodging	All	Space Heating	20.0	1.8%	per premise	62	$600	per boiler	31	$300
Boiler Pipe Insulation	Commercial	Existing	Misc.	All	Space Heating	20.0	1.8%	per premise	24	$300	per boiler	24	$300
Boiler Pipe Insulation	Commercial	Existing	Office	All	Space Heating	20.0	1.8%	per premise	42	$600	per boiler	21	$300
Boiler Pipe Insulation	Commercial	Existing	Restaurant	All	Space Heating	20.0	1.8%	per premise	24	$300	per boiler	24	$300

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Boiler Pipe Insulation	Commercial	Existing	Warehouse	All	Space Heating	20.0	1.8%	per premise	36	$300	per boiler	36	$300
Boiler Power Burner	Commercial	Existing	Education	All	Space Heating	3.5	1.1%	per premise	68	$600	per boiler	34	$300
Boiler Power Burner	Commercial	New	Education	All	Space Heating	3.5	1.1%	per premise	68	$600	per boiler	34	$300
Boiler Power Burner	Commercial	Existing	Grocery	All	Space Heating	3.5	1.1%	per premise	46	$300	per boiler	46	$300
Boiler Power Burner	Commercial	New	Grocery	All	Space Heating	3.5	1.1%	per premise	46	$300	per boiler	46	$300
Boiler Power Burner	Commercial	Existing	Healthcare	All	Space Heating	3.5	1.1%	per premise	40	$900	per boiler	13	$300
Boiler Power Burner	Commercial	New	Healthcare	All	Space Heating	3.5	1.1%	per premise	40	$900	per boiler	13	$300
Boiler Power Burner	Commercial	Existing	Lodging	All	Space Heating	3.5	1.1%	per premise	39	$600	per boiler	20	$300
Boiler Power Burner	Commercial	New	Lodging	All	Space Heating	3.5	1.1%	per premise	39	$600	per boiler	20	$300
Boiler Power Burner	Commercial	Existing	Misc.	All	Space Heating	3.5	1.1%	per premise	15	$300	per boiler	15	$300
Boiler Power Burner	Commercial	New	Misc.	All	Space Heating	3.5	1.1%	per premise	15	$300	per boiler	15	$300
Boiler Power Burner	Commercial	Existing	Office	All	Space Heating	3.5	1.1%	per premise	27	$600	per boiler	14	$300
Boiler Power Burner	Commercial	New	Office	All	Space Heating	3.5	1.1%	per premise	27	$600	per boiler	14	$300
Boiler Power Burner	Commercial	Existing	Retail	All	Space Heating	3.5	1.1%	per premise	28	$300	per boiler	28	$300
Boiler Power Burner	Commercial	New	Retail	All	Space Heating	3.5	1.1%	per premise	28	$300	per boiler	28	$300
Boiler Power Burner	Commercial	Existing	Warehouse	All	Space Heating	3.5	1.1%	per premise	23	$300	per boiler	23	$300

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Boiler Power Burner	Commercial	New	Warehouse	All	Space Heating	3.5	1.1%	per premise	23	$300	per boiler	23	$300
Boiler Repair/Maintenance	Commercial	Existing	Education	All	Space Heating	2.0	2.0%	per premise	119	$2,557	per boiler	60	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Grocery	All	Space Heating	2.0	2.0%	per premise	81	$1,278	per boiler	81	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Healthcare	All	Space Heating	2.0	2.0%	per premise	70	$3,835	per boiler	23	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Lodging	All	Space Heating	2.0	2.0%	per premise	69	$2,557	per boiler	35	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Misc.	All	Space Heating	2.0	2.0%	per premise	27	$1,278	per boiler	27	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Office	All	Space Heating	2.0	2.0%	per premise	48	$2,557	per boiler	24	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Retail	All	Space Heating	2.0	2.0%	per premise	48	$1,278	per boiler	48	$1,278
Boiler Repair/Maintenance	Commercial	Existing	Warehouse	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per boiler	40	$1,278
Boiler Stack Economizer	Commercial	Existing	Education	All	Space Heating	20.0	6.3%	per premise	367	$15,127	per boiler	184	$7,564
Boiler Stack Economizer	Commercial	Existing	Grocery	All	Space Heating	20.0	6.3%	per premise	250	$7,564	per boiler	250	$7,564
Boiler Stack Economizer	Commercial	Existing	Healthcare	All	Space Heating	20.0	6.3%	per premise	215	$22,691	per boiler	72	$7,564
Boiler Stack Economizer	Commercial	Existing	Lodging	All	Space Heating	20.0	6.3%	per premise	215	$15,127	per boiler	107	$7,564
Boiler Stack Economizer	Commercial	Existing	Misc.	All	Space Heating	20.0	6.3%	per premise	83	$7,564	per boiler	83	$7,564
Boiler Stack Economizer	Commercial	Existing	Office	All	Space Heating	20.0	6.3%	per premise	147	$15,127	per boiler	74	$7,564
Boiler Stack Economizer	Commercial	Existing	Retail	All	Space Heating	20.0	6.3%	per premise	150	$7,564	per boiler	150	$7,564

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Boiler Stack Economizer	Commercial	Existing	Warehouse	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per boiler	123	$7,564
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Education	All	Space Heating	6.0	4.4%	per premise	261	$500	per boiler	131	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Healthcare	All	Space Heating	6.0	4.4%	per premise	153	$750	per boiler	51	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Lodging	All	Space Heating	6.0	4.4%	per premise	153	$500	per boiler	76	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Misc.	All	Space Heating	6.0	4.4%	per premise	59	$500	per boiler	29	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Office	All	Space Heating	6.0	4.4%	per premise	105	$250	per boiler	105	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Retail	All	Space Heating	6.0	4.4%	per premise	106	$250	per boiler	106	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Commercial	Existing	Warehouse	All	Space Heating	6.0	4.4%	per premise	88	$250	per boiler	88	$250
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Education	All	Space Heating	12.0	1.2%	per premise	73	$2,000	per boiler	36	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	New	Education	All	Space Heating	12.0	1.2%	per premise	73	$2,000	per boiler	36	$1,000

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Healthcare	All	Space Heating	12.0	1.2%	per premise	43	$3,000	per boiler	14	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	New	Healthcare	All	Space Heating	12.0	1.2%	per premise	43	$3,000	per boiler	14	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Lodging	All	Space Heating	12.0	1.2%	per premise	42	$2,000	per boiler	21	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Misc.	All	Space Heating	12.0	1.2%	per premise	16	$1,000	per boiler	16	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Office	All	Space Heating	12.0	1.2%	per premise	29	$2,000	per boiler	15	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Retail	All	Space Heating	12.0	1.2%	per premise	30	$1,000	per boiler	30	$1,000
Boiler vent damper - min. 1000 kBtu input	Commercial	Existing	Warehouse	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per boiler	24	$1,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Education	All	Space Heating	20.0	1.0%	per premise	59	$18,000	per boiler	59	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Education	All	Space Heating	20.0	1.0%	per premise	59	$18,000	per boiler	59	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Healthcare	All	Space Heating	20.0	1.0%	per premise	34	$18,000	per boiler	34	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Healthcare	All	Space Heating	20.0	1.0%	per premise	34	$18,000	per boiler	34	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Lodging	All	Space Heating	20.0	1.0%	per premise	34	$18,000	per boiler	34	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Lodging	All	Space Heating	20.0	1.0%	per premise	34	$18,000	per boiler	34	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Misc.	All	Space Heating	20.0	1.0%	per premise	13	$18,000	per boiler	13	$18,000

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Boiler Waste Water Heat Exchanger	Commercial	New	Misc.	All	Space Heating	20.0	1.0%	per premise	13	$18,000	per boiler	13	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Office	All	Space Heating	20.0	1.0%	per premise	24	$18,000	per boiler	24	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Office	All	Space Heating	20.0	1.0%	per premise	24	$18,000	per boiler	24	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Retail	All	Space Heating	20.0	1.0%	per premise	24	$18,000	per boiler	24	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Retail	All	Space Heating	20.0	1.0%	per premise	24	$18,000	per boiler	24	$18,000
Boiler Waste Water Heat Exchanger	Commercial	Existing	Warehouse	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per boiler	20	$18,000
Boiler Waste Water Heat Exchanger	Commercial	New	Warehouse	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per boiler	20	$18,000
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Education	All	Space Heating	20.0	16.6%	per premise	974	$85,720	per unit	487	$42,860
Combination Boiler and Hot Water Heater	Commercial	New	Education	All	Space Heating	20.0	11.3%	per premise	666	$46,904	per unit	666	$46,904
Combination Boiler and Hot Water Heater	Commercial	Turnover	Education	All	Space Heating	20.0	11.3%	per premise	666	$46,904	per unit	333	$23,452
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Grocery	All	Space Heating	20.0	16.6%	per premise	663	$42,860	per unit	332	$21,430
Combination Boiler and Hot Water Heater	Commercial	New	Grocery	All	Space Heating	20.0	11.3%	per premise	454	$23,452	per unit	227	$11,726
Combination Boiler and Hot Water Heater	Commercial	Turnover	Grocery	All	Space Heating	20.0	11.3%	per premise	454	$23,452	per unit	227	$11,726
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Healthcare	All	Space Heating	20.0	16.6%	per premise	571	$128,581	per unit	571	$128,581

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Boiler and Hot Water Heater	Commercial	New	Healthcare	All	Space Heating	20.0	11.3%	per premise	390	$70,355	per unit	195	$35,178
Combination Boiler and Hot Water Heater	Commercial	Turnover	Healthcare	All	Space Heating	20.0	11.3%	per premise	390	$70,355	per unit	390	$70,355
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Lodging	All	Space Heating	20.0	16.6%	per premise	569	$85,720	per unit	569	$85,720
Combination Boiler and Hot Water Heater	Commercial	New	Lodging	All	Space Heating	20.0	11.3%	per premise	389	$46,904	per unit	389	$46,904
Combination Boiler and Hot Water Heater	Commercial	Turnover	Lodging	All	Space Heating	20.0	11.3%	per premise	389	$46,904	per unit	389	$46,904
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Misc.	All	Space Heating	20.0	16.6%	per premise	219	$42,860	per unit	73	$14,287
Combination Boiler and Hot Water Heater	Commercial	New	Misc.	All	Space Heating	20.0	11.2%	per premise	149	$23,452	per unit	149	$23,452
Combination Boiler and Hot Water Heater	Commercial	Turnover	Misc.	All	Space Heating	20.0	11.2%	per premise	149	$23,452	per unit	50	$7,817
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Office	All	Space Heating	20.0	16.6%	per premise	390	$85,720	per unit	390	$85,720
Combination Boiler and Hot Water Heater	Commercial	New	Office	All	Space Heating	20.0	11.3%	per premise	267	$46,904	per unit	89	$15,635
Combination Boiler and Hot Water Heater	Commercial	Turnover	Office	All	Space Heating	20.0	11.3%	per premise	267	$46,904	per unit	267	$46,904
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Restaurant	All	Space Heating	20.0	16.6%	per premise	220	$42,860	per unit	110	$21,430

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Boiler and Hot Water Heater	Commercial	New	Restaurant	All	Space Heating	20.0	11.2%	per premise	149	$23,452	per unit	149	$23,452
Combination Boiler and Hot Water Heater	Commercial	Turnover	Restaurant	All	Space Heating	20.0	11.2%	per premise	149	$23,452	per unit	75	$11,726
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Retail	All	Space Heating	20.0	16.6%	per premise	220	$42,860	per unit	220	$42,860
Combination Boiler and Hot Water Heater	Commercial	New	Retail	All	Space Heating	20.0	11.3%	per premise	271	$23,452	per unit	136	$11,726
Combination Boiler and Hot Water Heater	Commercial	Turnover	Retail	All	Space Heating	20.0	11.3%	per premise	271	$23,452	per unit	271	$23,452
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Warehouse	All	Space Heating	20.0	16.6%	per premise	327	$42,860	per unit	327	$42,860
Combination Boiler and Hot Water Heater	Commercial	New	Warehouse	All	Space Heating	20.0	11.2%	per premise	222	$23,452	per unit	222	$23,452
Combination Boiler and Hot Water Heater	Commercial	Turnover	Warehouse	All	Space Heating	20.0	11.2%	per premise	222	$23,452	per unit	222	$23,452
Demand Controlled Ventilation	Commercial	Existing	Education	All	Space Heating	12.0	16.8%	per premise	991	$1,708	per unit	991	$1,708
Demand Controlled Ventilation	Commercial	Existing	Grocery	All	Space Heating	12.0	16.8%	per premise	675	$1,708	per unit	675	$1,708
Demand Controlled Ventilation	Commercial	Existing	Healthcare	All	Space Heating	12.0	16.8%	per premise	581	$1,708	per unit	581	$1,708
Demand Controlled Ventilation	Commercial	Existing	Lodging	All	Space Heating	12.0	16.8%	per premise	578	$1,708	per unit	578	$1,708
Demand Controlled Ventilation	Commercial	Existing	Misc.	All	Space Heating	12.0	16.8%	per premise	223	$1,708	per unit	223	$1,708
Demand Controlled Ventilation	Commercial	Existing	Office	All	Space Heating	12.0	16.8%	per premise	397	$1,708	per unit	397	$1,708

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Demand Controlled Ventilation	Commercial	Existing	Restaurant	All	Space Heating	12.0	16.8%	per premise	224	$1,708	per unit	224	$1,708
Demand Controlled Ventilation	Commercial	Existing	Retail	All	Space Heating	12.0	16.8%	per premise	403	$1,708	per unit	403	$1,708
Demand Controlled Ventilation	Commercial	Existing	Warehouse	All	Space Heating	12.0	16.8%	per premise	333	$1,708	per unit	333	$1,708
Direct Fired Radiant Heater	Commercial	Early Retirement	Education	All	Space Heating	17.0	23.5%	per premise	1,382	$2,532	per unit	1,382	$2,532
Direct Fired Radiant Heater	Commercial	New	Education	All	Space Heating	17.0	23.5%	per premise	1,382	$812	per unit	1,382	$812
Direct Fired Radiant Heater	Commercial	Turnover	Education	All	Space Heating	17.0	23.5%	per premise	1,382	$812	per unit	1,382	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Grocery	All	Space Heating	17.0	23.5%	per premise	941	$2,532	per unit	941	$2,532
Direct Fired Radiant Heater	Commercial	New	Grocery	All	Space Heating	17.0	23.5%	per premise	941	$812	per unit	941	$812
Direct Fired Radiant Heater	Commercial	Turnover	Grocery	All	Space Heating	17.0	23.5%	per premise	941	$812	per unit	941	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Healthcare	All	Space Heating	17.0	23.5%	per premise	810	$2,532	per unit	810	$2,532
Direct Fired Radiant Heater	Commercial	New	Healthcare	All	Space Heating	17.0	23.5%	per premise	810	$812	per unit	810	$812
Direct Fired Radiant Heater	Commercial	Turnover	Healthcare	All	Space Heating	17.0	23.5%	per premise	810	$812	per unit	810	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Lodging	All	Space Heating	17.0	23.5%	per premise	807	$2,532	per unit	807	$2,532
Direct Fired Radiant Heater	Commercial	New	Lodging	All	Space Heating	17.0	23.5%	per premise	807	$812	per unit	807	$812
Direct Fired Radiant Heater	Commercial	Turnover	Lodging	All	Space Heating	17.0	23.5%	per premise	807	$812	per unit	807	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Misc.	All	Space Heating	17.0	23.5%	per premise	311	$2,532	per unit	311	$2,532

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Direct Fired Radiant Heater	Commercial	New	Misc.	All	Space Heating	17.0	23.5%	per premise	311	$812	per unit	311	$812
Direct Fired Radiant Heater	Commercial	Turnover	Misc.	All	Space Heating	17.0	23.5%	per premise	311	$812	per unit	311	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Office	All	Space Heating	17.0	23.5%	per premise	553	$2,532	per unit	553	$2,532
Direct Fired Radiant Heater	Commercial	New	Office	All	Space Heating	17.0	23.5%	per premise	553	$812	per unit	553	$812
Direct Fired Radiant Heater	Commercial	Turnover	Office	All	Space Heating	17.0	23.5%	per premise	553	$812	per unit	553	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Restaurant	All	Space Heating	17.0	23.5%	per premise	312	$2,532	per unit	312	$2,532
Direct Fired Radiant Heater	Commercial	New	Restaurant	All	Space Heating	17.0	23.5%	per premise	312	$812	per unit	312	$812
Direct Fired Radiant Heater	Commercial	Turnover	Restaurant	All	Space Heating	17.0	23.5%	per premise	312	$812	per unit	312	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Retail	All	Space Heating	17.0	23.5%	per premise	562	$2,532	per unit	562	$2,532
Direct Fired Radiant Heater	Commercial	New	Retail	All	Space Heating	17.0	23.5%	per premise	562	$812	per unit	562	$812
Direct Fired Radiant Heater	Commercial	Turnover	Retail	All	Space Heating	17.0	23.5%	per premise	562	$812	per unit	562	$812
Direct Fired Radiant Heater	Commercial	Early Retirement	Warehouse	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	464	$2,532
Direct Fired Radiant Heater	Commercial	New	Warehouse	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	464	$812
Direct Fired Radiant Heater	Commercial	Turnover	Warehouse	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	464	$812
Duct Sealing and Insulation	Commercial	Existing	Education	All	Space Heating	19.0	10.5%	per premise	619	$21,966	per sf facility	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Duct Sealing and Insulation	Commercial	Existing	Grocery	All	Space Heating	19.0	10.5%	per premise	422	$11,523	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Healthcare	All	Space Heating	19.0	10.5%	per premise	363	$15,234	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Lodging	All	Space Heating	19.0	10.5%	per premise	361	$18,957	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Misc.	All	Space Heating	19.0	10.5%	per premise	139	$5,434	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Office	All	Space Heating	19.0	10.5%	per premise	248	$11,886	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Restaurant	All	Space Heating	19.0	10.5%	per premise	140	$3,024	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Retail	All	Space Heating	19.0	10.5%	per premise	252	$9,702	per sf facility	0	$1
Duct Sealing and Insulation	Commercial	Existing	Warehouse	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
Floor Insulation	Commercial	Existing	Education	All	Space Heating	25.0	3.5%	per premise	204	$36,352	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Grocery	All	Space Heating	25.0	3.5%	per premise	139	$24,517	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Healthcare	All	Space Heating	25.0	3.5%	per premise	120	$25,210	per sf installed	0	$2

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Floor Insulation	Commercial	Existing	Lodging	All	Space Heating	25.0	3.5%	per premise	119	$33,217	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Misc.	All	Space Heating	25.0	3.5%	per premise	46	$9,521	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Office	All	Space Heating	25.0	3.5%	per premise	82	$19,670	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Restaurant	All	Space Heating	25.0	3.5%	per premise	46	$5,629	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Retail	All	Space Heating	25.0	3.5%	per premise	83	$20,643	per sf installed	0	$2
Floor Insulation	Commercial	Existing	Warehouse	All	Space Heating	25.0	3.5%	per premise	69	$38,650	per sf installed	0	$2
Heat Recovery	Commercial	Existing	Education	All	Space Heating	15.0	16.2%	per premise	954	$62,693	per sf facility	0	$2
Heat Recovery	Commercial	New	Education	All	Space Heating	15.0	16.2%	per premise	954	$62,693	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Grocery	All	Space Heating	15.0	16.2%	per premise	650	$32,886	per sf facility	0	$2
Heat Recovery	Commercial	New	Grocery	All	Space Heating	15.0	16.2%	per premise	650	$32,886	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Lodging	All	Space Heating	15.0	16.2%	per premise	557	$54,104	per sf facility	0	$2

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Heat Recovery	Commercial	New	Lodging	All	Space Heating	15.0	16.2%	per premise	557	$54,104	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Office	All	Space Heating	15.0	16.2%	per premise	382	$33,923	per sf facility	0	$2
Heat Recovery	Commercial	New	Office	All	Space Heating	15.0	16.2%	per premise	382	$33,923	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Restaurant	All	Space Heating	15.0	16.2%	per premise	216	$8,629	per sf facility	0	$2
Heat Recovery	Commercial	New	Restaurant	All	Space Heating	15.0	16.2%	per premise	216	$8,629	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Retail	All	Space Heating	15.0	16.2%	per premise	388	$27,691	per sf facility	0	$2
Heat Recovery	Commercial	New	Retail	All	Space Heating	15.0	16.2%	per premise	388	$27,691	per sf facility	0	$2
Heat Recovery	Commercial	Existing	Warehouse	All	Space Heating	15.0	16.2%	per premise	320	$40,735	per sf facility	0	$2
Heat Recovery	Commercial	New	Warehouse	All	Space Heating	15.0	16.2%	per premise	320	$40,735	per sf facility	0	$2
High Efficiency Condensing Boiler	Commercial	Early Retirement	Education	All	Space Heating	20.0	16.7%	per premise	980	$85,720	per unit	490	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Education	All	Space Heating	20.0	16.7%	per premise	980	$85,720	per unit	490	$42,860

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Boiler	Commercial	New	Education	All	Space Heating	20.0	11.4%	per premise	672	$46,904	per unit	336	$23,452
High Efficiency Condensing Boiler	Commercial	New	Education	All	Space Heating	20.0	11.4%	per premise	672	$46,904	per unit	336	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Education	All	Space Heating	20.0	11.4%	per premise	672	$46,904	per unit	336	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Education	All	Space Heating	20.0	11.4%	per premise	672	$46,904	per unit	336	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Grocery	All	Space Heating	20.0	16.7%	per premise	667	$42,860	per unit	667	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Grocery	All	Space Heating	20.0	16.7%	per premise	667	$42,860	per unit	667	$42,860
High Efficiency Condensing Boiler	Commercial	New	Grocery	All	Space Heating	20.0	11.4%	per premise	458	$23,452	per unit	458	$23,452
High Efficiency Condensing Boiler	Commercial	New	Grocery	All	Space Heating	20.0	11.4%	per premise	458	$23,452	per unit	458	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Grocery	All	Space Heating	20.0	11.4%	per premise	458	$23,452	per unit	458	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Grocery	All	Space Heating	20.0	11.4%	per premise	458	$23,452	per unit	458	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Healthcare	All	Space Heating	20.0	16.7%	per premise	574	$128,581	per unit	191	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Healthcare	All	Space Heating	20.0	16.7%	per premise	574	$128,581	per unit	191	$42,860
High Efficiency Condensing Boiler	Commercial	New	Healthcare	All	Space Heating	20.0	11.4%	per premise	394	$70,355	per unit	131	$23,452
High Efficiency Condensing Boiler	Commercial	New	Healthcare	All	Space Heating	20.0	11.4%	per premise	394	$70,355	per unit	131	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Healthcare	All	Space Heating	20.0	11.4%	per premise	394	$70,355	per unit	131	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Healthcare	All	Space Heating	20.0	11.4%	per premise	394	$70,355	per unit	131	$23,452

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Boiler	Commercial	Early Retirement	Lodging	All	Space Heating	20.0	16.7%	per premise	572	$85,720	per unit	286	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Lodging	All	Space Heating	20.0	16.7%	per premise	572	$85,720	per unit	286	$42,860
High Efficiency Condensing Boiler	Commercial	New	Lodging	All	Space Heating	20.0	11.4%	per premise	392	$46,904	per unit	196	$23,452
High Efficiency Condensing Boiler	Commercial	New	Lodging	All	Space Heating	20.0	11.4%	per premise	392	$46,904	per unit	196	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Lodging	All	Space Heating	20.0	11.4%	per premise	392	$46,904	per unit	196	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Lodging	All	Space Heating	20.0	11.4%	per premise	392	$46,904	per unit	196	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Misc.	All	Space Heating	20.0	16.7%	per premise	221	$42,860	per unit	221	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Misc.	All	Space Heating	20.0	16.7%	per premise	221	$42,860	per unit	221	$42,860
High Efficiency Condensing Boiler	Commercial	New	Misc.	All	Space Heating	20.0	11.4%	per premise	151	$23,452	per unit	151	$23,452
High Efficiency Condensing Boiler	Commercial	New	Misc.	All	Space Heating	20.0	11.4%	per premise	151	$23,452	per unit	151	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Misc.	All	Space Heating	20.0	11.4%	per premise	151	$23,452	per unit	151	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Misc.	All	Space Heating	20.0	11.4%	per premise	151	$23,452	per unit	151	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Office	All	Space Heating	20.0	16.7%	per premise	392	$85,720	per unit	196	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Office	All	Space Heating	20.0	16.7%	per premise	392	$85,720	per unit	196	$42,860
High Efficiency Condensing Boiler	Commercial	New	Office	All	Space Heating	20.0	11.4%	per premise	269	$46,904	per unit	135	$23,452
High Efficiency Condensing Boiler	Commercial	New	Office	All	Space Heating	20.0	11.4%	per premise	269	$46,904	per unit	135	$23,452

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Boiler	Commercial	Turnover	Office	All	Space Heating	20.0	11.4%	per premise	269	$46,904	per unit	135	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Office	All	Space Heating	20.0	11.4%	per premise	269	$46,904	per unit	135	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Restaurant	All	Space Heating	20.0	16.7%	per premise	222	$42,860	per unit	222	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Restaurant	All	Space Heating	20.0	16.7%	per premise	222	$42,860	per unit	222	$42,860
High Efficiency Condensing Boiler	Commercial	New	Restaurant	All	Space Heating	20.0	11.4%	per premise	152	$23,452	per unit	152	$23,452
High Efficiency Condensing Boiler	Commercial	New	Restaurant	All	Space Heating	20.0	11.4%	per premise	152	$23,452	per unit	152	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Restaurant	All	Space Heating	20.0	11.4%	per premise	152	$23,452	per unit	152	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Restaurant	All	Space Heating	20.0	11.4%	per premise	152	$23,452	per unit	152	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Retail	All	Space Heating	20.0	16.7%	per premise	399	$42,860	per unit	399	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Retail	All	Space Heating	20.0	16.7%	per premise	399	$42,860	per unit	399	$42,860
High Efficiency Condensing Boiler	Commercial	New	Retail	All	Space Heating	20.0	11.4%	per premise	274	$23,452	per unit	274	$23,452
High Efficiency Condensing Boiler	Commercial	New	Retail	All	Space Heating	20.0	11.4%	per premise	274	$23,452	per unit	274	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Retail	All	Space Heating	20.0	11.4%	per premise	274	$23,452	per unit	274	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Retail	All	Space Heating	20.0	11.4%	per premise	274	$23,452	per unit	274	$23,452
High Efficiency Condensing Boiler	Commercial	Early Retirement	Warehouse	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Commercial	Early Retirement	Warehouse	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Boiler	Commercial	New	Warehouse	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Commercial	New	Warehouse	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Warehouse	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Commercial	Turnover	Warehouse	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Furnace	Commercial	Early Retirement	Education	All	Space Heating	17.0	15.4%	per premise	904	$16,503	per unit	139	$2,532
High Efficiency Condensing Furnace	Commercial	New	Education	All	Space Heating	17.0	14.3%	per premise	840	$5,291	per unit	129	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Education	All	Space Heating	17.0	14.3%	per premise	840	$5,291	per unit	129	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Grocery	All	Space Heating	17.0	15.4%	per premise	616	$8,657	per unit	180	$2,532
High Efficiency Condensing Furnace	Commercial	New	Grocery	All	Space Heating	17.0	14.3%	per premise	572	$2,776	per unit	167	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Grocery	All	Space Heating	17.0	14.3%	per premise	572	$2,776	per unit	167	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Healthcare	All	Space Heating	17.0	15.4%	per premise	530	$11,445	per unit	117	$2,532
High Efficiency Condensing Furnace	Commercial	New	Healthcare	All	Space Heating	17.0	14.3%	per premise	492	$3,670	per unit	109	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Healthcare	All	Space Heating	17.0	14.3%	per premise	492	$3,670	per unit	109	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Lodging	All	Space Heating	17.0	15.4%	per premise	528	$14,242	per unit	94	$2,532
High Efficiency Condensing Furnace	Commercial	New	Lodging	All	Space Heating	17.0	14.3%	per premise	490	$4,567	per unit	87	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Lodging	All	Space Heating	17.0	14.3%	per premise	490	$4,567	per unit	87	$812

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Furnace	Commercial	Early Retirement	Misc.	All	Space Heating	17.0	15.4%	per premise	204	$4,082	per unit	126	$2,532
High Efficiency Condensing Furnace	Commercial	New	Misc.	All	Space Heating	17.0	14.3%	per premise	189	$1,309	per unit	117	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Misc.	All	Space Heating	17.0	14.3%	per premise	189	$1,309	per unit	117	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Office	All	Space Heating	17.0	15.4%	per premise	362	$8,930	per unit	103	$2,532
High Efficiency Condensing Furnace	Commercial	New	Office	All	Space Heating	17.0	14.3%	per premise	336	$2,863	per unit	95	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Office	All	Space Heating	17.0	14.3%	per premise	336	$2,863	per unit	95	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Restaurant	All	Space Heating	17.0	15.4%	per premise	204	$2,272	per unit	228	$2,532
High Efficiency Condensing Furnace	Commercial	New	Restaurant	All	Space Heating	17.0	14.3%	per premise	190	$728	per unit	212	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Restaurant	All	Space Heating	17.0	14.3%	per premise	190	$728	per unit	212	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Retail	All	Space Heating	17.0	15.4%	per premise	368	$7,289	per unit	128	$2,532
High Efficiency Condensing Furnace	Commercial	New	Retail	All	Space Heating	17.0	14.3%	per premise	342	$2,337	per unit	119	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Retail	All	Space Heating	17.0	14.3%	per premise	342	$2,337	per unit	119	$812
High Efficiency Condensing Furnace	Commercial	Early Retirement	Warehouse	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
High Efficiency Condensing Furnace	Commercial	New	Warehouse	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
High Efficiency Condensing Furnace	Commercial	Turnover	Warehouse	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Education	All	Space Heating	18.0	23.2%	per premise	1,361	$20,580	per unit	218	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Education	All	Space Heating	18.0	13.0%	per premise	767	$12,459	per unit	123	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Education	All	Space Heating	18.0	13.0%	per premise	767	$12,459	per unit	123	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Grocery	All	Space Heating	18.0	23.2%	per premise	927	$10,796	per unit	282	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Grocery	All	Space Heating	18.0	13.0%	per premise	522	$6,535	per unit	159	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Grocery	All	Space Heating	18.0	13.0%	per premise	522	$6,535	per unit	159	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Healthcare	All	Space Heating	18.0	23.2%	per premise	798	$14,273	per unit	184	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Healthcare	All	Space Heating	18.0	13.0%	per premise	449	$8,640	per unit	104	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Healthcare	All	Space Heating	18.0	13.0%	per premise	449	$8,640	per unit	104	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Lodging	All	Space Heating	18.0	23.2%	per premise	795	$17,761	per unit	147	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Lodging	All	Space Heating	18.0	13.0%	per premise	448	$10,752	per unit	83	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Lodging	All	Space Heating	18.0	13.0%	per premise	448	$10,752	per unit	83	$1,991

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Misc.	All	Space Heating	18.0	23.2%	per premise	307	$5,091	per unit	198	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Misc.	All	Space Heating	18.0	13.0%	per premise	173	$3,082	per unit	112	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Misc.	All	Space Heating	18.0	13.0%	per premise	173	$3,082	per unit	112	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Office	All	Space Heating	18.0	23.2%	per premise	545	$11,136	per unit	161	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Office	All	Space Heating	18.0	13.0%	per premise	307	$6,741	per unit	91	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Office	All	Space Heating	18.0	13.0%	per premise	307	$6,741	per unit	91	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Restaurant	All	Space Heating	18.0	23.2%	per premise	308	$3,289	per unit	308	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Restaurant	All	Space Heating	18.0	13.0%	per premise	173	$1,991	per unit	173	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Restaurant	All	Space Heating	18.0	13.0%	per premise	173	$1,991	per unit	173	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Retail	All	Space Heating	18.0	23.2%	per premise	554	$9,090	per unit	200	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Retail	All	Space Heating	18.0	13.0%	per premise	312	$5,503	per unit	113	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Retail	All	Space Heating	18.0	13.0%	per premise	312	$5,503	per unit	113	$1,991

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Early Retirement	Warehouse	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	New	Warehouse	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Commercial	Turnover	Warehouse	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Education	All	Space Heating	18.0	17.8%	per premise	1,046	$19,641	per unit	167	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Education	All	Space Heating	18.0	7.0%	per premise	410	$11,519	per unit	66	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Education	All	Space Heating	18.0	7.0%	per premise	410	$11,519	per unit	66	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Grocery	All	Space Heating	18.0	17.8%	per premise	712	$10,303	per unit	217	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Grocery	All	Space Heating	18.0	7.0%	per premise	279	$6,043	per unit	85	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Grocery	All	Space Heating	18.0	7.0%	per premise	279	$6,043	per unit	85	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Healthcare	All	Space Heating	18.0	17.8%	per premise	613	$13,621	per unit	141	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Healthcare	All	Space Heating	18.0	7.0%	per premise	240	$7,989	per unit	55	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Healthcare	All	Space Heating	18.0	7.0%	per premise	240	$7,989	per unit	55	$1,841

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Lodging	All	Space Heating	18.0	17.8%	per premise	611	$16,950	per unit	113	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Lodging	All	Space Heating	18.0	7.0%	per premise	239	$9,941	per unit	44	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Lodging	All	Space Heating	18.0	7.0%	per premise	239	$9,941	per unit	44	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Misc.	All	Space Heating	18.0	17.8%	per premise	236	$4,859	per unit	152	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Misc.	All	Space Heating	18.0	7.0%	per premise	92	$2,849	per unit	60	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Misc.	All	Space Heating	18.0	7.0%	per premise	92	$2,849	per unit	60	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Office	All	Space Heating	18.0	17.8%	per premise	419	$10,628	per unit	124	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Office	All	Space Heating	18.0	7.0%	per premise	164	$6,233	per unit	49	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Office	All	Space Heating	18.0	7.0%	per premise	164	$6,233	per unit	49	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Restaurant	All	Space Heating	18.0	17.8%	per premise	236	$3,139	per unit	236	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Restaurant	All	Space Heating	18.0	7.0%	per premise	93	$1,841	per unit	93	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Restaurant	All	Space Heating	18.0	7.0%	per premise	93	$1,841	per unit	93	$1,841

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Retail	All	Space Heating	18.0	17.8%	per premise	426	$8,675	per unit	154	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Retail	All	Space Heating	18.0	7.0%	per premise	167	$5,088	per unit	60	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Retail	All	Space Heating	18.0	7.0%	per premise	167	$5,088	per unit	60	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Early Retirement	Warehouse	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Commercial	New	Warehouse	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Commercial	Turnover	Warehouse	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
Hot Water Temperature Reset	Commercial	Existing	Education	All	Space Heating	20.0	3.6%	per premise	212	$5,254	per water heater	33	$806
Hot Water Temperature Reset	Commercial	Existing	Grocery	All	Space Heating	20.0	3.6%	per premise	145	$2,756	per water heater	42	$806
Hot Water Temperature Reset	Commercial	Existing	Healthcare	All	Space Heating	20.0	3.6%	per premise	125	$3,644	per water heater	28	$806
Hot Water Temperature Reset	Commercial	Existing	Lodging	All	Space Heating	20.0	3.6%	per premise	124	$4,534	per water heater	22	$806

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Hot Water Temperature Reset	Commercial	Existing	Misc.	All	Space Heating	20.0	3.6%	per premise	48	$1,300	per water heater	30	$806
Hot Water Temperature Reset	Commercial	Existing	Office	All	Space Heating	20.0	3.6%	per premise	85	$2,843	per water heater	24	$806
Hot Water Temperature Reset	Commercial	Existing	Restaurant	All	Space Heating	20.0	3.6%	per premise	48	$806	per water heater	48	$806
Hot Water Temperature Reset	Commercial	Existing	Retail	All	Space Heating	20.0	3.6%	per premise	86	$2,320	per water heater	30	$806
Hot Water Temperature Reset	Commercial	Existing	Warehouse	All	Space Heating	20.0	3.6%	per premise	71	$3,414	per water heater	17	$806
HVAC Controls	Commercial	Existing	Education	All	Space Heating	11.0	8.8%	per premise	517	$9,587	per building	517	$9,587
HVAC Controls	Commercial	New	Education	All	Space Heating	11.0	8.8%	per premise	517	$9,587	per building	517	$9,587
HVAC Controls	Commercial	Existing	Grocery	All	Space Heating	11.0	8.8%	per premise	352	$9,587	per building	352	$9,587
HVAC Controls	Commercial	New	Grocery	All	Space Heating	11.0	8.8%	per premise	352	$9,587	per building	352	$9,587

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
HVAC Controls	Commercial	Existing	Healthcare	All	Space Heating	11.0	8.8%	per premise	303	$9,587	per building	303	$9,587
HVAC Controls	Commercial	New	Healthcare	All	Space Heating	11.0	8.8%	per premise	303	$9,587	per building	303	$9,587
HVAC Controls	Commercial	Existing	Lodging	All	Space Heating	11.0	8.8%	per premise	302	$9,587	per building	302	$9,587
HVAC Controls	Commercial	New	Lodging	All	Space Heating	11.0	8.8%	per premise	302	$9,587	per building	302	$9,587
HVAC Controls	Commercial	Existing	Misc.	All	Space Heating	11.0	8.8%	per premise	117	$9,587	per building	117	$9,587
HVAC Controls	Commercial	New	Misc.	All	Space Heating	11.0	8.8%	per premise	117	$9,587	per building	117	$9,587
HVAC Controls	Commercial	Existing	Office	All	Space Heating	11.0	8.8%	per premise	207	$9,587	per building	207	$9,587
HVAC Controls	Commercial	New	Office	All	Space Heating	11.0	8.8%	per premise	207	$9,587	per building	207	$9,587
HVAC Controls	Commercial	Existing	Restaurant	All	Space Heating	11.0	8.8%	per premise	117	$9,587	per building	117	$9,587
HVAC Controls	Commercial	New	Restaurant	All	Space Heating	11.0	8.8%	per premise	117	$9,587	per building	117	$9,587
HVAC Controls	Commercial	Existing	Retail	All	Space Heating	11.0	8.8%	per premise	211	$9,587	per building	211	$9,587

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
HVAC Controls	Commercial	New	Retail	All	Space Heating	11.0	8.8%	per premise	211	$9,587	per building	211	$9,587
HVAC Controls	Commercial	Existing	Warehouse	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Commercial	New	Warehouse	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC System Commissioning	Commercial	Existing	Education	All	Space Heating	5.0	5.5%	per premise	321	$9,567	per building	321	$9,567
HVAC System Commissioning	Commercial	Existing	Grocery	All	Space Heating	5.0	5.5%	per premise	219	$9,567	per building	219	$9,567
HVAC System Commissioning	Commercial	Existing	Healthcare	All	Space Heating	5.0	5.5%	per premise	188	$9,567	per building	188	$9,567
HVAC System Commissioning	Commercial	Existing	Lodging	All	Space Heating	5.0	5.5%	per premise	187	$9,567	per building	187	$9,567
HVAC System Commissioning	Commercial	Existing	Misc.	All	Space Heating	5.0	5.5%	per premise	72	$9,567	per building	72	$9,567
HVAC System Commissioning	Commercial	Existing	Office	All	Space Heating	5.0	5.5%	per premise	129	$9,567	per building	129	$9,567
HVAC System Commissioning	Commercial	Existing	Restaurant	All	Space Heating	5.0	5.5%	per premise	73	$9,567	per building	73	$9,567
HVAC System Commissioning	Commercial	Existing	Retail	All	Space Heating	5.0	5.5%	per premise	131	$9,567	per building	131	$9,567

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
HVAC System Commissioning	Commercial	Existing	Warehouse	All	Space Heating	5.0	5.5%	per premise	108	$9,567	per building	108	$9,567
Natural Gas Heat Pump	Commercial	Early Retirement	Education	All	Space Heating	20.0	37.5%	per premise	2,205	$118,779	per unit	1,102	$59,390
Natural Gas Heat Pump	Commercial	New	Education	All	Space Heating	20.0	33.6%	per premise	1,974	$79,963	per unit	987	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Education	All	Space Heating	20.0	33.6%	per premise	1,974	$79,963	per unit	987	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Grocery	All	Space Heating	20.0	37.5%	per premise	1,502	$59,390	per unit	1,502	$59,390
Natural Gas Heat Pump	Commercial	New	Grocery	All	Space Heating	20.0	33.6%	per premise	1,344	$39,981	per unit	1,344	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Grocery	All	Space Heating	20.0	33.6%	per premise	1,344	$39,981	per unit	1,344	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Healthcare	All	Space Heating	20.0	37.5%	per premise	1,292	$178,169	per unit	431	$59,390
Natural Gas Heat Pump	Commercial	New	Healthcare	All	Space Heating	20.0	33.6%	per premise	1,157	$119,944	per unit	386	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Healthcare	All	Space Heating	20.0	33.6%	per premise	1,157	$119,944	per unit	386	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Lodging	All	Space Heating	20.0	37.5%	per premise	1,287	$118,779	per unit	644	$59,390
Natural Gas Heat Pump	Commercial	New	Lodging	All	Space Heating	20.0	33.6%	per premise	1,152	$79,963	per unit	576	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Lodging	All	Space Heating	20.0	33.6%	per premise	1,152	$79,963	per unit	576	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Misc.	All	Space Heating	20.0	37.5%	per premise	497	$59,390	per unit	497	$59,390
Natural Gas Heat Pump	Commercial	New	Misc.	All	Space Heating	20.0	33.6%	per premise	445	$39,981	per unit	445	$39,981

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Natural Gas Heat Pump	Commercial	Turnover	Misc.	All	Space Heating	20.0	33.6%	per premise	445	$39,981	per unit	445	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Office	All	Space Heating	20.0	37.5%	per premise	883	$118,779	per unit	442	$59,390
Natural Gas Heat Pump	Commercial	New	Office	All	Space Heating	20.0	33.6%	per premise	791	$79,963	per unit	395	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Office	All	Space Heating	20.0	33.6%	per premise	791	$79,963	per unit	395	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Restaurant	All	Space Heating	20.0	37.5%	per premise	498	$59,390	per unit	498	$59,390
Natural Gas Heat Pump	Commercial	New	Restaurant	All	Space Heating	20.0	33.6%	per premise	446	$39,981	per unit	446	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Restaurant	All	Space Heating	20.0	33.6%	per premise	446	$39,981	per unit	446	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Retail	All	Space Heating	20.0	37.5%	per premise	897	$59,390	per unit	897	$59,390
Natural Gas Heat Pump	Commercial	New	Retail	All	Space Heating	20.0	33.6%	per premise	803	$39,981	per unit	803	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Retail	All	Space Heating	20.0	33.6%	per premise	803	$39,981	per unit	803	$39,981
Natural Gas Heat Pump	Commercial	Early Retirement	Warehouse	All	Space Heating	20.0	37.5%	per premise	740	$59,390	per unit	740	$59,390
Natural Gas Heat Pump	Commercial	New	Warehouse	All	Space Heating	20.0	33.6%	per premise	663	$39,981	per unit	663	$39,981
Natural Gas Heat Pump	Commercial	Turnover	Warehouse	All	Space Heating	20.0	33.6%	per premise	663	$39,981	per unit	663	$39,981
Roof insulation (retrofit only) - Tier 1: Min R-30	Commercial	Existing	Lodging	All	Space Heating	27.5	21.7%	per premise	744	$10,037	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 1: Min R-30	Commercial	Existing	Office	All	Space Heating	27.5	21.7%	per premise	510	$5,944	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Roof insulation (retrofit only) - Tier 1: Min R-30	Commercial	Existing	Restaurant	All	Space Heating	27.5	21.7%	per premise	288	$1,701	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 1: Min R-30	Commercial	Existing	Retail	All	Space Heating	27.5	21.7%	per premise	518	$6,238	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Commercial	Existing	Lodging	All	Space Heating	27.5	22.8%	per premise	782	$15,828	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Commercial	Existing	Office	All	Space Heating	27.5	22.8%	per premise	536	$9,373	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Commercial	Existing	Restaurant	All	Space Heating	27.5	22.8%	per premise	303	$2,682	per sf installed	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Commercial	Existing	Retail	All	Space Heating	27.5	22.8%	per premise	545	$9,837	per sf installed	0	$1
Solar Wall	Commercial	Existing	Education	All	Space Heating	30.0	9.0%	per premise	527	$23,161	per sf installed	0	$11
Solar Wall	Commercial	New	Education	All	Space Heating	30.0	9.0%	per premise	527	$23,161	per sf installed	0	$11
Solar Wall	Commercial	Existing	Grocery	All	Space Heating	30.0	9.0%	per premise	359	$16,775	per sf installed	0	$11
Solar Wall	Commercial	New	Grocery	All	Space Heating	30.0	9.0%	per premise	359	$16,775	per sf installed	0	$11
Solar Wall	Commercial	Existing	Healthcare	All	Space Heating	30.0	9.0%	per premise	309	$19,288	per sf installed	0	$11

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Solar Wall	Commercial	New	Healthcare	All	Space Heating	30.0	9.0%	per premise	309	$19,288	per sf installed	0	$11
Solar Wall	Commercial	Existing	Lodging	All	Space Heating	30.0	9.0%	per premise	308	$21,516	per sf installed	0	$11
Solar Wall	Commercial	New	Lodging	All	Space Heating	30.0	9.0%	per premise	308	$21,516	per sf installed	0	$11
Solar Wall	Commercial	Existing	Misc.	All	Space Heating	30.0	9.0%	per premise	119	$11,520	per sf installed	0	$11
Solar Wall	Commercial	New	Misc.	All	Space Heating	30.0	9.0%	per premise	119	$11,520	per sf installed	0	$11
Solar Wall	Commercial	Existing	Office	All	Space Heating	30.0	9.0%	per premise	211	$17,037	per sf installed	0	$11
Solar Wall	Commercial	New	Office	All	Space Heating	30.0	9.0%	per premise	211	$17,037	per sf installed	0	$11
Solar Wall	Commercial	Existing	Restaurant	All	Space Heating	30.0	9.0%	per premise	119	$8,593	per sf installed	0	$11
Solar Wall	Commercial	New	Restaurant	All	Space Heating	30.0	9.0%	per premise	119	$8,593	per sf installed	0	$11
Solar Wall	Commercial	Existing	Retail	All	Space Heating	30.0	9.0%	per premise	215	$15,393	per sf installed	0	$11
Solar Wall	Commercial	New	Retail	All	Space Heating	30.0	9.0%	per premise	215	$15,393	per sf installed	0	$11

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Solar Wall	Commercial	Existing	Warehouse	All	Space Heating	30.0	9.0%	per premise	177	$18,670	per sf installed	0	$11
Solar Wall	Commercial	New	Warehouse	All	Space Heating	30.0	9.0%	per premise	177	$18,670	per sf installed	0	$11
Steam System Efficiency Improvements	Commercial	Existing	Education	All	Space Heating	15.0	10.2%	per premise	600	$10,540	per premise	600	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Healthcare	All	Space Heating	15.0	10.2%	per premise	351	$10,540	per premise	351	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Lodging	All	Space Heating	15.0	10.2%	per premise	350	$10,540	per premise	350	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Misc.	All	Space Heating	15.0	10.2%	per premise	135	$10,540	per premise	135	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Office	All	Space Heating	15.0	10.2%	per premise	240	$10,540	per premise	240	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Retail	All	Space Heating	15.0	10.2%	per premise	244	$10,540	per premise	244	$10,540
Steam System Efficiency Improvements	Commercial	Existing	Warehouse	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per premise	201	$10,540
Variable Volume Air System	Commercial	Existing	Education	All	Space Heating	15.0	62.7%	per premise	3,685	$67,748	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Grocery	All	Space Heating	15.0	62.7%	per premise	2,510	$35,538	per sf facility	0	$3

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Variable Volume Air System	Commercial	Existing	Healthcare	All	Space Heating	15.0	62.7%	per premise	2,159	$46,984	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Lodging	All	Space Heating	15.0	62.7%	per premise	2,151	$58,467	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Misc.	All	Space Heating	15.0	62.7%	per premise	830	$16,759	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Office	All	Space Heating	15.0	62.7%	per premise	1,476	$36,659	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Restaurant	All	Space Heating	15.0	62.7%	per premise	833	$9,325	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Retail	All	Space Heating	15.0	62.7%	per premise	1,500	$29,923	per sf facility	0	$3
Variable Volume Air System	Commercial	Existing	Warehouse	All	Space Heating	15.0	62.7%	per premise	1,237	$44,019	per sf facility	0	$3
Ventilation Hood / Makeup Air	Commercial	Existing	Education	All	Space Heating	5.0	3.1%	per premise	180	$3,507	per unit	127	$2,459
Ventilation Hood / Makeup Air	Commercial	New	Education	All	Space Heating	5.0	3.1%	per premise	180	$3,507	per unit	127	$2,459
Ventilation Hood / Makeup Air	Commercial	Existing	Grocery	All	Space Heating	5.0	5.8%	per premise	234	$3,507	per unit	164	$2,459
Ventilation Hood / Makeup Air	Commercial	New	Grocery	All	Space Heating	5.0	5.8%	per premise	234	$3,507	per unit	164	$2,459
Ventilation Hood / Makeup Air	Commercial	Existing	Healthcare	All	Space Heating	5.0	4.4%	per premise	152	$3,507	per unit	107	$2,459

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Ventilation Hood / Makeup Air	Commercial	New	Healthcare	All	Space Heating	5.0	4.4%	per premise	152	$3,507	per unit	107	$2,459
Ventilation Hood / Makeup Air	Commercial	Existing	Lodging	All	Space Heating	5.0	3.6%	per premise	122	$3,507	per unit	86	$2,459
Ventilation Hood / Makeup Air	Commercial	New	Lodging	All	Space Heating	5.0	3.6%	per premise	122	$3,507	per unit	86	$2,459
Ventilation Hood / Makeup Air	Commercial	Existing	Restaurant	All	Space Heating	5.0	22.3%	per premise	296	$3,507	per unit	208	$2,459
Ventilation Hood / Makeup Air	Commercial	New	Restaurant	All	Space Heating	5.0	22.3%	per premise	296	$3,507	per unit	208	$2,459
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Education	All	Space Heating	27.5	19.7%	per premise	1,160	$8,118	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Lodging	All	Space Heating	27.5	19.7%	per premise	677	$7,542	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Misc.	All	Space Heating	27.5	19.7%	per premise	261	$4,038	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Office	All	Space Heating	27.5	19.7%	per premise	465	$5,972	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Restaurant	All	Space Heating	27.5	19.7%	per premise	262	$3,012	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Retail	All	Space Heating	27.5	19.7%	per premise	472	$5,395	per sf installed	0	$1
Wall insulation - Tier 2: Min R-19	Commercial	Existing	Warehouse	All	Space Heating	27.5	19.7%	per premise	389	$6,544	per sf installed	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Education	All	Space Heating	27.5	15.9%	per premise	935	$7,068	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Lodging	All	Space Heating	27.5	15.9%	per premise	546	$6,566	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Misc.	All	Space Heating	27.5	15.9%	per premise	211	$3,515	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Office	All	Space Heating	27.5	15.9%	per premise	375	$5,199	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Restaurant	All	Space Heating	27.5	15.9%	per premise	211	$2,622	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Retail	All	Space Heating	27.5	15.9%	per premise	381	$4,697	per sf installed	0	$1
Wall insulation (Retrofit Only) - Tier 1: Min R-11	Commercial	Existing	Warehouse	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installed	0	$1
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Education	All	Space Heating	20.0	4.9%	per premise	291	$1,748	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Education	All	Space Heating	20.0	4.0%	per premise	237	$1,748	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Healthcare	All	Space Heating	20.0	4.9%	per premise	170	$1,212	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Healthcare	All	Space Heating	20.0	4.0%	per premise	139	$1,212	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Misc.	All	Space Heating	20.0	4.9%	per premise	66	$432	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Misc.	All	Space Heating	20.0	4.0%	per premise	53	$432	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Office	All	Space Heating	20.0	4.9%	per premise	117	$946	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Office	All	Space Heating	20.0	4.0%	per premise	95	$946	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Restaurant	All	Space Heating	20.0	4.9%	per premise	66	$241	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Restaurant	All	Space Heating	20.0	4.0%	per premise	54	$241	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Retail	All	Space Heating	20.0	4.9%	per premise	118	$772	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Retail	All	Space Heating	20.0	4.0%	per premise	96	$772	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	Existing	Warehouse	All	Space Heating	20.0	4.9%	per premise	98	$1,136	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Commercial	New	Warehouse	All	Space Heating	20.0	4.0%	per premise	80	$1,136	per sf facility	0	$0
Windows - Add Low E and Argon to Vinyl Tint	Commercial	Existing	Office	All	Space Heating	20.0	17.1%	per premise	403	$350	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Add Low E and Argon to Vinyl Tint	Commercial	New	Office	All	Space Heating	20.0	13.4%	per premise	316	$350	per sf facility	0	$0
Windows - Add Low E and Argon to Vinyl Tint	Commercial	Existing	Retail	All	Space Heating	20.0	17.1%	per premise	409	$356	per sf facility	0	$0
Windows - Add Low E and Argon to Vinyl Tint	Commercial	New	Retail	All	Space Heating	20.0	13.4%	per premise	321	$356	per sf facility	0	$0
Windows - Add Low E and Argon to Vinyl Tint	Commercial	Existing	Warehouse	All	Space Heating	20.0	17.1%	per premise	337	$293	per sf facility	0	$0
Windows - Add Low E and Argon to Vinyl Tint	Commercial	New	Warehouse	All	Space Heating	20.0	13.4%	per premise	265	$293	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	Existing	Office	All	Space Heating	20.0	12.2%	per premise	286	$1,677	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	New	Office	All	Space Heating	20.0	9.3%	per premise	220	$1,677	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	Existing	Retail	All	Space Heating	20.0	12.2%	per premise	291	$1,369	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	New	Retail	All	Space Heating	20.0	9.3%	per premise	223	$1,369	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	Existing	Warehouse	All	Space Heating	20.0	12.2%	per premise	240	$2,014	per sf facility	0	$0
Windows - Add Low E to Vinyl Tint	Commercial	New	Warehouse	All	Space Heating	20.0	9.3%	per premise	184	$2,014	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Education	All	Space Heating	20.0	12.8%	per premise	752	$11,651	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Grocery	All	Space Heating	20.0	12.8%	per premise	512	$6,112	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Healthcare	All	Space Heating	20.0	12.8%	per premise	441	$8,080	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Lodging	All	Space Heating	20.0	12.8%	per premise	439	$10,055	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Misc.	All	Space Heating	20.0	12.8%	per premise	169	$2,882	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Office	All	Space Heating	20.0	12.8%	per premise	301	$6,305	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Retail	All	Space Heating	20.0	12.8%	per premise	306	$5,146	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Commercial	Existing	Warehouse	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Education	All	Space Heating	20.0	8.3%	per premise	488	$4,661	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Grocery	All	Space Heating	20.0	8.3%	per premise	332	$2,445	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Healthcare	All	Space Heating	20.0	8.3%	per premise	286	$3,232	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Lodging	All	Space Heating	20.0	8.3%	per premise	285	$4,022	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Misc.	All	Space Heating	20.0	8.3%	per premise	110	$1,153	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Office	All	Space Heating	20.0	8.3%	per premise	195	$2,522	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Restaurant	All	Space Heating	20.0	8.3%	per premise	110	$642	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Retail	All	Space Heating	20.0	8.3%	per premise	199	$2,058	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Commercial	Existing	Warehouse	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Education	All	Space Heating	20.0	3.1%	per premise	180	$3,099	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Grocery	All	Space Heating	20.0	3.1%	per premise	122	$1,626	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Healthcare	All	Space Heating	20.0	3.1%	per premise	105	$2,149	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Lodging	All	Space Heating	20.0	3.1%	per premise	105	$2,675	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Misc.	All	Space Heating	20.0	3.1%	per premise	40	$767	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Office	All	Space Heating	20.0	3.1%	per premise	72	$1,677	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Restaurant	All	Space Heating	20.0	3.1%	per premise	41	$427	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Retail	All	Space Heating	20.0	3.1%	per premise	73	$1,369	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Commercial	Existing	Warehouse	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Education	All	Space Heating	20.0	11.0%	per premise	646	$11,651	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Grocery	All	Space Heating	20.0	11.0%	per premise	440	$6,112	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Healthcare	All	Space Heating	20.0	11.0%	per premise	379	$8,080	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Lodging	All	Space Heating	20.0	11.0%	per premise	377	$10,055	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Misc.	All	Space Heating	20.0	11.0%	per premise	146	$2,882	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Office	All	Space Heating	20.0	11.0%	per premise	259	$6,305	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Commercial	Existing	Retail	All	Space Heating	20.0	11.0%	per premise	263	$5,146	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Windows - Tinted AL Code to Class 36	Commercial	Existing	Warehouse	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Education	All	Space Heating	20.0	0.6%	per premise	37	$3,099	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Grocery	All	Space Heating	20.0	0.6%	per premise	25	$1,626	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Healthcare	All	Space Heating	20.0	0.6%	per premise	22	$2,149	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Lodging	All	Space Heating	20.0	0.6%	per premise	22	$2,675	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Misc.	All	Space Heating	20.0	0.6%	per premise	8	$767	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Office	All	Space Heating	20.0	0.6%	per premise	15	$1,677	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Retail	All	Space Heating	20.0	0.6%	per premise	15	$1,369	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Commercial	Existing	Warehouse	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Education	All	Water Heating	20.0	16.7%	per premise	514	$128,581	per unit	257	$64,290
Combination Boiler and Hot Water Heater	Commercial	New	Education	All	Water Heating	20.0	11.4%	per premise	352	$70,355	per unit	352	$70,355

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Boiler and Hot Water Heater	Commercial	Turnover	Education	All	Water Heating	20.0	11.4%	per premise	352	$70,355	per unit	176	$35,178
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	20.0	16.7%	per premise	60	$91,592	per unit	30	$45,796
Combination Boiler and Hot Water Heater	Commercial	New	Grocery	All	Water Heating	20.0	11.4%	per premise	41	$50,117	per unit	21	$25,058
Combination Boiler and Hot Water Heater	Commercial	Turnover	Grocery	All	Water Heating	20.0	11.4%	per premise	41	$50,117	per unit	21	$25,058
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	20.0	16.7%	per premise	311	$121,092	per unit	311	$121,092
Combination Boiler and Hot Water Heater	Commercial	New	Healthcare	All	Water Heating	20.0	11.4%	per premise	213	$66,258	per unit	107	$33,129
Combination Boiler and Hot Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	20.0	11.4%	per premise	213	$66,258	per unit	213	$66,258
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	20.0	16.7%	per premise	1,109	$150,686	per unit	1,109	$150,686
Combination Boiler and Hot Water Heater	Commercial	New	Lodging	All	Water Heating	20.0	11.4%	per premise	760	$82,451	per unit	760	$82,451
Combination Boiler and Hot Water Heater	Commercial	Turnover	Lodging	All	Water Heating	20.0	11.4%	per premise	760	$82,451	per unit	760	$82,451
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	20.0	16.7%	per premise	6	$43,192	per unit	2	$14,397
Combination Boiler and Hot Water Heater	Commercial	New	Misc.	All	Water Heating	20.0	11.4%	per premise	4	$23,634	per unit	4	$23,634

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Boiler and Hot Water Heater	Commercial	Turnover	Misc.	All	Water Heating	20.0	11.4%	per premise	4	$23,634	per unit	1	$7,878
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Office	All	Water Heating	20.0	16.7%	per premise	23	$94,480	per unit	23	$94,480
Combination Boiler and Hot Water Heater	Commercial	New	Office	All	Water Heating	20.0	11.4%	per premise	16	$51,697	per unit	5	$17,232
Combination Boiler and Hot Water Heater	Commercial	Turnover	Office	All	Water Heating	20.0	11.4%	per premise	16	$51,697	per unit	16	$51,697
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	20.0	16.7%	per premise	227	$42,860	per unit	114	$21,430
Combination Boiler and Hot Water Heater	Commercial	New	Restaurant	All	Water Heating	20.0	11.4%	per premise	156	$23,452	per unit	156	$23,452
Combination Boiler and Hot Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	20.0	11.4%	per premise	156	$23,452	per unit	78	$11,726
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	20.0	16.7%	per premise	14	$77,122	per unit	14	$77,122
Combination Boiler and Hot Water Heater	Commercial	New	Retail	All	Water Heating	20.0	11.4%	per premise	10	$42,199	per unit	5	$21,099
Combination Boiler and Hot Water Heater	Commercial	Turnover	Retail	All	Water Heating	20.0	11.4%	per premise	10	$42,199	per unit	10	$42,199
Combination Boiler and Hot Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	20.0	16.7%	per premise	11	$42,860	per unit	11	$42,860
Combination Boiler and Hot Water Heater	Commercial	New	Warehouse	All	Water Heating	20.0	11.4%	per premise	7	$23,452	per unit	7	$23,452

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Combination Boiler and Hot Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	20.0	11.4%	per premise	7	$23,452	per unit	7	$23,452
Drainwater Heat Recovery	Commercial	Existing	Education	All	Water Heating	20.0	30.0%	per premise	924	$3,822	per unit	230	$949
Drainwater Heat Recovery	Commercial	New	Education	All	Water Heating	20.0	30.0%	per premise	924	$3,419	per unit	230	$849
Drainwater Heat Recovery	Commercial	Existing	Grocery	All	Water Heating	20.0	30.0%	per premise	108	$2,393	per unit	43	$949
Drainwater Heat Recovery	Commercial	New	Grocery	All	Water Heating	20.0	30.0%	per premise	108	$2,141	per unit	43	$849
Drainwater Heat Recovery	Commercial	Existing	Healthcare	All	Water Heating	20.0	30.0%	per premise	560	$3,378	per unit	157	$949
Drainwater Heat Recovery	Commercial	New	Healthcare	All	Water Heating	20.0	30.0%	per premise	560	$3,022	per unit	157	$849
Drainwater Heat Recovery	Commercial	Existing	Lodging	All	Water Heating	20.0	30.0%	per premise	1,996	$3,577	per unit	530	$949
Drainwater Heat Recovery	Commercial	New	Lodging	All	Water Heating	20.0	30.0%	per premise	1,996	$3,200	per unit	530	$849
Drainwater Heat Recovery	Commercial	Existing	Misc.	All	Water Heating	20.0	30.0%	per premise	11	$1,048	per unit	10	$949
Drainwater Heat Recovery	Commercial	New	Misc.	All	Water Heating	20.0	30.0%	per premise	11	$938	per unit	10	$849
Drainwater Heat Recovery	Commercial	Existing	Office	All	Water Heating	20.0	30.0%	per premise	42	$2,487	per unit	16	$949

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Drainwater Heat Recovery	Commercial	New	Office	All	Water Heating	20.0	30.0%	per premise	42	$2,225	per unit	16	$849
Drainwater Heat Recovery	Commercial	Existing	Restaurant	All	Water Heating	20.0	30.0%	per premise	409	$949	per unit	409	$949
Drainwater Heat Recovery	Commercial	New	Restaurant	All	Water Heating	20.0	30.0%	per premise	409	$849	per unit	409	$849
Drainwater Heat Recovery	Commercial	Existing	Retail	All	Water Heating	20.0	30.0%	per premise	25	$1,872	per unit	13	$949
Drainwater Heat Recovery	Commercial	New	Retail	All	Water Heating	20.0	30.0%	per premise	25	$1,674	per unit	13	$849
Drainwater Heat Recovery	Commercial	Existing	Warehouse	All	Water Heating	20.0	30.0%	per premise	20	$949	per unit	20	$949
Drainwater Heat Recovery	Commercial	New	Warehouse	All	Water Heating	20.0	30.0%	per premise	20	$849	per unit	20	$849
Faucet Aerator	Commercial	Existing	Education	All	Water Heating	9.0	20.8%	per premise	642	$240	per unit	21	$8
Faucet Aerator	Commercial	New	Education	All	Water Heating	9.0	11.1%	per premise	342	$240	per unit	11	$8
Faucet Aerator	Commercial	Existing	Grocery	All	Water Heating	9.0	20.8%	per premise	75	$32	per unit	19	$8
Faucet Aerator	Commercial	New	Grocery	All	Water Heating	9.0	11.1%	per premise	40	$32	per unit	10	$8
Faucet Aerator	Commercial	Existing	Healthcare	All	Water Heating	9.0	20.8%	per premise	389	$160	per unit	19	$8

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Faucet Aerator	Commercial	New	Healthcare	All	Water Heating	9.0	11.1%	per premise	207	$160	per unit	10	$8
Faucet Aerator	Commercial	Existing	Lodging	All	Water Heating	9.0	20.8%	per premise	1,386	$200	per unit	55	$8
Faucet Aerator	Commercial	New	Lodging	All	Water Heating	9.0	11.1%	per premise	739	$200	per unit	30	$8
Faucet Aerator	Commercial	Existing	Misc.	All	Water Heating	9.0	20.8%	per premise	8	$16	per unit	4	$8
Faucet Aerator	Commercial	New	Misc.	All	Water Heating	9.0	11.1%	per premise	4	$16	per unit	2	$8
Faucet Aerator	Commercial	Existing	Office	All	Water Heating	9.0	20.8%	per premise	29	$80	per unit	3	$8
Faucet Aerator	Commercial	New	Office	All	Water Heating	9.0	11.1%	per premise	15	$80	per unit	2	$8
Faucet Aerator	Commercial	Existing	Restaurant	All	Water Heating	9.0	20.8%	per premise	284	$16	per unit	142	$8
Faucet Aerator	Commercial	New	Restaurant	All	Water Heating	9.0	11.1%	per premise	152	$16	per unit	76	$8
Faucet Aerator	Commercial	Existing	Retail	All	Water Heating	9.0	20.8%	per premise	18	$16	per unit	9	$8
Faucet Aerator	Commercial	New	Retail	All	Water Heating	9.0	11.1%	per premise	9	$16	per unit	5	$8
Faucet Aerator	Commercial	Existing	Warehouse	All	Water Heating	9.0	20.8%	per premise	14	$16	per unit	7	$8

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Faucet Aerator	Commercial	New	Warehouse	All	Water Heating	9.0	11.1%	per premise	7	$16	per unit	4	$8
Heat Pump Water Heater	Commercial	Early Retirement	Education	All	Water Heating	12.5	60.0%	per premise	1,849	$33,549	per unit	284	$5,147
Heat Pump Water Heater	Commercial	New	Education	All	Water Heating	12.5	56.8%	per premise	1,749	$29,240	per unit	268	$4,486
Heat Pump Water Heater	Commercial	Turnover	Education	All	Water Heating	12.5	56.8%	per premise	1,749	$29,240	per unit	268	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	12.5	60.0%	per premise	216	$17,599	per unit	63	$5,147
Heat Pump Water Heater	Commercial	New	Grocery	All	Water Heating	12.5	56.8%	per premise	204	$15,338	per unit	60	$4,486
Heat Pump Water Heater	Commercial	Turnover	Grocery	All	Water Heating	12.5	56.8%	per premise	204	$15,338	per unit	60	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	12.5	60.0%	per premise	1,119	$23,267	per unit	248	$5,147
Heat Pump Water Heater	Commercial	New	Healthcare	All	Water Heating	12.5	56.8%	per premise	1,059	$20,278	per unit	234	$4,486
Heat Pump Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	12.5	56.8%	per premise	1,059	$20,278	per unit	234	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	12.5	60.0%	per premise	3,991	$28,953	per unit	710	$5,147
Heat Pump Water Heater	Commercial	New	Lodging	All	Water Heating	12.5	56.8%	per premise	3,777	$25,234	per unit	671	$4,486
Heat Pump Water Heater	Commercial	Turnover	Lodging	All	Water Heating	12.5	56.8%	per premise	3,777	$25,234	per unit	671	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	12.5	60.0%	per premise	22	$8,299	per unit	14	$5,147
Heat Pump Water Heater	Commercial	New	Misc.	All	Water Heating	12.5	56.8%	per premise	21	$7,233	per unit	13	$4,486

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Heat Pump Water Heater	Commercial	Turnover	Misc.	All	Water Heating	12.5	56.8%	per premise	21	$7,233	per unit	13	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Office	All	Water Heating	12.5	60.0%	per premise	83	$18,153	per unit	24	$5,147
Heat Pump Water Heater	Commercial	New	Office	All	Water Heating	12.5	56.8%	per premise	79	$15,822	per unit	22	$4,486
Heat Pump Water Heater	Commercial	Turnover	Office	All	Water Heating	12.5	56.8%	per premise	79	$15,822	per unit	22	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	12.5	60.0%	per premise	819	$5,147	per unit	819	$5,147
Heat Pump Water Heater	Commercial	New	Restaurant	All	Water Heating	12.5	56.8%	per premise	775	$4,486	per unit	775	$4,486
Heat Pump Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	12.5	56.8%	per premise	775	$4,486	per unit	775	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	12.5	60.0%	per premise	51	$14,818	per unit	18	$5,147
Heat Pump Water Heater	Commercial	New	Retail	All	Water Heating	12.5	56.8%	per premise	48	$12,915	per unit	17	$4,486
Heat Pump Water Heater	Commercial	Turnover	Retail	All	Water Heating	12.5	56.8%	per premise	48	$12,915	per unit	17	$4,486
Heat Pump Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	12.5	60.0%	per premise	39	$21,799	per unit	9	$5,147
Heat Pump Water Heater	Commercial	New	Warehouse	All	Water Heating	12.5	56.8%	per premise	37	$18,999	per unit	9	$4,486
Heat Pump Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	12.5	56.8%	per premise	37	$18,999	per unit	9	$4,486
High Efficiency Commercial Gas Clothes Washer	Commercial	Existing	Education	All	Water Heating	7.0	27.8%	per premise	857	$1,496	per unit	857	$1,496
High Efficiency Commercial Gas Clothes Washer	Commercial	New	Education	All	Water Heating	7.0	27.8%	per premise	857	$200	per unit	857	$200

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Commercial Gas Clothes Washer	Commercial	Existing	Healthcare	All	Water Heating	7.0	27.8%	per premise	519	$1,496	per unit	519	$1,496
High Efficiency Commercial Gas Clothes Washer	Commercial	New	Healthcare	All	Water Heating	7.0	27.8%	per premise	519	$200	per unit	519	$200
High Efficiency Commercial Gas Clothes Washer	Commercial	Existing	Lodging	All	Water Heating	7.0	27.8%	per premise	1,850	$1,496	per unit	1,850	$1,496
High Efficiency Commercial Gas Clothes Washer	Commercial	New	Lodging	All	Water Heating	7.0	27.8%	per premise	1,850	$200	per unit	1,850	$200
High Efficiency Commercial Gas Clothes Washer	Commercial	Existing	Misc.	All	Water Heating	7.0	27.8%	per premise	10	$1,496	per unit	10	$1,496
High Efficiency Commercial Gas Clothes Washer	Commercial	New	Misc.	All	Water Heating	7.0	27.8%	per premise	10	$200	per unit	10	$200
High Efficiency Commercial Gas Clothes Washer	Commercial	Existing	Restaurant	All	Water Heating	7.0	27.8%	per premise	379	$1,496	per unit	379	$1,496
High Efficiency Commercial Gas Clothes Washer	Commercial	New	Restaurant	All	Water Heating	7.0	27.8%	per premise	379	$200	per unit	379	$200
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Education	All	Water Heating	12.7	23.2%	per premise	714	$19,541	per unit	109	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Education	All	Water Heating	12.7	23.2%	per premise	714	$7,674	per unit	109	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Education	All	Water Heating	12.7	23.2%	per premise	714	$7,674	per unit	109	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	12.7	23.2%	per premise	83	$10,250	per unit	24	$2,998

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Tank Condensing Water Heater	Commercial	New	Grocery	All	Water Heating	12.7	23.2%	per premise	83	$4,025	per unit	24	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Grocery	All	Water Heating	12.7	23.2%	per premise	83	$4,025	per unit	24	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	12.7	23.2%	per premise	432	$13,552	per unit	96	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Healthcare	All	Water Heating	12.7	23.2%	per premise	432	$5,322	per unit	96	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	12.7	23.2%	per premise	432	$5,322	per unit	96	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	12.7	23.2%	per premise	1,541	$16,864	per unit	274	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Lodging	All	Water Heating	12.7	23.2%	per premise	1,541	$6,622	per unit	274	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Lodging	All	Water Heating	12.7	23.2%	per premise	1,541	$6,622	per unit	274	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	12.7	23.2%	per premise	9	$4,834	per unit	5	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Misc.	All	Water Heating	12.7	23.2%	per premise	9	$1,898	per unit	5	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Misc.	All	Water Heating	12.7	23.2%	per premise	9	$1,898	per unit	5	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Office	All	Water Heating	12.7	23.2%	per premise	32	$10,573	per unit	9	$2,998

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Tank Condensing Water Heater	Commercial	New	Office	All	Water Heating	12.7	23.2%	per premise	32	$4,152	per unit	9	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Office	All	Water Heating	12.7	23.2%	per premise	32	$4,152	per unit	9	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	12.7	23.2%	per premise	316	$2,998	per unit	316	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Restaurant	All	Water Heating	12.7	23.2%	per premise	316	$1,177	per unit	316	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	12.7	23.2%	per premise	316	$1,177	per unit	316	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	12.7	23.2%	per premise	20	$8,631	per unit	7	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Retail	All	Water Heating	12.7	23.2%	per premise	20	$3,389	per unit	7	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Retail	All	Water Heating	12.7	23.2%	per premise	20	$3,389	per unit	7	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	12.7	23.2%	per premise	15	$12,697	per unit	4	$2,998
High Efficiency Tank Condensing Water Heater	Commercial	New	Warehouse	All	Water Heating	12.7	23.2%	per premise	15	$4,986	per unit	4	$1,177
High Efficiency Tank Condensing Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	12.7	23.2%	per premise	15	$4,986	per unit	4	$1,177
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Education	All	Water Heating	20.0	22.4%	per premise	321	$4,579	per unit	93	$1,334

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Tankless Water Heater	Commercial	New	Education	All	Water Heating	20.0	22.4%	per premise	321	$4,579	per unit	49	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Education	All	Water Heating	20.0	27.8%	per premise	527	$8,693	per unit	43	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	20.0	22.4%	per premise	37	$2,402	per unit	21	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Grocery	All	Water Heating	20.0	22.4%	per premise	37	$2,402	per unit	11	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Grocery	All	Water Heating	20.0	27.8%	per premise	62	$4,560	per unit	9	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	20.0	22.4%	per premise	194	$3,176	per unit	82	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Healthcare	All	Water Heating	20.0	22.4%	per premise	194	$3,176	per unit	43	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	20.0	27.8%	per premise	319	$6,028	per unit	37	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	20.0	22.4%	per premise	692	$3,952	per unit	234	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Lodging	All	Water Heating	20.0	22.4%	per premise	692	$3,952	per unit	123	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Lodging	All	Water Heating	20.0	27.8%	per premise	1,137	$7,502	per unit	106	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	20.0	22.4%	per premise	4	$1,133	per unit	5	$1,334

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Tankless Water Heater	Commercial	New	Misc.	All	Water Heating	20.0	22.4%	per premise	4	$1,133	per unit	2	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Misc.	All	Water Heating	20.0	27.8%	per premise	6	$2,150	per unit	2	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Office	All	Water Heating	20.0	22.4%	per premise	14	$2,478	per unit	8	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Office	All	Water Heating	20.0	22.4%	per premise	14	$2,478	per unit	4	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Office	All	Water Heating	20.0	27.8%	per premise	24	$4,704	per unit	4	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	20.0	22.4%	per premise	142	$703	per unit	270	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Restaurant	All	Water Heating	20.0	22.4%	per premise	142	$703	per unit	142	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	20.0	27.8%	per premise	233	$1,334	per unit	123	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	20.0	22.4%	per premise	9	$2,023	per unit	6	$1,334
High Efficiency Tankless Water Heater	Commercial	New	Retail	All	Water Heating	20.0	22.4%	per premise	9	$2,023	per unit	3	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Retail	All	Water Heating	20.0	27.8%	per premise	14	$3,839	per unit	3	$703
High Efficiency Tankless Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	20.0	22.4%	per premise	7	$2,975	per unit	3	$1,334

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Tankless Water Heater	Commercial	New	Warehouse	All	Water Heating	20.0	22.4%	per premise	7	$2,975	per unit	2	$703
High Efficiency Tankless Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	20.0	27.8%	per premise	11	$5,648	per unit	1	$703
High Efficiency Water Heater	Commercial	Early Retirement	Education	All	Water Heating	12.5	22.9%	per premise	704	$6,447	per unit	108	$989
High Efficiency Water Heater	Commercial	New	Education	All	Water Heating	12.5	17.1%	per premise	528	$2,138	per unit	81	$328
High Efficiency Water Heater	Commercial	Turnover	Education	All	Water Heating	12.5	17.1%	per premise	528	$2,138	per unit	81	$328
High Efficiency Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	12.5	22.9%	per premise	82	$3,382	per unit	24	$989
High Efficiency Water Heater	Commercial	New	Grocery	All	Water Heating	12.5	17.1%	per premise	62	$1,122	per unit	18	$328
High Efficiency Water Heater	Commercial	Turnover	Grocery	All	Water Heating	12.5	17.1%	per premise	62	$1,122	per unit	18	$328
High Efficiency Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	12.5	22.9%	per premise	426	$4,471	per unit	94	$989
High Efficiency Water Heater	Commercial	New	Healthcare	All	Water Heating	12.5	17.1%	per premise	320	$1,483	per unit	71	$328
High Efficiency Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	12.5	17.1%	per premise	320	$1,483	per unit	71	$328
High Efficiency Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	12.5	22.9%	per premise	1,521	$5,564	per unit	270	$989
High Efficiency Water Heater	Commercial	New	Lodging	All	Water Heating	12.5	17.1%	per premise	1,140	$1,845	per unit	203	$328
High Efficiency Water Heater	Commercial	Turnover	Lodging	All	Water Heating	12.5	17.1%	per premise	1,140	$1,845	per unit	203	$328
High Efficiency Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	12.5	22.9%	per premise	9	$1,595	per unit	5	$989

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
High Efficiency Water Heater	Commercial	New	Misc.	All	Water Heating	12.5	17.1%	per premise	6	$529	per unit	4	$328
High Efficiency Water Heater	Commercial	Turnover	Misc.	All	Water Heating	12.5	17.1%	per premise	6	$529	per unit	4	$328
High Efficiency Water Heater	Commercial	Early Retirement	Office	All	Water Heating	12.5	22.9%	per premise	32	$3,488	per unit	9	$989
High Efficiency Water Heater	Commercial	New	Office	All	Water Heating	12.5	17.1%	per premise	24	$1,157	per unit	7	$328
High Efficiency Water Heater	Commercial	Turnover	Office	All	Water Heating	12.5	17.1%	per premise	24	$1,157	per unit	7	$328
High Efficiency Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	12.5	22.9%	per premise	312	$989	per unit	312	$989
High Efficiency Water Heater	Commercial	New	Restaurant	All	Water Heating	12.5	17.1%	per premise	234	$328	per unit	234	$328
High Efficiency Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	12.5	17.1%	per premise	234	$328	per unit	234	$328
High Efficiency Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	12.5	22.9%	per premise	19	$2,848	per unit	7	$989
High Efficiency Water Heater	Commercial	New	Retail	All	Water Heating	12.5	17.1%	per premise	14	$944	per unit	5	$328
High Efficiency Water Heater	Commercial	Turnover	Retail	All	Water Heating	12.5	17.1%	per premise	14	$944	per unit	5	$328
High Efficiency Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	12.5	22.9%	per premise	15	$4,189	per unit	4	$989
High Efficiency Water Heater	Commercial	New	Warehouse	All	Water Heating	12.5	17.1%	per premise	11	$1,389	per unit	3	$328
High Efficiency Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	12.5	17.1%	per premise	11	$1,389	per unit	3	$328
Hot Water Pipe Insulation	Commercial	Existing	Education	All	Water Heating	11.0	2.0%	per premise	118	$107	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Hot Water Pipe Insulation	Commercial	Existing	Grocery	All	Water Heating	11.0	2.0%	per premise	80	$56	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Healthcare	All	Water Heating	11.0	2.0%	per premise	69	$74	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Lodging	All	Water Heating	11.0	2.0%	per premise	69	$92	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Misc.	All	Water Heating	11.0	2.0%	per premise	26	$26	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Office	All	Water Heating	11.0	2.0%	per premise	47	$58	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Restaurant	All	Water Heating	11.0	2.0%	per premise	27	$15	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Retail	All	Water Heating	11.0	2.0%	per premise	48	$47	per sf facility	0	$0
Hot Water Pipe Insulation	Commercial	Existing	Warehouse	All	Water Heating	11.0	2.0%	per premise	39	$69	per sf facility	0	$0
Hot Water Temperature Setback	Commercial	Existing	Education	All	Water Heating	5.0	14.3%	per premise	440	$40	per water heater	440	$40
Hot Water Temperature Setback	Commercial	New	Education	All	Water Heating	5.0	14.3%	per premise	440	$40	per water heater	440	$40

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Hot Water Temperature Setback	Commercial	Existing	Grocery	All	Water Heating	5.0	14.3%	per premise	51	$40	per water heater	51	$40
Hot Water Temperature Setback	Commercial	New	Grocery	All	Water Heating	5.0	14.3%	per premise	51	$40	per water heater	51	$40
Hot Water Temperature Setback	Commercial	Existing	Healthcare	All	Water Heating	5.0	14.3%	per premise	266	$40	per water heater	266	$40
Hot Water Temperature Setback	Commercial	New	Healthcare	All	Water Heating	5.0	14.3%	per premise	266	$40	per water heater	266	$40
Hot Water Temperature Setback	Commercial	Existing	Lodging	All	Water Heating	5.0	14.3%	per premise	950	$40	per water heater	950	$40
Hot Water Temperature Setback	Commercial	New	Lodging	All	Water Heating	5.0	14.3%	per premise	950	$40	per water heater	950	$40
Hot Water Temperature Setback	Commercial	Existing	Misc.	All	Water Heating	5.0	14.3%	per premise	5	$40	per water heater	5	$40
Hot Water Temperature Setback	Commercial	New	Misc.	All	Water Heating	5.0	14.3%	per premise	5	$40	per water heater	5	$40

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Hot Water Temperature Setback	Commercial	Existing	Office	All	Water Heating	5.0	14.3%	per premise	20	$40	per water heater	20	$40
Hot Water Temperature Setback	Commercial	New	Office	All	Water Heating	5.0	14.3%	per premise	20	$40	per water heater	20	$40
Hot Water Temperature Setback	Commercial	Existing	Retail	All	Water Heating	5.0	14.3%	per premise	12	$40	per water heater	12	$40
Hot Water Temperature Setback	Commercial	New	Retail	All	Water Heating	5.0	14.3%	per premise	12	$40	per water heater	12	$40
Hot Water Temperature Setback	Commercial	Existing	Warehouse	All	Water Heating	5.0	14.3%	per premise	9	$40	per water heater	9	$40
Hot Water Temperature Setback	Commercial	New	Warehouse	All	Water Heating	5.0	14.3%	per premise	9	$40	per water heater	9	$40
Low Flow Showerhead	Commercial	Existing	Education	All	Water Heating	10.0	33.3%	per premise	1,027	$800	per unit	128	$100
Low Flow Showerhead	Commercial	New	Education	All	Water Heating	10.0	19.8%	per premise	608	$260	per unit	76	$33
Low Flow Showerhead	Commercial	Existing	Grocery	All	Water Heating	10.0	33.3%	per premise	120	$100	per unit	120	$100

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Low Flow Showerhead	Commercial	New	Grocery	All	Water Heating	10.0	19.8%	per premise	71	$33	per unit	71	$33
Low Flow Showerhead	Commercial	Existing	Healthcare	All	Water Heating	10.0	33.3%	per premise	622	$1,000	per unit	62	$100
Low Flow Showerhead	Commercial	New	Healthcare	All	Water Heating	10.0	19.8%	per premise	368	$325	per unit	37	$33
Low Flow Showerhead	Commercial	Existing	Lodging	All	Water Heating	10.0	33.3%	per premise	2,217	$2,500	per unit	89	$100
Low Flow Showerhead	Commercial	New	Lodging	All	Water Heating	10.0	19.8%	per premise	1,314	$813	per unit	53	$33
Low Flow Showerhead	Commercial	Existing	Misc.	All	Water Heating	10.0	33.3%	per premise	12	$100	per unit	12	$100
Low Flow Showerhead	Commercial	New	Misc.	All	Water Heating	10.0	19.8%	per premise	7	$33	per unit	7	$33
Low Flow Showerhead	Commercial	Existing	Office	All	Water Heating	10.0	33.3%	per premise	46	$100	per unit	46	$100
Low Flow Showerhead	Commercial	New	Office	All	Water Heating	10.0	19.8%	per premise	27	$33	per unit	27	$33
Low Flow Showerhead	Commercial	Existing	Restaurant	All	Water Heating	10.0	33.3%	per premise	455	$100	per unit	455	$100
Low Flow Showerhead	Commercial	New	Restaurant	All	Water Heating	10.0	19.8%	per premise	269	$33	per unit	269	$33
Low Flow Showerhead	Commercial	Existing	Retail	All	Water Heating	10.0	33.3%	per premise	28	$100	per unit	28	$100

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Low Flow Showerhead	Commercial	New	Retail	All	Water Heating	10.0	19.8%	per premise	17	$33	per unit	17	$33
Low Flow Showerhead	Commercial	Existing	Warehouse	All	Water Heating	10.0	33.3%	per premise	22	$100	per unit	22	$100
Low Flow Showerhead	Commercial	New	Warehouse	All	Water Heating	10.0	19.8%	per premise	13	$33	per unit	13	$33
Low-flow Pre-Rinse Spray Valve	Commercial	Existing	Education	All	Water Heating	5.0	44.2%	per premise	1,362	$203	per unit	681	$102
Low-flow Pre-Rinse Spray Valve	Commercial	New	Education	All	Water Heating	5.0	33.8%	per premise	1,040	$77	per unit	520	$38
Low-flow Pre-Rinse Spray Valve	Commercial	Existing	Grocery	All	Water Heating	5.0	44.2%	per premise	159	$203	per unit	80	$102
Low-flow Pre-Rinse Spray Valve	Commercial	New	Grocery	All	Water Heating	5.0	33.8%	per premise	121	$77	per unit	61	$38
Low-flow Pre-Rinse Spray Valve	Commercial	Existing	Healthcare	All	Water Heating	5.0	44.2%	per premise	825	$203	per unit	412	$102
Low-flow Pre-Rinse Spray Valve	Commercial	New	Healthcare	All	Water Heating	5.0	33.8%	per premise	630	$77	per unit	315	$38
Low-flow Pre-Rinse Spray Valve	Commercial	Existing	Restaurant	All	Water Heating	5.0	44.2%	per premise	603	$203	per unit	302	$102
Low-flow Pre-Rinse Spray Valve	Commercial	New	Restaurant	All	Water Heating	5.0	33.8%	per premise	460	$77	per unit	230	$38
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Education	All	Water Heating	15.0	41.9%	per premise	1,290	$12,241	per unit	645	$6,121

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Education	All	Water Heating	15.0	41.9%	per premise	1,290	$4,042	per unit	645	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Grocery	All	Water Heating	15.0	41.9%	per premise	151	$12,241	per unit	75	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Grocery	All	Water Heating	15.0	41.9%	per premise	151	$4,042	per unit	75	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Healthcare	All	Water Heating	15.0	41.9%	per premise	781	$12,241	per unit	390	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Healthcare	All	Water Heating	15.0	41.9%	per premise	781	$4,042	per unit	390	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Lodging	All	Water Heating	15.0	41.9%	per premise	2,785	$12,241	per unit	1,393	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Lodging	All	Water Heating	15.0	41.9%	per premise	2,785	$4,042	per unit	1,393	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Misc.	All	Water Heating	15.0	41.9%	per premise	16	$6,121	per unit	16	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Misc.	All	Water Heating	15.0	41.9%	per premise	16	$2,021	per unit	16	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Office	All	Water Heating	15.0	41.9%	per premise	58	$6,121	per unit	58	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Office	All	Water Heating	15.0	41.9%	per premise	58	$2,021	per unit	58	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Restaurant	All	Water Heating	15.0	41.9%	per premise	571	$12,241	per unit	286	$6,121

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Restaurant	All	Water Heating	15.0	41.9%	per premise	571	$4,042	per unit	286	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Retail	All	Water Heating	15.0	41.9%	per premise	35	$6,121	per unit	35	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Retail	All	Water Heating	15.0	41.9%	per premise	35	$2,021	per unit	35	$2,021
Low-temp Door-Type Energy Star Dishwasher	Commercial	Existing	Warehouse	All	Water Heating	15.0	41.9%	per premise	27	$6,121	per unit	27	$6,121
Low-temp Door-Type Energy Star Dishwasher	Commercial	New	Warehouse	All	Water Heating	15.0	41.9%	per premise	27	$2,021	per unit	27	$2,021
Motion Faucet Controls	Commercial	Existing	Education	All	Water Heating	5.0	20.0%	per premise	616	$9,335	per unit	21	$311
Motion Faucet Controls	Commercial	New	Education	All	Water Heating	5.0	20.0%	per premise	616	$572	per unit	21	$19
Motion Faucet Controls	Commercial	Existing	Grocery	All	Water Heating	5.0	20.0%	per premise	72	$1,245	per unit	18	$311
Motion Faucet Controls	Commercial	New	Grocery	All	Water Heating	5.0	20.0%	per premise	72	$76	per unit	18	$19
Motion Faucet Controls	Commercial	Existing	Healthcare	All	Water Heating	5.0	20.0%	per premise	373	$3,112	per unit	37	$311
Motion Faucet Controls	Commercial	New	Healthcare	All	Water Heating	5.0	20.0%	per premise	373	$191	per unit	37	$19
Motion Faucet Controls	Commercial	Existing	Lodging	All	Water Heating	5.0	20.0%	per premise	1,330	$1,245	per unit	333	$311

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Motion Faucet Controls	Commercial	New	Lodging	All	Water Heating	5.0	20.0%	per premise	1,330	$76	per unit	333	$19
Motion Faucet Controls	Commercial	Existing	Misc.	All	Water Heating	5.0	20.0%	per premise	7	$622	per unit	4	$311
Motion Faucet Controls	Commercial	New	Misc.	All	Water Heating	5.0	20.0%	per premise	7	$38	per unit	4	$19
Motion Faucet Controls	Commercial	Existing	Office	All	Water Heating	5.0	20.0%	per premise	28	$3,112	per unit	3	$311
Motion Faucet Controls	Commercial	New	Office	All	Water Heating	5.0	20.0%	per premise	28	$191	per unit	3	$19
Motion Faucet Controls	Commercial	Existing	Restaurant	All	Water Heating	5.0	20.0%	per premise	273	$622	per unit	136	$311
Motion Faucet Controls	Commercial	New	Restaurant	All	Water Heating	5.0	20.0%	per premise	273	$38	per unit	136	$19
Motion Faucet Controls	Commercial	Existing	Retail	All	Water Heating	5.0	20.0%	per premise	17	$622	per unit	8	$311
Motion Faucet Controls	Commercial	New	Retail	All	Water Heating	5.0	20.0%	per premise	17	$38	per unit	8	$19
Motion Faucet Controls	Commercial	Existing	Warehouse	All	Water Heating	5.0	20.0%	per premise	13	$622	per unit	7	$311
Motion Faucet Controls	Commercial	New	Warehouse	All	Water Heating	5.0	20.0%	per premise	13	$38	per unit	7	$19
Multi-tank Conveyor Energy Star Dishwasher	Commercial	Existing	Education	All	Water Heating	20.0	48.1%	per premise	1,481	$32,345	per unit	741	$16,172

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Multi-tank Conveyor Energy Star Dishwasher	Commercial	New	Education	All	Water Heating	20.0	48.1%	per premise	1,481	$1,940	per unit	741	$970
Multi-tank Conveyor Energy Star Dishwasher	Commercial	Existing	Grocery	All	Water Heating	20.0	48.1%	per premise	173	$32,345	per unit	86	$16,172
Multi-tank Conveyor Energy Star Dishwasher	Commercial	New	Grocery	All	Water Heating	20.0	48.1%	per premise	173	$1,940	per unit	86	$970
Multi-tank Conveyor Energy Star Dishwasher	Commercial	Existing	Healthcare	All	Water Heating	20.0	48.1%	per premise	897	$32,345	per unit	448	$16,172
Multi-tank Conveyor Energy Star Dishwasher	Commercial	New	Healthcare	All	Water Heating	20.0	48.1%	per premise	897	$1,940	per unit	448	$970
Multi-tank Conveyor Energy Star Dishwasher	Commercial	Existing	Lodging	All	Water Heating	20.0	48.1%	per premise	3,198	$32,345	per unit	1,599	$16,172
Multi-tank Conveyor Energy Star Dishwasher	Commercial	New	Lodging	All	Water Heating	20.0	48.1%	per premise	3,198	$1,940	per unit	1,599	$970
Multi-tank Conveyor Energy Star Dishwasher	Commercial	Existing	Restaurant	All	Water Heating	20.0	48.1%	per premise	656	$32,345	per unit	328	$16,172
Multi-tank Conveyor Energy Star Dishwasher	Commercial	New	Restaurant	All	Water Heating	20.0	48.1%	per premise	656	$1,940	per unit	328	$970
Ozone injection laundry systems	Commercial	Existing	Education	All	Water Heating	10.0	23.6%	per premise	727	$8,283	per premise	727	$8,283
Ozone injection laundry systems	Commercial	New	Education	All	Water Heating	10.0	23.6%	per premise	727	$8,283	per premise	727	$8,283
Ozone injection laundry systems	Commercial	Existing	Healthcare	All	Water Heating	10.0	38.9%	per premise	725	$8,283	per premise	725	$8,283

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Ozone injection laundry systems	Commercial	New	Healthcare	All	Water Heating	10.0	38.9%	per premise	725	$8,283	per premise	725	$8,283
Ozone injection laundry systems	Commercial	Existing	Lodging	All	Water Heating	10.0	15.8%	per premise	1,049	$8,283	per premise	1,049	$8,283
Ozone injection laundry systems	Commercial	New	Lodging	All	Water Heating	10.0	15.8%	per premise	1,049	$8,283	per premise	1,049	$8,283
Ozone injection laundry systems	Commercial	Existing	Misc.	All	Water Heating	10.0	21.6%	per premise	8	$8,283	per premise	8	$8,283
Ozone injection laundry systems	Commercial	New	Misc.	All	Water Heating	10.0	21.6%	per premise	8	$8,283	per premise	8	$8,283
Ozone injection laundry systems	Commercial	Existing	Restaurant	All	Water Heating	10.0	21.6%	per premise	294	$8,283	per premise	294	$8,283
Ozone injection laundry systems	Commercial	New	Restaurant	All	Water Heating	10.0	21.6%	per premise	294	$8,283	per premise	294	$8,283
Recirculation Controls	Commercial	Existing	Education	All	Water Heating	15.0	6.0%	per premise	185	$900	per unit	62	$300
Recirculation Controls	Commercial	New	Education	All	Water Heating	15.0	6.0%	per premise	185	$250	per unit	62	$83
Recirculation Controls	Commercial	Existing	Healthcare	All	Water Heating	15.0	6.0%	per premise	112	$848	per unit	40	$300
Recirculation Controls	Commercial	New	Healthcare	All	Water Heating	15.0	6.0%	per premise	112	$235	per unit	40	$83

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Recirculation Controls	Commercial	Existing	Lodging	All	Water Heating	15.0	6.0%	per premise	399	$1,055	per unit	114	$300
Recirculation Controls	Commercial	New	Lodging	All	Water Heating	15.0	6.0%	per premise	399	$293	per unit	114	$83
Recirculation Controls	Commercial	Existing	Misc.	All	Water Heating	15.0	6.0%	per premise	2	$302	per unit	2	$300
Recirculation Controls	Commercial	New	Misc.	All	Water Heating	15.0	6.0%	per premise	2	$84	per unit	2	$83
Refrigeration system superheat recovery DHW	Commercial	Existing	Grocery	All	Water Heating	15.0	20.0%	per premise	72	$7,500	per premise	72	$7,500
Refrigeration system superheat recovery DHW	Commercial	New	Grocery	All	Water Heating	15.0	20.0%	per premise	72	$7,500	per premise	72	$7,500
Refrigeration system superheat recovery DHW	Commercial	Existing	Restaurant	All	Water Heating	15.0	20.0%	per premise	273	$7,500	per premise	273	$7,500
Refrigeration system superheat recovery DHW	Commercial	New	Restaurant	All	Water Heating	15.0	20.0%	per premise	273	$7,500	per premise	273	$7,500
Refrigeration system superheat recovery DHW	Commercial	Existing	Warehouse	All	Water Heating	15.0	20.0%	per premise	13	$7,500	per premise	13	$7,500
Refrigeration system superheat recovery DHW	Commercial	New	Warehouse	All	Water Heating	15.0	20.0%	per premise	13	$7,500	per premise	13	$7,500
Solar Hot Water Heater	Commercial	Early Retirement	Education	All	Water Heating	15.0	52.4%	per premise	1,614	$21,311	per unit	1,614	$21,311
Solar Hot Water Heater	Commercial	New	Education	All	Water Heating	15.0	52.4%	per premise	1,614	$21,311	per unit	1,614	$21,311

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Solar Hot Water Heater	Commercial	Turnover	Education	All	Water Heating	15.0	52.4%	per premise	1,614	$21,311	per unit	1,614	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Grocery	All	Water Heating	15.0	52.4%	per premise	188	$21,311	per unit	188	$21,311
Solar Hot Water Heater	Commercial	New	Grocery	All	Water Heating	15.0	52.4%	per premise	188	$21,311	per unit	188	$21,311
Solar Hot Water Heater	Commercial	Turnover	Grocery	All	Water Heating	15.0	52.4%	per premise	188	$21,311	per unit	188	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Healthcare	All	Water Heating	15.0	52.4%	per premise	977	$21,311	per unit	977	$21,311
Solar Hot Water Heater	Commercial	New	Healthcare	All	Water Heating	15.0	52.4%	per premise	977	$21,311	per unit	977	$21,311
Solar Hot Water Heater	Commercial	Turnover	Healthcare	All	Water Heating	15.0	52.4%	per premise	977	$21,311	per unit	977	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Lodging	All	Water Heating	15.0	52.4%	per premise	3,484	$21,311	per unit	3,484	$21,311
Solar Hot Water Heater	Commercial	New	Lodging	All	Water Heating	15.0	52.4%	per premise	3,484	$21,311	per unit	3,484	$21,311
Solar Hot Water Heater	Commercial	Turnover	Lodging	All	Water Heating	15.0	52.4%	per premise	3,484	$21,311	per unit	3,484	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Misc.	All	Water Heating	15.0	52.4%	per premise	20	$21,311	per unit	20	$21,311
Solar Hot Water Heater	Commercial	New	Misc.	All	Water Heating	15.0	52.4%	per premise	20	$21,311	per unit	20	$21,311
Solar Hot Water Heater	Commercial	Turnover	Misc.	All	Water Heating	15.0	52.4%	per premise	20	$21,311	per unit	20	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Office	All	Water Heating	15.0	52.4%	per premise	73	$21,311	per unit	73	$21,311
Solar Hot Water Heater	Commercial	New	Office	All	Water Heating	15.0	52.4%	per premise	73	$21,311	per unit	73	$21,311
Solar Hot Water Heater	Commercial	Turnover	Office	All	Water Heating	15.0	52.4%	per premise	73	$21,311	per unit	73	$21,311

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm)	Incremental Cost per Measure ($)
Solar Hot Water Heater	Commercial	Early Retirement	Restaurant	All	Water Heating	15.0	52.4%	per premise	715	$21,311	per unit	715	$21,311
Solar Hot Water Heater	Commercial	New	Restaurant	All	Water Heating	15.0	52.4%	per premise	715	$21,311	per unit	715	$21,311
Solar Hot Water Heater	Commercial	Turnover	Restaurant	All	Water Heating	15.0	52.4%	per premise	715	$21,311	per unit	715	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Retail	All	Water Heating	15.0	52.4%	per premise	44	$21,311	per unit	44	$21,311
Solar Hot Water Heater	Commercial	New	Retail	All	Water Heating	15.0	52.4%	per premise	44	$21,311	per unit	44	$21,311
Solar Hot Water Heater	Commercial	Turnover	Retail	All	Water Heating	15.0	52.4%	per premise	44	$21,311	per unit	44	$21,311
Solar Hot Water Heater	Commercial	Early Retirement	Warehouse	All	Water Heating	15.0	52.4%	per premise	34	$21,311	per unit	34	$21,311
Solar Hot Water Heater	Commercial	New	Warehouse	All	Water Heating	15.0	52.4%	per premise	34	$21,311	per unit	34	$21,311
Solar Hot Water Heater	Commercial	Turnover	Warehouse	All	Water Heating	15.0	52.4%	per premise	34	$21,311	per unit	34	$21,311

B.3 Industrial Sector Measures

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Boiler Power Burner	Industrial	Existing	FoodMfg	All	Process Heating	3.5	1.1%	per premise	21	$272	per unit	23	$300
Boiler Power Burner	Industrial	Existing	PaperMfg	All	Process Heating	3.5	1.1%	per premise	15	$194	per unit	23	$300
Boiler Power Burner	Industrial	Existing	StoneClayGlass	All	Process Heating	3.5	1.1%	per premise	8	$110	per unit	23	$300
Boiler Power Burner	Industrial	Existing	MetalsFab	All	Process Heating	3.5	1.1%	per premise	8	$100	per unit	23	$300
Boiler Power Burner	Industrial	Existing	Other	All	Process Heating	3.5	1.1%	per premise	3	$37	per unit	23	$300
Boiler Power Burner	Industrial	Existing	LumberWood	All	Process Heating	3.5	1.1%	per premise	9	$118	per unit	23	$300
Boiler Repair/Maintenance	Industrial	Existing	FoodMfg	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Repair/Maintenance	Industrial	Existing	PaperMfg	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Repair/Maintenance	Industrial	Existing	MetalsFab	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Repair/Maintenance	Industrial	Existing	LumberWood	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Repair/Maintenance	Industrial	Existing	StoneClayGlass	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Repair/Maintenance	Industrial	Existing	Other	All	Space Heating	2.0	2.0%	per premise	40	$1,278	per unit	40	$1,278
Boiler Stack Economizer	Industrial	Existing	FoodMfg	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564
Boiler Stack Economizer	Industrial	Existing	PaperMfg	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564
Boiler Stack Economizer	Industrial	Existing	MetalsFab	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Boiler Stack Economizer	Industrial	Existing	LumberWood	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564
Boiler Stack Economizer	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564
Boiler Stack Economizer	Industrial	Existing	Other	All	Space Heating	20.0	6.3%	per premise	123	$7,564	per unit	123	$7,564
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	FoodMfg	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	PaperMfg	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	MetalsFab	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	LumberWood	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	StoneClayGlass	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler Steam Trap - min. 300 kBtu in, pressure of 7 psig or >	Industrial	Existing	Other	All	Space Heating	6.0	1.2%	per premise	23	$720	per unit	8	$250
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	FoodMfg	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	PaperMfg	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	MetalsFab	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	LumberWood	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	StoneClayGlass	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000
Boiler vent damper - min. 1000 kBtu input	Industrial	Existing	Other	All	Space Heating	12.0	1.2%	per premise	24	$1,000	per unit	24	$1,000
Demand Controlled Ventilation	Industrial	Existing	FoodMfg	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Demand Controlled Ventilation	Industrial	Existing	PaperMfg	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Demand Controlled Ventilation	Industrial	Existing	MetalsFab	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Demand Controlled Ventilation	Industrial	Existing	LumberWood	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Demand Controlled Ventilation	Industrial	Existing	StoneClayGlass	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Demand Controlled Ventilation	Industrial	Existing	Other	All	Space Heating	12.0	19.0%	per premise	374	$1,922	per unit	219	$1,125
Duct Sealing and Insulation	Industrial	Existing	FoodMfg	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
Duct Sealing and Insulation	Industrial	Existing	PaperMfg	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
Duct Sealing and Insulation	Industrial	Existing	MetalsFab	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
Duct Sealing and Insulation	Industrial	Existing	LumberWood	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
Duct Sealing and Insulation	Industrial	Existing	StoneClayGlass	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Duct Sealing and Insulation	Industrial	Existing	Other	All	Space Heating	19.0	10.5%	per premise	208	$14,273	per sf facility	0	$1
HVAC Controls	Industrial	Existing	FoodMfg	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Industrial	Existing	PaperMfg	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Industrial	Existing	MetalsFab	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Industrial	Existing	LumberWood	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Industrial	Existing	StoneClayGlass	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC Controls	Industrial	Existing	Other	All	Space Heating	11.0	8.8%	per premise	174	$9,587	per building	174	$9,587
HVAC System Commissioning	Industrial	Existing	FoodMfg	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
HVAC System Commissioning	Industrial	Existing	PaperMfg	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
HVAC System Commissioning	Industrial	Existing	MetalsFab	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
HVAC System Commissioning	Industrial	Existing	LumberWood	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
HVAC System Commissioning	Industrial	Existing	StoneClayGlass	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
HVAC System Commissioning	Industrial	Existing	Other	All	Space Heating	7.0	5.5%	per premise	108	$1,314	per building	108	$1,314
Improved Process Heating Controls	Industrial	Existing	FoodMfg	All	Process Heating	15.0	30.4%	per premise	545	$262	per therm saved	1	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Improved Process Heating Controls	Industrial	Existing	PaperMfg	All	Process Heating	15.0	30.4%	per premise	388	$187	per therm saved	1	$0
Improved Process Heating Controls	Industrial	Existing	StoneClayGlass	All	Process Heating	15.0	30.4%	per premise	220	$106	per therm saved	1	$0
Improved Process Heating Controls	Industrial	Existing	MetalsFab	All	Process Heating	15.0	30.4%	per premise	200	$97	per therm saved	1	$0
Improved Process Heating Controls	Industrial	Existing	Other	All	Process Heating	15.0	30.4%	per premise	73	$35	per therm saved	1	$0
Improved Process Heating Controls	Industrial	Existing	LumberWood	All	Process Heating	15.0	30.4%	per premise	236	$114	per therm saved	1	$0
Optimized Furnace Operations/Improved O&M	Industrial	Existing	FoodMfg	All	Process Heating	17.0	6.0%	per premise	107	$45	per therm saved	1	$0
Optimized Furnace Operations/Improved O&M	Industrial	Existing	PaperMfg	All	Process Heating	17.0	6.0%	per premise	76	$32	per therm saved	1	$0
Optimized Furnace Operations/Improved O&M	Industrial	Existing	StoneClayGlass	All	Process Heating	17.0	6.0%	per premise	43	$18	per therm saved	1	$0
Optimized Furnace Operations/Improved O&M	Industrial	Existing	MetalsFab	All	Process Heating	17.0	6.0%	per premise	39	$17	per therm saved	1	$0
Optimized Furnace Operations/Improved O&M	Industrial	Existing	Other	All	Process Heating	17.0	6.0%	per premise	14	$6	per therm saved	1	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Optimized Furnace Operations/Improved O&M	Industrial	Existing	LumberWood	All	Process Heating	17.0	6.0%	per premise	46	$20	per therm saved	1	$0
Refrigeration system superheat recovery	Industrial	Existing	FoodMfg	All	Water Heating	15.0	8.0%	per premise	5	$2,996	per unit	5	$2,996
Refrigeration system superheat recovery	Industrial	Existing	Other	All	Water Heating	15.0	8.0%	per premise	5	$2,996	per unit	5	$2,996
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	FoodMfg	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	PaperMfg	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	MetalsFab	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	LumberWood	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	StoneClayGlass	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 1: Min R-30	Industrial	Existing	Other	All	Space Heating	27.5	5.8%	per premise	114	$3,103	per sf installation	0	$0
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	FoodMfg	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	PaperMfg	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	MetalsFab	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	LumberWood	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	StoneClayGlass	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1
Roof insulation (retrofit only) - Tier 2: Min R-45	Industrial	Existing	Other	All	Space Heating	27.5	6.9%	per premise	136	$5,554	per sf installation	0	$1
Space Heating O&M	Industrial	Existing	FoodMfg	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3
Space Heating O&M	Industrial	Existing	PaperMfg	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3
Space Heating O&M	Industrial	Existing	MetalsFab	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3
Space Heating O&M	Industrial	Existing	LumberWood	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3
Space Heating O&M	Industrial	Existing	StoneClayGlass	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3
Space Heating O&M	Industrial	Existing	Other	All	Space Heating	2.0	8.0%	per premise	158	$506	per therm saved	1	$3

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Steam System Efficiency Improvements	Industrial	Existing	FoodMfg	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Steam System Efficiency Improvements	Industrial	Existing	PaperMfg	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Steam System Efficiency Improvements	Industrial	Existing	MetalsFab	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Steam System Efficiency Improvements	Industrial	Existing	LumberWood	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Steam System Efficiency Improvements	Industrial	Existing	StoneClayGlass	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Steam System Efficiency Improvements	Industrial	Existing	Other	All	Space Heating	15.0	10.2%	per premise	201	$10,540	per unit	201	$10,540
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	FoodMfg	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	PaperMfg	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	MetalsFab	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	LumberWood	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	StoneClayGlass	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Wall insulation (retrofit only) - Tier 1: Min R-11	Industrial	Existing	Other	All	Space Heating	27.5	15.9%	per premise	314	$5,697	per sf installation	0	$2
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	FoodMfg	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	PaperMfg	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	MetalsFab	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	LumberWood	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	StoneClayGlass	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Wall insulation (retrofit only) - Tier 2: Min R-19	Industrial	Existing	Other	All	Space Heating	27.5	19.7%	per premise	389	$6,532	per sf installation	0	$3
Waste Water Heat Exchanger	Industrial	Existing	FoodMfg	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000
Waste Water Heat Exchanger	Industrial	Existing	PaperMfg	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000
Waste Water Heat Exchanger	Industrial	Existing	MetalsFab	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000
Waste Water Heat Exchanger	Industrial	Existing	LumberWood	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000
Waste Water Heat Exchanger	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Waste Water Heat Exchanger	Industrial	Existing	Other	All	Space Heating	20.0	1.0%	per premise	20	$18,000	per unit	20	$18,000
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	FoodMfg	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	PaperMfg	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	MetalsFab	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	LumberWood	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Add Argon to Vinyl Lowe	Industrial	Existing	Other	All	Space Heating	20.0	5.0%	per premise	99	$1,148	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	FoodMfg	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	PaperMfg	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	MetalsFab	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	LumberWood	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 36	Industrial	Existing	Other	All	Space Heating	20.0	12.8%	per premise	252	$7,570	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	FoodMfg	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	PaperMfg	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	MetalsFab	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	LumberWood	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 40	Industrial	Existing	Other	All	Space Heating	20.0	8.3%	per premise	164	$3,028	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	FoodMfg	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	PaperMfg	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	MetalsFab	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	LumberWood	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Non-Tinted AL Code to Class 45	Industrial	Existing	Other	All	Space Heating	20.0	3.1%	per premise	60	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Industrial	Existing	FoodMfg	All	Space Heating	20.0	11.0%	per premise	217	$7,578	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Industrial	Existing	PaperMfg	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Windows - Tinted AL Code to Class 36	Industrial	Existing	MetalsFab	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Industrial	Existing	LumberWood	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0
Windows - Tinted AL Code to Class 36	Industrial	Existing	Other	All	Space Heating	20.0	11.0%	per premise	217	$7,570	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	FoodMfg	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	PaperMfg	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	MetalsFab	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	LumberWood	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	StoneClayGlass	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Windows - Tinted AL Code to Class 45	Industrial	Existing	Other	All	Space Heating	20.0	0.6%	per premise	12	$2,014	per sf facility	0	$0
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	PaperMfg	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	FoodMfg	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	LumberWood	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	MetalsFab	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	PaperMfg	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	FoodMfg	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	Other	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	MetalsFab	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	20.0	16.7%	per premise	329	$43,119	per unit	329	$43,119
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	LumberWood	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	Other	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Early Retirement	StoneClayGlass	All	Water Heating	20.0	16.7%	per premise	11	$1,426	per unit	11	$1,426
Combination Boiler and Hot Water Heater	Industrial	Turnover	PaperMfg	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Combination Boiler and Hot Water Heater	Industrial	Turnover	FoodMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Combination Boiler and Hot Water Heater	Industrial	Turnover	LumberWood	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869
Combination Boiler and Hot Water Heater	Industrial	Turnover	MetalsFab	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869
Combination Boiler and Hot Water Heater	Industrial	Turnover	PaperMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869
Combination Boiler and Hot Water Heater	Industrial	Turnover	FoodMfg	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Combination Boiler and Hot Water Heater	Industrial	Turnover	Other	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869
Combination Boiler and Hot Water Heater	Industrial	Turnover	MetalsFab	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Combination Boiler and Hot Water Heater	Industrial	Turnover	StoneClayGlass	All	Space Heating	20.0	11.4%	per premise	226	$23,869	per unit	226	$23,869
Combination Boiler and Hot Water Heater	Industrial	Turnover	LumberWood	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Combination Boiler and Hot Water Heater	Industrial	Turnover	Other	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Combination Boiler and Hot Water Heater	Industrial	Turnover	StoneClayGlass	All	Water Heating	20.0	11.4%	per premise	7	$789	per unit	7	$789
Direct Fired Radiant Heater	Industrial	Early Retirement	FoodMfg	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178
Direct Fired Radiant Heater	Industrial	Early Retirement	PaperMfg	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Direct Fired Radiant Heater	Industrial	Early Retirement	MetalsFab	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178
Direct Fired Radiant Heater	Industrial	Early Retirement	LumberWood	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178
Direct Fired Radiant Heater	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178
Direct Fired Radiant Heater	Industrial	Early Retirement	Other	All	Space Heating	17.0	23.5%	per premise	464	$2,532	per unit	582	$3,178
Direct Fired Radiant Heater	Industrial	Turnover	FoodMfg	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
Direct Fired Radiant Heater	Industrial	Turnover	PaperMfg	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
Direct Fired Radiant Heater	Industrial	Turnover	MetalsFab	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
Direct Fired Radiant Heater	Industrial	Turnover	LumberWood	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
Direct Fired Radiant Heater	Industrial	Turnover	StoneClayGlass	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
Direct Fired Radiant Heater	Industrial	Turnover	Other	All	Space Heating	17.0	23.5%	per premise	464	$812	per unit	1,224	$2,142
High Efficiency Condensing Boiler	Industrial	Early Retirement	FoodMfg	All	Process Heating	20.0	16.7%	per premise	298	$38,866	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	FoodMfg	All	Process Heating	20.0	16.7%	per premise	298	$38,866	per unit	329	$42,860

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Boiler	Industrial	Early Retirement	PaperMfg	All	Process Heating	20.0	16.7%	per premise	212	$27,659	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	PaperMfg	All	Process Heating	20.0	16.7%	per premise	212	$27,659	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	StoneClayGlass	All	Process Heating	20.0	16.7%	per premise	121	$15,733	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	StoneClayGlass	All	Process Heating	20.0	16.7%	per premise	121	$15,733	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	FoodMfg	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	FoodMfg	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	MetalsFab	All	Process Heating	20.0	16.7%	per premise	110	$14,298	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	MetalsFab	All	Process Heating	20.0	16.7%	per premise	110	$14,298	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	Other	All	Process Heating	20.0	16.7%	per premise	40	$5,229	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	Other	All	Process Heating	20.0	16.7%	per premise	40	$5,229	per unit	329	$42,860

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Boiler	Industrial	Early Retirement	LumberWood	All	Process Heating	20.0	16.7%	per premise	129	$16,832	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	LumberWood	All	Process Heating	20.0	16.7%	per premise	129	$16,832	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	PaperMfg	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	PaperMfg	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	MetalsFab	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	MetalsFab	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	LumberWood	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	LumberWood	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Boiler	Industrial	Early Retirement	Other	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Early Retirement	Other	All	Space Heating	20.0	16.7%	per premise	329	$42,860	per unit	329	$42,860
High Efficiency Condensing Boiler	Industrial	Turnover	FoodMfg	All	Process Heating	20.0	11.4%	per premise	205	$21,266	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	FoodMfg	All	Process Heating	20.0	11.4%	per premise	205	$21,266	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	PaperMfg	All	Process Heating	20.0	11.4%	per premise	146	$15,134	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	PaperMfg	All	Process Heating	20.0	11.4%	per premise	146	$15,134	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	StoneClayGlass	All	Process Heating	20.0	11.4%	per premise	83	$8,609	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	StoneClayGlass	All	Process Heating	20.0	11.4%	per premise	83	$8,609	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	FoodMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	FoodMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	MetalsFab	All	Process Heating	20.0	11.4%	per premise	75	$7,823	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	MetalsFab	All	Process Heating	20.0	11.4%	per premise	75	$7,823	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	Other	All	Process Heating	20.0	11.4%	per premise	28	$2,861	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	Other	All	Process Heating	20.0	11.4%	per premise	28	$2,861	per unit	226	$23,452

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Boiler	Industrial	Turnover	LumberWood	All	Process Heating	20.0	11.4%	per premise	89	$9,210	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	LumberWood	All	Process Heating	20.0	11.4%	per premise	89	$9,210	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	PaperMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	PaperMfg	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	MetalsFab	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	MetalsFab	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	LumberWood	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	LumberWood	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	StoneClayGlass	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	StoneClayGlass	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	Other	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Boiler	Industrial	Turnover	Other	All	Space Heating	20.0	11.4%	per premise	226	$23,452	per unit	226	$23,452
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	FoodMfg	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	PaperMfg	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	MetalsFab	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	LumberWood	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Early Retirement	Other	All	Space Heating	18.0	23.2%	per premise	457	$13,372	per unit	112	$3,289
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	FoodMfg	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	PaperMfg	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	MetalsFab	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	LumberWood	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	StoneClayGlass	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Condensing Unit Heater 92% AFUE	Industrial	Turnover	Other	All	Space Heating	18.0	13.0%	per premise	257	$8,095	per unit	63	$1,991
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	FoodMfg	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	PaperMfg	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	MetalsFab	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	LumberWood	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Industrial	Early Retirement	Other	All	Space Heating	18.0	17.8%	per premise	351	$12,762	per unit	86	$3,139
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	FoodMfg	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	PaperMfg	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	MetalsFab	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	LumberWood	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	StoneClayGlass	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841
High Efficiency Non-Condensing Unit Heater	Industrial	Turnover	Other	All	Space Heating	18.0	7.0%	per premise	138	$7,485	per unit	34	$1,841

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
Process Heating: High Efficiency Furance	Industrial	Early Retirement	FoodMfg	All	Process Heating	17.0	15.4%	per premise	275	$9,721	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Early Retirement	PaperMfg	All	Process Heating	17.0	15.4%	per premise	196	$6,920	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Early Retirement	StoneClayGlass	All	Process Heating	17.0	15.4%	per premise	111	$3,936	per unit	72	$2,532
High Efficiency Condensing Furnace	Industrial	Early Retirement	FoodMfg	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Early Retirement	MetalsFab	All	Process Heating	17.0	15.4%	per premise	101	$3,577	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Early Retirement	Other	All	Process Heating	17.0	15.4%	per premise	37	$1,308	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Early Retirement	LumberWood	All	Process Heating	17.0	15.4%	per premise	119	$4,211	per unit	72	$2,532
High Efficiency Condensing Furnace	Industrial	Early Retirement	PaperMfg	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
High Efficiency Condensing Furnace	Industrial	Early Retirement	MetalsFab	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
High Efficiency Condensing Furnace	Industrial	Early Retirement	LumberWood	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532

								Per Premise Values			Per Unit Values		
Measure Name	Sector	Vintage	Segment	Climate Zone	End Use	EUL (yrs)	Energy Savings (%)	Unit	Energy Savings (therms)	Incremental Cost ($)	Unit	Savings EUI (Thm/Unit)	Incremental Cost per Measure ($/Unit)
High Efficiency Condensing Furnace	Industrial	Early Retirement	StoneClayGlass	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
High Efficiency Condensing Furnace	Industrial	Early Retirement	Other	All	Space Heating	17.0	15.4%	per premise	304	$10,723	per unit	72	$2,532
Process Heating: High Efficiency Furance	Industrial	Turnover	FoodMfg	All	Process Heating	17.0	14.3%	per premise	256	$3,119	per unit	67	$812
Process Heating: High Efficiency Furance	Industrial	Turnover	PaperMfg	All	Process Heating	17.0	14.3%	per premise	182	$2,219	per unit	67	$812
Process Heating: High Efficiency Furance	Industrial	Turnover	StoneClayGlass	All	Process Heating	17.0	14.3%	per premise	103	$1,262	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	FoodMfg	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
Process Heating: High Efficiency Furance	Industrial	Turnover	MetalsFab	All	Process Heating	17.0	14.3%	per premise	94	$1,147	per unit	67	$812
Process Heating: High Efficiency Furance	Industrial	Turnover	Other	All	Process Heating	17.0	14.3%	per premise	34	$419	per unit	67	$812
Process Heating: High Efficiency Furance	Industrial	Turnover	LumberWood	All	Process Heating	17.0	14.3%	per premise	111	$1,350	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	PaperMfg	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	MetalsFab	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	LumberWood	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	StoneClayGlass	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812
High Efficiency Condensing Furnace	Industrial	Turnover	Other	All	Space Heating	17.0	14.3%	per premise	282	$3,438	per unit	67	$812

Appendix C Detailed Findings by Scenario

Detailed natural gas energy efficiency cumulative savings for each of the 22 scenarios run for each sector (66 scenarios total) are presented below. Within each scenario table, natural gas savings are presented by segment, by end use and by year. Values presented in each year represent the cumulative savings to each given year. Each of the scenarios addressed in this study are summarized in the table below.

Potential Category	Scenario	Scenario # Res/Com/Ind	Avoided Costs	Incentivized %	Discount Rate	
					Residential	Comm./ Industrial
Base Case – Technical/Economic/Achievable Potential Scenarios under TRC						
Technical	Technical – Base	1 / 23 / 45	Current	n/a	3.40%	8.55%
Economic	Economic – Base	2 / 24 / 46	Current	n/a	3.40%	8.55%
Achievable Potential	Achievable – Base	3 / 25 / 47	Current	30%	3.40%	8.55%
	Achievable – Moderate	4 / 26 / 48	Current	50%	3.40%	8.55%
	Achievable – High	5 / 27 / 49	Current	75%	3.40%	8.55%
Base Case – Technical/Economic/Achievable Scenarios under UCT						
Technical	Technical – Base	6 / 28 / 50	Current	n/a	8.55%	8.55%
Economic	Economic – Base	7 / 29 / 51	Current	n/a	8.55%	8.55%
Achievable Potential	Achievable – Base	8 / 30 / 52	Current	30%	8.55%	8.55%
	Achievable – Moderate	9 / 31 / 53	Current	50%	8.55%	8.55%
	Achievable – High	10 / 32 / 54	Current	75%	8.55%	8.55%
Alternate Base Achievable Scenarios under TRC						
Achievable Potential	Achievable – Base	11 / 33 / 55	+25%	30%	3.40%	8.55%
	Achievable – Base	12 / 34 / 56	+50%	30%	3.40%	8.55%
	Achievable – Base	13 / 35 / 57	+100%	30%	3.40%	8.55%
	Achievable – Base	14 / 36 / 58	-25%	30%	3.40%	8.55%
	Achievable – Base	15 / 37 / 59	-50%	30%	3.40%	8.55%
	Achievable – Base	21 / 43 / 65	Current	30%	4.17%	4.17%
Alternate Base Achievable Scenarios under UCT						
Achievable Potential	Achievable – Base	16 / 38 / 60	+25%	30%	8.55%	8.55%
	Achievable – Base	17 / 39 / 61	+50%	30%	8.55%	8.55%
	Achievable – Base	18 / 40 / 62	+100%	30%	8.55%	8.55%
	Achievable – Base	19 / 41 / 63	-25%	30%	8.55%	8.55%
	Achievable – Base	20 / 42 / 64	-50%	30%	8.55%	8.55%
	Achievable – Base	22 / 44 / 66	Current	30%	4.17%	4.17%

C.1 Residential Sector Scenario Findings

C-1: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #1)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**464.0**	**966.0**	**1,480.2**	**2,006.1**	**2,528.9**	**3,062.1**	**3,596.0**	**4,141.3**	**4,697.2**	**5,263.5**	**5,842.5**	**6,434.9**	**6,983.3**	**7,527.6**	**8,084.0**	**8,595.4**	**9,117.7**	**9,595.7**	**10,015.8**	**10,457.2**	**10,810.3**
Clothes Drying	0.9	1.9	2.9	4.0	5.0	6.1	7.2	8.4	9.5	10.7	11.9	13.1	14.4	14.7	15.0	15.3	15.7	16.0	16.5	16.9	17.4
Room Heating	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1
Space Heating	245.3	508.8	778.4	1,054.0	1,335.0	1,621.5	1,903.2	2,190.7	2,483.8	2,782.3	3,087.3	3,399.4	3,717.7	4,032.1	4,352.7	4,622.7	4,898.5	5,180.0	5,467.8	5,766.4	6,002.2
Water Heating	217.7	455.2	698.8	948.0	1,188.6	1,434.2	1,685.3	1,941.9	2,203.5	2,470.1	2,742.8	3,021.9	3,250.5	3,480.2	3,715.6	3,956.6	4,202.7	4,398.8	4,530.6	4,672.9	4,789.7
Mfg_CZ2	**139.9**	**291.3**	**446.3**	**604.9**	**762.5**	**923.2**	**1,084.2**	**1,248.5**	**1,416.0**	**1,586.7**	**1,761.2**	**1,939.8**	**2,105.2**	**2,269.5**	**2,437.4**	**2,592.3**	**2,750.5**	**2,895.4**	**3,022.8**	**3,156.6**	**3,262.9**
Clothes Drying	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	2.9	3.3	3.6	4.0	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.3
Room Heating	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Space Heating	73.2	152.0	232.5	314.9	398.8	484.5	568.6	654.4	742.0	831.1	922.2	1,015.4	1,110.5	1,204.5	1,300.3	1,381.5	1,464.3	1,548.9	1,635.4	1,725.1	1,795.7
Water Heating	66.4	138.7	212.9	288.8	362.1	436.8	513.3	591.4	671.1	752.2	835.2	920.2	990.1	1,060.4	1,132.3	1,206.0	1,281.2	1,341.4	1,382.1	1,426.1	1,461.5
Mfg_CZ3	**167.8**	**349.0**	**534.5**	**724.2**	**913.0**	**1,105.6**	**1,298.5**	**1,495.6**	**1,696.4**	**1,901.0**	**2,110.1**	**2,324.1**	**2,523.4**	**2,721.0**	**2,922.9**	**3,106.9**	**3,294.9**	**3,468.5**	**3,623.2**	**3,785.4**	**3,913.7**
Clothes Drying	0.3	0.7	1.0	1.4	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.6	5.0	5.1	5.2	5.3	5.4	5.6	5.7	5.9	6.0
Room Heating	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
Space Heating	90.8	188.2	287.7	389.4	493.2	598.9	703.1	809.5	917.9	1,028.3	1,141.1	1,256.5	1,374.2	1,490.2	1,608.5	1,706.9	1,807.5	1,910.1	2,015.1	2,123.9	2,211.2
Water Heating	76.7	160.1	245.8	333.4	418.0	504.5	592.8	683.1	775.1	868.9	964.8	1,062.9	1,144.0	1,225.5	1,309.0	1,394.5	1,481.7	1,552.5	1,602.1	1,655.3	1,696.2
Multi_CZ1	**16,153.3**	**34,022.1**	**52,334.4**	**71,071.3**	**89,426.4**	**108,164.1**	**126,797.4**	**145,846.0**	**165,285.3**	**185,106.0**	**205,387.7**	**226,162.4**	**244,173.4**	**261,950.0**	**280,169.1**	**296,914.8**	**314,060.9**	**330,931.5**	**347,400.7**	**364,742.2**	**380,698.4**
Clothes Drying	62.9	132.5	204.2	277.5	352.3	428.6	506.6	586.1	667.2	749.8	834.2	920.5	1,008.6	1,028.6	1,050.3	1,073.6	1,098.6	1,125.1	1,153.4	1,185.1	1,219.1
Room Heating	4.9	10.7	16.6	22.7	28.9	35.2	41.7	48.3	55.1	61.9	69.0	76.2	83.5	91.0	98.7	106.5	114.4	122.5	130.7	139.3	148.1
Space Heating	9,671.4	20,485.2	31,576.1	42,926.5	54,509.4	66,326.8	77,876.6	89,680.7	101,725.2	114,004.0	126,564.7	139,427.2	152,560.6	165,622.6	178,956.0	190,653.7	202,597.3	214,793.0	227,279.4	240,324.8	252,425.4
Water Heating	6,414.1	13,393.7	20,537.5	27,844.7	34,535.7	41,373.5	48,372.6	55,530.8	62,837.8	70,290.3	77,919.8	85,738.5	90,520.7	95,207.8	100,064.0	105,081.0	110,250.6	114,891.0	118,837.2	123,093.1	126,905.8
Multi_CZ2	**15,961.4**	**33,410.9**	**51,295.9**	**69,591.4**	**87,518.9**	**105,815.3**	**124,067.1**	**142,719.4**	**161,746.0**	**181,139.0**	**200,977.2**	**221,291.0**	**239,037.0**	**256,566.1**	**274,520.8**	**291,141.7**	**308,146.9**	**324,895.7**	**341,260.2**	**358,414.8**	**374,195.8**
Clothes Drying	60.3	127.1	195.9	266.3	338.1	411.3	486.1	562.5	640.3	719.5	800.5	883.4	967.8	987.0	1,007.9	1,030.3	1,054.2	1,079.6	1,106.8	1,137.2	1,169.8
Room Heating	4.7	10.3	16.0	21.8	27.7	33.8	40.0	46.4	52.8	59.4	66.2	73.1	80.2	87.3	94.7	102.2	109.8	117.5	125.4	133.7	142.1
Space Heating	9,178.4	19,456.5	29,999.0	40,788.4	51,799.3	63,033.3	74,062.3	85,333.4	96,833.4	108,556.6	120,548.3	132,827.1	145,363.7	157,843.2	170,581.2	181,827.0	193,307.0	205,027.1	217,024.7	229,558.0	241,178.1
Water Heating	6,717.9	13,817.0	21,085.0	28,514.9	35,353.9	42,337.0	49,478.8	56,777.2	64,219.4	71,803.4	79,562.2	87,507.4	92,625.3	97,648.5	102,837.0	108,182.3	113,676.0	118,671.5	123,003.2	127,586.0	131,705.8
Multi_CZ3	**13,937.8**	**29,201.5**	**44,841.1**	**60,840.2**	**76,496.9**	**92,476.7**	**108,405.4**	**124,685.1**	**141,293.2**	**158,222.5**	**175,541.8**	**193,277.8**	**208,693.7**	**223,855.9**	**239,391.1**	**253,427.8**	**267,801.5**	**281,962.6**	**295,803.6**	**310,345.5**	**323,518.5**
Clothes Drying	54.5	114.9	177.1	240.7	305.6	371.7	439.3	508.4	578.7	650.3	723.5	798.4	874.8	892.1	910.9	931.2	952.8	975.8	1,000.4	1,027.8	1,057.3
Room Heating	4.1	8.8	13.7	18.7	23.8	29.0	34.3	39.8	45.3	51.0	56.8	62.7	68.8	74.9	81.2	87.6	94.1	100.8	107.6	114.6	121.9
Space Heating	8,476.6	17,936.5	27,637.3	37,564.7	47,695.1	58,030.2	68,183.6	78,559.0	89,144.1	99,933.6	110,969.3	122,268.5	133,803.9	145,243.4	156,919.8	166,968.3	177,231.5	187,714.5	198,450.5	209,670.9	220,079.8
Water Heating	5,402.6	11,141.3	17,013.1	23,016.2	28,472.4	34,045.7	39,748.2	45,577.9	51,525.0	57,587.6	63,792.1	70,148.2	73,946.3	77,645.5	81,479.2	85,440.7	89,523.0	93,171.5	96,245.2	99,532.2	102,259.4
Single_CZ1	**98,309.0**	**204,933.6**	**314,154.3**	**425,864.5**	**537,170.0**	**650,708.0**	**764,711.6**	**881,139.6**	**999,826.3**	**1,120,726.4**	**1,243,847.6**	**1,369,850.4**	**1,487,491.8**	**1,600,948.5**	**1,716,978.1**	**1,827,715.5**	**1,940,773.6**	**2,044,736.8**	**2,136,804.9**	**2,233,469.8**	**2,315,619.8**
Clothes Drying	301.1	634.5	977.6	1,328.8	1,687.0	2,052.4	2,425.7	2,806.7	3,195.1	3,590.5	3,994.7	4,408.0	4,829.6	4,925.3	5,029.3	5,141.2	5,260.5	5,387.5	5,523.1	5,674.6	5,837.5
Other	15.8	31.8	48.3	65.2	82.4	99.9	117.7	135.9	154.4	173.2	192.4	212.0	231.9	252.2	272.8	293.7	315.0	336.6	358.5	380.7	403.4
Room Heating	12.5	27.0	42.0	57.4	73.1	89.1	105.4	122.1	139.2	156.6	174.4	192.6	211.2	230.2	249.5	269.2	289.2	309.6	330.5	352.2	374.5
Space Heating	53,710.7	111,647.2	170,899.7	231,496.9	293,293.6	356,295.1	418,631.3	482,275.8	547,136.9	613,190.3	680,223.3	748,812.0	818,779.7	884,755.6	952,119.2	1,013,063.2	1,075,257.4	1,138,730.9	1,203,602.8	1,270,908.2	1,329,065.7
Water Heating	44,268.9	92,593.1	142,186.6	192,916.2	242,033.9	292,171.6	343,431.5	395,799.1	449,200.7	503,615.8	559,262.8	616,225.8	663,439.3	710,785.2	759,307.3	808,948.2	859,651.4	899,972.2	926,990.1	956,154.1	979,938.7
Single_CZ2	**186,405.3**	**388,574.3**	**595,677.0**	**807,500.2**	**1,018,496.8**	**1,233,726.6**	**1,449,793.4**	**1,670,457.0**	**1,895,403.1**	**2,124,546.1**	**2,357,890.5**	**2,596,698.6**	**2,819,812.4**	**3,035,292.4**	**3,255,650.6**	**3,466,448.8**	**3,681,647.3**	**3,879,574.6**	**4,054,911.5**	**4,238,959.4**	**4,394,089.5**
Clothes Drying	577.3	1,216.6	1,874.7	2,548.0	3,234.9	3,935.6	4,651.4	5,382.1	6,126.7	6,885.1	7,660.0	8,452.6	9,261.1	9,444.6	9,644.0	9,858.5	10,087.3	10,330.8	10,590.9	10,881.4	11,193.6
Other	30.2	61.0	92.7	125.0	158.0	191.6	225.8	260.7	296.1	332.2	368.9	406.5	444.7	483.5	523.1	563.2	604.0	645.4	687.4	730.1	773.5
Room Heating	22.7	49.2	76.5	104.4	132.9	162.1	191.8	222.3	253.3	285.0	317.4	350.5	384.4	418.8	454.0	489.9	526.3	563.5	601.4	641.0	681.6
Space Heating	100,749.4	209,547.6	320,825.2	434,630.7	550,691.4	669,017.6	786,015.8	905,474.0	1,027,221.3	1,151,211.1	1,277,025.3	1,405,764.4	1,537,090.5	1,661,152.7	1,787,824.8	1,902,779.2	2,020,085.4	2,139,798.1	2,262,146.6	2,389,099.3	2,498,348.6
Water Heating	85,025.7	177,699.9	272,808.0	370,092.0	464,279.5	560,419.8	658,708.6	759,118.0	861,505.6	965,832.8	1,072,519.0	1,181,724.6	1,272,631.7	1,363,792.8	1,457,204.8	1,552,758.1	1,650,344.3	1,728,236.8	1,780,885.2	1,837,607.7	1,883,092.1
Single_CZ3	**132,416.0**	**275,681.8**	**422,415.4**	**572,486.4**	**722,158.9**	**874,822.6**	**1,028,223.8**	**1,184,873.3**	**1,344,545.5**	**1,507,181.2**	**1,672,818.2**	**1,842,316.8**	**2,001,480.5**	**2,154,551.5**	**2,311,068.2**	**2,459,663.8**	**2,611,366.1**	**2,752,151.6**	**2,878,585.2**	**3,011,096.6**	**3,122,405.9**
Clothes Drying	387.1	815.8	1,257.1	1,708.6	2,169.3	2,639.1	3,119.1	3,609.1	4,108.4	4,617.0	5,136.6	5,668.1	6,210.3	6,333.4	6,467.1	6,610.9	6,764.3	6,927.6	7,102.0	7,296.8	7,506.2
Other	20.3	40.9	62.2	83.9	106.0	128.5	151.4	174.8	198.6	222.7	247.4	272.6	298.2	324.3	350.8	377.7	405.0	432.8	461.0	489.6	518.7
Room Heating	15.2	33.0	51.3	70.0	89.1	108.7	128.6	149.0	169.9	191.1	212.8	235.1	257.8	280.9	304.5	328.5	353.0	377.9	403.3	429.8	457.0
Space Heating	74,146.2	153,881.1	235,411.1	318,786.4	403,806.9	490,479.3	576,415.9	664,146.5	753,543.0	844,572.8	936,986.3	1,031,533.5	1,127,966.3	1,218,526.4	1,310,988.5	1,394,060.9	1,478,845.8	1,565,382.8	1,653,825.0	1,745,547.8	1,825,652.6
Water Heating	57,847.2	120,910.9	185,633.7	251,837.5	315,987.7	381,467.0	448,408.7	516,793.9	586,525.6	657,577.5	730,235.1	804,607.6	866,748.0	929,086.6	992,957.5	1,058,285.9	1,124,998.1	1,179,030.5	1,216,794.0	1,257,332.6	1,288,271.3
Grand Total	**463,954.5**	**967,430.3**	**1,483,179.1**	**2,010,689.2**	**2,535,472.3**	**3,070,804.3**	**3,607,977.5**	**4,156,605.9**	**4,715,909.0**	**5,285,672.5**	**5,866,176.9**	**6,460,295.9**	**7,012,300.7**	**7,545,682.6**	**8,091,222.2**	**8,609,607.1**	**9,138,959.5**	**9,630,212.5**	**10,071,427.9**	**10,534,427.7**	**10,928,514.9**

C-2: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #2)

Segment/End Use]	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**154.1**	**323.6**	**497.2**	**674.8**	**842.1**	**1,013.1**	**1,188.0**	**1,366.9**	**1,549.4**	**1,735.5**	**1,926.0**	**2,121.1**	**2,264.0**	**2,400.6**	**2,541.4**	**2,686.2**	**2,834.7**	**2,987.1**	**3,136.3**	**3,293.5**	**3,410.4**
Room Heating	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1
Space Heating	78.9	170.5	264.5	360.8	459.2	559.6	662.2	767.1	874.2	983.3	1,095.0	1,209.2	1,325.9	1,434.8	1,546.1	1,659.7	1,775.5	1,893.5	2,014.3	2,140.8	2,224.9
Water Heating	75.2	153.1	232.5	313.8	382.8	453.3	525.5	599.4	674.8	751.7	830.6	911.4	937.4	965.1	994.6	1,025.7	1,058.4	1,092.7	1,121.0	1,151.7	1,184.5
Mfg_CZ2	**46.5**	**97.5**	**149.8**	**203.2**	**253.5**	**304.9**	**357.5**	**411.3**	**466.2**	**522.1**	**579.4**	**638.0**	**680.7**	**721.7**	**763.9**	**807.2**	**851.7**	**897.4**	**942.0**	**989.1**	**1,023.7**
Room Heating	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Space Heating	23.6	50.9	78.9	107.6	136.9	166.8	197.4	228.6	260.5	293.0	326.3	360.3	395.0	427.5	460.7	494.6	529.1	564.3	600.3	638.0	662.7
Water Heating	22.9	46.6	70.8	95.6	116.6	138.1	160.1	182.6	205.5	229.0	253.0	277.6	285.5	294.0	302.9	312.4	322.4	332.8	341.4	350.8	360.8
Mfg_CZ3	**54.6**	**114.7**	**176.2**	**239.1**	**298.5**	**359.2**	**421.3**	**484.8**	**549.6**	**615.7**	**683.3**	**752.6**	**803.7**	**852.3**	**902.4**	**953.9**	**1,006.8**	**1,061.0**	**1,114.3**	**1,170.4**	**1,212.6**
Room Heating	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
Space Heating	28.6	61.8	95.9	130.8	166.5	202.8	240.0	278.1	316.8	356.4	396.8	438.2	480.5	519.7	559.7	600.6	642.3	684.8	728.3	773.8	804.7
Water Heating	25.9	52.8	80.2	108.2	132.0	156.3	181.2	206.6	232.6	259.1	286.3	314.1	323.0	332.4	342.5	353.1	364.2	375.9	385.7	396.3	407.5
Multi_CZ1	**6,701.9**	**14,562.7**	**22,609.5**	**30,852.2**	**38,505.8**	**46,338.5**	**54,367.2**	**62,589.8**	**70,999.7**	**79,590.3**	**88,394.6**	**97,428.4**	**103,572.9**	**109,581.9**	**115,799.6**	**122,216.6**	**128,823.8**	**135,626.4**	**142,569.0**	**150,030.3**	**156,928.2**
Room Heating	4.9	10.7	16.6	22.7	28.9	35.2	41.7	48.3	55.1	61.9	69.0	76.2	83.5	91.0	98.7	106.5	114.4	122.5	130.7	139.3	148.1
Space Heating	2,619.2	6,143.3	9,763.6	13,480.6	17,286.1	21,182.1	25,176.8	29,269.3	33,460.3	37,744.9	42,136.2	46,642.4	51,255.7	55,641.3	60,134.1	64,729.6	69,424.0	74,220.4	79,159.1	84,451.8	89,057.1
Water Heating	4,077.8	8,408.7	12,829.3	17,348.9	21,190.9	25,121.1	29,148.7	33,272.2	37,484.3	41,783.4	46,189.5	50,709.8	52,233.7	53,849.5	55,566.9	57,380.6	59,285.4	61,283.5	63,279.2	65,439.2	67,723.0
Multi_CZ2	**7,020.9**	**15,027.6**	**23,226.3**	**31,620.1**	**39,451.7**	**47,460.6**	**55,663.8**	**64,059.1**	**72,637.8**	**81,394.2**	**90,363.1**	**99,559.7**	**105,977.1**	**112,283.8**	**118,796.5**	**125,505.3**	**132,401.1**	**139,488.6**	**146,707.1**	**154,389.7**	**161,528.5**
Room Heating	4.7	10.3	16.0	21.8	27.7	33.8	40.0	46.4	52.8	59.4	66.2	73.1	80.2	87.3	94.7	102.2	109.8	117.5	125.4	133.7	142.1
Space Heating	2,505.7	5,881.3	9,349.2	12,909.7	16,555.1	20,287.3	24,114.1	28,034.6	32,049.7	36,154.5	40,361.5	44,678.7	49,098.7	53,313.5	57,631.1	62,047.2	66,558.2	71,167.0	75,912.4	80,997.8	85,420.5
Water Heating	4,510.4	9,136.0	13,861.2	18,688.6	22,868.9	27,139.5	31,509.7	35,978.1	40,535.2	45,180.4	49,935.5	54,807.8	56,798.2	58,883.0	61,070.7	63,355.9	65,733.0	68,204.1	70,669.3	73,258.2	75,965.9
Multi_CZ3	**5,657.8**	**12,175.1**	**18,844.4**	**25,673.7**	**31,980.5**	**38,433.0**	**45,045.2**	**51,815.4**	**58,736.9**	**65,805.1**	**73,047.6**	**80,477.1**	**85,378.2**	**90,116.1**	**95,023.6**	**100,092.7**	**105,316.0**	**110,697.5**	**116,186.7**	**122,073.8**	**127,455.6**
Room Heating	4.1	8.8	13.7	18.7	23.8	29.0	34.3	39.8	45.3	51.0	56.8	62.7	68.8	74.9	81.2	87.6	94.1	100.8	107.6	114.6	121.9
Space Heating	2,288.6	5,345.8	8,485.9	11,709.6	15,009.6	18,387.8	21,851.1	25,398.7	29,031.2	32,744.4	36,549.5	40,454.0	44,450.7	48,213.7	52,069.0	56,012.9	60,042.1	64,159.0	68,398.0	72,938.9	76,886.5
Water Heating	3,365.1	6,820.5	10,344.8	13,945.4	16,947.0	20,016.2	23,159.8	26,376.9	29,660.4	33,009.7	36,441.3	39,960.4	40,858.7	41,827.5	42,873.4	43,992.2	45,179.8	46,437.7	47,681.1	49,020.2	50,447.2
Single_CZ1	**42,633.3**	**89,366.5**	**137,184.2**	**186,102.7**	**233,335.9**	**281,559.5**	**330,871.7**	**381,258.6**	**432,653.2**	**485,032.0**	**538,604.4**	**593,453.5**	**638,534.1**	**679,339.9**	**721,289.4**	**764,326.1**	**808,395.7**	**853,523.1**	**898,257.5**	**945,173.1**	**982,756.1**
Other	15.8	31.8	48.3	65.2	82.4	99.9	117.7	135.9	154.4	173.2	192.4	212.0	231.9	252.2	272.8	293.7	315.0	336.6	358.5	380.7	403.4
Room Heating	12.5	27.0	42.0	57.4	73.1	89.1	105.4	122.1	139.2	156.6	174.4	192.6	211.2	230.2	249.5	269.2	289.2	309.6	330.5	352.2	374.5
Space Heating	27,946.7	59,484.0	91,794.0	124,866.2	158,622.4	193,069.0	228,273.4	264,226.5	300,890.5	338,245.8	376,429.9	415,501.8	455,375.4	490,661.4	526,748.0	563,597.2	601,172.7	639,492.7	678,686.5	719,607.3	750,796.6
Water Heating	14,658.4	29,823.6	45,299.8	61,113.9	74,558.0	88,301.5	102,375.1	116,774.1	131,469.1	146,456.4	161,807.7	177,547.2	182,715.6	188,196.2	194,019.1	200,166.0	206,618.8	213,384.1	218,882.1	224,832.9	231,181.5
Single_CZ2	**73,510.4**	**153,903.9**	**236,129.5**	**320,244.3**	**400,929.0**	**483,312.6**	**567,564.1**	**653,659.3**	**741,481.6**	**830,991.2**	**922,548.8**	**1,016,297.0**	**1,091,081.5**	**1,157,819.9**	**1,226,519.8**	**1,297,083.8**	**1,369,418.6**	**1,443,566.5**	**1,516,713.4**	**1,593,568.4**	**1,659,277.1**
Other	30.2	61.0	92.7	125.0	158.0	191.6	225.8	260.7	296.1	332.2	368.9	406.5	444.7	483.5	523.1	563.2	604.0	645.4	687.4	730.1	773.5
Room Heating	22.7	49.2	76.5	104.4	132.9	162.1	191.8	222.3	253.3	285.0	317.4	350.5	384.4	418.8	454.0	489.9	526.3	563.5	601.4	641.0	681.6
Space Heating	45,349.2	96,605.3	149,095.5	202,825.7	257,669.0	313,636.1	370,836.7	429,255.7	488,833.1	549,535.9	611,587.5	675,083.7	739,885.5	796,041.1	853,500.5	912,201.6	972,085.6	1,033,182.0	1,095,706.4	1,161,068.2	1,214,518.9
Water Heating	28,108.2	57,188.4	86,864.8	117,189.1	142,969.1	169,322.9	196,309.8	223,920.7	252,099.1	280,838.1	310,275.0	340,456.3	350,367.0	360,876.4	372,042.2	383,829.1	396,202.7	409,175.6	419,718.2	431,129.3	443,303.1
Single_CZ3	**57,137.1**	**119,693.2**	**183,693.9**	**249,166.4**	**312,521.8**	**377,200.9**	**443,335.4**	**510,906.5**	**579,823.7**	**650,056.2**	**721,884.3**	**795,419.2**	**856,450.9**	**911,174.8**	**967,427.1**	**1,025,132.2**	**1,084,217.6**	**1,144,716.3**	**1,204,870.3**	**1,267,924.0**	**1,319,058.0**
Other	20.3	40.9	62.2	83.9	106.0	128.5	151.4	174.8	198.6	222.7	247.4	272.6	298.2	324.3	350.8	377.7	405.0	432.8	461.0	489.6	518.7
Room Heating	15.2	33.0	51.3	70.0	89.1	108.7	128.6	149.0	169.9	191.1	212.8	235.1	257.8	280.9	304.5	328.5	353.0	377.9	403.3	429.8	457.0
Space Heating	38,345.5	81,466.2	125,633.4	170,839.6	216,977.8	264,056.3	312,167.2	361,297.8	411,395.5	462,433.9	514,601.7	567,979.0	622,447.9	670,208.8	719,059.8	768,948.7	819,825.9	871,716.0	924,789.3	980,183.5	1,023,149.0
Water Heating	18,756.1	38,153.2	57,947.0	78,172.9	95,348.9	112,907.5	130,888.2	149,284.9	168,059.8	187,208.4	206,822.4	226,932.6	233,447.1	240,360.8	247,712.1	255,477.4	263,633.8	272,189.6	279,216.7	286,821.1	294,933.3
Grand Total	**192,916.5**	**405,264.9**	**622,511.0**	**844,776.5**	**1,058,118.9**	**1,275,982.2**	**1,498,814.1**	**1,726,551.6**	**1,958,898.1**	**2,195,742.3**	**2,438,031.5**	**2,686,146.5**	**2,884,743.2**	**3,064,291.0**	**3,249,063.7**	**3,438,804.0**	**3,633,266.2**	**3,832,563.9**	**4,030,496.6**	**4,238,612.3**	**4,412,650.3**

C-3: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #3)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**43.0**	**87.7**	**134.6**	**184.2**	**231.4**	**282.2**	**337.3**	**397.2**	**462.1**	**531.9**	**606.7**	**686.5**	**747.9**	**809.8**	**875.1**	**943.5**	**1,014.6**	**1,088.6**	**1,165.0**	**1,245.6**	**1,326.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	14.8	30.8	48.3	67.7	89.2	113.5	140.9	171.9	206.7	245.1	287.4	333.2	382.2	430.6	481.5	534.4	589.2	646.1	704.9	766.7	828.3
Water Heating	28.3	56.9	86.3	116.6	142.1	168.7	196.4	225.3	255.4	286.7	319.2	353.1	365.6	379.0	393.5	408.9	425.1	442.2	459.8	478.5	498.2
Mfg_CZ2	**13.0**	**26.5**	**40.6**	**55.6**	**69.8**	**85.1**	**101.7**	**119.7**	**139.2**	**160.1**	**182.6**	**206.6**	**225.0**	**243.5**	**263.0**	**283.5**	**304.8**	**327.0**	**349.8**	**373.9**	**398.2**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	4.4	9.1	14.3	20.1	26.5	33.7	41.8	51.0	61.4	72.8	85.4	99.0	113.6	128.0	143.1	158.9	175.2	192.2	209.7	228.1	246.4
Water Heating	8.6	17.3	26.3	35.5	43.3	51.4	59.8	68.6	77.8	87.3	97.2	107.6	111.3	115.4	119.9	124.5	129.5	134.7	140.1	145.8	151.7
Mfg_CZ3	**15.4**	**31.3**	**48.1**	**65.8**	**82.6**	**100.8**	**120.5**	**141.8**	**164.9**	**189.7**	**216.4**	**244.7**	**266.7**	**288.7**	**312.0**	**336.3**	**361.6**	**387.9**	**415.1**	**443.7**	**472.7**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	5.6	11.6	18.2	25.4	33.4	42.4	52.5	63.9	76.6	90.6	106.0	122.6	140.4	157.8	176.1	195.2	214.9	235.4	256.5	278.8	301.0
Water Heating	9.8	19.7	29.9	40.4	49.2	58.4	68.0	78.0	88.3	99.1	110.4	122.1	126.3	130.9	135.8	141.1	146.6	152.5	158.5	164.9	171.6
Multi_CZ1	**1,980.0**	**4,055.4**	**6,233.4**	**8,540.0**	**10,680.9**	**12,996.9**	**15,518.8**	**18,267.4**	**21,252.8**	**24,475.8**	**27,942.6**	**31,645.6**	**34,301.5**	**37,028.5**	**39,926.3**	**42,974.5**	**46,155.6**	**49,486.4**	**52,959.0**	**56,696.5**	**60,552.8**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	411.7	894.4	1,437.2	2,058.3	2,776.7	3,614.1	4,593.2	5,731.2	7,038.7	8,516.5	10,163.7	11,972.3	13,924.3	15,889.2	17,966.3	20,140.4	22,398.7	24,754.4	27,206.3	29,844.6	32,542.5
Water Heating	1,568.1	3,160.6	4,795.4	6,480.3	7,902.2	9,379.8	10,921.3	12,530.5	14,206.5	15,949.6	17,766.7	19,658.3	20,359.2	21,118.0	21,935.3	22,805.8	23,724.8	24,695.9	25,712.6	26,807.5	27,961.5
Multi_CZ2	**1,915.4**	**3,923.9**	**6,039.4**	**8,289.3**	**10,394.2**	**12,684.1**	**15,191.8**	**17,939.4**	**20,937.1**	**24,185.8**	**27,691.0**	**31,443.3**	**34,208.0**	**37,060.1**	**40,087.9**	**43,269.6**	**46,586.1**	**50,055.3**	**53,662.3**	**57,507.3**	**61,467.7**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	390.2	848.5	1,364.6	1,955.8	2,640.4	3,439.4	4,374.5	5,462.2	6,712.7	8,127.0	9,704.0	11,436.0	13,305.9	15,192.7	17,187.3	19,275.1	21,443.7	23,705.9	26,060.5	28,594.1	31,184.8
Water Heating	1,525.1	3,074.9	4,674.0	6,332.2	7,751.8	9,241.9	10,813.3	12,471.7	14,217.1	16,049.5	17,975.3	19,992.9	20,884.9	21,846.9	22,876.9	23,967.3	25,111.6	26,314.7	27,563.3	28,870.6	30,236.1
Multi_CZ3	**1,732.5**	**3,538.3**	**5,426.6**	**7,417.8**	**9,254.1**	**11,228.0**	**13,363.5**	**15,676.3**	**18,173.3**	**20,855.3**	**23,727.8**	**26,785.5**	**28,917.3**	**31,084.0**	**33,385.2**	**35,805.1**	**38,330.0**	**40,972.8**	**43,726.4**	**46,682.4**	**49,728.8**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	374.1	808.8	1,295.2	1,849.1	2,486.2	3,225.4	4,085.9	5,082.3	6,223.7	7,510.7	8,942.5	10,512.5	12,205.1	13,895.6	15,682.1	17,551.8	19,493.6	21,518.9	23,626.4	25,893.0	28,210.4
Water Heating	1,358.3	2,729.1	4,130.7	5,567.6	6,766.2	8,000.2	9,274.1	10,589.2	11,943.4	13,336.6	14,775.3	16,260.7	16,697.4	17,170.9	17,682.7	18,230.0	18,810.0	19,424.3	20,067.0	20,752.8	21,478.2
Single_CZ1	**12,603.8**	**25,779.5**	**39,670.8**	**54,459.4**	**69,193.0**	**85,115.5**	**102,410.1**	**121,181.1**	**141,447.4**	**163,179.6**	**186,389.7**	**211,004.4**	**232,441.8**	**253,173.3**	**274,885.2**	**297,455.6**	**320,781.5**	**344,949.6**	**369,818.0**	**395,908.6**	**422,044.4**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	7,108.6	14,718.2	22,896.2	31,796.2	41,554.3	52,306.9	64,209.0	77,352.7	91,760.9	107,404.1	124,269.7	142,284.0	161,294.5	179,400.9	198,289.2	217,856.3	238,016.1	258,842.8	280,286.2	302,739.5	325,049.7
Water Heating	5,494.2	11,058.9	16,770.1	22,656.0	27,627.7	32,792.5	38,178.7	43,798.1	49,646.5	55,724.2	62,055.6	68,641.5	71,052.4	73,660.5	76,466.0	79,450.4	82,596.9	85,917.8	89,321.6	92,937.1	96,740.4
Single_CZ2	**22,624.4**	**45,992.1**	**70,344.8**	**95,917.0**	**120,765.7**	**147,204.1**	**175,500.6**	**205,820.9**	**238,219.7**	**272,699.6**	**309,337.4**	**348,068.6**	**380,209.0**	**410,735.6**	**442,776.1**	**476,150.1**	**510,702.7**	**546,571.5**	**583,506.5**	**622,330.6**	**661,846.1**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	12,087.1	24,781.4	38,178.8	52,459.4	67,767.5	84,292.8	102,249.0	121,779.0	142,945.0	165,749.4	190,222.0	216,297.2	243,784.7	269,278.3	295,905.2	323,521.2	352,003.4	381,466.0	411,834.5	443,684.9	475,865.6
Water Heating	10,535.5	21,206.1	32,157.6	43,444.0	52,977.6	62,881.4	73,209.8	83,985.2	95,199.9	106,854.2	118,995.1	131,623.7	136,246.8	141,247.9	146,627.7	152,350.4	158,384.1	164,752.0	171,279.1	178,212.0	185,504.9
Single_CZ3	**17,147.9**	**35,045.5**	**53,886.8**	**73,909.7**	**93,889.1**	**115,426.8**	**138,762.4**	**164,031.3**	**191,256.8**	**220,401.1**	**251,483.4**	**284,410.6**	**313,286.1**	**341,000.4**	**370,006.4**	**400,145.0**	**431,281.4**	**463,528.7**	**496,709.8**	**531,509.2**	**566,401.3**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	10,085.0	20,830.3	32,332.1	44,792.6	58,387.2	73,294.3	89,717.8	107,778.2	127,504.4	148,858.2	171,827.4	196,317.7	222,127.6	246,525.4	271,963.3	298,305.5	325,438.6	353,460.3	382,305.7	412,499.2	442,545.5
Water Heating	7,061.6	14,212.2	21,549.1	29,107.9	35,488.0	42,112.4	49,016.5	56,215.0	63,702.2	71,478.5	79,575.3	87,993.9	91,039.4	94,334.6	97,880.1	101,652.7	105,631.4	109,831.3	114,140.6	118,719.2	123,536.9
Grand Total	**58,075.3**	**118,480.2**	**181,825.0**	**248,838.8**	**314,560.8**	**385,123.4**	**461,306.6**	**543,575.3**	**632,053.1**	**726,679.0**	**827,577.8**	**934,495.8**	**1,024,603.2**	**1,111,423.8**	**1,202,517.4**	**1,297,363.4**	**1,395,518.2**	**1,497,367.8**	**1,602,312.0**	**1,712,697.7**	**1,824,238.9**

C-4: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #4)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**55.3**	**113.8**	**175.9**	**242.4**	**306.8**	**376.9**	**453.4**	**536.5**	**626.3**	**722.4**	**824.8**	**933.1**	**1,018.3**	**1,103.6**	**1,193.1**	**1,286.3**	**1,382.7**	**1,482.2**	**1,584.6**	**1,692.9**	**1,800.5**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5
Space Heating	19.8	42.1	66.9	94.8	126.5	162.3	203.0	248.7	299.5	355.1	415.4	480.0	548.4	615.7	686.0	758.8	833.8	910.9	990.5	1,074.5	1,156.7
Water Heating	35.5	71.7	109.0	147.5	180.3	214.5	250.3	287.7	326.7	367.2	409.2	453.0	469.7	487.6	506.8	527.2	548.5	570.9	593.7	617.9	643.3
Mfg_CZ2	**16.7**	**34.3**	**53.1**	**73.1**	**92.5**	**113.6**	**136.6**	**161.6**	**188.5**	**217.4**	**248.2**	**280.7**	**306.2**	**331.7**	**358.5**	**386.4**	**415.3**	**445.1**	**475.7**	**508.1**	**540.3**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Space Heating	5.9	12.5	19.9	28.2	37.5	48.2	60.3	73.9	89.0	105.5	123.5	142.7	163.1	183.1	204.1	225.8	248.1	271.1	294.8	319.8	344.2
Water Heating	10.8	21.8	33.2	44.9	54.9	65.3	76.2	87.6	99.5	111.8	124.6	138.0	143.1	148.5	154.4	160.6	167.1	173.9	180.8	188.2	195.9
Mfg_CZ3	**19.8**	**40.6**	**62.8**	**86.5**	**109.5**	**134.5**	**161.7**	**191.3**	**223.2**	**257.3**	**293.7**	**332.1**	**362.5**	**392.9**	**424.7**	**457.8**	**492.0**	**527.4**	**563.7**	**602.2**	**640.5**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Space Heating	7.4	15.8	25.0	35.4	47.0	60.2	75.1	91.8	110.2	130.4	152.2	175.6	200.3	224.6	249.8	276.0	302.9	330.6	359.2	389.4	419.0
Water Heating	12.3	24.8	37.7	51.1	62.4	74.2	86.6	99.5	112.9	126.9	141.4	156.4	162.1	168.2	174.8	181.7	189.0	196.6	204.4	212.7	221.4
Multi_CZ1	**2,535.5**	**5,252.5**	**8,137.4**	**11,229.6**	**14,164.6**	**17,368.5**	**20,875.3**	**24,700.3**	**28,842.7**	**33,289.8**	**38,039.8**	**43,077.4**	**46,791.5**	**50,579.5**	**54,573.2**	**58,749.3**	**63,088.2**	**67,582.2**	**72,265.5**	**77,321.1**	**82,502.9**
Room Heating	0.3	0.9	1.7	2.7	4.0	5.7	7.8	10.3	13.3	16.7	20.5	24.7	29.2	33.9	38.9	44.1	49.4	54.9	60.6	66.6	72.8
Space Heating	565.6	1,269.6	2,081.1	3,028.4	4,137.8	5,436.7	6,949.4	8,688.6	10,656.9	12,844.0	15,241.2	17,833.8	20,597.0	23,363.6	26,263.8	29,280.6	32,400.1	35,615.3	38,963.3	42,577.0	46,241.1
Water Heating	1,969.6	3,982.0	6,054.6	8,198.6	10,022.8	11,926.2	13,918.2	16,001.4	18,172.5	20,429.1	22,778.0	25,218.9	26,165.3	27,182.0	28,270.6	29,424.6	30,638.7	31,911.9	33,241.6	34,677.5	36,189.1
Multi_CZ2	**2,468.8**	**5,113.8**	**7,936.1**	**10,977.2**	**13,891.4**	**17,091.5**	**20,613.2**	**24,472.7**	**28,668.0**	**33,185.4**	**38,021.4**	**43,158.3**	**47,044.9**	**51,025.1**	**55,216.4**	**59,593.5**	**64,135.6**	**68,833.4**	**73,715.6**	**78,934.0**	**84,275.0**
Room Heating	0.3	0.9	1.6	2.6	3.8	5.5	7.5	9.9	12.8	16.1	19.7	23.7	28.0	32.6	37.3	42.3	47.4	52.7	58.2	63.9	69.8
Space Heating	536.7	1,206.5	1,979.4	2,882.7	3,941.8	5,182.9	6,629.5	8,293.7	10,178.1	12,272.8	14,569.4	17,053.7	19,702.0	22,359.4	25,145.2	28,042.9	31,039.3	34,127.7	37,343.4	40,814.6	44,333.8
Water Heating	1,931.8	3,906.4	5,955.1	8,092.0	9,945.8	11,903.2	13,976.3	16,169.1	18,477.1	20,896.5	23,432.3	26,080.8	27,314.9	28,633.2	30,033.9	31,508.3	33,048.8	34,653.0	36,314.0	38,055.6	39,871.3
Multi_CZ3	**2,216.2**	**4,570.7**	**7,058.9**	**9,711.3**	**12,207.8**	**14,914.7**	**17,858.2**	**21,049.6**	**24,487.7**	**28,162.6**	**32,074.3**	**36,211.5**	**39,179.7**	**42,179.4**	**45,341.2**	**48,647.0**	**52,081.7**	**55,639.3**	**59,344.1**	**63,332.7**	**67,414.2**
Room Heating	0.3	0.7	1.4	2.2	3.3	4.7	6.4	8.5	11.0	13.8	16.9	20.3	24.0	27.9	32.0	36.3	40.7	45.2	49.9	54.8	59.9
Space Heating	511.1	1,140.5	1,862.0	2,699.9	3,676.7	4,815.6	6,137.3	7,652.7	9,363.8	11,261.8	13,339.3	15,584.0	17,974.5	20,351.0	22,841.9	25,432.6	28,111.3	30,872.0	33,746.2	36,846.9	39,990.3
Water Heating	1,704.8	3,429.5	5,195.5	7,009.2	8,527.9	10,094.5	11,714.4	13,388.4	15,112.9	16,887.0	18,718.1	20,607.2	21,181.1	21,800.4	22,467.3	23,178.1	23,929.7	24,722.1	25,548.1	26,431.0	27,364.0
Single_CZ1	**16,303.6**	**33,680.9**	**52,226.4**	**72,172.8**	**92,312.6**	**114,181.8**	**137,936.2**	**163,602.8**	**191,098.5**	**220,299.1**	**251,173.2**	**283,614.1**	**311,883.4**	**339,053.6**	**367,320.1**	**396,560.0**	**426,670.5**	**457,614.9**	**489,392.7**	**522,801.5**	**555,639.9**
Other	1.1	2.6	4.8	7.6	11.2	15.9	21.7	28.7	36.9	46.2	56.6	67.9	80.1	92.9	106.3	120.2	134.6	149.3	164.4	179.9	195.7
Room Heating	0.9	2.3	4.2	6.7	10.1	14.4	19.7	26.1	33.7	42.3	51.9	62.5	73.8	85.8	98.4	111.5	125.0	138.9	153.3	168.4	184.0
Space Heating	9,390.6	19,734.0	31,035.2	43,487.0	57,242.1	72,450.3	89,234.7	107,614.4	127,520.2	148,836.5	171,507.8	195,430.4	220,420.7	244,071.4	268,575.6	293,832.4	319,758.4	346,320.7	373,660.6	402,345.0	430,219.2
Water Heating	6,911.0	13,942.0	21,182.3	28,671.4	35,049.1	41,701.3	48,660.1	55,933.6	63,507.8	71,374.0	79,556.9	88,053.4	91,308.8	94,803.5	98,539.8	102,495.9	106,652.5	111,006.0	115,414.4	120,108.1	125,041.0
Single_CZ2	**28,880.0**	**59,138.7**	**90,968.6**	**124,715.2**	**157,974.8**	**193,637.6**	**231,993.3**	**273,156.0**	**317,078.2**	**363,647.6**	**412,883.9**	**464,660.7**	**508,067.4**	**549,253.1**	**592,254.1**	**636,866.2**	**682,916.8**	**730,339.3**	**779,092.9**	**830,474.1**	**882,275.8**
Other	2.1	5.1	9.1	14.5	21.6	30.5	41.7	55.1	70.8	88.6	108.5	130.2	153.5	178.1	203.9	230.6	258.1	286.3	315.3	344.9	375.3
Room Heating	1.6	4.1	7.6	12.3	18.4	26.2	35.8	47.6	61.3	77.0	94.5	113.7	134.3	156.1	179.0	202.8	227.4	252.7	278.9	306.4	334.8
Space Heating	15,624.1	32,395.0	50,333.6	69,709.4	90,726.2	113,616.5	138,607.4	165,797.6	195,166.5	226,618.4	260,126.2	295,569.6	332,690.0	367,128.0	402,915.8	439,891.4	477,919.3	516,940.4	557,185.3	599,508.8	641,792.8
Water Heating	13,252.1	26,734.5	40,618.3	54,979.0	67,208.6	79,964.4	93,308.4	107,255.7	121,779.6	136,863.6	152,554.7	168,847.1	175,089.6	181,790.8	188,955.4	196,541.5	204,512.0	212,859.9	221,313.4	230,313.9	239,772.9
Single_CZ3	**22,143.0**	**45,691.3**	**70,774.3**	**97,696.8**	**124,906.0**	**154,379.1**	**186,321.0**	**220,767.0**	**257,607.9**	**296,682.8**	**337,955.7**	**381,290.0**	**419,301.1**	**455,571.9**	**493,290.4**	**532,295.3**	**572,452.2**	**613,713.7**	**656,093.3**	**700,631.6**	**744,480.7**
Other	1.4	3.4	6.1	9.7	14.5	20.5	27.9	36.9	47.5	59.4	72.8	87.3	103.0	119.4	136.7	154.6	173.0	192.0	211.4	231.3	251.7
Room Heating	1.1	2.8	5.1	8.2	12.3	17.5	24.0	31.9	41.1	51.6	63.4	76.2	90.1	104.7	120.1	136.0	152.5	169.5	187.0	205.5	224.5
Space Heating	13,260.5	27,774.1	43,555.6	60,859.8	79,883.2	100,821.9	123,839.7	148,962.0	176,097.6	205,096.2	235,890.3	268,346.6	302,222.4	334,053.3	367,023.8	401,000.2	435,872.7	471,598.4	508,363.6	546,923.6	584,489.0
Water Heating	8,880.0	17,911.0	27,207.5	36,819.1	44,996.0	53,519.2	62,429.3	71,736.1	81,421.8	91,475.5	101,929.3	112,779.9	116,885.6	121,294.5	126,009.9	131,004.5	136,253.9	141,753.8	147,331.2	153,271.2	159,515.5
Grand Total	**74,638.8**	**153,636.7**	**237,393.4**	**326,904.9**	**415,965.9**	**512,198.1**	**616,348.7**	**728,637.7**	**848,821.1**	**976,464.2**	**1,111,514.8**	**1,253,558.1**	**1,373,954.8**	**1,489,490.8**	**1,609,971.7**	**1,734,841.8**	**1,863,635.0**	**1,996,177.4**	**2,132,528.1**	**2,276,298.1**	**2,419,569.8**

C-5: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #5)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**73.3**	**150.5**	**232.1**	**319.0**	**402.5**	**492.6**	**590.1**	**695.3**	**808.1**	**928.0**	**1,055.3**	**1,189.4**	**1,291.8**	**1,393.8**	**1,500.7**	**1,612.0**	**1,727.2**	**1,846.1**	**1,968.7**	**2,098.1**	**2,226.5**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6
Space Heating	26.1	55.2	87.4	123.3	163.4	208.5	259.0	315.3	377.2	444.5	517.1	594.7	676.5	756.4	839.6	925.8	1,014.6	1,105.8	1,200.3	1,299.7	1,396.5
Water Heating	47.2	95.3	144.7	195.7	239.0	284.1	331.0	380.0	430.8	483.4	538.0	594.5	615.1	637.1	660.8	685.8	712.1	739.8	767.9	797.9	829.4
Mfg_CZ2	**22.1**	**45.4**	**70.0**	**96.2**	**121.3**	**148.4**	**177.8**	**209.4**	**243.3**	**279.4**	**317.6**	**357.9**	**388.5**	**419.1**	**451.1**	**484.4**	**518.9**	**554.5**	**591.3**	**630.0**	**668.4**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Space Heating	7.7	16.4	25.9	36.6	48.5	61.9	76.9	93.7	112.1	132.1	153.7	176.8	201.1	224.9	249.7	275.4	301.9	329.1	357.2	386.8	415.6
Water Heating	14.4	29.0	44.1	59.6	72.8	86.5	100.8	115.7	131.2	147.2	163.9	181.1	187.3	194.1	201.2	208.9	216.9	225.3	233.9	243.0	252.6
Mfg_CZ3	**26.2**	**53.7**	**82.8**	**113.8**	**143.6**	**175.8**	**210.6**	**248.0**	**288.1**	**330.8**	**376.0**	**423.6**	**460.3**	**496.6**	**534.6**	**574.2**	**615.2**	**657.5**	**701.1**	**747.2**	**792.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Space Heating	9.8	20.7	32.7	46.0	60.9	77.5	96.0	116.6	139.1	163.6	190.0	218.1	247.8	276.6	306.6	337.6	369.6	402.4	436.4	472.2	507.1
Water Heating	16.4	33.0	50.1	67.8	82.7	98.3	114.5	131.4	149.0	167.1	185.9	205.4	212.4	219.9	228.0	236.5	245.5	255.0	264.6	274.8	285.6
Multi_CZ1	**3,363.6**	**6,950.0**	**10,741.6**	**14,783.6**	**18,582.8**	**22,696.3**	**27,160.9**	**31,990.9**	**37,182.9**	**42,722.1**	**48,609.5**	**54,829.9**	**59,245.5**	**63,725.7**	**68,448.6**	**73,387.8**	**78,521.2**	**83,840.4**	**89,399.7**	**95,386.2**	**101,507.9**
Room Heating	0.4	1.1	2.0	3.3	4.8	6.8	9.3	12.3	15.7	19.6	24.0	28.8	33.9	39.3	45.0	50.9	57.0	63.3	69.8	76.6	83.7
Space Heating	742.8	1,654.8	2,695.0	3,895.1	5,283.1	6,888.0	8,735.1	10,836.7	13,194.2	15,795.6	18,632.1	21,688.4	24,937.2	28,163.1	31,541.7	35,054.3	38,685.3	42,427.1	46,335.2	50,542.4	54,791.8
Water Heating	2,620.4	5,294.1	8,044.6	10,885.3	13,294.8	15,801.5	18,416.5	21,141.9	23,973.0	26,906.9	29,953.3	33,112.7	34,274.4	35,523.4	36,861.9	38,282.6	39,779.0	41,350.1	42,994.8	44,767.2	46,632.4
Multi_CZ2	**3,271.7**	**6,759.2**	**10,463.0**	**14,430.2**	**18,192.0**	**22,287.1**	**26,754.0**	**31,608.0**	**36,844.2**	**42,446.6**	**48,414.3**	**54,729.2**	**59,334.7**	**64,029.1**	**68,971.7**	**74,134.4**	**79,493.4**	**85,038.9**	**90,820.1**	**96,986.4**	**103,283.0**
Room Heating	0.4	1.1	2.0	3.1	4.6	6.6	8.9	11.8	15.1	18.8	23.0	27.6	32.5	37.7	43.2	48.8	54.7	60.7	67.0	73.5	80.3
Space Heating	704.7	1,572.0	2,562.5	3,706.4	5,030.8	6,563.6	8,329.1	10,339.2	12,595.1	15,085.5	17,801.8	20,729.1	23,841.5	26,939.7	30,184.6	33,558.1	37,045.4	40,639.0	44,392.3	48,433.0	52,513.9
Water Heating	2,566.6	5,186.1	7,898.6	10,720.7	13,156.5	15,717.0	18,416.0	21,257.1	24,234.0	27,342.2	30,589.4	33,972.5	35,460.7	37,051.6	38,743.9	40,527.4	42,393.4	44,339.2	46,360.8	48,479.8	50,688.9
Multi_CZ3	**2,940.5**	**6,051.0**	**9,325.4**	**12,798.8**	**16,039.4**	**19,526.6**	**23,288.8**	**27,337.1**	**31,667.5**	**36,268.7**	**41,143.2**	**46,280.1**	**49,828.0**	**53,392.4**	**57,148.9**	**61,077.2**	**65,159.8**	**69,390.6**	**73,808.5**	**78,553.0**	**83,397.3**
Room Heating	0.4	0.9	1.7	2.7	4.0	5.6	7.7	10.1	12.9	16.2	19.8	23.7	27.9	32.4	37.0	41.9	46.9	52.1	57.4	63.1	68.9
Space Heating	671.8	1,488.1	2,414.4	3,477.9	4,702.5	6,112.5	7,729.9	9,564.8	11,618.5	13,880.5	16,343.6	18,994.7	21,810.4	24,584.3	27,489.0	30,508.4	33,629.3	36,845.3	40,203.5	43,816.6	47,465.5
Water Heating	2,268.3	4,562.0	6,909.3	9,318.2	11,332.9	13,408.4	15,551.3	17,762.1	20,036.1	22,372.0	24,779.9	27,261.7	27,989.7	28,775.8	29,623.0	30,526.9	31,483.6	32,493.2	33,547.6	34,673.3	35,863.0
Single_CZ1	**21,590.8**	**44,484.2**	**68,774.3**	**94,726.2**	**120,673.5**	**148,592.8**	**178,637.1**	**210,812.1**	**245,004.4**	**281,072.2**	**319,002.4**	**358,691.7**	**392,554.9**	**424,745.6**	**458,196.8**	**492,776.0**	**528,371.1**	**564,946.7**	**602,546.2**	**641,990.6**	**680,630.0**
Other	1.4	3.3	5.9	9.3	13.6	19.2	26.0	34.1	43.6	54.3	66.2	79.1	93.0	107.6	123.0	138.8	155.2	172.0	189.3	207.0	225.1
Room Heating	1.1	2.8	5.2	8.2	12.2	17.3	23.5	31.0	39.8	49.7	60.7	72.8	85.7	99.4	113.7	128.7	144.1	160.0	176.5	193.8	211.6
Space Heating	12,399.0	25,950.1	40,629.8	56,655.1	74,171.3	93,320.1	114,216.6	136,859.5	161,155.1	186,971.9	214,262.0	242,923.0	272,757.4	300,620.5	329,440.1	359,109.4	389,540.0	420,700.1	452,799.5	486,393.8	518,886.5
Water Heating	9,189.2	18,528.0	28,133.6	38,053.6	46,476.3	55,236.2	64,371.0	73,887.5	83,766.0	93,996.4	104,613.5	115,616.8	119,618.8	123,918.0	128,520.0	133,399.0	138,531.7	143,914.6	149,381.0	155,195.9	161,306.9
Single_CZ2	**38,329.1**	**78,348.8**	**120,302.9**	**164,588.0**	**207,938.9**	**254,117.6**	**303,439.0**	**356,008.7**	**411,747.5**	**470,524.9**	**532,397.0**	**597,240.7**	**650,598.3**	**700,743.2**	**753,055.2**	**807,302.7**	**863,287.8**	**920,939.4**	**980,311.9**	**1,042,727.4**	**1,105,526.9**
Other	2.7	6.3	11.2	17.7	26.2	36.8	49.8	65.4	83.6	104.1	126.9	151.7	178.3	206.4	235.8	266.2	297.6	329.8	363.1	397.0	431.7
Room Heating	2.0	5.1	9.4	15.0	22.3	31.5	42.8	56.5	72.3	90.4	110.4	132.4	156.0	180.9	207.0	234.2	262.2	291.1	321.1	352.6	385.0
Space Heating	20,703.6	42,809.0	66,334.7	91,585.4	118,769.6	148,130.9	179,911.5	214,203.5	250,965.7	290,087.3	331,557.7	375,255.1	420,888.5	462,736.5	506,168.3	551,002.5	597,085.9	644,354.4	693,181.6	744,381.2	795,395.5
Water Heating	17,620.8	35,528.4	53,947.6	72,969.9	89,120.8	105,918.5	123,434.9	141,683.3	160,625.9	180,243.2	200,602.0	221,701.5	229,375.5	237,619.5	246,444.1	255,799.8	265,642.1	275,964.1	286,446.1	297,596.6	309,314.6
Single_CZ3	**29,331.3**	**60,368.3**	**93,243.0**	**128,303.2**	**163,404.7**	**201,091.7**	**241,566.0**	**284,835.4**	**330,750.8**	**379,128.3**	**429,957.3**	**483,106.2**	**528,814.2**	**571,936.2**	**616,726.7**	**663,011.5**	**710,643.7**	**759,577.8**	**809,887.2**	**862,642.8**	**914,417.9**
Other	1.8	4.2	7.5	11.9	17.5	24.7	33.4	43.9	56.0	69.8	85.1	101.7	119.6	138.4	158.1	178.5	199.6	221.2	243.5	266.2	289.5
Room Heating	1.3	3.4	6.3	10.1	14.9	21.1	28.7	37.9	48.5	60.6	74.1	88.8	104.6	121.3	138.8	157.0	175.9	195.2	215.4	236.5	258.2
Space Heating	17,520.3	36,556.6	57,090.4	79,408.6	103,697.7	130,143.5	158,899.9	189,966.1	223,218.2	258,485.3	295,711.6	334,765.7	375,385.6	413,040.7	451,977.8	492,055.5	533,156.7	575,239.8	618,581.4	663,924.1	707,907.9
Water Heating	11,807.9	23,804.0	36,138.8	48,872.6	59,674.4	70,902.4	82,603.9	94,787.6	107,428.0	120,512.6	134,086.5	148,149.9	153,204.4	158,635.8	164,452.0	170,620.4	177,111.6	183,921.5	190,847.0	198,215.9	205,962.3
Grand Total	**98,948.6**	**203,211.1**	**313,235.4**	**430,159.2**	**545,498.6**	**669,129.0**	**801,824.2**	**943,745.0**	**1,094,536.9**	**1,253,700.9**	**1,421,272.5**	**1,596,848.6**	**1,742,516.2**	**1,880,881.6**	**2,025,034.3**	**2,174,360.1**	**2,328,338.4**	**2,486,791.9**	**2,650,034.8**	**2,821,761.6**	**2,992,450.7**

C-6: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #6)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**464.0**	**966.0**	**1,480.2**	**2,006.1**	**2,528.9**	**3,062.1**	**3,596.0**	**4,141.3**	**4,697.2**	**5,263.5**	**5,842.5**	**6,434.9**	**6,983.3**	**7,527.6**	**8,084.0**	**8,595.4**	**9,117.7**	**9,595.7**	**10,015.8**	**10,457.2**	**10,810.3**
Clothes Drying	0.9	1.9	2.9	4.0	5.0	6.1	7.2	8.4	9.5	10.7	11.9	13.1	14.4	14.7	15.0	15.3	15.7	16.0	16.5	16.9	17.4
Room Heating	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1
Space Heating	245.3	508.8	778.4	1,054.0	1,335.0	1,621.5	1,903.2	2,190.7	2,483.8	2,782.3	3,087.3	3,399.4	3,717.7	4,032.1	4,352.7	4,622.7	4,898.5	5,180.0	5,467.8	5,766.4	6,002.2
Water Heating	217.7	455.2	698.8	948.0	1,188.6	1,434.2	1,685.3	1,941.9	2,203.5	2,470.1	2,742.8	3,021.9	3,250.5	3,480.2	3,715.6	3,956.6	4,202.7	4,398.8	4,530.6	4,672.9	4,789.7
Mfg_CZ2	**139.9**	**291.3**	**446.3**	**604.9**	**762.5**	**923.2**	**1,084.2**	**1,248.5**	**1,416.0**	**1,586.7**	**1,761.2**	**1,939.8**	**2,105.2**	**2,269.5**	**2,437.4**	**2,592.3**	**2,750.5**	**2,895.4**	**3,022.8**	**3,156.6**	**3,262.9**
Clothes Drying	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	2.9	3.3	3.6	4.0	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.3
Room Heating	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Space Heating	73.2	152.0	232.5	314.9	398.8	484.5	568.6	654.4	742.0	831.1	922.2	1,015.4	1,110.5	1,204.5	1,300.3	1,381.5	1,464.3	1,548.9	1,635.4	1,725.1	1,795.7
Water Heating	66.4	138.7	212.9	288.8	362.1	436.8	513.3	591.4	671.1	752.2	835.2	920.2	990.1	1,060.4	1,132.3	1,206.0	1,281.2	1,341.4	1,382.1	1,426.1	1,461.5
Mfg_CZ3	**167.8**	**349.0**	**534.5**	**724.2**	**913.0**	**1,105.6**	**1,298.5**	**1,495.6**	**1,696.4**	**1,901.0**	**2,110.1**	**2,324.1**	**2,523.4**	**2,721.0**	**2,922.9**	**3,106.9**	**3,294.9**	**3,468.5**	**3,623.2**	**3,785.4**	**3,913.7**
Clothes Drying	0.3	0.7	1.0	1.4	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.6	5.0	5.1	5.2	5.3	5.4	5.6	5.7	5.9	6.0
Room Heating	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
Space Heating	90.8	188.2	287.7	389.4	493.2	598.9	703.1	809.5	917.9	1,028.3	1,141.1	1,256.5	1,374.2	1,490.2	1,608.5	1,706.9	1,807.5	1,910.1	2,015.1	2,123.9	2,211.2
Water Heating	76.7	160.1	245.8	333.4	418.0	504.5	592.8	683.1	775.1	868.9	964.8	1,062.9	1,144.0	1,225.5	1,309.0	1,394.5	1,481.7	1,552.5	1,602.1	1,655.3	1,696.2
Multi_CZ1	**16,153.3**	**34,022.1**	**52,334.4**	**71,071.3**	**89,426.4**	**108,164.1**	**126,797.4**	**145,846.0**	**165,285.3**	**185,106.0**	**205,387.7**	**226,162.4**	**244,173.4**	**261,950.0**	**280,169.1**	**296,914.8**	**314,060.9**	**330,931.5**	**347,400.7**	**364,742.2**	**380,698.4**
Clothes Drying	62.9	132.5	204.2	277.5	352.3	428.6	506.6	586.1	667.2	749.8	834.2	920.5	1,008.6	1,028.6	1,050.3	1,073.6	1,098.6	1,125.1	1,153.4	1,185.1	1,219.1
Room Heating	4.9	10.7	16.6	22.7	28.9	35.2	41.7	48.3	55.1	61.9	69.0	76.2	83.5	91.0	98.7	106.5	114.4	122.5	130.7	139.3	148.1
Space Heating	9,671.4	20,485.2	31,576.1	42,926.5	54,509.4	66,326.8	77,876.6	89,680.7	101,725.2	114,004.0	126,564.7	139,427.2	152,560.6	165,622.6	178,956.0	190,653.7	202,597.3	214,793.0	227,279.4	240,324.8	252,425.4
Water Heating	6,414.1	13,393.7	20,537.5	27,844.7	34,535.7	41,373.5	48,372.6	55,530.8	62,837.8	70,290.3	77,919.8	85,738.5	90,520.7	95,207.8	100,064.0	105,081.0	110,250.6	114,891.0	118,837.2	123,093.1	126,905.8
Multi_CZ2	**15,961.4**	**33,410.9**	**51,295.9**	**69,591.4**	**87,518.9**	**105,815.3**	**124,067.1**	**142,719.4**	**161,746.0**	**181,139.0**	**200,977.2**	**221,291.0**	**239,037.0**	**256,566.1**	**274,520.8**	**291,141.7**	**308,146.9**	**324,895.7**	**341,260.2**	**358,414.8**	**374,195.8**
Clothes Drying	60.3	127.1	195.9	266.3	338.1	411.3	486.1	562.5	640.3	719.5	800.5	883.4	967.8	987.0	1,007.9	1,030.3	1,054.2	1,079.6	1,106.8	1,137.2	1,169.8
Room Heating	4.7	10.3	16.0	21.8	27.7	33.8	40.0	46.4	52.8	59.4	66.2	73.1	80.2	87.3	94.7	102.2	109.8	117.5	125.4	133.7	142.1
Space Heating	9,178.4	19,456.5	29,999.0	40,788.4	51,799.3	63,033.3	74,062.3	85,333.4	96,833.4	108,556.6	120,548.3	132,827.1	145,363.7	157,843.2	170,581.2	181,827.0	193,307.0	205,027.1	217,024.7	229,558.0	241,178.1
Water Heating	6,717.9	13,817.0	21,085.0	28,514.9	35,353.9	42,337.0	49,478.8	56,777.2	64,219.4	71,803.4	79,562.2	87,507.4	92,625.3	97,648.5	102,837.0	108,182.3	113,676.0	118,671.5	123,003.2	127,586.0	131,705.8
Multi_CZ3	**13,937.8**	**29,201.5**	**44,841.1**	**60,840.2**	**76,496.9**	**92,476.7**	**108,405.4**	**124,685.1**	**141,293.2**	**158,222.5**	**175,541.8**	**193,277.8**	**208,693.7**	**223,855.9**	**239,391.1**	**253,427.8**	**267,801.5**	**281,962.6**	**295,803.6**	**310,345.5**	**323,518.5**
Clothes Drying	54.5	114.9	177.1	240.7	305.6	371.7	439.3	508.4	578.7	650.3	723.5	798.4	874.8	892.1	910.9	931.2	952.8	975.8	1,000.4	1,027.8	1,057.3
Room Heating	4.1	8.8	13.7	18.7	23.8	29.0	34.3	39.8	45.3	51.0	56.8	62.7	68.8	74.9	81.2	87.6	94.1	100.8	107.6	114.6	121.9
Space Heating	8,476.6	17,936.5	27,637.3	37,564.7	47,695.1	58,030.2	68,183.6	78,559.0	89,144.1	99,933.6	110,969.3	122,268.5	133,803.9	145,243.4	156,919.8	166,968.3	177,231.5	187,714.5	198,450.5	209,670.9	220,079.8
Water Heating	5,402.6	11,141.3	17,013.1	23,016.2	28,472.4	34,045.7	39,748.2	45,577.9	51,525.0	57,587.6	63,792.1	70,148.2	73,946.3	77,645.5	81,479.2	85,440.7	89,523.0	93,171.5	96,245.2	99,532.2	102,259.4
Single_CZ1	**98,309.0**	**204,933.6**	**314,154.3**	**425,864.5**	**537,170.0**	**650,708.0**	**764,711.6**	**881,139.6**	**999,826.3**	**1,120,726.4**	**1,243,847.6**	**1,369,850.4**	**1,487,491.8**	**1,600,948.5**	**1,716,978.1**	**1,827,715.5**	**1,940,773.6**	**2,044,736.8**	**2,136,804.9**	**2,233,469.8**	**2,315,619.8**
Clothes Drying	301.1	634.5	977.6	1,328.8	1,687.0	2,052.4	2,425.7	2,806.7	3,195.1	3,590.5	3,994.7	4,408.0	4,829.6	4,925.3	5,029.3	5,141.2	5,260.5	5,387.5	5,523.1	5,674.6	5,837.5
Other	15.8	31.8	48.3	65.2	82.4	99.9	117.7	135.9	154.4	173.2	192.4	212.0	231.9	252.2	272.8	293.7	315.0	336.6	358.5	380.7	403.4
Room Heating	12.5	27.0	42.0	57.4	73.1	89.1	105.4	122.1	139.2	156.6	174.4	192.6	211.2	230.2	249.5	269.2	289.2	309.6	330.5	352.2	374.5
Space Heating	53,710.7	111,647.2	170,899.7	231,496.9	293,293.6	356,295.1	418,631.3	482,275.8	547,136.9	613,190.3	680,223.3	748,812.0	818,779.7	884,755.6	952,119.2	1,013,063.2	1,075,257.4	1,138,730.9	1,203,602.8	1,270,908.2	1,329,065.7
Water Heating	44,268.9	92,593.1	142,186.6	192,916.2	242,033.9	292,171.6	343,431.5	395,799.1	449,200.7	503,615.8	559,262.8	616,225.8	663,439.3	710,785.2	759,307.3	808,948.2	859,651.4	899,972.2	926,990.1	956,154.1	979,938.7
Single_CZ2	**186,405.3**	**388,574.3**	**595,677.0**	**807,500.2**	**1,018,496.8**	**1,233,726.6**	**1,449,793.4**	**1,670,457.0**	**1,895,403.1**	**2,124,546.1**	**2,357,890.5**	**2,596,698.6**	**2,819,812.4**	**3,035,292.4**	**3,255,650.6**	**3,466,448.8**	**3,681,647.3**	**3,879,574.6**	**4,054,911.5**	**4,238,959.4**	**4,394,089.5**
Clothes Drying	577.3	1,216.6	1,874.7	2,548.0	3,234.9	3,935.6	4,651.4	5,382.1	6,126.7	6,885.1	7,660.0	8,452.6	9,261.1	9,444.6	9,644.0	9,858.5	10,087.3	10,330.8	10,590.9	10,881.4	11,193.6
Other	30.2	61.0	92.7	125.0	158.0	191.6	225.8	260.7	296.1	332.2	368.9	406.5	444.7	483.5	523.1	563.2	604.0	645.4	687.4	730.1	773.5
Room Heating	22.7	49.2	76.5	104.4	132.9	162.1	191.8	222.3	253.3	285.0	317.4	350.5	384.4	418.8	454.0	489.9	526.3	563.5	601.4	641.0	681.6
Space Heating	100,749.4	209,547.6	320,825.2	434,630.7	550,691.4	669,017.6	786,015.8	905,474.0	1,027,221.3	1,151,211.1	1,277,025.3	1,405,764.4	1,537,090.5	1,661,152.7	1,787,824.8	1,902,779.2	2,020,085.4	2,139,798.1	2,262,146.6	2,389,099.3	2,498,348.6
Water Heating	85,025.7	177,699.9	272,808.0	370,092.0	464,279.5	560,419.8	658,708.6	759,118.0	861,505.6	965,832.8	1,072,519.0	1,181,724.6	1,272,631.7	1,363,792.8	1,457,204.8	1,552,758.1	1,650,344.3	1,728,236.8	1,780,885.2	1,837,607.7	1,883,092.1
Single_CZ3	**132,416.0**	**275,681.8**	**422,415.4**	**572,486.4**	**722,158.9**	**874,822.6**	**1,028,223.8**	**1,184,873.3**	**1,344,545.5**	**1,507,181.2**	**1,672,818.2**	**1,842,316.8**	**2,001,480.5**	**2,154,551.5**	**2,311,068.2**	**2,459,663.8**	**2,611,366.1**	**2,752,151.6**	**2,878,585.2**	**3,011,096.6**	**3,122,405.9**
Clothes Drying	387.1	815.8	1,257.1	1,708.6	2,169.3	2,639.1	3,119.1	3,609.1	4,108.4	4,617.0	5,136.6	5,668.1	6,210.3	6,333.4	6,467.1	6,610.9	6,764.3	6,927.6	7,102.0	7,296.8	7,506.2
Other	20.3	40.9	62.2	83.9	106.0	128.5	151.4	174.8	198.6	222.7	247.4	272.6	298.2	324.3	350.8	377.7	405.0	432.8	461.0	489.6	518.7
Room Heating	15.2	33.0	51.3	70.0	89.1	108.7	128.6	149.0	169.9	191.1	212.8	235.1	257.8	280.9	304.5	328.5	353.0	377.9	403.3	429.8	457.0
Space Heating	74,146.2	153,881.1	235,411.1	318,786.4	403,806.9	490,479.3	576,415.9	664,146.5	753,543.0	844,572.8	936,986.3	1,031,533.5	1,127,966.3	1,218,526.4	1,310,988.5	1,394,060.9	1,478,845.8	1,565,382.8	1,653,825.0	1,745,547.8	1,825,652.6
Water Heating	57,847.2	120,910.9	185,633.7	251,837.5	315,987.7	381,467.0	448,408.7	516,793.9	586,525.6	657,577.5	730,235.1	804,607.6	866,748.0	929,086.6	992,957.5	1,058,285.9	1,124,998.1	1,179,030.5	1,216,794.0	1,257,332.6	1,288,271.3
Grand Total	**463,954.5**	**967,430.3**	**1,483,179.1**	**2,010,689.2**	**2,535,472.3**	**3,070,804.3**	**3,607,977.5**	**4,156,605.9**	**4,715,909.0**	**5,285,672.5**	**5,866,176.9**	**6,460,295.9**	**7,012,300.7**	**7,545,682.6**	**8,091,222.2**	**8,609,607.1**	**9,138,959.5**	**9,630,212.5**	**10,071,427.9**	**10,534,427.7**	**10,928,514.9**

C-7: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #7)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**318.6**	**659.1**	**1,007.2**	**1,363.2**	**1,712.4**	**2,068.6**	**2,422.0**	**2,783.1**	**3,151.2**	**3,526.2**	**3,909.6**	**4,302.1**	**4,645.9**	**4,987.2**	**5,336.6**	**5,637.2**	**5,945.1**	**6,260.4**	**6,564.8**	**6,882.5**	**7,139.6**
Room Heating	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1
Space Heating	229.5	476.9	729.8	988.5	1,252.3	1,521.3	1,785.4	2,055.1	2,330.0	2,610.0	2,896.2	3,189.0	3,487.8	3,782.2	4,082.5	4,332.0	4,586.9	4,847.2	5,113.5	5,390.0	5,603.4
Water Heating	89.1	182.2	277.3	374.5	459.9	547.1	636.3	727.6	820.7	915.7	1,012.9	1,112.6	1,157.5	1,204.4	1,253.4	1,304.4	1,357.4	1,412.3	1,450.4	1,491.5	1,535.2
Mfg_CZ2	**95.6**	**197.8**	**302.3**	**409.1**	**513.9**	**620.8**	**726.7**	**835.0**	**945.4**	**1,057.9**	**1,172.9**	**1,290.7**	**1,393.5**	**1,495.7**	**1,600.4**	**1,690.9**	**1,783.5**	**1,878.5**	**1,970.0**	**2,065.6**	**2,142.8**
Room Heating	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Space Heating	68.4	142.2	217.8	295.0	373.8	454.0	532.8	613.3	695.3	778.9	864.3	951.6	1,040.8	1,128.7	1,218.4	1,293.3	1,369.9	1,448.0	1,528.0	1,611.0	1,674.9
Water Heating	27.1	55.5	84.5	114.1	140.1	166.6	193.8	221.6	250.0	278.9	308.5	338.9	352.5	366.8	381.7	397.3	413.4	430.1	441.7	454.3	467.6
Mfg_CZ3	**115.9**	**239.4**	**365.7**	**494.8**	**621.7**	**751.2**	**879.8**	**1,011.1**	**1,145.0**	**1,281.4**	**1,420.9**	**1,563.6**	**1,689.5**	**1,814.3**	**1,942.1**	**2,050.5**	**2,161.6**	**2,275.4**	**2,385.7**	**2,500.7**	**2,595.0**
Room Heating	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
Space Heating	85.2	176.6	270.1	365.8	463.3	562.7	660.5	760.5	862.3	966.0	1,072.0	1,180.4	1,291.0	1,399.8	1,510.8	1,601.8	1,694.8	1,789.8	1,886.9	1,987.8	2,066.9
Water Heating	30.7	62.8	95.5	129.0	158.4	188.4	219.1	250.5	282.6	315.3	348.7	383.0	398.3	414.3	431.1	448.5	466.6	485.3	498.4	512.6	527.7
Multi_CZ1	**11,822.1**	**25,018.2**	**38,524.9**	**52,347.4**	**65,687.6**	**79,313.3**	**92,748.1**	**106,492.5**	**120,529.5**	**134,851.5**	**149,516.6**	**164,548.9**	**176,776.5**	**188,985.5**	**201,525.1**	**212,486.9**	**223,748.1**	**235,316.0**	**246,987.1**	**259,343.2**	**270,827.6**
Room Heating	4.9	10.7	16.6	22.7	28.9	35.2	41.7	48.3	55.1	61.9	69.0	76.2	83.5	91.0	98.7	106.5	114.4	122.5	130.7	139.3	148.1
Space Heating	7,584.2	16,256.9	25,144.7	34,244.5	43,534.7	53,017.6	62,207.4	71,605.9	81,203.7	90,994.9	101,016.9	111,286.1	121,779.4	132,157.5	142,759.2	151,682.1	160,808.2	170,142.8	179,726.6	189,817.3	198,904.8
Water Heating	4,232.9	8,750.6	13,363.5	18,080.2	22,124.0	26,260.5	30,499.0	34,838.3	39,270.8	43,794.7	48,430.7	53,186.6	54,913.6	56,737.0	58,667.1	60,698.4	62,825.5	65,050.7	67,129.8	69,386.6	71,774.7
Multi_CZ2	**11,819.1**	**24,834.0**	**38,158.3**	**51,790.5**	**64,961.0**	**78,408.8**	**91,731.2**	**105,354.4**	**119,260.3**	**133,442.1**	**147,957.9**	**162,831.0**	**175,000.2**	**187,168.7**	**199,657.5**	**210,714.6**	**222,061.3**	**233,704.6**	**245,441.8**	**257,801.6**	**269,318.2**
Room Heating	4.7	10.3	16.0	21.8	27.7	33.8	40.0	46.4	52.8	59.4	66.2	73.1	80.2	87.3	94.7	102.2	109.8	117.5	125.4	133.7	142.1
Space Heating	7,153.0	15,354.0	23,759.3	32,365.4	41,152.2	50,121.5	58,860.8	67,798.1	76,924.6	86,234.5	95,763.1	105,526.2	115,501.8	125,377.8	135,465.9	144,019.9	152,766.8	161,711.5	170,893.5	180,560.6	189,258.1
Water Heating	4,661.4	9,469.7	14,383.0	19,403.3	23,781.1	28,253.5	32,830.3	37,510.0	42,282.9	47,148.2	52,128.5	57,231.7	59,418.2	61,703.5	64,096.9	66,592.6	69,184.8	71,875.6	74,422.9	77,107.3	79,917.9
Multi_CZ3	**10,236.4**	**21,521.8**	**33,069.9**	**44,885.1**	**56,273.1**	**67,901.9**	**79,406.8**	**91,172.8**	**103,184.4**	**115,435.5**	**127,976.5**	**140,827.7**	**151,223.5**	**161,561.2**	**172,177.1**	**181,206.2**	**190,486.8**	**200,025.1**	**209,644.1**	**219,808.6**	**229,206.7**
Room Heating	4.1	8.8	13.7	18.7	23.8	29.0	34.3	39.8	45.3	51.0	56.8	62.7	68.8	74.9	81.2	87.6	94.1	100.8	107.6	114.6	121.9
Space Heating	6,732.8	14,395.0	22,246.1	30,283.7	38,488.8	46,863.1	55,034.7	63,389.8	71,919.8	80,619.6	89,522.3	98,642.5	107,959.4	117,143.6	126,524.3	134,240.9	142,136.0	150,214.1	158,509.5	167,242.6	175,114.4
Water Heating	3,499.5	7,118.0	10,810.1	14,582.7	17,760.6	21,009.8	24,337.7	27,743.2	31,219.3	34,765.0	38,397.5	42,122.5	43,195.4	44,342.7	45,571.5	46,877.6	48,256.7	49,710.2	51,027.0	52,451.4	53,970.3
Single_CZ1	**66,740.2**	**138,382.1**	**211,627.0**	**286,527.0**	**360,239.5**	**435,433.1**	**510,325.7**	**586,826.7**	**664,820.2**	**744,277.1**	**825,048.8**	**907,733.8**	**981,053.4**	**1,050,669.5**	**1,121,990.3**	**1,187,200.9**	**1,253,945.9**	**1,322,260.8**	**1,388,373.2**	**1,457,397.7**	**1,517,655.2**
Other	15.8	31.8	48.3	65.2	82.4	99.9	117.7	135.9	154.4	173.2	192.4	212.0	231.9	252.2	272.8	293.7	315.0	336.6	358.5	380.7	403.4
Room Heating	12.5	27.0	42.0	57.4	73.1	89.1	105.4	122.1	139.2	156.6	174.4	192.6	211.2	230.2	249.5	269.2	289.2	309.6	330.5	352.2	374.5
Space Heating	49,170.1	102,419.7	156,873.9	212,568.4	269,369.9	327,283.9	384,490.6	442,905.0	502,445.2	563,087.3	624,596.7	687,542.0	751,771.8	811,913.7	873,338.0	928,251.8	984,321.5	1,041,574.3	1,100,130.3	1,160,988.4	1,212,573.2
Water Heating	17,541.8	35,903.6	54,662.8	73,836.0	90,714.2	107,960.2	125,611.9	143,663.6	162,081.3	180,859.9	200,085.3	219,787.2	228,838.5	238,273.4	248,130.0	258,386.2	269,020.1	280,040.2	287,554.0	295,676.4	304,304.0
Single_CZ2	**125,627.0**	**260,605.0**	**398,610.4**	**539,736.9**	**678,539.8**	**820,136.0**	**961,100.9**	**1,105,099.6**	**1,251,914.4**	**1,401,490.3**	**1,553,530.9**	**1,709,180.1**	**1,846,817.4**	**1,977,741.6**	**2,111,881.6**	**2,234,894.8**	**2,360,803.0**	**2,489,673.3**	**2,614,273.1**	**2,744,394.9**	**2,857,541.9**
Other	30.2	61.0	92.7	125.0	158.0	191.6	225.8	260.7	296.1	332.2	368.9	406.5	444.7	483.5	523.1	563.2	604.0	645.4	687.4	730.1	773.5
Room Heating	22.7	49.2	76.5	104.4	132.9	162.1	191.8	222.3	253.3	285.0	317.4	350.5	384.4	418.8	454.0	489.9	526.3	563.5	601.4	641.0	681.6
Space Heating	91,936.6	191,647.7	293,622.4	397,922.9	504,299.5	612,762.8	719,815.6	829,133.9	940,565.2	1,054,064.5	1,169,170.3	1,286,969.2	1,407,178.2	1,519,937.0	1,635,101.8	1,738,372.2	1,843,812.0	1,951,472.0	2,061,584.1	2,176,048.4	2,272,567.4
Water Heating	33,637.4	68,847.1	104,818.8	141,584.6	173,949.3	207,019.5	240,867.7	275,482.8	310,799.7	346,808.7	383,674.3	421,453.9	438,810.2	456,902.2	475,802.8	495,469.5	515,860.7	536,992.3	551,400.3	566,975.5	583,519.4
Single_CZ3	**90,616.3**	**187,656.1**	**286,852.9**	**388,286.4**	**488,288.6**	**590,291.1**	**692,018.3**	**795,918.1**	**901,831.2**	**1,009,719.5**	**1,119,414.0**	**1,231,693.3**	**1,332,039.0**	**1,426,876.1**	**1,524,014.7**	**1,612,155.2**	**1,702,366.6**	**1,794,696.1**	**1,884,445.9**	**1,978,074.4**	**2,060,564.0**
Other	20.3	40.9	62.2	83.9	106.0	128.5	151.4	174.8	198.6	222.7	247.4	272.6	298.2	324.3	350.8	377.7	405.0	432.8	461.0	489.6	518.7
Room Heating	15.2	33.0	51.3	70.0	89.1	108.7	128.6	149.0	169.9	191.1	212.8	235.1	257.8	280.9	304.5	328.5	353.0	377.9	403.3	429.8	457.0
Space Heating	68,161.4	141,704.9	216,897.8	293,797.7	372,220.4	452,172.7	531,331.0	612,150.1	694,514.6	778,392.6	863,505.5	950,593.4	1,039,446.8	1,122,300.6	1,206,916.7	1,282,023.7	1,358,718.3	1,437,037.4	1,517,134.7	1,600,334.0	1,671,749.0
Water Heating	22,419.3	45,877.3	69,841.6	94,334.8	115,873.1	137,881.2	160,407.3	183,444.1	206,948.2	230,913.1	255,448.3	280,592.3	292,036.3	303,970.4	316,442.8	329,425.3	342,890.2	356,848.1	366,446.9	376,820.9	387,839.3
Grand Total	**317,391.1**	**659,113.5**	**1,008,518.6**	**1,365,840.4**	**1,716,837.7**	**2,074,924.6**	**2,431,359.5**	**2,795,493.4**	**3,166,781.6**	**3,545,081.6**	**3,929,948.2**	**4,323,971.2**	**4,670,639.1**	**5,001,299.9**	**5,340,125.3**	**5,648,037.2**	**5,963,302.0**	**6,286,090.0**	**6,600,085.7**	**6,928,269.2**	**7,216,990.9**

C-8: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #8)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**101.6**	**206.9**	**317.0**	**433.3**	**550.8**	**676.1**	**806.0**	**945.5**	**1,094.6**	**1,253.1**	**1,421.1**	**1,598.2**	**1,760.6**	**1,926.4**	**2,098.7**	**2,252.8**	**2,412.0**	**2,576.6**	**2,745.0**	**2,920.9**	**3,096.8**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	71.2	145.3	223.2	305.8	393.8	487.8	584.5	688.6	800.3	919.3	1,045.7	1,179.1	1,318.6	1,460.0	1,606.4	1,733.2	1,863.9	1,998.8	2,137.5	2,282.0	2,425.3
Water Heating	30.4	61.5	93.8	127.5	157.0	188.3	221.5	256.8	294.2	333.7	375.3	419.0	441.8	466.2	492.2	519.4	547.8	577.6	607.3	638.5	671.1
Mfg_CZ2	**30.3**	**61.7**	**94.6**	**129.3**	**164.4**	**201.9**	**240.8**	**282.5**	**327.2**	**374.8**	**425.2**	**478.4**	**527.1**	**576.9**	**628.6**	**675.1**	**723.1**	**772.8**	**823.6**	**876.7**	**929.8**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	21.0	43.0	66.0	90.5	116.6	144.5	173.3	204.3	237.6	273.1	310.8	350.7	392.5	434.8	478.6	516.8	556.2	596.8	638.6	682.1	725.2
Water Heating	9.3	18.7	28.6	38.8	47.8	57.3	67.5	78.2	89.6	101.6	114.3	127.6	134.6	142.0	149.9	158.2	166.9	175.9	185.0	194.5	204.4
Mfg_CZ3	**37.5**	**76.3**	**116.9**	**159.6**	**202.8**	**248.7**	**296.3**	**347.2**	**401.6**	**459.2**	**520.2**	**584.3**	**643.5**	**703.7**	**766.3**	**821.5**	**878.5**	**937.5**	**997.8**	**1,060.8**	**1,123.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	27.0	55.0	84.4	115.5	148.5	183.6	219.8	258.5	300.0	344.0	390.7	439.8	491.2	543.1	596.8	642.8	690.1	738.9	789.2	841.5	893.4
Water Heating	10.5	21.3	32.4	44.1	54.3	65.1	76.5	88.7	101.6	115.1	129.5	144.5	152.2	160.5	169.4	178.7	188.3	198.5	208.6	219.3	230.4
Multi_CZ1	**3,440.1**	**7,055.4**	**10,878.0**	**14,959.7**	**19,027.0**	**23,442.2**	**28,046.5**	**33,084.0**	**38,561.6**	**44,470.9**	**50,814.2**	**57,569.6**	**63,424.1**	**69,475.8**	**75,815.2**	**81,610.9**	**87,628.2**	**93,893.2**	**100,373.4**	**107,233.6**	**114,245.5**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,862.8	3,870.1	6,036.5	8,404.0	11,010.6	13,897.6	16,896.4	20,246.3	23,954.6	28,013.2	32,418.1	37,148.3	42,161.0	47,304.1	52,668.5	57,429.3	62,357.6	67,474.8	72,767.5	78,352.2	84,023.1
Water Heating	1,577.1	3,184.8	4,840.7	6,554.3	8,014.4	9,541.6	11,145.9	12,832.0	14,599.5	16,448.0	18,383.9	20,406.4	21,245.1	22,150.5	23,122.0	24,153.2	25,238.5	26,382.3	27,565.7	28,837.0	30,173.6
Multi_CZ2	**3,265.3**	**6,700.1**	**10,341.9**	**14,242.3**	**18,142.5**	**22,392.9**	**26,867.1**	**31,779.0**	**37,135.9**	**42,929.8**	**49,162.1**	**55,809.8**	**61,609.6**	**67,617.2**	**73,912.0**	**79,727.3**	**85,762.0**	**92,042.7**	**98,531.0**	**105,367.6**	**112,350.0**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,731.4	3,601.5	5,623.6	7,837.8	10,280.8	12,992.6	15,833.8	19,011.5	22,533.0	26,390.6	30,579.9	35,080.8	39,852.2	44,752.8	49,864.9	54,430.6	59,156.2	64,062.4	69,136.4	74,490.4	79,925.8
Water Heating	1,533.8	3,098.2	4,717.5	6,403.3	7,859.7	9,397.5	11,029.3	12,761.9	14,595.6	16,529.8	18,570.4	20,714.6	21,740.1	22,844.0	24,023.4	25,269.6	26,575.0	27,945.7	29,356.1	30,834.7	32,377.5
Multi_CZ3	**3,055.1**	**6,252.3**	**9,623.7**	**13,211.9**	**16,777.1**	**20,630.4**	**24,651.8**	**29,030.3**	**33,770.2**	**38,864.1**	**44,314.8**	**50,104.7**	**55,096.8**	**60,234.3**	**65,609.0**	**70,413.9**	**75,401.9**	**80,593.9**	**85,961.8**	**91,633.2**	**97,425.0**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,689.2	3,502.6	5,454.5	7,581.1	9,914.7	12,491.0	15,184.0	18,180.5	21,486.6	25,095.3	29,003.6	33,193.6	37,628.2	42,163.8	46,891.4	51,007.9	55,269.8	59,695.7	64,273.7	69,103.4	74,008.5
Water Heating	1,365.8	2,749.3	4,168.5	5,629.7	6,860.7	8,136.9	9,464.3	10,845.1	12,277.4	13,760.8	15,301.2	16,898.8	17,453.7	18,053.0	18,697.3	19,382.7	20,105.6	20,868.5	21,655.1	22,493.3	23,376.3
Single_CZ1	**21,714.3**	**44,164.0**	**67,618.7**	**92,314.0**	**117,311.2**	**143,890.7**	**171,467.4**	**200,984.5**	**232,446.3**	**265,812.9**	**301,102.7**	**338,257.3**	**372,619.8**	**406,631.1**	**441,968.1**	**475,209.3**	**509,488.1**	**544,910.8**	**581,127.5**	**618,943.2**	**657,079.8**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	15,788.8	32,168.7	49,323.5	67,438.2	86,639.1	107,074.7	128,108.2	150,656.9	174,726.7	200,284.2	227,330.5	255,821.6	285,567.2	314,646.5	344,748.1	372,485.2	401,020.5	430,437.7	460,674.4	492,190.0	523,757.5
Water Heating	5,924.4	11,992.9	18,290.8	24,868.6	30,661.1	36,800.0	43,336.8	50,297.2	57,679.6	65,477.4	73,707.8	82,356.7	86,957.8	91,872.7	97,089.9	102,575.2	108,299.1	114,284.2	120,243.0	126,521.4	133,068.0
Single_CZ2	**40,633.5**	**82,671.3**	**126,617.2**	**172,920.6**	**219,784.1**	**269,663.1**	**321,432.7**	**376,902.2**	**436,081.9**	**498,894.8**	**565,371.6**	**635,398.1**	**700,047.7**	**764,147.3**	**830,766.0**	**893,616.6**	**958,436.4**	**1,025,428.7**	**1,093,923.4**	**1,165,456.9**	**1,237,572.0**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	29,271.3	59,669.8	91,535.3	125,220.1	160,969.2	199,067.2	238,290.2	280,397.8	325,403.4	373,242.4	423,912.5	477,327.0	533,124.0	587,767.1	644,347.7	696,644.5	750,451.8	805,929.1	862,957.9	922,411.6	981,931.3
Water Heating	11,360.5	22,997.0	35,073.5	47,686.9	58,794.3	70,566.0	83,100.7	96,447.6	110,603.7	125,556.4	141,338.8	157,923.5	166,746.3	176,170.9	186,175.2	196,693.6	207,669.3	219,146.1	230,572.6	242,611.6	255,165.1
Single_CZ3	**29,953.2**	**60,865.0**	**93,109.3**	**126,996.6**	**161,317.5**	**197,715.2**	**235,443.3**	**275,713.7**	**318,528.7**	**363,836.8**	**411,671.9**	**461,961.7**	**508,711.6**	**554,774.5**	**602,591.3**	**647,229.9**	**693,246.1**	**740,777.9**	**789,391.5**	**840,121.7**	**891,319.7**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	22,344.9	45,468.7	69,634.2	95,086.0	121,983.4	150,519.4	179,882.5	211,252.3	244,633.0	279,981.3	317,308.3	356,559.4	397,482.0	437,319.0	478,525.8	516,213.7	554,975.5	594,920.9	635,967.9	678,725.2	721,608.9
Water Heating	7,607.1	15,393.3	23,469.4	31,901.5	39,320.3	47,175.7	55,532.7	64,423.4	73,845.5	83,791.1	94,282.8	105,303.2	111,110.7	117,315.1	123,902.4	130,829.5	138,059.2	145,620.0	153,160.1	161,105.6	169,391.9
Grand Total	**102,230.9**	**208,053.0**	**318,717.3**	**435,367.3**	**553,277.5**	**678,861.2**	**809,251.9**	**949,069.0**	**1,098,348.0**	**1,256,896.3**	**1,424,803.7**	**1,601,762.2**	**1,764,440.8**	**1,926,087.3**	**2,094,155.2**	**2,251,557.4**	**2,413,976.3**	**2,581,934.0**	**2,753,875.0**	**2,933,614.6**	**3,115,142.6**

C-9: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #9)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**90.4**	**187.0**	**290.5**	**402.4**	**516.4**	**640.7**	**776.0**	**922.6**	**1,079.7**	**1,246.5**	**1,422.9**	**1,608.2**	**1,772.6**	**1,939.2**	**2,112.0**	**2,260.3**	**2,413.5**	**2,571.4**	**2,732.2**	**2,901.5**	**3,066.2**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5
Space Heating	53.7	112.2	176.1	246.2	323.3	408.2	501.6	603.4	713.3	830.5	954.8	1,085.7	1,222.1	1,359.0	1,500.3	1,615.7	1,734.6	1,856.9	1,983.1	2,115.7	2,242.1
Water Heating	36.7	74.7	114.4	156.2	193.1	232.4	274.4	319.1	366.3	415.9	468.0	522.4	550.3	580.0	611.4	644.3	678.5	714.1	748.7	785.3	823.6
Mfg_CZ2	**18.4**	**38.7**	**60.9**	**85.4**	**110.4**	**138.4**	**169.6**	**203.9**	**241.4**	**281.6**	**324.5**	**370.0**	**408.8**	**448.2**	**489.3**	**531.8**	**575.6**	**620.7**	**666.5**	**714.7**	**761.3**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Space Heating	7.2	15.9	26.0	37.8	51.6	67.6	86.0	106.7	129.8	154.9	182.0	210.8	241.1	271.5	303.0	335.5	368.8	403.1	438.3	475.4	510.3
Water Heating	11.2	22.8	34.8	47.6	58.8	70.8	83.6	97.2	111.6	126.7	142.5	159.1	167.6	176.7	186.2	196.2	206.7	217.5	228.0	239.2	250.8
Mfg_CZ3	**33.1**	**68.3**	**106.1**	**146.7**	**188.1**	**233.1**	**282.1**	**334.9**	**391.4**	**451.4**	**514.7**	**581.2**	**640.5**	**700.4**	**762.4**	**814.8**	**868.9**	**924.6**	**981.4**	**1,041.3**	**1,099.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Space Heating	20.4	42.5	66.5	92.7	121.4	152.9	187.3	224.8	265.1	308.0	353.5	401.2	451.0	500.8	552.2	593.3	635.7	679.3	724.4	771.7	817.0
Water Heating	12.7	25.8	39.6	54.0	66.7	80.3	94.7	110.1	126.3	143.3	161.2	179.9	189.4	199.5	210.2	221.4	233.0	245.1	256.9	269.4	282.5
Multi_CZ1	**3,727.5**	**7,731.3**	**12,009.1**	**16,619.4**	**21,210.3**	**26,220.2**	**31,691.5**	**37,636.8**	**44,042.8**	**50,882.8**	**58,149.5**	**65,817.2**	**72,252.9**	**78,842.9**	**85,715.2**	**91,843.5**	**98,195.5**	**104,760.9**	**111,579.2**	**118,861.0**	**126,225.0**
Room Heating	0.3	0.9	1.7	2.7	4.0	5.7	7.8	10.3	13.3	16.7	20.5	24.7	29.2	33.9	38.9	44.1	49.4	54.9	60.6	66.6	72.8
Space Heating	1,756.1	3,743.6	5,943.4	8,402.6	11,160.2	14,255.2	17,720.6	21,566.1	25,782.1	30,344.3	35,238.6	40,440.3	45,906.1	51,454.6	57,212.4	62,159.6	67,269.3	72,532.4	77,990.7	83,802.9	89,620.4
Water Heating	1,971.1	3,986.8	6,064.0	8,214.1	10,046.1	11,959.3	13,963.1	16,060.3	18,247.4	20,521.8	22,890.3	25,352.3	26,317.5	27,354.3	28,463.9	29,639.9	30,876.8	32,173.5	33,528.0	34,991.5	36,531.9
Multi_CZ2	**2,669.0**	**5,600.7**	**8,793.5**	**12,304.9**	**15,804.0**	**19,715.1**	**24,080.6**	**28,914.1**	**34,204.0**	**39,922.8**	**46,057.4**	**52,578.5**	**57,917.0**	**63,407.3**	**69,161.8**	**75,148.2**	**81,339.8**	**87,724.7**	**94,338.1**	**101,355.3**	**108,430.7**
Room Heating	0.3	0.9	1.6	2.6	3.8	5.5	7.5	9.9	12.8	16.1	19.7	23.7	28.0	32.6	37.3	42.3	47.4	52.7	58.2	63.9	69.8
Space Heating	735.5	1,688.7	2,827.7	4,195.3	5,831.6	7,774.2	10,052.8	12,677.2	15,640.2	18,918.4	22,493.9	26,341.2	30,422.0	34,568.8	38,896.3	43,380.9	48,003.4	52,754.5	57,675.9	62,917.5	68,141.4
Water Heating	1,933.2	3,911.1	5,964.2	8,107.1	9,968.5	11,935.5	14,020.3	16,227.0	18,551.0	20,988.3	23,543.8	26,213.6	27,467.0	28,805.9	30,228.2	31,725.1	33,289.0	34,917.5	36,604.0	38,373.9	40,219.4
Multi_CZ3	**3,358.7**	**6,938.8**	**10,746.8**	**14,830.3**	**18,880.3**	**23,273.4**	**28,044.0**	**33,201.3**	**38,732.9**	**44,616.9**	**50,848.9**	**57,408.9**	**62,882.6**	**68,460.8**	**74,270.7**	**79,314.4**	**84,542.4**	**89,946.6**	**95,556.0**	**101,532.0**	**107,566.7**
Room Heating	0.3	0.7	1.4	2.2	3.3	4.7	6.4	8.5	11.0	13.8	16.9	20.3	24.0	27.9	32.0	36.3	40.7	45.2	49.9	54.8	59.9
Space Heating	1,652.4	3,504.3	5,541.7	7,805.3	10,328.6	13,145.1	16,283.4	19,752.0	23,542.2	27,633.1	32,013.2	36,661.3	41,539.9	46,476.3	51,595.9	55,904.1	60,354.9	64,940.2	69,696.0	74,758.4	79,828.1
Water Heating	1,706.0	3,433.8	5,203.8	7,022.8	8,548.4	10,123.7	11,754.2	13,440.7	15,179.7	16,970.0	18,818.8	20,727.2	21,318.6	21,956.5	22,642.9	23,374.1	24,146.9	24,961.2	25,810.2	26,718.8	27,678.7
Single_CZ1	**21,711.6**	**44,692.8**	**69,114.9**	**95,259.5**	**121,940.3**	**150,719.9**	**180,754.7**	**213,094.1**	**247,624.9**	**284,194.2**	**322,727.0**	**363,145.8**	**399,663.7**	**435,321.0**	**472,305.0**	**506,381.0**	**541,515.8**	**577,668.5**	**614,488.2**	**653,210.8**	**691,590.6**
Other	1.1	2.6	4.8	7.6	11.2	15.9	21.7	28.7	36.9	46.2	56.6	67.9	80.1	92.9	106.3	120.2	134.6	149.3	164.4	179.9	195.7
Room Heating	0.9	2.3	4.2	6.7	10.1	14.4	19.7	26.1	33.7	42.3	51.9	62.5	73.8	85.8	98.4	111.5	125.0	138.9	153.3	168.4	184.0
Space Heating	14,557.3	30,143.1	46,832.4	64,839.9	84,313.6	105,409.4	127,237.9	150,841.1	176,133.0	202,989.6	231,327.0	261,090.1	292,071.6	321,853.2	352,629.2	380,199.5	408,560.7	437,680.4	467,699.9	499,227.2	530,095.3
Water Heating	7,152.3	14,544.8	22,273.6	30,405.3	37,605.3	45,280.2	53,475.4	62,198.1	71,421.3	81,116.1	91,291.5	101,925.3	107,438.3	113,289.1	119,471.1	125,949.8	132,695.6	139,700.0	146,470.6	153,635.3	161,115.6
Single_CZ2	**33,168.4**	**68,678.5**	**106,729.7**	**147,831.2**	**189,720.5**	**235,389.1**	**283,195.1**	**335,164.5**	**391,108.7**	**450,747.0**	**513,902.2**	**580,421.5**	**639,243.2**	**696,394.8**	**755,882.8**	**817,441.1**	**880,848.5**	**946,023.9**	**1,012,303.7**	**1,082,024.8**	**1,150,851.5**
Other	2.1	5.1	9.1	14.5	21.6	30.5	41.7	55.1	70.8	88.6	108.5	130.2	153.5	178.1	203.9	230.6	258.1	286.3	315.3	344.9	375.3
Room Heating	1.6	4.1	7.6	12.3	18.4	26.2	35.8	47.6	61.3	77.0	94.5	113.7	134.3	156.1	179.0	202.8	227.4	252.7	278.9	306.4	334.8
Space Heating	19,449.7	40,778.9	64,002.2	89,500.7	117,570.4	148,505.1	180,575.7	215,793.5	254,022.4	295,036.8	338,642.9	384,730.3	432,936.7	478,822.5	526,407.6	575,492.1	625,911.9	677,602.7	730,844.3	786,769.4	841,193.6
Water Heating	13,715.0	27,890.4	42,710.8	58,303.8	72,110.2	86,827.2	102,541.9	119,268.3	136,954.2	155,544.6	175,056.3	195,447.3	206,018.7	217,238.0	229,092.4	241,515.6	254,451.0	267,882.2	280,865.3	294,604.0	308,947.8
Single_CZ3	**29,740.1**	**61,138.4**	**94,432.8**	**129,989.2**	**166,279.7**	**205,315.3**	**246,018.0**	**289,736.9**	**336,323.4**	**385,580.4**	**437,419.6**	**491,743.5**	**541,104.0**	**589,043.8**	**638,739.6**	**684,078.2**	**730,821.9**	**778,918.1**	**827,944.4**	**879,489.8**	**930,651.8**
Other	1.4	3.4	6.1	9.7	14.5	20.5	27.9	36.9	47.5	59.4	72.8	87.3	103.0	119.4	136.7	154.6	173.0	192.0	211.4	231.3	251.7
Room Heating	1.1	2.8	5.1	8.2	12.3	17.5	24.0	31.9	41.1	51.6	63.4	76.2	90.1	104.7	120.1	136.0	152.5	169.5	187.0	205.5	224.5
Space Heating	20,560.8	42,475.3	65,857.8	90,992.4	118,068.4	147,289.5	177,519.6	210,098.4	244,911.3	281,797.3	320,655.6	361,416.2	403,804.2	444,341.7	486,213.9	523,351.2	561,553.4	600,778.8	641,212.7	683,664.8	725,331.7
Water Heating	9,176.8	18,656.8	28,563.8	38,978.9	48,184.5	57,987.8	68,446.4	79,569.7	91,323.5	103,672.1	116,627.8	130,163.7	137,106.8	144,477.9	152,269.0	160,436.4	168,942.9	177,777.9	186,333.2	195,388.1	204,843.9
Grand Total	**94,517.3**	**195,074.4**	**302,284.3**	**417,468.9**	**534,650.0**	**661,645.2**	**795,011.6**	**939,209.0**	**1,093,749.2**	**1,257,923.6**	**1,431,366.7**	**1,613,674.8**	**1,775,885.3**	**1,934,558.3**	**2,099,438.8**	**2,257,813.4**	**2,421,122.0**	**2,589,159.5**	**2,760,589.8**	**2,941,131.1**	**3,120,243.3**

C-10: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #10)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**71.5**	**146.9**	**226.5**	**311.3**	**392.6**	**480.5**	**575.5**	**678.2**	**788.2**	**905.3**	**1,029.6**	**1,160.7**	**1,259.8**	**1,358.5**	**1,462.0**	**1,569.8**	**1,681.5**	**1,796.7**	**1,915.7**	**2,041.1**	**2,165.4**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6
Space Heating	24.3	51.6	81.8	115.6	153.6	196.3	244.4	298.1	357.3	421.8	491.5	565.9	644.5	721.1	801.0	883.7	968.9	1,056.5	1,147.2	1,242.7	1,335.5
Water Heating	47.2	95.3	144.7	195.7	239.0	284.1	331.0	380.0	430.8	483.4	538.0	594.5	615.1	637.1	660.8	685.8	712.1	739.8	767.9	797.9	829.4
Mfg_CZ2	**21.6**	**44.3**	**68.3**	**93.9**	**118.4**	**144.9**	**173.6**	**204.6**	**237.9**	**273.3**	**310.9**	**350.5**	**380.4**	**410.2**	**441.5**	**474.1**	**507.9**	**542.8**	**578.7**	**616.7**	**654.3**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Space Heating	7.2	15.3	24.2	34.3	45.6	58.4	72.8	88.9	106.7	126.0	147.0	169.4	193.0	216.1	240.2	265.2	290.9	317.3	344.7	373.5	401.5
Water Heating	14.4	29.0	44.1	59.6	72.8	86.5	100.8	115.7	131.2	147.2	163.9	181.1	187.3	194.1	201.2	208.9	216.9	225.3	233.9	243.0	252.6
Mfg_CZ3	**25.4**	**52.1**	**80.4**	**110.5**	**139.4**	**170.6**	**204.3**	**240.7**	**279.7**	**321.1**	**365.1**	**411.5**	**446.9**	**481.8**	**518.5**	**556.7**	**596.2**	**637.0**	**679.1**	**723.6**	**767.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Space Heating	9.0	19.1	30.3	42.7	56.6	72.2	89.7	109.2	130.7	154.0	179.2	206.0	234.4	261.8	290.4	320.0	350.5	381.9	414.4	448.6	481.8
Water Heating	16.4	33.0	50.1	67.8	82.7	98.3	114.5	131.4	149.0	167.1	185.9	205.4	212.4	219.9	228.0	236.5	245.5	255.0	264.6	274.8	285.6
Multi_CZ1	**3,343.4**	**6,909.6**	**10,680.6**	**14,701.5**	**18,479.2**	**22,570.9**	**27,013.2**	**31,820.5**	**36,989.5**	**42,505.3**	**48,368.7**	**54,564.7**	**58,955.5**	**63,410.5**	**68,107.7**	**73,020.8**	**78,127.7**	**83,420.0**	**88,952.1**	**94,910.9**	**101,004.4**
Room Heating	0.4	1.1	2.0	3.3	4.8	6.8	9.3	12.3	15.7	19.6	24.0	28.8	33.9	39.3	45.0	50.9	57.0	63.3	69.8	76.6	83.7
Space Heating	722.6	1,614.4	2,634.0	3,813.0	5,179.6	6,762.6	8,587.4	10,666.3	13,000.8	15,578.8	18,391.4	21,423.2	24,647.2	27,847.8	31,200.8	34,687.2	38,291.8	42,006.7	45,887.6	50,067.1	54,288.4
Water Heating	2,620.4	5,294.1	8,044.6	10,885.3	13,294.8	15,801.5	18,416.5	21,141.9	23,973.0	26,906.9	29,953.3	33,112.7	34,274.4	35,523.4	36,861.9	38,282.6	39,779.0	41,350.1	42,994.8	44,767.2	46,632.4
Multi_CZ2	**3,248.8**	**6,713.2**	**10,393.5**	**14,336.7**	**18,074.0**	**22,144.3**	**26,585.8**	**31,414.0**	**36,623.9**	**42,199.6**	**48,140.0**	**54,427.2**	**59,004.4**	**63,670.0**	**68,583.4**	**73,716.4**	**79,045.2**	**84,560.1**	**90,310.2**	**96,445.0**	**102,709.6**
Room Heating	0.4	1.1	2.0	3.1	4.6	6.6	8.9	11.8	15.1	18.8	23.0	27.6	32.5	37.7	43.2	48.8	54.7	60.7	67.0	73.5	80.3
Space Heating	681.8	1,526.0	2,493.0	3,612.9	4,912.9	6,420.8	8,160.9	10,145.1	12,374.8	14,838.5	17,527.6	20,427.1	23,511.2	26,580.6	29,796.3	33,140.1	36,597.2	40,160.1	43,882.5	47,891.6	51,940.4
Water Heating	2,566.6	5,186.1	7,898.6	10,720.7	13,156.5	15,717.0	18,416.0	21,257.1	24,234.0	27,342.2	30,589.4	33,972.5	35,460.7	37,051.6	38,743.9	40,527.4	42,393.4	44,339.2	46,360.8	48,479.8	50,688.9
Multi_CZ3	**2,920.8**	**6,011.5**	**9,265.8**	**12,718.6**	**15,938.2**	**19,404.0**	**23,144.6**	**27,170.6**	**31,478.5**	**36,056.8**	**40,908.0**	**46,021.0**	**49,544.7**	**53,084.4**	**56,815.8**	**60,718.6**	**64,775.3**	**68,979.8**	**73,371.1**	**78,088.5**	**82,905.3**
Room Heating	0.4	0.9	1.7	2.7	4.0	5.6	7.7	10.1	12.9	16.2	19.8	23.7	27.9	32.4	37.0	41.9	46.9	52.1	57.4	63.1	68.9
Space Heating	652.1	1,448.6	2,354.8	3,397.7	4,601.3	5,990.0	7,585.6	9,398.4	11,429.5	13,668.6	16,108.3	18,735.6	21,527.1	24,276.3	27,155.8	30,149.7	33,244.8	36,434.5	39,766.1	43,352.2	46,973.5
Water Heating	2,268.3	4,562.0	6,909.3	9,318.2	11,332.9	13,408.4	15,551.3	17,762.1	20,036.1	22,372.0	24,779.9	27,261.7	27,989.7	28,775.8	29,623.0	30,526.9	31,483.6	32,493.2	33,547.6	34,673.3	35,863.0
Single_CZ1	**20,359.8**	**41,608.4**	**63,875.7**	**87,370.1**	**110,388.5**	**134,893.4**	**161,050.2**	**188,914.1**	**218,443.0**	**249,568.4**	**282,321.2**	**316,637.2**	**344,975.4**	**371,519.9**	**399,205.8**	**427,911.5**	**457,533.1**	**488,033.5**	**519,442.3**	**552,455.9**	**585,686.4**
Other	1.4	3.3	5.9	9.3	13.6	19.2	26.0	34.1	43.6	54.3	66.2	79.1	93.0	107.6	123.0	138.8	155.2	172.0	189.3	207.0	225.1
Room Heating	1.1	2.8	5.2	8.2	12.2	17.3	23.5	31.0	39.8	49.7	60.7	72.8	85.7	99.4	113.7	128.7	144.1	160.0	176.5	193.8	211.6
Space Heating	11,168.0	23,074.3	35,731.2	49,299.0	63,886.3	79,620.7	96,629.7	114,961.4	134,593.6	155,468.1	177,580.8	200,868.5	225,177.9	247,394.9	270,449.1	294,245.0	318,702.1	343,786.9	369,695.5	396,859.1	423,942.8
Water Heating	9,189.2	18,528.0	28,133.6	38,053.6	46,476.3	55,236.2	64,371.0	73,887.5	83,766.0	93,996.4	104,613.5	115,616.8	119,618.8	123,918.0	128,520.0	133,399.0	138,531.7	143,914.6	149,381.0	155,195.9	161,306.9
Single_CZ2	**36,857.4**	**75,397.8**	**115,844.3**	**158,589.7**	**200,372.7**	**244,955.6**	**292,650.0**	**343,562.2**	**397,616.3**	**454,681.7**	**514,807.6**	**577,868.5**	**629,411.4**	**677,709.6**	**728,143.0**	**780,481.9**	**834,529.9**	**890,215.5**	**947,595.0**	**1,007,986.5**	**1,068,727.3**
Other	2.7	6.3	11.2	17.7	26.2	36.8	49.8	65.4	83.6	104.1	126.9	151.7	178.3	206.4	235.8	266.2	297.6	329.8	363.1	397.0	431.7
Room Heating	2.0	5.1	9.4	15.0	22.3	31.5	42.8	56.5	72.3	90.4	110.4	132.4	156.0	180.9	207.0	234.2	262.2	291.1	321.1	352.6	385.0
Space Heating	19,231.9	39,858.0	61,876.1	85,587.1	111,203.4	138,968.8	169,122.5	201,757.0	236,834.4	274,244.1	313,968.3	355,882.9	399,701.6	439,702.9	481,256.1	524,181.6	568,328.0	613,630.5	660,464.7	709,640.3	758,596.0
Water Heating	17,620.8	35,528.4	53,947.6	72,969.9	89,120.8	105,918.5	123,434.9	141,683.3	160,625.9	180,243.2	200,602.0	221,701.5	229,375.5	237,619.5	246,444.1	255,799.8	265,642.1	275,964.1	286,446.1	297,596.6	309,314.6
Single_CZ3	**27,673.3**	**56,520.5**	**86,718.7**	**118,542.7**	**149,801.9**	**183,022.6**	**218,422.6**	**256,073.5**	**295,918.2**	**337,866.8**	**381,964.7**	**428,130.3**	**466,659.7**	**502,446.6**	**539,747.9**	**578,404.0**	**618,278.0**	**659,322.3**	**701,593.2**	**746,002.0**	**790,742.6**
Other	1.8	4.2	7.5	11.9	17.5	24.7	33.4	43.9	56.0	69.8	85.1	101.7	119.6	138.4	158.1	178.5	199.6	221.2	243.5	266.2	289.5
Room Heating	1.3	3.4	6.3	10.1	14.9	21.1	28.7	37.9	48.5	60.6	74.1	88.8	104.6	121.3	138.8	157.0	175.9	195.2	215.4	236.5	258.2
Space Heating	15,862.2	32,708.8	50,566.0	69,648.2	90,095.0	112,074.4	135,756.5	161,204.2	188,385.6	217,223.8	247,719.1	279,789.9	313,231.2	343,551.1	374,999.0	407,448.1	440,790.9	474,984.3	510,287.4	547,283.4	584,232.6
Water Heating	11,807.9	23,804.0	36,138.8	48,872.6	59,674.4	70,902.4	82,603.9	94,787.6	107,428.0	120,512.6	134,086.5	148,149.9	153,204.4	158,635.8	164,452.0	170,620.4	177,111.6	183,921.5	190,847.0	198,215.9	205,962.3
Grand Total	**94,521.9**	**193,404.3**	**297,153.8**	**406,775.2**	**513,705.0**	**627,786.8**	**749,819.9**	**880,078.4**	**1,018,375.1**	**1,164,378.4**	**1,318,215.9**	**1,479,571.6**	**1,610,638.3**	**1,734,091.7**	**1,863,025.7**	**1,996,853.7**	**2,135,074.9**	**2,277,507.7**	**2,424,437.4**	**2,579,270.2**	**2,735,363.0**

C-11: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #11)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**48.6**	**100.4**	**156.1**	**216.8**	**277.7**	**345.4**	**420.9**	**504.9**	**597.4**	**698.4**	**807.6**	**924.5**	**1,025.6**	**1,129.1**	**1,237.8**	**1,351.0**	**1,468.3**	**1,589.9**	**1,714.4**	**1,845.1**	**1,974.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	19.7	42.1	67.2	95.9	129.0	167.2	211.4	261.9	319.1	382.6	452.3	527.7	608.2	689.5	774.6	862.9	954.1	1,048.5	1,145.7	1,247.8	1,347.6
Water Heating	28.8	58.3	89.0	120.9	148.7	178.2	209.5	242.9	278.3	315.7	355.2	396.7	417.3	439.4	463.0	487.9	513.9	541.2	568.3	597.0	627.0
Mfg_CZ2	**14.8**	**30.5**	**47.5**	**65.9**	**84.4**	**105.0**	**128.0**	**153.6**	**181.7**	**212.5**	**245.7**	**281.4**	**312.1**	**343.7**	**376.8**	**411.4**	**447.1**	**484.2**	**522.2**	**562.1**	**601.7**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	6.0	12.7	20.4	29.1	39.1	50.7	64.2	79.6	97.0	116.3	137.5	160.5	185.0	209.8	235.8	262.7	290.5	319.3	349.0	380.1	410.6
Water Heating	8.8	17.8	27.1	36.8	45.3	54.3	63.8	74.0	84.8	96.2	108.2	120.8	127.1	133.8	141.0	148.6	156.5	164.8	173.1	181.8	191.0
Mfg_CZ3	**17.1**	**35.4**	**55.1**	**76.4**	**97.9**	**121.7**	**148.2**	**177.6**	**210.1**	**245.4**	**283.7**	**324.6**	**360.0**	**396.1**	**434.1**	**473.6**	**514.5**	**557.0**	**600.4**	**646.1**	**691.4**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	7.2	15.2	24.3	34.6	46.4	60.1	75.8	93.8	114.0	136.5	161.2	187.8	216.2	244.8	274.7	305.8	337.9	371.0	405.2	441.1	476.2
Water Heating	10.0	20.2	30.8	41.8	51.4	61.6	72.4	83.9	96.1	108.9	122.5	136.7	143.7	151.3	159.3	167.7	176.6	185.9	195.1	204.9	215.1
Multi_CZ1	**2,213.6**	**4,573.5**	**7,089.6**	**9,803.5**	**12,436.8**	**15,344.1**	**18,570.5**	**22,144.6**	**26,077.0**	**30,363.6**	**35,004.7**	**39,983.0**	**44,000.0**	**48,159.2**	**52,553.4**	**57,152.5**	**61,931.1**	**66,912.4**	**72,081.9**	**77,586.4**	**83,202.0**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	645.4	1,412.5	2,293.4	3,321.9	4,532.6	5,961.4	7,644.9	9,608.4	11,863.0	14,404.3	17,225.8	20,309.7	23,622.8	27,020.0	30,593.4	34,318.3	38,174.2	42,180.5	46,329.2	50,734.5	55,191.7
Water Heating	1,568.1	3,160.6	4,795.4	6,480.3	7,902.2	9,379.8	10,921.3	12,530.5	14,206.5	15,949.6	17,766.7	19,658.3	20,359.2	21,118.0	21,935.3	22,805.8	23,724.8	24,695.9	25,712.6	26,807.5	27,961.5
Multi_CZ2	**2,149.0**	**4,440.2**	**6,890.5**	**9,542.2**	**12,131.4**	**15,001.4**	**18,198.6**	**21,752.9**	**25,675.2**	**29,961.3**	**34,611.2**	**39,606.0**	**43,696.5**	**47,943.4**	**52,428.4**	**57,120.0**	**61,991.9**	**67,067.9**	**72,326.9**	**77,892.3**	**83,566.3**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	623.8	1,364.9	2,215.7	3,208.8	4,377.6	5,756.6	7,381.3	9,275.7	11,450.9	13,902.4	16,624.1	19,598.7	22,794.3	26,076.1	29,527.7	33,125.5	36,849.5	40,718.6	44,725.1	48,979.1	53,283.4
Water Heating	1,525.1	3,074.9	4,674.0	6,332.2	7,751.8	9,241.9	10,813.3	12,471.7	14,217.1	16,049.5	17,975.3	19,992.9	20,884.9	21,846.9	22,876.9	23,967.3	25,111.6	26,314.7	27,563.3	28,870.6	30,236.1
Multi_CZ3	**1,928.1**	**3,973.3**	**6,147.4**	**8,484.2**	**10,739.6**	**13,218.3**	**15,956.6**	**18,977.1**	**22,287.5**	**25,884.1**	**29,767.6**	**33,923.9**	**37,229.1**	**40,631.2**	**44,223.5**	**47,981.9**	**51,885.9**	**55,953.9**	**60,172.8**	**64,655.1**	**69,221.5**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	569.7	1,243.8	2,016.1	2,915.4	3,971.7	5,215.7	6,679.0	8,383.1	10,337.9	12,539.5	14,982.3	17,650.9	20,517.0	23,442.8	26,520.4	29,728.6	33,049.5	36,499.9	40,072.8	43,865.7	47,703.1
Water Heating	1,358.3	2,729.1	4,130.7	5,567.6	6,766.2	8,000.2	9,274.1	10,589.2	11,943.4	13,336.6	14,775.3	16,260.7	16,697.4	17,170.9	17,682.7	18,230.0	18,810.0	19,424.3	20,067.0	20,752.8	21,478.2
Single_CZ1	**13,242.8**	**27,141.9**	**41,850.3**	**57,574.5**	**73,387.7**	**90,561.0**	**109,304.2**	**129,737.5**	**151,883.2**	**175,705.5**	**201,209.6**	**228,307.0**	**252,388.9**	**275,900.4**	**300,515.0**	**326,093.3**	**352,517.6**	**379,886.9**	**407,863.7**	**437,201.8**	**466,683.5**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	7,628.5	15,778.0	24,517.6	34,005.8	44,381.6	55,786.0	68,379.0	82,256.3	97,441.3	113,904.3	131,634.2	150,556.3	170,513.0	189,598.6	209,498.4	230,105.8	251,331.6	273,253.0	295,820.5	319,452.8	342,974.8
Water Heating	5,613.3	11,361.5	17,328.2	23,561.5	28,995.0	34,759.1	40,902.8	47,450.8	54,401.9	61,749.8	69,511.1	77,671.8	81,781.0	86,189.8	90,886.7	95,838.6	101,017.5	106,444.9	111,833.0	117,517.1	123,454.3
Single_CZ2	**24,991.7**	**51,239.0**	**79,030.5**	**108,761.8**	**138,656.4**	**171,152.1**	**206,649.5**	**245,379.5**	**287,385.3**	**332,598.0**	**381,025.4**	**432,497.0**	**478,176.2**	**522,898.3**	**569,726.0**	**618,392.2**	**668,672.0**	**720,754.8**	**773,993.0**	**829,827.3**	**885,917.7**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	14,226.0	29,448.2	45,794.4	63,567.8	83,036.2	104,469.7	128,174.4	154,333.2	182,991.9	214,093.3	247,613.8	283,409.4	321,179.2	357,415.2	395,202.8	434,337.9	474,650.3	516,287.4	559,154.2	604,048.4	648,711.7
Water Heating	10,763.8	21,786.2	33,227.7	45,180.4	55,599.6	66,652.4	78,433.3	90,989.6	104,318.5	118,408.6	133,291.2	148,939.9	156,819.6	165,273.7	174,280.1	183,775.8	193,706.5	204,113.9	214,445.9	225,345.3	236,730.3
Single_CZ3	**18,739.8**	**38,335.0**	**59,004.6**	**81,021.4**	**103,191.8**	**127,147.3**	**153,161.8**	**181,390.3**	**211,858.7**	**244,521.1**	**279,392.6**	**316,361.9**	**349,497.2**	**381,654.8**	**415,273.4**	**450,170.8**	**486,193.3**	**523,469.5**	**561,581.7**	**601,498.5**	**641,647.5**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	11,531.6	23,750.6	36,767.3	50,791.6	66,000.0	82,575.9	100,731.0	120,589.1	142,178.0	165,459.1	190,426.1	216,984.7	244,925.1	271,508.0	299,186.0	327,818.6	357,287.9	387,695.1	418,974.9	451,683.4	484,302.0
Water Heating	7,207.0	14,581.4	22,231.7	30,220.6	37,177.9	44,551.3	52,402.7	60,763.1	69,630.6	78,997.6	88,885.8	99,278.3	104,453.1	110,006.5	115,924.4	122,165.4	128,694.0	135,537.4	142,343.3	149,524.3	157,026.6
Grand Total	**63,345.5**	**129,869.4**	**200,271.5**	**275,546.7**	**351,003.7**	**432,996.3**	**522,538.3**	**620,217.9**	**726,156.2**	**840,189.7**	**962,348.1**	**1,092,209.3**	**1,206,685.6**	**1,319,056.1**	**1,436,768.5**	**1,559,146.8**	**1,685,621.7**	**1,816,676.6**	**1,950,857.0**	**2,091,714.6**	**2,233,506.5**

C-12: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #12)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**96.9**	**197.3**	**302.5**	**413.7**	**526.1**	**646.2**	**775.1**	**913.5**	**1,061.3**	**1,218.5**	**1,385.0**	**1,560.5**	**1,721.1**	**1,885.1**	**2,055.4**	**2,207.5**	**2,364.4**	**2,526.8**	**2,692.8**	**2,866.1**	**3,039.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	66.5	135.8	208.8	286.4	369.3	458.2	554.1	657.3	767.9	885.8	1,011.0	1,143.1	1,281.1	1,421.0	1,565.7	1,690.8	1,819.7	1,952.6	2,089.3	2,231.8	2,373.2
Water Heating	30.4	61.5	93.7	127.3	156.8	187.9	221.0	256.2	293.4	332.6	373.9	417.3	439.9	464.0	489.5	516.4	544.5	573.9	603.2	634.0	666.1
Mfg_CZ2	**15.3**	**31.6**	**49.0**	**68.0**	**87.1**	**108.2**	**131.8**	**157.9**	**186.7**	**218.0**	**251.9**	**288.2**	**319.6**	**351.8**	**385.6**	**420.8**	**457.2**	**495.0**	**533.7**	**574.3**	**614.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	6.0	12.8	20.5	29.2	39.3	51.0	64.5	79.9	97.3	116.7	138.0	161.0	185.6	210.4	236.4	263.5	291.3	320.2	349.9	381.1	411.6
Water Heating	9.3	18.7	28.5	38.8	47.7	57.2	67.3	78.0	89.4	101.3	113.9	127.1	134.0	141.3	149.1	157.3	165.8	174.8	183.7	193.1	202.9
Mfg_CZ3	**35.9**	**73.0**	**111.8**	**152.8**	**194.2**	**238.3**	**285.6**	**336.1**	**390.0**	**447.2**	**507.7**	**571.3**	**629.8**	**689.4**	**751.3**	**805.8**	**862.0**	**920.2**	**979.7**	**1,041.9**	**1,104.1**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	25.4	51.7	79.4	108.8	140.0	173.4	209.2	247.7	288.8	332.4	378.7	427.4	478.2	529.6	582.7	628.1	674.8	723.0	772.5	824.1	875.3
Water Heating	10.5	21.3	32.4	44.0	54.2	64.9	76.4	88.5	101.3	114.8	129.0	143.9	151.6	159.8	168.5	177.6	187.2	197.2	207.2	217.7	228.7
Multi_CZ1	**3,020.4**	**6,192.3**	**9,536.9**	**13,097.8**	**16,594.9**	**20,382.9**	**24,508.8**	**29,001.2**	**33,869.0**	**39,107.8**	**44,721.9**	**50,694.9**	**55,724.0**	**60,913.1**	**66,355.7**	**71,225.4**	**76,291.0**	**81,576.2**	**87,065.6**	**92,909.7**	**98,882.3**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,451.4	3,028.8	4,735.8	6,608.0	8,678.1	10,981.8	13,557.7	16,430.4	19,609.6	23,090.7	26,871.0	30,934.0	35,244.1	39,654.7	44,259.3	48,236.5	52,360.5	56,650.8	61,098.6	65,820.4	70,610.4
Water Heating	1,568.8	3,163.0	4,800.2	6,488.4	7,914.7	9,398.1	10,947.0	12,565.1	14,251.9	16,007.5	17,838.7	19,745.9	20,462.0	21,237.1	22,071.8	22,960.5	23,898.4	24,889.4	25,926.9	27,044.9	28,223.1
Multi_CZ2	**2,153.9**	**4,451.0**	**6,907.9**	**9,567.1**	**12,165.0**	**15,045.1**	**18,254.1**	**21,821.9**	**25,759.6**	**30,062.8**	**34,731.6**	**39,747.1**	**43,857.9**	**48,126.4**	**52,634.0**	**57,349.4**	**62,245.8**	**67,347.4**	**72,633.0**	**78,227.4**	**83,931.5**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	627.9	1,373.2	2,228.4	3,225.8	4,399.1	5,782.6	7,411.9	9,311.0	11,491.0	13,947.4	16,674.0	19,653.7	22,854.4	26,141.4	29,598.4	33,201.6	36,931.1	40,805.7	44,817.8	49,077.6	53,387.7
Water Heating	1,525.8	3,077.3	4,678.7	6,340.0	7,764.0	9,259.6	10,838.1	12,505.4	14,261.4	16,106.1	18,045.9	20,079.0	20,986.2	21,964.6	23,011.9	24,120.6	25,283.9	26,507.1	27,776.6	29,107.2	30,497.0
Multi_CZ3	**2,711.5**	**5,545.0**	**8,523.1**	**11,681.6**	**14,774.9**	**18,107.5**	**21,717.6**	**25,627.7**	**29,843.9**	**34,362.1**	**39,187.1**	**44,305.7**	**48,590.0**	**52,988.0**	**57,594.1**	**61,605.4**	**65,778.2**	**70,131.2**	**74,650.3**	**79,451.4**	**84,353.6**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,352.5	2,813.3	4,387.5	6,105.8	7,996.0	10,088.8	12,417.5	15,003.3	17,854.3	20,966.4	24,338.0	27,954.9	31,786.3	35,693.3	39,769.0	43,213.6	46,786.0	50,503.3	54,357.5	58,448.2	62,599.4
Water Heating	1,358.9	2,731.3	4,134.9	5,574.8	6,777.2	8,016.2	9,296.6	10,619.7	11,983.4	13,387.8	14,839.1	16,338.5	16,788.9	17,277.2	17,804.7	18,368.5	18,965.8	19,598.1	20,259.8	20,966.7	21,714.0
Single_CZ1	**20,863.0**	**42,448.4**	**65,017.0**	**88,801.1**	**112,862.3**	**138,479.4**	**165,884.6**	**195,199.6**	**226,430.4**	**259,537.4**	**294,535.6**	**331,366.2**	**365,389.5**	**399,036.5**	**433,983.0**	**466,809.9**	**500,652.1**	**535,614.9**	**571,348.7**	**608,646.3**	**646,268.3**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	14,943.2	30,472.0	46,759.0	63,987.5	82,286.0	101,803.1	122,720.6	145,135.8	169,056.3	194,448.8	221,310.5	249,595.9	279,117.2	307,955.5	337,797.6	365,257.8	393,500.0	422,607.3	452,518.7	483,690.8	514,926.2
Water Heating	5,918.9	11,974.1	18,253.6	24,806.3	30,565.2	36,660.3	43,141.6	50,033.5	57,334.1	65,037.2	73,160.8	81,691.4	86,177.4	90,969.1	96,055.4	101,403.1	106,983.6	112,818.6	118,620.0	124,723.7	131,087.8
Single_CZ2	**26,785.9**	**54,889.2**	**84,622.5**	**116,399.8**	**148,455.8**	**183,243.7**	**221,181.7**	**262,507.6**	**307,261.5**	**355,368.7**	**406,793.5**	**461,402.6**	**510,340.2**	**558,423.4**	**608,710.8**	**660,924.1**	**714,828.8**	**770,621.3**	**827,647.8**	**887,387.5**	**947,429.1**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	15,434.3	31,923.7	49,612.0	68,818.8	89,824.7	112,915.6	138,413.5	166,508.8	197,245.4	230,560.2	266,383.3	304,607.3	344,913.0	383,775.9	424,276.3	466,199.6	509,366.8	553,932.0	599,794.6	647,789.4	695,585.7
Water Heating	11,349.8	22,960.9	35,002.2	47,567.4	58,610.4	70,298.2	82,726.3	95,942.0	109,941.3	124,712.4	140,289.7	156,647.6	165,249.8	174,438.1	184,191.4	194,446.0	205,146.8	216,335.9	227,460.3	239,164.4	251,367.9
Single_CZ3	**28,859.7**	**58,661.3**	**89,767.2**	**122,483.9**	**155,602.4**	**190,763.8**	**228,271.4**	**268,282.3**	**310,800.3**	**355,774.7**	**403,234.9**	**453,108.1**	**499,422.0**	**545,016.5**	**592,331.4**	**636,437.3**	**681,892.2**	**728,832.8**	**776,825.5**	**826,889.7**	**877,426.0**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	21,258.6	43,289.2	66,340.0	90,653.5	116,391.6	143,747.6	172,961.8	204,160.1	237,349.1	272,485.5	309,575.3	348,562.2	389,196.8	428,724.2	469,597.7	506,929.9	545,315.2	584,862.6	625,491.6	667,807.8	710,264.8
Water Heating	7,599.9	15,369.1	23,421.6	31,821.3	39,196.9	46,996.1	55,281.5	64,084.1	73,401.0	83,224.7	93,578.8	104,446.9	110,106.2	116,152.0	122,570.7	129,320.6	136,365.6	143,733.2	151,070.5	158,791.1	166,842.2
Grand Total	**84,542.4**	**172,489.0**	**264,838.0**	**362,665.9**	**461,262.7**	**567,015.2**	**681,010.7**	**803,847.9**	**935,602.9**	**1,076,097.2**	**1,225,349.2**	**1,383,044.5**	**1,525,994.1**	**1,667,430.1**	**1,814,801.4**	**1,957,785.6**	**2,105,371.9**	**2,258,065.9**	**2,414,377.2**	**2,577,994.2**	**2,743,049.2**

C-13: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #13)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**97.3**	**198.1**	**303.9**	**415.7**	**528.7**	**649.5**	**779.3**	**918.7**	**1,067.7**	**1,226.1**	**1,394.0**	**1,571.0**	**1,733.2**	**1,898.9**	**2,070.9**	**2,224.8**	**2,383.7**	**2,548.0**	**2,716.0**	**2,891.6**	**3,067.1**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	66.8	136.5	209.8	287.8	371.1	460.4	556.6	660.2	771.3	889.6	1,015.2	1,147.7	1,286.2	1,426.5	1,571.7	1,697.3	1,826.6	1,960.0	2,097.2	2,240.1	2,381.6
Water Heating	30.4	61.6	94.0	127.8	157.6	189.1	222.7	258.4	296.3	336.4	378.7	423.2	446.9	472.2	499.1	527.4	556.9	587.7	618.6	651.1	685.1
Mfg_CZ2	**29.0**	**59.0**	**90.6**	**123.9**	**157.7**	**193.8**	**232.6**	**274.4**	**319.0**	**366.5**	**416.9**	**470.1**	**518.7**	**568.5**	**620.1**	**666.6**	**714.5**	**764.1**	**814.8**	**867.8**	**920.7**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	19.7	40.3	61.9	85.0	109.7	136.2	164.8	195.6	228.7	264.0	301.6	341.2	382.6	424.6	468.1	505.9	544.8	585.0	626.3	669.3	711.9
Water Heating	9.3	18.8	28.6	38.9	48.0	57.6	67.8	78.7	90.3	102.5	115.4	128.9	136.1	143.8	152.0	160.6	169.6	179.0	188.4	198.3	208.7
Mfg_CZ3	**36.0**	**73.3**	**112.3**	**153.5**	**195.1**	**239.5**	**287.0**	**338.0**	**392.2**	**449.8**	**510.8**	**574.9**	**634.0**	**694.2**	**756.6**	**811.8**	**868.7**	**927.6**	**987.8**	**1,050.7**	**1,113.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	25.5	52.0	79.8	109.3	140.6	174.1	210.1	248.7	289.9	333.7	380.1	429.0	480.0	531.5	584.8	630.3	677.2	725.5	775.2	826.9	878.3
Water Heating	10.5	21.3	32.5	44.2	54.5	65.4	76.9	89.2	102.3	116.1	130.6	145.9	154.0	162.6	171.8	181.4	191.5	202.0	212.5	223.6	235.2
Multi_CZ1	**3,228.7**	**6,631.6**	**10,237.7**	**14,098.3**	**17,940.5**	**22,126.5**	**26,709.8**	**31,721.9**	**37,170.3**	**43,046.4**	**49,351.5**	**56,063.6**	**61,870.2**	**67,869.6**	**74,152.2**	**79,886.8**	**85,838.9**	**92,034.5**	**98,441.4**	**105,224.0**	**112,153.2**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,651.4	3,446.3	5,396.2	7,542.6	9,924.0	12,581.9	15,559.7	18,884.2	22,563.2	26,588.7	30,955.4	35,642.3	40,607.0	45,697.9	51,005.5	55,705.2	60,568.3	65,616.1	70,835.6	76,342.6	81,930.8
Water Heating	1,577.1	3,184.8	4,840.7	6,554.3	8,014.4	9,541.6	11,145.9	12,832.0	14,599.5	16,448.0	18,383.9	20,406.4	21,245.1	22,150.5	23,122.0	24,153.2	25,238.5	26,382.3	27,565.7	28,837.0	30,173.6
Multi_CZ2	**3,085.0**	**6,338.6**	**9,795.7**	**13,507.5**	**17,215.6**	**21,270.5**	**25,726.8**	**30,617.0**	**35,948.9**	**41,714.5**	**47,914.3**	**54,525.1**	**60,283.9**	**66,247.0**	**72,493.4**	**78,256.5**	**84,235.6**	**90,457.1**	**96,882.9**	**103,653.3**	**110,565.2**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,551.1	3,240.0	5,077.3	7,102.9	9,353.9	11,870.2	14,693.5	17,849.6	21,346.1	25,175.4	29,332.2	33,796.1	38,526.6	43,382.6	48,446.3	52,959.8	57,629.7	62,476.8	67,488.4	72,776.0	78,140.9
Water Heating	1,533.8	3,098.2	4,717.5	6,403.3	7,859.7	9,397.5	11,029.3	12,761.9	14,595.6	16,529.8	18,570.4	20,714.6	21,740.1	22,844.0	24,023.4	25,269.6	26,575.0	27,945.7	29,356.1	30,834.7	32,377.5
Multi_CZ3	**2,892.2**	**5,925.7**	**9,130.2**	**12,548.0**	**15,939.7**	**19,616.4**	**23,621.6**	**27,980.6**	**32,697.9**	**37,766.2**	**43,187.6**	**48,944.1**	**53,899.1**	**58,996.4**	**64,327.4**	**69,085.1**	**74,022.8**	**79,161.4**	**84,472.8**	**90,084.3**	**95,812.5**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,526.3	3,176.0	4,961.0	6,917.2	9,077.3	11,477.0	14,153.8	17,130.8	20,414.3	23,997.4	27,876.4	32,033.0	36,430.6	40,925.9	45,609.7	49,679.1	53,890.8	58,263.2	62,784.7	67,554.5	72,396.0
Water Heating	1,365.8	2,749.3	4,168.5	5,629.7	6,860.7	8,136.9	9,464.3	10,845.1	12,277.4	13,760.8	15,301.2	16,898.8	17,453.7	18,053.0	18,697.3	19,382.7	20,105.6	20,868.5	21,655.1	22,493.3	23,376.3
Single_CZ1	**21,717.6**	**44,175.2**	**67,641.0**	**92,351.8**	**117,370.0**	**143,977.5**	**171,590.8**	**201,154.3**	**232,673.3**	**266,108.1**	**301,477.1**	**338,721.4**	**373,190.3**	**407,315.9**	**442,774.7**	**476,144.2**	**510,556.8**	**546,119.8**	**582,483.7**	**620,460.8**	**658,765.7**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	15,788.8	32,168.7	49,323.5	67,438.2	86,639.1	107,074.7	128,108.2	150,656.9	174,726.7	200,284.2	227,330.5	255,821.6	285,567.2	314,646.5	344,748.1	372,485.2	401,020.5	430,437.7	460,674.4	492,190.0	523,757.5
Water Heating	5,927.7	12,004.1	18,313.1	24,906.4	30,719.8	36,886.8	43,460.2	50,467.0	57,906.6	65,772.6	74,082.2	82,820.8	87,528.2	92,557.5	97,896.6	103,510.1	109,367.7	115,493.2	121,599.2	128,039.0	134,753.9
Single_CZ2	**40,639.9**	**82,692.8**	**126,660.0**	**172,993.0**	**219,896.8**	**269,829.6**	**321,669.4**	**377,227.8**	**436,517.2**	**499,460.9**	**566,089.5**	**636,288.0**	**701,141.5**	**765,460.5**	**832,312.8**	**895,409.2**	**960,485.6**	**1,027,747.1**	**1,096,523.9**	**1,168,366.9**	**1,240,804.9**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	29,271.3	59,669.8	91,535.3	125,220.1	160,969.2	199,067.2	238,290.2	280,397.8	325,403.4	373,242.4	423,912.5	477,327.0	533,124.0	587,767.1	644,347.7	696,644.5	750,451.8	805,929.1	862,957.9	922,411.6	981,931.3
Water Heating	11,366.8	23,018.5	35,116.3	47,759.3	58,907.0	70,732.5	83,337.4	96,773.3	111,039.0	126,122.4	142,056.7	158,813.4	167,840.1	177,484.0	187,721.9	198,486.2	209,718.6	221,464.4	233,173.1	245,521.6	258,397.9
Single_CZ3	**29,957.4**	**60,879.4**	**93,138.0**	**127,045.2**	**161,393.1**	**197,826.8**	**235,602.0**	**275,932.2**	**318,820.8**	**364,216.7**	**412,153.7**	**462,559.0**	**509,445.8**	**555,656.0**	**603,629.6**	**648,433.4**	**694,621.8**	**742,334.3**	**791,137.4**	**842,075.5**	**893,490.3**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	22,344.9	45,468.7	69,634.2	95,086.0	121,983.4	150,519.4	179,882.5	211,252.3	244,633.0	279,981.3	317,308.3	356,559.4	397,482.0	437,319.0	478,525.8	516,213.7	554,975.5	594,920.9	635,967.9	678,725.2	721,608.9
Water Heating	7,611.3	15,407.7	23,498.2	31,950.1	39,395.8	47,287.4	55,691.5	64,641.9	74,137.6	84,171.0	94,764.6	105,900.5	111,844.9	118,196.6	124,940.7	132,032.9	139,434.9	147,176.4	154,906.0	163,059.4	171,562.5
Grand Total	**101,683.0**	**206,973.8**	**317,109.4**	**433,236.9**	**550,637.2**	**675,730.1**	**806,219.5**	**946,164.9**	**1,095,607.4**	**1,254,355.2**	**1,422,495.4**	**1,599,717.1**	**1,762,716.8**	**1,924,707.0**	**2,093,137.7**	**2,250,918.4**	**2,413,728.4**	**2,582,093.7**	**2,754,460.8**	**2,934,674.8**	**3,116,693.1**

C-14: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #14)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**38.6**	**78.9**	**121.2**	**166.1**	**208.3**	**254.1**	**304.1**	**358.6**	**417.8**	**481.8**	**550.7**	**624.3**	**679.4**	**737.9**	**799.7**	**864.4**	**931.6**	**1,001.7**	**1,074.0**	**1,150.2**	**1,227.0**
Space Heating	10.4	22.0	35.0	49.7	66.5	85.8	108.2	133.9	163.3	196.3	232.8	272.8	315.7	361.1	408.8	458.4	509.8	563.1	618.2	676.1	733.7
Water Heating	28.2	56.8	86.2	116.4	141.9	168.3	195.9	224.6	254.5	285.6	317.9	351.5	363.7	376.8	390.9	406.0	421.9	438.6	455.8	474.1	493.3
Mfg_CZ2	**11.7**	**24.0**	**36.8**	**50.5**	**63.3**	**77.2**	**92.4**	**109.0**	**127.0**	**146.4**	**167.4**	**189.7**	**206.5**	**224.2**	**243.0**	**262.7**	**283.1**	**304.4**	**326.4**	**349.5**	**372.8**
Space Heating	3.1	6.7	10.6	15.0	20.1	25.9	32.7	40.5	49.4	59.4	70.5	82.7	95.7	109.5	123.9	139.0	154.6	170.8	187.5	205.1	222.6
Water Heating	8.6	17.3	26.2	35.5	43.2	51.3	59.7	68.4	77.5	87.0	96.8	107.1	110.8	114.8	119.1	123.7	128.5	133.6	138.8	144.4	150.2
Mfg_CZ3	**13.7**	**27.9**	**42.9**	**58.8**	**73.8**	**90.1**	**107.8**	**127.1**	**148.0**	**170.7**	**195.0**	**221.0**	**240.6**	**261.4**	**283.4**	**306.4**	**330.2**	**355.1**	**380.8**	**407.9**	**435.1**
Space Heating	3.9	8.3	13.1	18.5	24.7	31.8	40.0	49.3	60.0	71.9	85.1	99.5	115.0	131.3	148.5	166.3	184.8	203.9	223.7	244.5	265.3
Water Heating	9.8	19.7	29.9	40.3	49.1	58.3	67.8	77.7	88.1	98.8	109.9	121.5	125.6	130.1	134.9	140.1	145.5	151.2	157.1	163.3	169.9
Multi_CZ1	**1,857.3**	**3,809.4**	**5,861.5**	**8,039.4**	**10,049.2**	**12,231.4**	**14,616.7**	**17,225.9**	**20,069.2**	**23,147.6**	**26,466.6**	**30,018.4**	**32,520.3**	**35,194.4**	**38,036.5**	**41,026.3**	**44,146.5**	**47,413.8**	**50,820.6**	**54,489.4**	**58,274.1**
Space Heating	289.3	648.8	1,066.1	1,559.2	2,147.0	2,851.6	3,695.4	4,695.4	5,862.7	7,198.0	8,699.9	10,360.1	12,161.1	14,076.4	16,101.2	18,220.5	20,421.7	22,717.9	25,108.0	27,681.9	30,312.6
Water Heating	1,568.1	3,160.6	4,795.4	6,480.3	7,902.2	9,379.8	10,921.3	12,530.5	14,206.5	15,949.6	17,766.7	19,658.3	20,359.2	21,118.0	21,935.3	22,805.8	23,724.8	24,695.9	25,712.6	26,807.5	27,961.5
Multi_CZ2	**1,806.7**	**3,705.7**	**5,709.5**	**7,845.3**	**9,833.9**	**12,005.1**	**14,391.5**	**17,015.4**	**19,886.9**	**23,007.3**	**26,381.2**	**29,999.3**	**32,627.1**	**35,435.3**	**38,416.7**	**41,549.5**	**44,815.0**	**48,230.8**	**51,782.3**	**55,569.3**	**59,469.1**
Space Heating	281.6	630.8	1,035.5	1,513.2	2,082.0	2,763.2	3,578.2	4,543.6	5,669.8	6,957.8	8,405.9	10,006.4	11,742.3	13,588.3	15,539.8	17,582.2	19,703.4	21,916.0	24,219.0	26,698.7	29,233.0
Water Heating	1,525.1	3,074.9	4,674.0	6,332.2	7,751.8	9,241.9	10,813.3	12,471.7	14,217.1	16,049.5	17,975.3	19,992.9	20,884.9	21,846.9	22,876.9	23,967.3	25,111.6	26,314.7	27,563.3	28,870.6	30,236.1
Multi_CZ3	**1,619.6**	**3,311.8**	**5,084.2**	**6,957.0**	**8,672.5**	**10,523.3**	**12,533.1**	**14,717.6**	**17,084.0**	**19,633.0**	**22,369.7**	**25,288.4**	**27,278.6**	**29,402.8**	**31,658.9**	**34,031.2**	**36,506.2**	**39,096.8**	**41,795.9**	**44,695.0**	**47,681.7**
Space Heating	261.3	582.6	953.5	1,389.3	1,906.3	2,523.2	3,259.0	4,128.4	5,140.6	6,296.4	7,594.4	9,027.7	10,581.3	12,231.9	13,976.1	15,801.2	17,696.2	19,672.5	21,729.0	23,942.1	26,203.5
Water Heating	1,358.3	2,729.1	4,130.7	5,567.6	6,766.2	8,000.2	9,274.1	10,589.2	11,943.4	13,336.6	14,775.3	16,260.7	16,697.4	17,170.9	17,682.7	18,230.0	18,810.0	19,424.3	20,067.0	20,752.8	21,478.2
Single_CZ1	**11,538.2**	**23,464.7**	**35,900.9**	**48,968.7**	**61,656.0**	**75,169.5**	**89,649.0**	**105,181.4**	**121,795.9**	**139,494.1**	**158,314.5**	**178,223.0**	**194,691.3**	**210,238.5**	**226,571.5**	**243,596.6**	**261,232.8**	**279,552.2**	**298,425.1**	**318,283.7**	**338,501.0**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Space Heating	6,043.5	12,404.5	19,128.4	26,308.9	34,022.5	42,368.5	51,458.5	61,367.4	72,128.5	83,743.1	96,225.3	109,540.4	123,589.6	136,519.9	150,038.1	164,069.0	178,548.5	193,536.5	208,994.8	225,226.9	241,629.7
Water Heating	5,494.2	11,058.9	16,770.1	22,656.0	27,627.7	32,792.5	38,178.7	43,798.1	49,646.5	55,724.2	62,055.6	68,641.5	71,052.4	73,660.5	76,466.0	79,450.4	82,596.9	85,917.8	89,321.6	92,937.1	96,740.4
Single_CZ2	**21,675.3**	**44,044.4**	**67,338.6**	**91,777.8**	**115,407.4**	**140,526.4**	**167,387.7**	**196,148.4**	**226,861.6**	**259,532.9**	**294,238.6**	**330,921.0**	**360,911.4**	**389,201.2**	**418,924.5**	**449,911.6**	**482,016.3**	**515,368.9**	**549,727.6**	**585,888.8**	**622,674.7**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Space Heating	11,138.8	22,835.8	35,176.4	48,326.4	62,418.6	77,628.8	94,155.4	112,132.7	131,621.6	152,627.3	175,179.3	199,218.5	224,570.0	247,841.7	272,167.4	297,413.1	323,464.7	350,429.2	378,240.2	407,447.3	436,918.6
Water Heating	10,535.5	21,206.1	32,157.6	43,444.0	52,977.6	62,881.4	73,209.8	83,985.2	95,199.9	106,854.2	118,995.1	131,623.7	136,246.8	141,247.9	146,627.7	152,350.4	158,384.1	164,752.0	171,279.1	178,212.0	185,504.9
Single_CZ3	**16,352.7**	**33,222.1**	**50,781.9**	**69,194.6**	**87,156.8**	**106,222.6**	**126,577.3**	**148,333.7**	**171,527.6**	**196,160.7**	**222,289.4**	**249,871.4**	**273,077.5**	**294,858.7**	**317,694.9**	**341,462.1**	**366,053.2**	**391,562.9**	**417,829.0**	**445,422.7**	**473,525.8**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Space Heating	9,290.4	19,008.2	29,229.8	40,081.7	51,661.3	64,099.5	77,545.7	92,098.3	107,798.5	124,647.7	142,671.0	161,824.6	181,974.6	200,449.4	219,728.0	239,710.0	260,309.5	281,605.7	303,548.7	326,549.7	349,820.5
Water Heating	7,061.6	14,212.2	21,549.1	29,107.9	35,488.0	42,112.4	49,016.5	56,215.0	63,702.2	71,478.5	79,575.3	87,993.9	91,039.4	94,334.6	97,880.1	101,652.7	105,631.4	109,831.3	114,140.6	118,719.2	123,536.9
Grand Total	**54,913.9**	**111,688.8**	**170,877.5**	**233,058.1**	**293,121.2**	**357,099.6**	**425,659.5**	**499,216.9**	**577,918.1**	**661,774.5**	**750,973.2**	**845,356.5**	**922,232.7**	**995,554.3**	**1,072,629.1**	**1,153,010.7**	**1,236,314.8**	**1,322,886.5**	**1,412,161.8**	**1,506,256.5**	**1,602,161.4**

C-15: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #15)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**33.2**	**66.9**	**101.6**	**137.4**	**168.8**	**201.6**	**235.8**	**271.8**	**309.3**	**348.5**	**389.5**	**432.3**	**454.1**	**477.2**	**501.7**	**527.5**	**554.4**	**582.4**	**611.3**	**641.8**	**673.7**
Space Heating	4.9	10.0	15.4	21.0	26.9	33.2	39.9	47.1	54.8	63.0	71.6	80.8	90.4	100.4	110.8	121.5	132.5	143.8	155.5	167.8	180.4
Water Heating	28.2	56.8	86.2	116.4	141.9	168.3	195.9	224.6	254.5	285.6	317.9	351.5	363.7	376.8	390.9	406.0	421.9	438.6	455.8	474.1	493.3
Mfg_CZ2	**10.0**	**20.2**	**30.7**	**41.6**	**51.1**	**60.9**	**71.3**	**82.1**	**93.5**	**105.3**	**117.7**	**130.6**	**137.1**	**144.0**	**151.3**	**159.0**	**167.1**	**175.5**	**184.1**	**193.3**	**202.8**
Space Heating	1.4	2.9	4.5	6.1	7.8	9.7	11.6	13.7	16.0	18.3	20.9	23.5	26.3	29.3	32.3	35.4	38.6	41.9	45.3	48.9	52.6
Water Heating	8.6	17.3	26.2	35.5	43.2	51.3	59.7	68.4	77.5	87.0	96.8	107.1	110.8	114.8	119.1	123.7	128.5	133.6	138.8	144.4	150.2
Mfg_CZ3	**11.7**	**23.7**	**36.0**	**48.8**	**60.1**	**71.8**	**84.2**	**97.3**	**111.0**	**125.3**	**140.3**	**156.1**	**164.6**	**173.6**	**183.2**	**193.2**	**203.6**	**214.6**	**225.8**	**237.8**	**250.2**
Space Heating	1.9	4.0	6.2	8.5	10.9	13.6	16.4	19.5	22.9	26.5	30.4	34.6	39.0	43.5	48.2	53.1	58.2	63.4	68.7	74.5	80.3
Water Heating	9.8	19.7	29.9	40.3	49.1	58.3	67.8	77.7	88.1	98.8	109.9	121.5	125.6	130.1	134.9	140.1	145.5	151.2	157.1	163.3	169.9
Multi_CZ1	**1,506.1**	**3,080.9**	**4,726.8**	**6,462.0**	**7,985.1**	**9,627.8**	**11,411.4**	**13,349.9**	**15,450.4**	**17,713.9**	**20,145.6**	**22,741.2**	**24,357.8**	**26,099.6**	**27,962.0**	**29,931.0**	**31,994.8**	**34,165.0**	**36,438.1**	**38,914.5**	**41,508.7**
Space Heating	68.9	182.7	327.9	515.1	755.6	1,062.6	1,449.3	1,926.0	2,500.3	3,173.0	3,942.8	4,805.3	5,750.8	6,766.2	7,846.6	8,983.0	10,168.3	11,410.5	12,712.3	14,142.0	15,633.4
Water Heating	1,437.2	2,898.2	4,398.9	5,946.9	7,229.5	8,565.2	9,962.1	11,423.9	12,950.1	14,541.0	16,202.8	17,936.0	18,607.0	19,333.4	20,115.4	20,948.0	21,826.5	22,754.6	23,725.8	24,772.5	25,875.3
Multi_CZ2	**1,460.1**	**2,981.7**	**4,576.6**	**6,262.9**	**7,753.2**	**9,367.1**	**11,126.8**	**13,046.7**	**15,133.5**	**17,388.1**	**19,815.4**	**22,409.9**	**24,072.6**	**25,862.2**	**27,772.1**	**29,787.4**	**31,895.6**	**34,108.5**	**36,415.1**	**38,885.6**	**41,463.7**
Space Heating	60.6	158.6	283.0	442.5	646.9	907.0	1,234.0	1,636.9	2,122.1	2,690.3	3,340.8	4,069.7	4,869.1	5,727.8	6,641.5	7,602.9	8,605.7	9,656.7	10,758.3	11,967.8	13,229.6
Water Heating	1,399.5	2,823.1	4,293.6	5,820.4	7,106.3	8,460.2	9,892.8	11,409.8	13,011.4	14,697.8	16,474.6	18,340.2	19,203.5	20,134.4	21,130.5	22,184.5	23,290.0	24,451.8	25,656.8	26,917.8	28,234.1
Multi_CZ3	**1,309.5**	**2,671.4**	**4,090.1**	**5,579.4**	**6,876.0**	**8,265.3**	**9,763.7**	**11,381.3**	**13,123.1**	**14,989.7**	**16,985.8**	**19,108.4**	**20,367.9**	**21,719.8**	**23,165.3**	**24,694.0**	**26,296.8**	**27,982.3**	**29,747.4**	**31,667.4**	**33,679.4**
Space Heating	64.8	169.9	303.2	474.3	693.2	971.7	1,321.5	1,751.9	2,269.4	2,874.8	3,566.9	4,341.5	5,190.2	6,096.7	7,061.0	8,075.3	9,133.2	10,241.8	11,403.6	12,679.5	14,010.6
Water Heating	1,244.8	2,501.5	3,786.8	5,105.1	6,182.8	7,293.6	8,442.2	9,629.5	10,853.7	12,114.9	13,418.9	14,766.9	15,177.7	15,623.1	16,104.3	16,618.7	17,163.5	17,740.6	18,343.8	18,987.9	19,668.8
Single_CZ1	**10,356.9**	**20,928.1**	**31,820.4**	**43,101.1**	**53,700.0**	**64,758.5**	**76,349.4**	**88,510.5**	**101,246.6**	**114,559.7**	**128,493.3**	**143,043.1**	**153,949.3**	**163,583.8**	**173,689.0**	**184,217.4**	**195,127.3**	**206,454.1**	**218,107.7**	**230,410.6**	**243,174.7**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Space Heating	5,070.9	10,286.2	15,679.8	21,291.4	27,138.7	33,255.9	39,687.8	46,460.2	53,581.7	61,053.6	68,896.5	77,105.5	85,640.0	92,709.3	100,055.7	107,650.4	115,468.1	123,532.0	131,843.3	140,596.4	149,627.6
Water Heating	5,285.5	10,640.6	16,138.2	21,805.8	26,555.4	31,494.1	36,649.8	42,034.4	47,644.1	53,479.2	59,563.3	65,896.5	68,260.0	70,816.4	73,565.8	76,489.8	79,571.9	82,824.3	86,155.8	89,694.5	93,416.1
Single_CZ2	**19,438.8**	**39,279.6**	**59,723.7**	**80,897.3**	**100,748.0**	**121,462.4**	**143,177.2**	**165,963.9**	**189,831.6**	**214,783.7**	**240,902.2**	**268,178.7**	**288,447.7**	**306,405.8**	**325,248.1**	**344,885.5**	**365,239.7**	**386,377.0**	**408,124.8**	**431,090.7**	**454,922.2**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Space Heating	9,302.4	18,873.1	28,773.3	39,076.1	49,815.4	61,054.5	72,876.7	85,330.3	98,431.4	112,183.0	126,622.1	141,739.8	157,460.9	170,500.0	184,052.3	198,064.1	212,488.8	227,369.3	242,708.2	258,867.1	275,540.5
Water Heating	10,135.3	20,403.9	30,945.8	41,813.9	50,921.5	60,391.7	70,278.1	80,603.2	91,360.1	102,549.3	114,215.8	126,360.1	130,892.2	135,794.3	141,066.4	146,673.3	152,583.5	158,820.0	165,208.3	171,994.1	179,130.5
Single_CZ3	**14,134.0**	**28,557.4**	**43,415.4**	**58,798.5**	**73,330.7**	**88,482.0**	**104,350.4**	**120,986.1**	**138,395.1**	**156,579.6**	**175,599.7**	**195,449.8**	**210,648.4**	**223,957.2**	**237,901.4**	**252,417.2**	**267,448.9**	**283,043.7**	**299,091.2**	**316,020.0**	**333,573.8**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Space Heating	7,340.0	14,881.5	22,675.9	30,778.7	39,213.9	48,028.4	57,284.7	67,018.6	77,240.8	87,953.5	99,186.1	110,932.8	123,136.3	133,205.0	143,663.8	154,472.1	165,595.1	177,064.5	188,881.8	201,316.5	214,143.1
Water Heating	6,793.3	13,674.2	20,736.4	28,014.8	34,109.3	40,442.8	47,050.6	53,947.1	61,127.4	68,591.7	76,370.4	84,464.2	87,448.7	90,677.5	94,150.8	97,845.7	101,741.6	105,853.4	110,069.7	114,549.6	119,262.3
Grand Total	**48,260.4**	**97,609.8**	**148,521.3**	**201,328.9**	**250,672.8**	**302,297.5**	**356,570.1**	**413,689.6**	**473,694.2**	**536,594.0**	**602,589.7**	**671,650.1**	**722,599.4**	**768,423.3**	**816,574.2**	**866,812.3**	**918,928.2**	**973,103.1**	**1,028,945.5**	**1,088,061.7**	**1,149,449.2**

C-16: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #16)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**106.3**	**216.4**	**331.5**	**452.9**	**575.7**	**706.6**	**842.4**	**987.9**	**1,143.3**	**1,308.4**	**1,483.2**	**1,667.4**	**1,837.1**	**2,010.4**	**2,190.3**	**2,352.2**	**2,519.3**	**2,692.1**	**2,868.8**	**3,053.3**	**3,238.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	75.9	154.6	237.2	324.7	417.6	516.7	618.5	727.8	844.8	969.2	1,101.1	1,240.1	1,385.3	1,532.5	1,684.8	1,817.6	1,954.4	2,095.5	2,240.4	2,391.4	2,541.1
Water Heating	30.5	61.8	94.2	128.2	158.2	190.0	223.9	260.0	298.5	339.1	382.1	427.2	451.7	477.7	505.3	534.4	564.7	596.4	628.1	661.6	696.5
Mfg_CZ2	**30.3**	**61.8**	**94.7**	**129.5**	**164.8**	**202.4**	**241.5**	**283.5**	**328.5**	**376.4**	**427.2**	**480.9**	**530.1**	**580.3**	**632.6**	**679.6**	**728.2**	**778.5**	**830.0**	**883.7**	**937.5**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	21.0	43.0	66.0	90.5	116.6	144.5	173.3	204.3	237.6	273.1	310.8	350.7	392.5	434.8	478.6	516.8	556.2	596.8	638.6	682.1	725.2
Water Heating	9.3	18.8	28.7	39.1	48.2	57.9	68.2	79.2	90.9	103.3	116.4	130.1	137.6	145.5	153.9	162.8	172.0	181.6	191.3	201.5	212.2
Mfg_CZ3	**39.2**	**79.6**	**121.9**	**166.4**	**211.5**	**259.3**	**308.9**	**362.0**	**418.5**	**478.4**	**541.8**	**608.4**	**670.1**	**732.9**	**798.1**	**856.0**	**915.8**	**977.6**	**1,040.9**	**1,106.9**	**1,173.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	28.6	58.3	89.3	122.1	156.8	193.7	231.6	272.2	315.4	361.4	409.9	461.1	514.4	568.4	624.1	672.1	721.6	772.6	825.0	879.5	933.7
Water Heating	10.6	21.4	32.6	44.3	54.7	65.7	77.4	89.8	103.0	117.0	131.8	147.3	155.6	164.5	173.9	183.8	194.2	205.0	215.8	227.3	239.2
Multi_CZ1	**3,440.1**	**7,055.4**	**10,878.0**	**14,959.7**	**19,027.0**	**23,442.2**	**28,046.5**	**33,084.0**	**38,561.6**	**44,470.9**	**50,814.2**	**57,569.6**	**63,424.1**	**69,475.8**	**75,815.2**	**81,610.9**	**87,628.2**	**93,893.2**	**100,373.4**	**107,233.6**	**114,245.5**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,862.8	3,870.1	6,036.5	8,404.0	11,010.6	13,897.6	16,896.4	20,246.3	23,954.6	28,013.2	32,418.1	37,148.3	42,161.0	47,304.1	52,668.5	57,429.3	62,357.6	67,474.8	72,767.5	78,352.2	84,023.1
Water Heating	1,577.1	3,184.8	4,840.7	6,554.3	8,014.4	9,541.6	11,145.9	12,832.0	14,599.5	16,448.0	18,383.9	20,406.4	21,245.1	22,150.5	23,122.0	24,153.2	25,238.5	26,382.3	27,565.7	28,837.0	30,173.6
Multi_CZ2	**3,265.3**	**6,700.1**	**10,341.9**	**14,242.3**	**18,142.5**	**22,392.9**	**26,867.1**	**31,779.0**	**37,135.9**	**42,929.8**	**49,162.1**	**55,809.8**	**61,609.6**	**67,617.2**	**73,912.0**	**79,727.3**	**85,762.0**	**92,042.7**	**98,531.0**	**105,367.6**	**112,350.0**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,731.4	3,601.5	5,623.6	7,837.8	10,280.8	12,992.6	15,833.8	19,011.5	22,533.0	26,390.6	30,579.9	35,080.8	39,852.2	44,752.8	49,864.9	54,430.6	59,156.2	64,062.4	69,136.4	74,490.4	79,925.8
Water Heating	1,533.8	3,098.2	4,717.5	6,403.3	7,859.7	9,397.5	11,029.3	12,761.9	14,595.6	16,529.8	18,570.4	20,714.6	21,740.1	22,844.0	24,023.4	25,269.6	26,575.0	27,945.7	29,356.1	30,834.7	32,377.5
Multi_CZ3	**3,055.1**	**6,252.3**	**9,623.7**	**13,211.9**	**16,777.1**	**20,630.4**	**24,651.8**	**29,030.3**	**33,770.2**	**38,864.1**	**44,314.8**	**50,104.7**	**55,096.8**	**60,234.3**	**65,609.0**	**70,413.9**	**75,401.9**	**80,593.9**	**85,961.8**	**91,633.2**	**97,425.0**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,689.2	3,502.6	5,454.5	7,581.1	9,914.7	12,491.0	15,184.0	18,180.5	21,486.6	25,095.3	29,003.6	33,193.6	37,628.2	42,163.8	46,891.4	51,007.9	55,269.8	59,695.7	64,273.7	69,103.4	74,008.5
Water Heating	1,365.8	2,749.3	4,168.5	5,629.7	6,860.7	8,136.9	9,464.3	10,845.1	12,277.4	13,760.8	15,301.2	16,898.8	17,453.7	18,053.0	18,697.3	19,382.7	20,105.6	20,868.5	21,655.1	22,493.3	23,376.3
Single_CZ1	**22,412.1**	**45,582.2**	**69,783.4**	**95,257.1**	**121,067.2**	**148,498.9**	**176,973.1**	**207,435.8**	**239,892.0**	**274,299.4**	**310,678.0**	**348,967.7**	**384,506.6**	**419,711.2**	**456,276.2**	**490,777.0**	**526,343.8**	**563,085.3**	**600,651.8**	**639,875.7**	**679,456.4**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	16,472.9	33,540.2	51,395.8	70,226.0	90,155.6	111,333.0	133,122.7	156,441.7	181,294.6	207,647.7	235,505.7	264,825.3	295,414.3	325,350.8	356,324.3	384,947.3	414,381.7	444,711.4	475,873.3	508,328.4	540,851.5
Water Heating	5,938.2	12,039.5	18,383.2	25,023.8	30,900.5	37,149.9	43,828.1	50,963.7	58,557.4	66,600.4	75,107.9	84,063.4	88,997.4	94,248.5	99,821.9	105,680.8	111,793.5	118,184.9	124,568.5	131,315.5	138,350.5
Single_CZ2	**41,933.9**	**85,314.9**	**130,653.5**	**178,410.0**	**226,792.1**	**278,264.2**	**331,712.9**	**388,953.2**	**449,996.3**	**514,761.2**	**583,280.7**	**655,438.1**	**722,296.9**	**788,637.2**	**857,562.7**	**922,779.5**	**990,019.4**	**1,059,490.2**	**1,130,522.0**	**1,204,703.9**	**1,279,535.2**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	30,545.1	62,224.0	95,394.4	130,411.9	167,518.0	206,997.3	247,628.4	291,170.7	337,634.5	386,955.2	439,136.7	494,094.3	551,462.0	607,701.3	665,905.6	719,852.3	775,334.0	832,510.7	891,262.3	952,465.7	1,013,765.0
Water Heating	11,386.9	23,086.4	35,250.7	47,984.5	59,253.4	71,237.0	84,042.7	97,725.8	112,287.0	127,709.9	144,023.5	161,196.2	170,657.4	180,726.6	191,413.9	202,648.7	214,370.2	226,626.0	238,866.8	251,804.5	265,294.6
Single_CZ3	**30,853.5**	**62,694.7**	**95,901.9**	**130,793.3**	**166,162.7**	**203,659.6**	**242,545.1**	**284,035.2**	**328,132.4**	**374,782.7**	**424,021.6**	**475,775.3**	**524,042.1**	**571,643.8**	**621,044.2**	**667,307.1**	**714,984.1**	**764,216.5**	**814,570.6**	**867,116.7**	**920,176.7**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	23,227.5	47,238.4	72,308.0	98,683.1	126,520.6	156,013.6	186,352.4	218,716.2	253,107.2	289,482.1	327,856.3	368,176.5	410,187.3	451,130.3	493,462.0	532,292.9	572,214.9	613,337.6	655,578.3	699,547.9	743,664.5
Water Heating	7,624.8	15,453.3	23,588.3	32,101.1	39,628.2	47,625.9	56,164.7	65,280.9	74,975.0	85,236.2	96,084.6	107,499.7	113,735.8	120,373.1	127,419.1	134,827.3	142,557.8	150,641.8	158,728.9	167,278.0	176,193.3
Grand Total	**105,135.7**	**213,957.3**	**327,730.5**	**447,623.0**	**568,920.6**	**698,056.6**	**832,189.4**	**975,950.9**	**1,129,378.7**	**1,292,271.4**	**1,464,723.5**	**1,646,422.0**	**1,814,013.2**	**1,980,643.0**	**2,153,840.3**	**2,316,503.6**	**2,484,302.7**	**2,657,770.0**	**2,835,350.2**	**3,020,974.6**	**3,208,537.4**

C-17: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #17)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**106.3**	**216.4**	**331.5**	**452.9**	**575.7**	**706.6**	**842.4**	**987.9**	**1,143.3**	**1,308.4**	**1,483.2**	**1,667.4**	**1,837.1**	**2,010.4**	**2,190.3**	**2,352.2**	**2,519.3**	**2,692.1**	**2,868.8**	**3,053.3**	**3,238.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	75.9	154.6	237.2	324.7	417.6	516.7	618.5	727.8	844.8	969.2	1,101.1	1,240.1	1,385.3	1,532.5	1,684.8	1,817.6	1,954.4	2,095.5	2,240.4	2,391.4	2,541.1
Water Heating	30.5	61.8	94.2	128.2	158.2	190.0	223.9	260.0	298.5	339.1	382.1	427.2	451.7	477.7	505.3	534.4	564.7	596.4	628.1	661.6	696.5
Mfg_CZ2	**31.7**	**64.5**	**98.9**	**135.1**	**171.8**	**210.9**	**251.5**	**295.1**	**341.7**	**391.2**	**443.6**	**498.9**	**549.8**	**601.8**	**655.8**	**704.6**	**755.0**	**807.1**	**860.4**	**916.0**	**971.7**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	22.4	45.7	70.2	96.1	123.6	153.1	183.3	215.9	250.7	287.8	327.2	368.8	412.2	456.2	501.8	541.8	582.9	625.4	669.0	714.4	759.5
Water Heating	9.3	18.8	28.7	39.1	48.2	57.9	68.2	79.2	90.9	103.3	116.4	130.1	137.6	145.5	153.9	162.8	172.0	181.6	191.3	201.5	212.2
Mfg_CZ3	**39.2**	**79.6**	**121.9**	**166.4**	**211.5**	**259.3**	**308.9**	**362.0**	**418.5**	**478.4**	**541.8**	**608.4**	**670.1**	**732.9**	**798.1**	**856.0**	**915.8**	**977.6**	**1,040.9**	**1,106.9**	**1,173.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	28.6	58.3	89.3	122.1	156.8	193.7	231.6	272.2	315.4	361.4	409.9	461.1	514.4	568.4	624.1	672.1	721.6	772.6	825.0	879.5	933.7
Water Heating	10.6	21.4	32.6	44.3	54.7	65.7	77.4	89.8	103.0	117.0	131.8	147.3	155.6	164.5	173.9	183.8	194.2	205.0	215.8	227.3	239.2
Multi_CZ1	**3,440.1**	**7,055.4**	**10,878.0**	**14,959.7**	**19,027.0**	**23,442.2**	**28,046.5**	**33,084.0**	**38,561.6**	**44,470.9**	**50,814.2**	**57,569.6**	**63,424.1**	**69,475.8**	**75,815.2**	**81,610.9**	**87,628.2**	**93,893.2**	**100,373.4**	**107,233.6**	**114,245.5**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,862.8	3,870.1	6,036.5	8,404.0	11,010.6	13,897.6	16,896.4	20,246.3	23,954.6	28,013.2	32,418.1	37,148.3	42,161.0	47,304.1	52,668.5	57,429.3	62,357.6	67,474.8	72,767.5	78,352.2	84,023.1
Water Heating	1,577.1	3,184.8	4,840.7	6,554.3	8,014.4	9,541.6	11,145.9	12,832.0	14,599.5	16,448.0	18,383.9	20,406.4	21,245.1	22,150.5	23,122.0	24,153.2	25,238.5	26,382.3	27,565.7	28,837.0	30,173.6
Multi_CZ2	**3,265.3**	**6,700.1**	**10,341.9**	**14,242.3**	**18,142.5**	**22,392.9**	**26,867.1**	**31,779.0**	**37,135.9**	**42,929.8**	**49,162.1**	**55,809.8**	**61,609.6**	**67,617.2**	**73,912.0**	**79,727.3**	**85,762.0**	**92,042.7**	**98,531.0**	**105,367.6**	**112,350.0**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,731.4	3,601.5	5,623.6	7,837.8	10,280.8	12,992.6	15,833.8	19,011.5	22,533.0	26,390.6	30,579.9	35,080.8	39,852.2	44,752.8	49,864.9	54,430.6	59,156.2	64,062.4	69,136.4	74,490.4	79,925.8
Water Heating	1,533.8	3,098.2	4,717.5	6,403.3	7,859.7	9,397.5	11,029.3	12,761.9	14,595.6	16,529.8	18,570.4	20,714.6	21,740.1	22,844.0	24,023.4	25,269.6	26,575.0	27,945.7	29,356.1	30,834.7	32,377.5
Multi_CZ3	**3,055.1**	**6,252.3**	**9,623.7**	**13,211.9**	**16,777.1**	**20,630.4**	**24,651.8**	**29,030.3**	**33,770.2**	**38,864.1**	**44,314.8**	**50,104.7**	**55,096.8**	**60,234.3**	**65,609.0**	**70,413.9**	**75,401.9**	**80,593.9**	**85,961.8**	**91,633.2**	**97,425.0**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,689.2	3,502.6	5,454.5	7,581.1	9,914.7	12,491.0	15,184.0	18,180.5	21,486.6	25,095.3	29,003.6	33,193.6	37,628.2	42,163.8	46,891.4	51,007.9	55,269.8	59,695.7	64,273.7	69,103.4	74,008.5
Water Heating	1,365.8	2,749.3	4,168.5	5,629.7	6,860.7	8,136.9	9,464.3	10,845.1	12,277.4	13,760.8	15,301.2	16,898.8	17,453.7	18,053.0	18,697.3	19,382.7	20,105.6	20,868.5	21,655.1	22,493.3	23,376.3
Single_CZ1	**22,412.1**	**45,582.2**	**69,783.4**	**95,257.1**	**121,067.2**	**148,498.9**	**176,973.1**	**207,435.8**	**239,892.0**	**274,299.4**	**310,678.0**	**348,967.7**	**384,506.6**	**419,711.2**	**456,276.2**	**490,777.0**	**526,343.8**	**563,085.3**	**600,651.8**	**639,875.7**	**679,456.4**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	16,472.9	33,540.2	51,395.8	70,226.0	90,155.6	111,333.0	133,122.7	156,441.7	181,294.6	207,647.7	235,505.7	264,825.3	295,414.3	325,350.8	356,324.3	384,947.3	414,381.7	444,711.4	475,873.3	508,328.4	540,851.5
Water Heating	5,938.2	12,039.5	18,383.2	25,023.8	30,900.5	37,149.9	43,828.1	50,963.7	58,557.4	66,600.4	75,107.9	84,063.4	88,997.4	94,248.5	99,821.9	105,680.8	111,793.5	118,184.9	124,568.5	131,315.5	138,350.5
Single_CZ2	**41,933.9**	**85,314.9**	**130,653.5**	**178,410.0**	**226,792.1**	**278,264.2**	**331,712.9**	**388,953.2**	**449,996.3**	**514,761.2**	**583,280.7**	**655,438.1**	**722,296.9**	**788,637.2**	**857,562.7**	**922,779.5**	**990,019.4**	**1,059,490.2**	**1,130,522.0**	**1,204,703.9**	**1,279,535.2**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	30,545.1	62,224.0	95,394.4	130,411.9	167,518.0	206,997.3	247,628.4	291,170.7	337,634.5	386,955.2	439,136.7	494,094.3	551,462.0	607,701.3	665,905.6	719,852.3	775,334.0	832,510.7	891,262.3	952,465.7	1,013,765.0
Water Heating	11,386.9	23,086.4	35,250.7	47,984.5	59,253.4	71,237.0	84,042.7	97,725.8	112,287.0	127,709.9	144,023.5	161,196.2	170,657.4	180,726.6	191,413.9	202,648.7	214,370.2	226,626.0	238,866.8	251,804.5	265,294.6
Single_CZ3	**30,853.5**	**62,694.7**	**95,901.9**	**130,793.3**	**166,162.7**	**203,659.6**	**242,545.1**	**284,035.2**	**328,132.4**	**374,782.7**	**424,021.6**	**475,775.3**	**524,042.1**	**571,643.8**	**621,044.2**	**667,307.1**	**714,984.1**	**764,216.5**	**814,570.6**	**867,116.7**	**920,176.7**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	23,227.5	47,238.4	72,308.0	98,683.1	126,520.6	156,013.6	186,352.4	218,716.2	253,107.2	289,482.1	327,856.3	368,176.5	410,187.3	451,130.3	493,462.0	532,292.9	572,214.9	613,337.6	655,578.3	699,547.9	743,664.5
Water Heating	7,624.8	15,453.3	23,588.3	32,101.1	39,628.2	47,625.9	56,164.7	65,280.9	74,975.0	85,236.2	96,084.6	107,499.7	113,735.8	120,373.1	127,419.1	134,827.3	142,557.8	150,641.8	158,728.9	167,278.0	176,193.3
Grand Total	**105,137.1**	**213,960.1**	**327,734.7**	**447,628.6**	**568,927.6**	**698,065.2**	**832,199.5**	**975,962.5**	**1,129,391.9**	**1,292,286.1**	**1,464,739.9**	**1,646,440.0**	**1,814,033.0**	**1,980,664.5**	**2,153,863.5**	**2,316,528.6**	**2,484,329.5**	**2,657,798.6**	**2,835,380.7**	**3,021,007.0**	**3,208,571.6**

C-18: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #18)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**106.6**	**216.9**	**332.3**	**454.0**	**577.3**	**708.7**	**844.8**	**990.8**	**1,146.8**	**1,312.5**	**1,488.2**	**1,673.2**	**1,843.8**	**2,018.0**	**2,199.0**	**2,362.0**	**2,530.2**	**2,704.1**	**2,882.1**	**3,067.9**	**3,254.1**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	76.0	155.0	237.8	325.4	418.5	517.8	619.6	729.0	846.0	970.4	1,102.3	1,241.4	1,386.6	1,533.9	1,686.2	1,819.1	1,955.9	2,097.1	2,242.1	2,393.1	2,542.9
Water Heating	30.5	61.9	94.5	128.6	158.8	190.9	225.1	261.8	300.8	342.1	385.8	431.8	457.0	484.0	512.5	542.6	574.0	606.8	639.7	674.5	710.8
Mfg_CZ2	**31.7**	**64.6**	**99.0**	**135.4**	**172.1**	**211.3**	**251.9**	**295.5**	**342.0**	**391.6**	**444.0**	**499.4**	**550.2**	**602.3**	**656.3**	**705.1**	**755.5**	**807.7**	**861.0**	**916.7**	**972.4**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	22.5	45.8	70.3	96.3	123.9	153.4	183.7	216.2	251.1	288.2	327.6	369.2	412.6	456.7	502.3	542.3	583.4	625.9	669.5	715.0	760.0
Water Heating	9.3	18.8	28.7	39.1	48.2	57.9	68.2	79.2	90.9	103.3	116.4	130.2	137.6	145.5	154.0	162.8	172.1	181.7	191.4	201.6	212.3
Mfg_CZ3	**39.2**	**79.8**	**122.1**	**166.7**	**211.8**	**259.7**	**309.3**	**362.4**	**418.9**	**478.9**	**542.2**	**608.9**	**670.6**	**733.5**	**798.7**	**856.6**	**916.5**	**978.3**	**1,041.6**	**1,107.6**	**1,173.8**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	28.7	58.4	89.5	122.3	157.1	194.1	232.0	272.6	315.9	361.8	410.4	461.5	514.9	568.8	624.6	672.7	722.1	773.1	825.6	880.1	934.3
Water Heating	10.6	21.4	32.6	44.3	54.7	65.7	77.4	89.8	103.1	117.1	131.8	147.4	155.7	164.6	174.0	183.9	194.3	205.1	215.9	227.4	239.4
Multi_CZ1	**3,508.8**	**7,195.7**	**11,093.0**	**15,253.0**	**19,402.9**	**23,905.3**	**28,593.3**	**33,720.3**	**39,293.1**	**45,302.8**	**51,751.5**	**58,617.4**	**64,586.6**	**70,752.0**	**77,208.6**	**83,124.8**	**89,265.5**	**95,657.0**	**102,266.8**	**109,263.2**	**116,414.9**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,871.5	3,887.7	6,063.1	8,439.7	11,055.6	13,952.2	16,951.8	20,302.8	24,012.2	28,072.3	32,478.7	37,210.7	42,225.4	47,370.7	52,737.4	57,500.8	62,431.8	67,551.9	72,847.6	78,435.6	84,109.9
Water Heating	1,637.1	3,307.6	5,029.2	6,812.0	8,345.2	9,950.1	11,637.3	13,411.8	15,273.3	17,220.8	19,260.6	21,391.7	22,343.1	23,360.0	24,446.5	25,595.7	26,801.6	28,069.1	29,379.1	30,783.3	32,256.3
Multi_CZ2	**3,331.3**	**6,834.9**	**10,548.3**	**14,524.0**	**18,503.4**	**22,837.7**	**27,392.6**	**32,390.7**	**37,839.6**	**43,730.7**	**50,065.4**	**56,820.3**	**62,731.6**	**68,850.0**	**75,259.2**	**81,192.1**	**87,347.2**	**93,751.4**	**100,366.4**	**107,336.3**	**114,455.5**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,739.8	3,618.4	5,649.0	7,872.0	10,324.0	13,044.9	15,887.0	19,065.7	22,588.4	26,447.3	30,638.1	35,140.8	39,914.1	44,816.7	49,931.1	54,499.2	59,227.4	64,136.4	69,213.3	74,570.4	80,009.1
Water Heating	1,591.3	3,216.1	4,898.4	6,650.7	8,177.4	9,789.9	11,501.6	13,319.5	15,244.0	17,274.1	19,415.5	21,665.2	22,800.3	24,012.9	25,304.4	26,665.7	28,089.0	29,580.4	31,114.6	32,723.3	34,399.7
Multi_CZ3	**3,114.7**	**6,374.0**	**9,810.2**	**13,466.4**	**17,103.3**	**21,032.4**	**25,126.7**	**29,583.2**	**34,406.2**	**39,588.0**	**45,131.2**	**51,018.0**	**56,110.9**	**61,348.6**	**66,826.7**	**71,737.8**	**76,834.6**	**82,138.4**	**87,620.8**	**93,412.6**	**99,328.1**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,696.8	3,517.9	5,477.5	7,612.0	9,953.8	12,538.3	15,232.1	18,229.5	21,536.6	25,146.5	29,056.2	33,247.8	37,684.1	42,221.6	46,951.2	51,069.9	55,334.1	59,762.5	64,343.2	69,175.6	74,083.8
Water Heating	1,417.8	2,855.8	4,332.0	5,853.3	7,147.9	8,491.6	9,891.2	11,349.0	12,863.4	14,433.5	16,065.0	17,758.0	18,412.0	19,109.5	19,855.1	20,644.6	21,474.1	22,346.2	23,244.6	24,200.4	25,204.2
Single_CZ1	**22,444.4**	**45,656.5**	**69,906.8**	**95,438.7**	**121,318.7**	**148,834.3**	**177,383.4**	**207,939.7**	**240,509.0**	**275,049.1**	**311,579.6**	**350,039.5**	**385,748.2**	**421,136.3**	**457,897.5**	**492,605.6**	**528,389.4**	**565,359.0**	**603,165.6**	**642,655.2**	**682,514.0**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	16,498.2	33,591.0	51,472.5	70,329.3	90,285.9	111,490.8	133,283.0	156,605.1	181,461.5	207,818.6	235,681.2	265,006.1	295,600.9	325,543.6	356,524.0	385,154.3	414,596.6	444,934.6	476,105.3	508,569.7	541,102.8
Water Heating	5,945.2	12,063.0	18,429.8	25,102.2	31,021.7	37,327.5	44,078.1	51,304.2	59,007.4	67,179.2	75,834.0	84,954.5	90,052.5	95,480.8	101,243.6	107,302.4	113,624.3	120,235.5	126,850.3	133,853.6	141,156.9
Single_CZ2	**41,982.9**	**85,413.7**	**130,803.4**	**178,612.4**	**227,048.6**	**278,576.6**	**332,034.2**	**389,285.3**	**450,341.2**	**515,120.8**	**583,657.2**	**655,833.7**	**722,712.5**	**789,074.6**	**858,023.6**	**923,265.4**	**990,531.8**	**1,060,030.7**	**1,131,092.0**	**1,205,305.9**	**1,280,171.0**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	30,593.8	62,321.5	95,541.7	130,610.0	167,767.9	207,299.9	247,935.9	291,484.1	337,954.7	387,283.1	439,473.4	494,441.0	551,819.9	608,071.1	666,288.6	720,249.4	775,746.1	832,938.9	891,707.3	952,928.6	1,014,247.0
Water Heating	11,387.3	23,087.7	35,253.3	47,988.8	59,260.0	71,246.7	84,056.4	97,744.4	112,311.6	127,741.6	144,063.3	161,245.0	170,715.2	180,794.1	191,491.8	202,737.5	214,470.5	226,738.3	238,991.8	251,943.6	265,448.4
Single_CZ3	**30,886.3**	**62,760.8**	**96,002.2**	**130,928.8**	**166,334.5**	**203,868.8**	**242,760.3**	**284,257.6**	**328,363.4**	**375,023.6**	**424,273.8**	**476,040.2**	**524,320.5**	**571,936.8**	**621,353.0**	**667,632.6**	**715,327.4**	**764,578.6**	**814,952.6**	**867,520.1**	**920,602.7**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	23,260.0	47,303.6	72,406.6	98,815.7	126,688.0	156,216.3	186,558.3	218,926.1	253,321.7	289,701.7	328,081.8	368,408.7	410,426.9	451,377.9	493,718.5	532,558.8	572,490.9	613,624.3	655,876.3	699,857.9	743,987.3
Water Heating	7,625.0	15,454.1	23,590.0	32,104.0	39,632.7	47,632.4	56,173.9	65,293.5	74,991.5	85,257.5	96,111.3	107,532.5	113,774.6	120,418.4	127,471.4	134,887.0	142,625.2	150,717.3	158,812.8	167,371.4	176,296.6
Grand Total	**105,445.8**	**214,596.9**	**328,717.3**	**448,979.5**	**570,672.7**	**700,234.7**	**834,696.6**	**978,825.5**	**1,132,660.3**	**1,295,998.1**	**1,468,933.1**	**1,651,150.7**	**1,819,275.0**	**1,986,451.9**	**2,160,222.5**	**2,323,482.1**	**2,491,898.1**	**2,666,005.3**	**2,844,248.9**	**3,030,585.4**	**3,218,886.6**

C-19: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #19)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**100.1**	**203.7**	**312.3**	**426.9**	**542.7**	**666.4**	**794.5**	**932.3**	**1,079.6**	**1,236.2**	**1,402.4**	**1,577.6**	**1,738.0**	**1,901.9**	**2,072.2**	**2,224.3**	**2,381.4**	**2,543.9**	**2,710.2**	**2,883.9**	**3,057.6**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	71.2	145.3	223.2	305.8	393.8	487.8	584.5	688.6	800.3	919.3	1,045.7	1,179.1	1,318.6	1,460.0	1,606.4	1,733.2	1,863.9	1,998.8	2,137.5	2,282.0	2,425.3
Water Heating	28.8	58.4	89.1	121.1	149.0	178.5	210.0	243.6	279.2	316.8	356.6	398.4	419.3	441.7	465.6	490.9	517.2	544.9	572.4	601.5	632.0
Mfg_CZ2	**23.2**	**47.4**	**72.9**	**100.2**	**127.7**	**157.4**	**188.4**	**222.1**	**258.6**	**297.8**	**339.8**	**384.3**	**424.2**	**465.0**	**507.6**	**544.9**	**583.5**	**623.6**	**664.7**	**708.0**	**751.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	14.4	29.6	45.8	63.3	82.3	103.0	124.4	147.9	173.5	201.3	231.1	262.9	296.4	330.4	365.8	395.3	425.8	457.5	490.3	524.6	558.4
Water Heating	8.8	17.8	27.1	36.9	45.4	54.4	64.0	74.2	85.0	96.5	108.6	121.3	127.7	134.5	141.8	149.5	157.5	166.0	174.4	183.2	192.5
Mfg_CZ3	**37.0**	**75.2**	**115.2**	**157.4**	**200.0**	**245.3**	**292.3**	**342.7**	**396.3**	**453.3**	**513.7**	**577.2**	**635.7**	**695.2**	**757.1**	**811.6**	**867.9**	**926.2**	**985.8**	**1,048.0**	**1,110.3**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	27.0	55.0	84.4	115.5	148.5	183.6	219.8	258.5	300.0	344.0	390.7	439.8	491.2	543.1	596.8	642.8	690.1	738.9	789.2	841.5	893.4
Water Heating	10.0	20.2	30.8	41.9	51.5	61.7	72.5	84.1	96.4	109.3	123.0	137.3	144.4	152.0	160.2	168.8	177.7	187.1	196.5	206.5	216.8
Multi_CZ1	**3,243.7**	**6,645.4**	**10,229.1**	**14,040.6**	**17,800.8**	**21,866.0**	**26,072.6**	**30,662.7**	**35,644.9**	**41,014.4**	**46,775.8**	**52,912.1**	**58,116.7**	**63,493.0**	**69,134.3**	**74,212.7**	**79,496.0**	**85,008.6**	**90,722.3**	**96,802.7**	**103,018.1**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,666.5	3,460.2	5,387.6	7,484.9	9,784.3	12,321.4	14,922.5	17,825.0	21,037.9	24,556.6	28,379.7	32,490.8	36,853.6	41,321.3	45,987.6	50,031.1	54,225.3	58,590.2	63,116.5	67,921.3	72,795.8
Water Heating	1,577.1	3,184.8	4,840.7	6,554.3	8,014.4	9,541.6	11,145.9	12,832.0	14,599.5	16,448.0	18,383.9	20,406.4	21,245.1	22,150.5	23,122.0	24,153.2	25,238.5	26,382.3	27,565.7	28,837.0	30,173.6
Multi_CZ2	**2,893.7**	**5,939.5**	**9,164.3**	**12,613.9**	**16,024.2**	**19,740.3**	**23,811.9**	**28,269.7**	**33,123.1**	**38,367.5**	**44,005.8**	**50,019.2**	**55,151.1**	**60,462.8**	**66,035.9**	**71,107.2**	**76,378.4**	**81,874.4**	**87,561.2**	**93,579.5**	**99,723.4**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,359.8	2,840.9	4,446.0	6,209.3	8,162.6	10,340.0	12,778.6	15,502.3	18,520.3	21,828.4	25,423.7	29,290.2	33,393.8	37,598.4	41,988.8	45,810.4	49,772.5	53,894.1	58,166.6	62,702.3	67,299.1
Water Heating	1,533.8	3,098.2	4,717.5	6,403.3	7,859.7	9,397.5	11,029.3	12,761.9	14,595.6	16,529.8	18,570.4	20,714.6	21,740.1	22,844.0	24,023.4	25,269.6	26,575.0	27,945.7	29,356.1	30,834.7	32,377.5
Multi_CZ3	**2,721.5**	**5,569.3**	**8,566.3**	**11,749.6**	**14,875.0**	**18,248.3**	**21,909.0**	**25,880.5**	**30,168.9**	**34,770.0**	**39,687.9**	**44,908.7**	**49,301.5**	**53,814.6**	**58,541.7**	**62,678.8**	**66,981.6**	**71,469.4**	**76,117.9**	**81,054.9**	**86,094.1**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,355.6	2,819.7	4,397.2	6,118.8	8,012.6	10,108.9	12,441.2	15,030.7	17,885.3	21,001.2	24,376.7	27,997.6	31,833.0	35,744.1	39,824.0	43,272.8	46,849.5	50,571.2	54,429.8	58,525.1	62,677.6
Water Heating	1,365.8	2,749.3	4,168.5	5,629.7	6,860.7	8,136.9	9,464.3	10,845.1	12,277.4	13,760.8	15,301.2	16,898.8	17,453.7	18,053.0	18,697.3	19,382.7	20,105.6	20,868.5	21,655.1	22,493.3	23,376.3
Single_CZ1	**21,405.7**	**43,541.4**	**66,673.5**	**91,035.9**	**115,689.9**	**141,915.0**	**169,124.5**	**198,261.2**	**229,330.0**	**262,291.0**	**297,161.8**	**333,883.7**	**367,808.4**	**401,371.4**	**436,249.4**	**469,022.0**	**502,823.2**	**537,758.8**	**573,478.8**	**610,782.3**	**648,395.4**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	15,788.8	32,168.7	49,323.5	67,438.2	86,639.1	107,074.7	128,108.2	150,656.9	174,726.7	200,284.2	227,330.5	255,821.6	285,567.2	314,646.5	344,748.1	372,485.2	401,020.5	430,437.7	460,674.4	492,190.0	523,757.5
Water Heating	5,615.9	11,370.2	17,345.5	23,590.5	29,039.8	34,824.2	40,993.9	47,574.0	54,563.3	61,955.5	69,766.9	77,983.1	82,146.3	86,613.0	91,371.3	96,387.9	101,634.2	107,132.1	112,594.3	118,360.4	124,383.5
Single_CZ2	**33,787.2**	**68,936.5**	**105,856.5**	**144,978.6**	**184,521.0**	**226,938.1**	**271,086.2**	**318,779.1**	**370,041.9**	**424,798.7**	**483,047.4**	**544,664.5**	**600,758.9**	**656,152.2**	**713,908.4**	**767,737.0**	**823,397.1**	**881,088.7**	**940,149.4**	**1,002,087.1**	**1,064,438.0**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	23,016.6	47,128.8	72,587.1	99,728.9	128,815.0	160,130.8	192,436.3	227,496.7	265,339.1	305,899.5	349,145.2	394,980.0	443,061.5	489,857.7	538,455.8	582,629.3	628,192.9	675,303.5	723,850.8	774,690.9	825,450.3
Water Heating	10,768.8	21,803.1	33,261.0	45,236.1	55,685.3	66,777.4	78,608.0	91,225.6	104,628.0	118,803.1	133,781.8	149,536.8	157,520.0	166,085.1	175,209.4	184,829.1	194,889.0	205,431.6	215,905.7	226,962.5	238,512.1
Single_CZ3	**29,556.4**	**60,064.4**	**91,893.8**	**125,353.1**	**159,232.7**	**195,174.5**	**232,430.5**	**272,211.9**	**314,521.4**	**359,308.0**	**406,604.0**	**456,337.3**	**502,524.2**	**548,010.6**	**595,237.1**	**639,273.0**	**684,674.8**	**731,580.0**	**779,554.8**	**829,626.2**	**880,150.8**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	22,344.9	45,468.7	69,634.2	95,086.0	121,983.4	150,519.4	179,882.5	211,252.3	244,633.0	279,981.3	317,308.3	356,559.4	397,482.0	437,319.0	478,525.8	516,213.7	554,975.5	594,920.9	635,967.9	678,725.2	721,608.9
Water Heating	7,210.3	14,592.7	22,254.0	30,258.0	37,235.4	44,635.1	52,520.0	60,921.5	69,838.2	79,262.3	89,215.0	99,678.9	104,923.2	110,551.2	116,548.2	122,872.5	129,487.9	136,422.1	143,323.4	150,610.1	158,223.0
Grand Total	**93,768.5**	**191,022.8**	**292,884.0**	**400,456.2**	**509,013.9**	**624,951.3**	**745,709.9**	**875,562.0**	**1,014,564.8**	**1,162,537.0**	**1,319,538.6**	**1,485,264.6**	**1,636,458.7**	**1,786,366.7**	**1,942,443.7**	**2,087,611.4**	**2,237,583.8**	**2,392,873.6**	**2,551,945.2**	**2,718,572.5**	**2,886,738.8**

C-20: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #20)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**45.4**	**94.0**	**146.3**	**203.4**	**260.6**	**324.3**	**395.7**	**475.3**	**563.2**	**659.3**	**763.4**	**875.0**	**970.4**	**1,068.1**	**1,170.8**	**1,278.0**	**1,388.9**	**1,504.1**	**1,621.9**	**1,745.7**	**1,868.5**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	16.6	35.6	57.3	82.5	111.8	146.1	186.1	232.3	284.8	343.5	408.1	478.2	553.0	628.5	707.6	789.9	874.7	962.7	1,053.3	1,148.4	1,241.1
Water Heating	28.8	58.3	89.0	120.9	148.7	178.2	209.5	242.9	278.3	315.7	355.2	396.7	417.3	439.4	463.0	487.9	513.9	541.2	568.3	597.0	627.0
Mfg_CZ2	**13.8**	**28.5**	**44.3**	**61.7**	**79.0**	**98.4**	**120.0**	**144.2**	**170.9**	**200.1**	**231.8**	**265.7**	**294.7**	**324.4**	**355.7**	**388.3**	**422.1**	**457.1**	**493.0**	**530.7**	**568.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	5.0	10.7	17.3	24.8	33.7	44.1	56.2	70.2	86.1	103.9	123.6	144.8	167.6	190.5	214.6	239.6	265.5	292.2	319.8	348.7	376.9
Water Heating	8.8	17.8	27.1	36.8	45.3	54.3	63.8	74.0	84.8	96.2	108.2	120.8	127.1	133.8	141.0	148.6	156.5	164.8	173.1	181.8	191.0
Mfg_CZ3	**16.2**	**33.6**	**52.2**	**72.5**	**92.9**	**115.5**	**140.9**	**169.0**	**200.1**	**234.0**	**270.8**	**310.1**	**343.9**	**378.3**	**414.5**	**452.2**	**491.2**	**531.8**	**573.3**	**616.9**	**660.2**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	6.2	13.4	21.4	30.7	41.5	54.0	68.5	85.1	104.0	125.1	148.2	173.3	200.1	227.0	255.1	284.4	314.6	345.9	378.1	411.9	445.0
Water Heating	10.0	20.2	30.8	41.8	51.4	61.6	72.4	83.9	96.1	108.9	122.5	136.7	143.7	151.3	159.3	167.7	176.6	185.9	195.1	204.9	215.1
Multi_CZ1	**2,082.8**	**4,308.2**	**6,685.3**	**9,254.7**	**11,737.7**	**14,488.2**	**17,550.0**	**20,951.6**	**24,703.4**	**28,801.2**	**33,245.0**	**38,017.5**	**41,819.6**	**45,757.5**	**49,923.9**	**54,289.4**	**58,829.2**	**63,566.1**	**68,485.4**	**73,729.4**	**79,078.0**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	513.8	1,144.7	1,884.2	2,764.9	3,820.9	5,087.1	6,598.9	8,380.8	10,443.9	12,784.0	15,394.1	18,256.6	21,339.6	24,499.1	27,827.4	31,300.6	34,898.7	38,640.7	42,518.3	46,640.0	50,806.1
Water Heating	1,568.8	3,163.0	4,800.2	6,488.4	7,914.7	9,398.1	10,947.0	12,565.1	14,251.9	16,007.5	17,838.7	19,745.9	20,462.0	21,237.1	22,071.8	22,960.5	23,898.4	24,889.4	25,926.9	27,044.9	28,223.1
Multi_CZ2	**1,980.9**	**4,076.8**	**6,303.2**	**8,694.6**	**10,978.9**	**13,490.6**	**16,267.7**	**19,334.6**	**22,700.6**	**26,362.9**	**30,323.6**	**34,568.5**	**37,855.0**	**41,253.9**	**44,851.3**	**48,621.6**	**52,543.3**	**56,636.1**	**60,883.9**	**65,398.5**	**69,992.0**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	454.9	999.1	1,623.7	2,353.3	3,212.9	4,228.1	5,425.5	6,823.7	8,432.0	10,247.5	12,266.0	14,475.1	16,851.6	19,269.0	21,815.6	24,473.8	27,228.6	30,094.4	33,068.8	36,248.8	39,448.2
Water Heating	1,525.8	3,077.3	4,678.7	6,340.0	7,764.0	9,259.6	10,838.1	12,505.4	14,261.4	16,106.1	18,045.9	20,079.0	20,986.2	21,964.6	23,011.9	24,120.6	25,283.9	26,507.1	27,776.6	29,107.2	30,497.0
Multi_CZ3	**1,832.2**	**3,778.6**	**5,850.6**	**8,081.0**	**10,225.7**	**12,588.5**	**15,205.1**	**18,097.7**	**21,274.0**	**24,730.2**	**28,466.8**	**32,469.9**	**35,614.6**	**38,851.2**	**42,273.2**	**45,856.9**	**49,582.2**	**53,467.2**	**57,498.8**	**61,785.8**	**66,152.0**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	473.2	1,047.0	1,715.0	2,505.1	3,446.8	4,569.8	5,905.0	7,473.4	9,284.4	11,334.5	13,617.7	16,119.0	18,810.8	21,556.5	24,448.1	27,465.0	30,590.0	33,839.4	37,206.0	40,782.6	44,397.8
Water Heating	1,358.9	2,731.3	4,134.9	5,574.8	6,777.2	8,016.2	9,296.6	10,619.7	11,983.4	13,387.8	14,839.1	16,338.5	16,788.9	17,277.2	17,804.7	18,368.5	18,965.8	19,598.1	20,259.8	20,966.7	21,714.0
Single_CZ1	**12,449.8**	**25,548.0**	**39,437.4**	**54,322.0**	**69,275.9**	**85,569.3**	**103,409.4**	**122,915.9**	**144,112.4**	**166,963.3**	**191,446.7**	**217,496.6**	**240,507.6**	**262,927.2**	**286,428.0**	**310,872.0**	**336,143.1**	**362,339.5**	**389,124.1**	**417,243.4**	**445,483.1**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	6,835.5	14,184.1	22,104.7	30,753.3	40,269.8	50,794.3	62,484.3	75,434.7	89,670.6	105,162.2	121,871.3	139,745.9	158,631.7	176,625.4	195,411.3	214,884.4	234,957.1	255,705.6	277,081.0	299,494.5	321,774.5
Water Heating	5,613.3	11,361.5	17,328.2	23,561.5	28,995.0	34,759.1	40,902.8	47,450.8	54,401.9	61,749.8	69,511.1	77,671.8	81,781.0	86,189.8	90,886.7	95,838.6	101,017.5	106,444.9	111,833.0	117,517.1	123,454.3
Single_CZ2	**23,430.4**	**48,073.7**	**74,207.8**	**102,217.0**	**130,320.3**	**160,946.7**	**194,484.9**	**231,159.7**	**271,013.8**	**313,978.9**	**360,057.4**	**409,079.9**	**452,221.7**	**494,329.7**	**538,467.4**	**584,375.0**	**631,834.4**	**681,029.3**	**731,311.1**	**784,067.8**	**837,002.5**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	12,664.7	26,282.9	40,971.7	57,023.0	74,700.1	94,264.3	116,009.7	140,113.4	166,620.4	195,474.2	226,645.7	259,992.4	295,224.7	328,846.7	363,944.1	400,320.7	437,812.7	476,561.9	516,472.3	558,288.8	599,796.5
Water Heating	10,763.8	21,786.2	33,227.7	45,180.4	55,599.6	66,652.4	78,433.3	90,989.6	104,318.5	118,408.6	133,291.2	148,939.9	156,819.6	165,273.7	174,280.1	183,775.8	193,706.5	204,113.9	214,445.9	225,345.3	236,730.3
Single_CZ3	**17,305.7**	**35,457.0**	**54,653.2**	**75,163.2**	**95,796.4**	**118,183.9**	**142,595.9**	**169,187.4**	**197,987.3**	**228,949.7**	**262,052.8**	**297,213.6**	**328,505.1**	**358,787.1**	**390,495.8**	**423,451.3**	**457,501.8**	**492,775.2**	**528,855.3**	**566,703.2**	**604,746.8**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	10,097.5	20,872.5	32,415.9	44,933.4	58,604.7	73,612.5	90,165.1	108,386.2	128,306.5	149,887.7	173,086.3	197,836.3	223,933.1	248,640.2	274,408.4	301,099.1	328,596.5	357,000.8	386,248.5	416,888.1	447,401.2
Water Heating	7,207.0	14,581.4	22,231.7	30,220.6	37,177.9	44,551.3	52,402.7	60,763.1	69,630.6	78,997.6	88,885.8	99,278.3	104,453.1	110,006.5	115,924.4	122,165.4	128,694.0	135,537.4	142,343.3	149,524.3	157,026.6
Grand Total	**59,157.1**	**121,398.3**	**187,380.3**	**258,070.1**	**328,767.4**	**405,805.4**	**490,169.6**	**582,435.6**	**682,725.7**	**790,879.7**	**906,858.2**	**1,030,296.8**	**1,138,132.6**	**1,243,677.4**	**1,354,380.5**	**1,469,584.6**	**1,588,736.3**	**1,712,306.4**	**1,838,846.9**	**1,971,821.4**	**2,105,550.9**

C-21: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #21)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**42.8**	**87.3**	**134.0**	**183.3**	**230.0**	**280.4**	**335.0**	**394.3**	**458.4**	**527.3**	**601.2**	**679.9**	**740.3**	**801.0**	**865.1**	**932.1**	**1,001.8**	**1,074.5**	**1,149.4**	**1,228.3**	**1,307.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	14.6	30.5	47.8	66.9	88.1	112.1	139.1	169.6	203.8	241.7	283.3	328.3	376.5	424.0	473.9	526.0	579.8	635.6	693.3	753.9	814.2
Water Heating	28.2	56.8	86.2	116.4	141.9	168.3	195.9	224.6	254.5	285.6	317.9	351.5	363.7	376.8	390.9	406.0	421.9	438.6	455.8	474.1	493.3
Mfg_CZ2	**12.7**	**25.9**	**39.7**	**54.4**	**68.3**	**83.2**	**99.5**	**117.1**	**136.2**	**156.8**	**178.9**	**202.4**	**220.4**	**238.5**	**257.6**	**277.6**	**298.4**	**320.1**	**342.4**	**366.0**	**389.8**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	4.1	8.6	13.5	18.9	25.0	32.0	39.8	48.7	58.7	69.8	82.1	95.4	109.6	123.6	138.4	153.9	169.8	186.4	203.5	221.5	239.4
Water Heating	8.6	17.3	26.2	35.5	43.2	51.3	59.7	68.4	77.5	87.0	96.8	107.1	110.8	114.8	119.1	123.7	128.5	133.6	138.8	144.4	150.2
Mfg_CZ3	**15.3**	**31.1**	**47.7**	**65.3**	**81.9**	**99.9**	**119.3**	**140.4**	**163.2**	**187.6**	**213.9**	**241.8**	**263.3**	**284.9**	**307.7**	**331.5**	**356.2**	**382.0**	**408.6**	**436.6**	**464.9**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	5.5	11.4	17.9	24.9	32.8	41.6	51.5	62.6	75.1	88.8	103.9	120.2	137.6	154.7	172.7	191.3	210.7	230.7	251.4	273.2	294.9
Water Heating	9.8	19.7	29.9	40.3	49.1	58.3	67.8	77.7	88.1	98.8	109.9	121.5	125.6	130.1	134.9	140.1	145.5	151.2	157.1	163.3	169.9
Multi_CZ1	**1,967.9**	**4,031.2**	**6,196.7**	**8,490.7**	**10,618.8**	**12,921.6**	**15,430.1**	**18,165.2**	**21,136.6**	**24,345.6**	**27,798.1**	**31,486.4**	**34,127.4**	**36,839.2**	**39,721.7**	**42,754.2**	**45,919.3**	**49,234.0**	**52,690.3**	**56,411.2**	**60,250.6**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	399.6	870.2	1,400.5	2,009.1	2,714.5	3,538.8	4,504.6	5,629.0	6,922.6	8,386.3	10,019.2	11,813.1	13,750.2	15,700.0	17,761.6	19,920.0	22,162.4	24,502.0	26,937.6	29,559.3	32,240.3
Water Heating	1,568.1	3,160.6	4,795.4	6,480.3	7,902.2	9,379.8	10,921.3	12,530.5	14,206.5	15,949.6	17,766.7	19,658.3	20,359.2	21,118.0	21,935.3	22,805.8	23,724.8	24,695.9	25,712.6	26,807.5	27,961.5
Multi_CZ2	**1,908.1**	**3,909.3**	**6,017.2**	**8,259.5**	**10,356.7**	**12,638.6**	**15,138.2**	**17,877.6**	**20,866.9**	**24,107.2**	**27,603.7**	**31,347.1**	**34,102.8**	**36,945.7**	**39,964.3**	**43,136.4**	**46,443.3**	**49,902.7**	**53,499.9**	**57,334.8**	**61,285.1**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	382.9	833.9	1,342.4	1,926.0	2,602.9	3,393.9	4,320.9	5,400.4	6,642.6	8,048.3	9,616.7	11,339.8	13,200.7	15,078.3	17,063.6	19,141.9	21,300.9	23,553.4	25,898.1	28,421.7	31,002.2
Water Heating	1,525.1	3,074.9	4,674.0	6,332.2	7,751.8	9,241.9	10,813.3	12,471.7	14,217.1	16,049.5	17,975.3	19,992.9	20,884.9	21,846.9	22,876.9	23,967.3	25,111.6	26,314.7	27,563.3	28,870.6	30,236.1
Multi_CZ3	**1,732.5**	**3,538.3**	**5,426.6**	**7,417.8**	**9,254.1**	**11,228.0**	**13,363.5**	**15,676.3**	**18,173.3**	**20,855.3**	**23,727.8**	**26,785.5**	**28,917.3**	**31,084.0**	**33,385.2**	**35,805.1**	**38,330.0**	**40,972.8**	**43,726.4**	**46,682.4**	**49,728.8**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	374.1	808.8	1,295.2	1,849.1	2,486.2	3,225.4	4,085.9	5,082.3	6,223.7	7,510.7	8,942.5	10,512.5	12,205.1	13,895.6	15,682.1	17,551.8	19,493.6	21,518.9	23,626.4	25,893.0	28,210.4
Water Heating	1,358.3	2,729.1	4,130.7	5,567.6	6,766.2	8,000.2	9,274.1	10,589.2	11,943.4	13,336.6	14,775.3	16,260.7	16,697.4	17,170.9	17,682.7	18,230.0	18,810.0	19,424.3	20,067.0	20,752.8	21,478.2
Single_CZ1	**12,021.3**	**24,433.5**	**37,365.0**	**50,939.0**	**64,142.2**	**78,181.3**	**93,197.4**	**109,277.1**	**126,448.7**	**144,713.7**	**164,113.0**	**184,613.1**	**201,684.1**	**217,844.8**	**234,802.3**	**252,462.0**	**270,742.6**	**289,716.3**	**309,252.7**	**329,785.5**	**350,688.6**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	6,526.1	13,372.1	20,590.4	28,275.8	36,503.4	45,372.8	54,996.3	65,448.7	76,762.2	88,938.2	101,993.0	115,892.7	130,536.9	144,072.4	158,206.3	172,862.7	187,977.2	203,609.5	219,721.0	236,616.5	253,693.9
Water Heating	5,494.2	11,058.9	16,770.1	22,656.0	27,627.7	32,792.5	38,178.7	43,798.1	49,646.5	55,724.2	62,055.6	68,641.5	71,052.4	73,660.5	76,466.0	79,450.4	82,596.9	85,917.8	89,321.6	92,937.1	96,740.4
Single_CZ2	**22,624.4**	**45,992.1**	**70,344.8**	**95,917.0**	**120,765.7**	**147,204.1**	**175,500.6**	**205,820.9**	**238,219.7**	**272,699.6**	**309,337.4**	**348,068.6**	**380,209.0**	**410,735.6**	**442,776.1**	**476,150.1**	**510,702.7**	**546,571.5**	**583,506.5**	**622,330.6**	**661,846.1**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	12,087.1	24,781.4	38,178.8	52,459.4	67,767.5	84,292.8	102,249.0	121,779.0	142,945.0	165,749.4	190,222.0	216,297.2	243,784.7	269,278.3	295,905.2	323,521.2	352,003.4	381,466.0	411,834.5	443,684.9	475,865.6
Water Heating	10,535.5	21,206.1	32,157.6	43,444.0	52,977.6	62,881.4	73,209.8	83,985.2	95,199.9	106,854.2	118,995.1	131,623.7	136,246.8	141,247.9	146,627.7	152,350.4	158,384.1	164,752.0	171,279.1	178,212.0	185,504.9
Single_CZ3	**16,762.8**	**34,044.6**	**52,025.1**	**70,867.8**	**89,268.4**	**108,781.2**	**129,592.3**	**151,814.6**	**175,482.9**	**200,599.0**	**227,221.3**	**255,307.9**	**279,028.3**	**301,332.7**	**324,701.6**	**349,010.3**	**374,151.3**	**400,219.5**	**427,052.0**	**455,221.3**	**483,910.1**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	9,699.9	19,829.4	30,470.4	41,750.8	53,766.6	66,648.8	80,547.7	95,561.6	111,730.5	129,056.1	147,565.2	167,214.9	187,869.9	206,857.8	226,658.4	247,170.8	268,308.6	290,151.1	312,647.9	336,211.4	360,054.3
Water Heating	7,061.6	14,212.2	21,549.1	29,107.9	35,488.0	42,112.4	49,016.5	56,215.0	63,702.2	71,478.5	79,575.3	87,993.9	91,039.4	94,334.6	97,880.1	101,652.7	105,631.4	109,831.3	114,140.6	118,719.2	123,536.9
Grand Total	**57,087.8**	**116,093.2**	**177,596.9**	**242,194.8**	**304,786.1**	**371,418.5**	**442,776.0**	**519,283.5**	**601,086.0**	**688,192.2**	**780,795.4**	**878,732.7**	**959,292.9**	**1,036,106.3**	**1,116,781.3**	**1,200,859.4**	**1,287,945.8**	**1,378,393.4**	**1,471,628.2**	**1,569,796.6**	**1,669,871.8**

C-22: Residential Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #22)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Mfg_CZ1	**106.3**	**216.4**	**331.5**	**452.9**	**575.7**	**706.6**	**842.4**	**987.9**	**1,143.3**	**1,308.4**	**1,483.2**	**1,667.4**	**1,837.1**	**2,010.4**	**2,190.3**	**2,352.2**	**2,519.3**	**2,692.1**	**2,868.8**	**3,053.3**	**3,238.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Space Heating	75.9	154.6	237.2	324.7	417.6	516.7	618.5	727.8	844.8	969.2	1,101.1	1,240.1	1,385.3	1,532.5	1,684.8	1,817.6	1,954.4	2,095.5	2,240.4	2,391.4	2,541.1
Water Heating	30.5	61.8	94.2	128.2	158.2	190.0	223.9	260.0	298.5	339.1	382.1	427.2	451.7	477.7	505.3	534.4	564.7	596.4	628.1	661.6	696.5
Mfg_CZ2	**31.7**	**64.5**	**98.9**	**135.1**	**171.8**	**210.9**	**251.5**	**295.1**	**341.7**	**391.2**	**443.6**	**498.9**	**549.8**	**601.8**	**655.8**	**704.6**	**755.0**	**807.1**	**860.4**	**916.0**	**971.7**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	22.4	45.7	70.2	96.1	123.6	153.1	183.3	215.9	250.7	287.8	327.2	368.8	412.2	456.2	501.8	541.8	582.9	625.4	669.0	714.4	759.5
Water Heating	9.3	18.8	28.7	39.1	48.2	57.9	68.2	79.2	90.9	103.3	116.4	130.1	137.6	145.5	153.9	162.8	172.0	181.6	191.3	201.5	212.2
Mfg_CZ3	**39.2**	**79.6**	**121.9**	**166.4**	**211.5**	**259.3**	**308.9**	**362.0**	**418.5**	**478.4**	**541.8**	**608.4**	**670.1**	**732.9**	**798.1**	**856.0**	**915.8**	**977.6**	**1,040.9**	**1,106.9**	**1,173.0**
Room Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Heating	28.6	58.3	89.3	122.1	156.8	193.7	231.6	272.2	315.4	361.4	409.9	461.1	514.4	568.4	624.1	672.1	721.6	772.6	825.0	879.5	933.7
Water Heating	10.6	21.4	32.6	44.3	54.7	65.7	77.4	89.8	103.0	117.0	131.8	147.3	155.6	164.5	173.9	183.8	194.2	205.0	215.8	227.3	239.2
Multi_CZ1	**3,498.2**	**7,171.8**	**11,054.0**	**15,196.4**	**19,325.7**	**23,803.8**	**28,472.4**	**33,575.3**	**39,119.4**	**45,096.3**	**51,508.4**	**58,334.2**	**64,260.4**	**70,384.9**	**76,798.4**	**82,669.4**	**88,763.1**	**95,105.6**	**101,664.4**	**108,604.5**	**115,697.5**
Room Heating	0.2	0.4	0.8	1.4	2.1	3.0	4.2	5.7	7.6	9.7	12.2	15.0	18.0	21.3	24.7	28.3	32.1	36.0	40.1	44.4	48.8
Space Heating	1,862.8	3,870.1	6,036.5	8,404.0	11,010.6	13,897.6	16,896.4	20,246.3	23,954.6	28,013.2	32,418.1	37,148.3	42,161.0	47,304.1	52,668.5	57,429.3	62,357.6	67,474.8	72,767.5	78,352.2	84,023.1
Water Heating	1,635.2	3,301.3	5,016.7	6,791.0	8,313.0	9,903.2	11,571.7	13,323.2	15,157.3	17,073.4	19,078.2	21,171.0	22,081.4	23,059.6	24,105.2	25,211.7	26,373.4	27,594.8	28,856.8	30,207.9	31,625.6
Multi_CZ2	**3,321.1**	**6,811.9**	**10,510.8**	**14,469.5**	**18,429.1**	**22,739.9**	**27,275.8**	**32,250.4**	**37,671.1**	**43,529.8**	**49,828.3**	**56,543.5**	**62,412.1**	**68,489.6**	**74,855.5**	**80,743.1**	**86,851.1**	**93,206.1**	**99,769.9**	**106,683.1**	**113,743.4**
Room Heating	0.2	0.4	0.8	1.3	2.0	2.9	4.0	5.5	7.2	9.3	11.7	14.4	17.3	20.4	23.7	27.2	30.8	34.6	38.5	42.6	46.8
Space Heating	1,731.4	3,601.5	5,623.6	7,837.8	10,280.8	12,992.6	15,833.8	19,011.5	22,533.0	26,390.6	30,579.9	35,080.8	39,852.2	44,752.8	49,864.9	54,430.6	59,156.2	64,062.4	69,136.4	74,490.4	79,925.8
Water Heating	1,589.5	3,210.0	4,886.4	6,630.5	8,146.3	9,744.5	11,437.9	13,233.3	15,130.8	17,129.9	19,236.6	21,448.4	22,542.6	23,716.4	24,966.8	26,285.3	27,664.1	29,109.1	30,594.9	32,150.1	33,770.9
Multi_CZ3	**3,105.5**	**6,353.3**	**9,776.3**	**13,417.2**	**17,036.2**	**20,944.0**	**25,021.2**	**29,456.4**	**34,253.9**	**39,406.5**	**44,916.9**	**50,767.9**	**55,822.1**	**61,022.8**	**66,461.8**	**71,331.9**	**76,386.2**	**81,645.4**	**87,081.5**	**92,822.1**	**98,684.4**
Room Heating	0.1	0.4	0.7	1.1	1.7	2.5	3.5	4.7	6.2	8.0	10.0	12.3	14.8	17.5	20.3	23.3	26.4	29.7	33.0	36.5	40.1
Space Heating	1,689.2	3,502.6	5,454.5	7,581.1	9,914.7	12,491.0	15,184.0	18,180.5	21,486.6	25,095.3	29,003.6	33,193.6	37,628.2	42,163.8	46,891.4	51,007.9	55,269.8	59,695.7	64,273.7	69,103.4	74,008.5
Water Heating	1,416.2	2,850.3	4,321.1	5,835.0	7,119.7	8,450.5	9,833.7	11,271.2	12,761.1	14,303.2	15,903.3	17,561.9	18,179.1	18,841.5	19,550.0	20,300.7	21,089.9	21,920.1	22,774.8	23,682.2	24,635.7
Single_CZ1	**22,412.1**	**45,582.2**	**69,783.4**	**95,257.1**	**121,067.2**	**148,498.9**	**176,973.1**	**207,435.8**	**239,892.0**	**274,299.4**	**310,678.0**	**348,967.7**	**384,506.6**	**419,711.2**	**456,276.2**	**490,777.0**	**526,343.8**	**563,085.3**	**600,651.8**	**639,875.7**	**679,456.4**
Other	0.5	1.3	2.4	3.8	5.8	8.4	11.7	15.9	20.9	26.8	33.5	41.1	49.3	58.1	67.5	77.2	87.3	97.8	108.7	119.7	131.0
Room Heating	0.4	1.1	2.1	3.4	5.2	7.6	10.6	14.5	19.1	24.6	30.8	37.8	45.5	53.8	62.5	71.7	81.2	91.1	101.4	112.2	123.3
Space Heating	16,472.9	33,540.2	51,395.8	70,226.0	90,155.6	111,333.0	133,122.7	156,441.7	181,294.6	207,647.7	235,505.7	264,825.3	295,414.3	325,350.8	356,324.3	384,947.3	414,381.7	444,711.4	475,873.3	508,328.4	540,851.5
Water Heating	5,938.2	12,039.5	18,383.2	25,023.8	30,900.5	37,149.9	43,828.1	50,963.7	58,557.4	66,600.4	75,107.9	84,063.4	88,997.4	94,248.5	99,821.9	105,680.8	111,793.5	118,184.9	124,568.5	131,315.5	138,350.5
Single_CZ2	**41,933.9**	**85,314.9**	**130,653.5**	**178,410.0**	**226,792.1**	**278,264.2**	**331,712.9**	**388,953.2**	**449,996.3**	**514,761.2**	**583,280.7**	**655,438.1**	**722,296.9**	**788,637.2**	**857,562.7**	**922,779.5**	**990,019.4**	**1,059,490.2**	**1,130,522.0**	**1,204,703.9**	**1,279,535.2**
Other	1.0	2.5	4.6	7.4	11.1	16.1	22.5	30.5	40.1	51.4	64.3	78.8	94.6	111.5	129.4	148.1	167.5	187.6	208.3	229.5	251.2
Room Heating	0.8	2.0	3.8	6.2	9.5	13.8	19.4	26.3	34.8	44.7	56.1	68.9	82.8	97.8	113.8	130.4	147.8	165.9	184.6	204.2	224.4
Space Heating	30,545.1	62,224.0	95,394.4	130,411.9	167,518.0	206,997.3	247,628.4	291,170.7	337,634.5	386,955.2	439,136.7	494,094.3	551,462.0	607,701.3	665,905.6	719,852.3	775,334.0	832,510.7	891,262.3	952,465.7	1,013,765.0
Water Heating	11,386.9	23,086.4	35,250.7	47,984.5	59,253.4	71,237.0	84,042.7	97,725.8	112,287.0	127,709.9	144,023.5	161,196.2	170,657.4	180,726.6	191,413.9	202,648.7	214,370.2	226,626.0	238,866.8	251,804.5	265,294.6
Single_CZ3	**30,853.5**	**62,694.7**	**95,901.9**	**130,793.3**	**166,162.7**	**203,659.6**	**242,545.1**	**284,035.2**	**328,132.4**	**374,782.7**	**424,021.6**	**475,775.3**	**524,042.1**	**571,643.8**	**621,044.2**	**667,307.1**	**714,984.1**	**764,216.5**	**814,570.6**	**867,116.7**	**920,176.7**
Other	0.7	1.7	3.1	4.9	7.5	10.8	15.1	20.4	26.9	34.5	43.1	52.8	63.4	74.8	86.8	99.3	112.3	125.8	139.7	153.9	168.4
Room Heating	0.5	1.4	2.6	4.2	6.4	9.3	13.0	17.6	23.3	30.0	37.6	46.2	55.6	65.6	76.3	87.5	99.1	111.2	123.8	136.9	150.5
Space Heating	23,227.5	47,238.4	72,308.0	98,683.1	126,520.6	156,013.6	186,352.4	218,716.2	253,107.2	289,482.1	327,856.3	368,176.5	410,187.3	451,130.3	493,462.0	532,292.9	572,214.9	613,337.6	655,578.3	699,547.9	743,664.5
Water Heating	7,624.8	15,453.3	23,588.3	32,101.1	39,628.2	47,625.9	56,164.7	65,280.9	74,975.0	85,236.2	96,084.6	107,499.7	113,735.8	120,373.1	127,419.1	134,827.3	142,557.8	150,641.8	158,728.9	167,278.0	176,193.3
Grand Total	**105,301.4**	**214,289.4**	**328,232.2**	**448,297.9**	**569,771.9**	**699,087.5**	**833,403.3**	**977,351.3**	**1,130,968.6**	**1,294,053.9**	**1,466,702.5**	**1,648,601.5**	**1,816,397.1**	**1,983,234.4**	**2,156,642.9**	**2,319,520.8**	**2,487,537.7**	**2,661,226.0**	**2,839,030.3**	**3,024,882.2**	**3,212,676.4**

C.2 Commercial Sector Scenario Findings

C-23: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #23)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**38,857.0**	**78,314.2**	**118,532.2**	**159,587.3**	**200,957.6**	**243,036.8**	**285,913.5**	**319,544.5**	**353,019.5**	**387,047.9**	**421,915.4**	**455,303.3**	**488,810.0**	**520,906.7**	**552,446.3**	**583,751.1**	**615,825.4**	**644,365.4**	**673,916.4**	**700,006.0**	**727,064.6**
Cooking	683.0	1,383.6	2,098.4	2,829.0	3,572.9	4,330.4	5,103.1	5,891.6	6,693.8	7,508.5	8,339.2	9,188.9	10,052.5	10,930.3	11,125.4	11,334.8	11,559.9	11,797.3	12,057.2	12,337.8	12,639.2
Other	2,363.0	4,749.4	7,185.0	9,674.5	12,209.3	14,790.7	17,423.9	20,111.2	22,204.2	24,340.1	26,530.4	28,785.2	31,088.0	33,438.9	35,843.1	38,296.5	40,803.9	43,353.6	45,990.4	48,696.8	51,474.7
Space Heating	15,223.8	30,702.9	46,480.2	62,586.1	78,577.8	94,847.8	111,430.8	126,960.2	142,544.2	158,389.0	174,563.0	191,133.3	207,999.8	223,027.3	237,696.3	252,662.2	267,930.2	282,243.5	296,954.9	307,616.0	318,647.5
Water Heating	20,587.2	41,478.3	62,768.6	84,497.6	106,597.6	129,067.9	151,955.7	166,581.5	181,577.3	196,810.3	212,482.8	226,195.9	239,669.7	253,510.2	267,781.5	281,457.6	295,531.5	306,971.0	318,914.0	331,355.4	344,303.2
Grocery	**17,365.5**	**35,025.3**	**53,025.7**	**71,401.4**	**90,091.5**	**109,099.6**	**128,465.3**	**146,038.3**	**163,927.0**	**182,113.8**	**200,676.8**	**219,395.8**	**238,450.4**	**256,141.8**	**271,033.2**	**286,119.9**	**301,552.3**	**316,230.0**	**331,359.4**	**343,511.4**	**356,059.3**
Cooking	1,754.3	3,554.0	5,390.2	7,266.9	9,177.7	11,123.4	13,108.2	15,133.5	17,194.1	19,287.0	21,420.8	23,603.2	25,821.7	28,076.4	28,577.6	29,115.8	29,694.2	30,304.1	30,971.6	31,692.5	32,466.8
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	12,740.7	25,687.6	38,882.6	52,350.6	66,046.9	79,974.0	94,160.9	107,446.4	120,960.3	134,690.8	148,694.9	163,028.5	177,608.6	190,752.4	202,789.1	215,072.2	227,604.3	239,857.5	252,430.8	261,902.2	271,643.5
Water Heating	2,870.5	5,783.6	8,752.9	11,783.9	14,866.9	18,002.2	21,196.2	23,458.3	25,772.7	28,136.0	30,561.1	32,764.1	35,020.0	37,313.0	39,666.5	41,931.9	44,253.9	46,068.4	47,957.0	49,916.8	51,949.1
Healthcare	**12,191.3**	**24,571.4**	**37,188.6**	**50,066.6**	**63,020.6**	**76,195.0**	**89,617.7**	**100,098.3**	**110,679.2**	**121,070.4**	**131,722.8**	**141,917.0**	**151,788.4**	**161,161.5**	**170,366.6**	**179,488.0**	**188,846.8**	**196,791.8**	**205,040.7**	**212,656.4**	**220,540.8**
Cooking	148.9	301.6	457.4	616.7	778.9	944.0	1,112.4	1,284.3	1,459.2	1,636.8	1,817.9	2,003.1	2,191.3	2,382.7	2,425.2	2,470.8	2,519.8	2,571.5	2,628.2	2,689.4	2,755.1
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,940.0	9,960.9	15,078.1	20,301.4	25,469.8	30,727.8	36,086.8	41,120.6	46,124.1	51,211.7	56,405.6	61,727.4	67,145.0	71,955.1	76,597.4	81,335.5	86,170.4	90,624.8	95,204.3	98,974.2	102,833.6
Water Heating	7,102.4	14,308.9	21,653.0	29,148.6	36,772.0	44,523.3	52,418.5	57,693.4	63,096.0	68,221.9	73,499.4	78,186.5	82,452.1	86,823.8	91,344.1	95,681.7	100,156.5	103,595.5	107,208.2	110,992.9	114,952.2
Lodging	**14,259.3**	**28,736.6**	**43,490.9**	**58,549.9**	**73,852.5**	**89,412.4**	**105,262.2**	**118,399.8**	**131,675.2**	**144,187.6**	**157,005.0**	**168,740.6**	**177,960.4**	**187,027.1**	**196,161.4**	**204,821.0**	**213,757.6**	**222,173.0**	**230,933.5**	**239,528.5**	**248,456.9**
Cooking	7.9	16.0	24.2	32.7	41.3	50.0	58.9	68.0	77.3	86.7	96.3	106.1	116.1	126.2	136.6	147.0	157.7	168.5	171.5	174.8	178.2
Other	287.2	577.3	873.4	1,176.0	1,484.1	1,797.9	2,117.9	2,444.5	2,662.9	2,886.6	3,116.9	3,355.0	3,598.9	3,848.7	4,104.9	4,367.1	4,635.8	4,909.6	5,193.8	5,486.4	5,787.7
Space Heating	2,659.7	5,362.8	8,117.8	10,929.7	13,775.9	16,670.3	19,619.0	22,406.9	25,237.5	28,113.3	31,046.2	34,048.0	37,101.2	39,837.3	42,397.9	45,009.9	47,673.9	50,252.1	52,897.2	55,094.5	57,338.6
Water Heating	11,304.5	22,780.5	34,475.5	46,411.5	58,551.2	70,894.2	83,466.3	93,480.3	103,697.5	113,100.9	122,745.6	131,231.5	137,144.2	143,214.8	149,522.1	155,297.0	161,290.2	166,842.8	172,671.0	178,772.8	185,152.4
Misc.	**9,015.8**	**18,183.9**	**27,528.8**	**37,068.6**	**46,661.3**	**56,419.1**	**66,362.6**	**75,643.5**	**85,042.2**	**94,591.4**	**104,335.9**	**114,238.6**	**124,296.9**	**133,196.3**	**141,479.2**	**149,911.9**	**158,524.0**	**167,002.1**	**175,710.2**	**181,881.5**	**188,274.8**
Cooking	51.1	103.4	156.9	211.5	267.1	323.7	381.5	440.4	500.4	561.3	623.4	686.9	751.5	817.1	838.8	861.5	885.4	910.2	929.6	950.6	973.1
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	8,615.5	17,376.8	26,307.0	35,423.3	44,585.5	53,905.3	63,402.6	72,372.5	81,452.8	90,681.0	100,095.8	109,735.1	119,542.2	128,187.4	136,252.8	144,486.3	152,891.3	161,168.0	169,671.6	175,628.3	181,797.0
Water Heating	349.2	703.7	1,065.0	1,433.7	1,808.8	2,190.1	2,578.5	2,830.6	3,089.0	3,349.1	3,616.7	3,816.6	4,003.2	4,191.8	4,387.7	4,564.1	4,747.3	4,923.9	5,109.0	5,302.6	5,504.7
Office	**62,451.2**	**125,929.3**	**190,627.3**	**256,668.5**	**323,252.4**	**390,972.7**	**459,972.4**	**524,012.0**	**588,890.8**	**654,836.0**	**722,127.0**	**790,059.8**	**859,029.8**	**921,279.5**	**980,058.1**	**1,039,542.3**	**1,100,256.4**	**1,156,830.2**	**1,214,999.6**	**1,260,632.0**	**1,307,646.9**
Cooking	6.8	13.8	20.9	28.2	35.6	43.2	50.9	58.7	66.7	74.8	83.1	91.6	100.2	109.0	117.9	126.9	136.1	145.4	148.0	150.8	153.8
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	56,670.1	114,274.8	172,985.3	232,913.4	293,278.1	354,672.6	417,226.7	476,632.6	536,771.0	597,875.9	660,200.7	723,994.8	788,887.6	846,993.4	901,504.6	957,115.2	1,013,839.0	1,067,230.4	1,122,065.8	1,164,215.9	1,207,598.0
Water Heating	5,774.3	11,640.7	17,621.1	23,726.9	29,938.6	36,256.9	42,694.8	47,320.6	52,053.1	56,885.2	61,843.2	65,973.4	70,041.9	74,177.1	78,435.7	82,300.2	86,281.3	89,454.3	92,785.8	96,265.3	99,895.0
Restaurant	**29,912.4**	**60,320.5**	**91,318.6**	**122,966.4**	**155,162.3**	**187,909.6**	**221,276.8**	**248,093.0**	**275,460.3**	**303,280.7**	**331,752.8**	**359,645.0**	**388,012.1**	**416,076.7**	**438,724.7**	**461,273.4**	**484,425.4**	**504,795.8**	**525,982.2**	**546,457.0**	**567,696.8**
Cooking	5,302.3	10,741.7	16,291.4	21,963.6	27,738.8	33,619.7	39,618.5	45,739.8	51,967.7	58,293.4	64,742.6	71,338.7	78,043.9	84,858.5	86,354.8	87,962.7	89,692.3	91,517.0	93,534.4	95,712.8	98,052.9
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	7,374.5	14,856.6	22,484.5	30,272.7	38,195.8	46,255.2	54,467.6	60,185.6	66,039.0	72,019.8	78,161.5	84,496.4	90,975.4	96,847.7	102,261.4	107,820.2	113,528.7	119,085.9	124,848.3	129,322.4	133,977.5
Water Heating	17,235.5	34,722.3	52,542.8	70,730.1	89,227.7	108,034.7	127,190.7	142,167.5	157,453.6	172,967.5	188,848.7	203,809.9	218,992.7	234,370.6	250,108.5	265,490.5	281,204.5	294,192.9	307,599.6	321,421.8	335,666.4
Retail	**56,554.1**	**114,035.9**	**172,620.3**	**232,418.9**	**293,059.5**	**354,726.7**	**417,549.9**	**476,700.3**	**536,767.6**	**597,798.6**	**660,045.9**	**723,240.3**	**787,525.2**	**845,340.9**	**899,098.3**	**953,126.4**	**1,008,263.3**	**1,061,234.5**	**1,115,640.0**	**1,156,015.4**	**1,197,413.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	53,968.6	108,823.2	164,729.1	221,792.5	279,650.3	338,486.4	398,424.7	455,691.5	513,827.1	572,881.3	633,095.1	694,705.8	757,361.5	813,527.2	865,578.9	918,675.6	972,828.0	1,024,856.3	1,078,244.7	1,117,535.3	1,157,779.5
Water Heating	2,585.6	5,212.7	7,891.2	10,626.3	13,409.2	16,240.2	19,125.3	21,008.8	22,940.5	24,917.2	26,950.8	28,534.4	30,163.7	31,813.7	33,519.4	34,450.7	35,435.3	36,378.2	37,395.3	38,480.1	39,633.6
Warehouse	**5,028.3**	**10,143.9**	**15,358.8**	**20,683.2**	**26,086.1**	**31,582.0**	**37,182.3**	**42,383.7**	**47,669.6**	**53,042.4**	**58,524.9**	**64,088.4**	**69,749.7**	**74,766.0**	**79,647.0**	**84,540.9**	**89,536.5**	**94,314.6**	**99,230.9**	**102,504.7**	**105,893.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,765.9	9,614.9	14,558.0	19,604.8	24,725.3	29,933.8	35,241.2	40,249.6	45,337.4	50,507.5	55,781.7	61,180.8	66,673.2	71,519.4	76,224.6	81,023.6	85,918.9	90,601.2	95,413.9	98,577.3	101,848.4
Water Heating	262.4	529.0	800.8	1,078.4	1,360.8	1,648.2	1,941.0	2,134.2	2,332.2	2,534.9	2,743.3	2,907.6	3,076.5	3,246.7	3,422.5	3,517.3	3,617.6	3,713.5	3,817.0	3,927.4	4,044.8
Grand Total	**245,634.9**	**495,261.1**	**749,691.2**	**1,009,410.7**	**1,272,143.8**	**1,539,353.9**	**1,811,602.7**	**2,050,913.3**	**2,293,131.6**	**2,537,968.8**	**2,788,106.5**	**3,036,628.6**	**3,285,622.9**	**3,515,896.6**	**3,729,015.0**	**3,942,574.9**	**4,160,987.7**	**4,363,737.4**	**4,572,813.0**	**4,743,192.9**	**4,919,046.5**

C-24: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #24)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**15,217.8**	**30,606.7**	**46,302.7**	**62,335.5**	**78,651.8**	**95,256.2**	**112,183.0**	**122,668.3**	**133,215.7**	**143,918.2**	**154,959.3**	**163,880.9**	**172,653.8**	**181,705.8**	**189,854.8**	**198,309.3**	**207,087.7**	**215,179.9**	**223,749.1**	**232,620.2**	**241,912.7**
Cooking	539.2	1,092.3	1,656.6	2,233.4	2,820.7	3,418.7	4,028.7	4,651.2	5,284.5	5,927.7	6,583.5	7,254.3	7,936.2	8,629.2	8,781.4	8,945.0	9,120.9	9,306.6	9,511.9	9,733.6	9,971.7
Other	1,722.2	3,461.2	5,236.2	7,050.5	8,897.9	10,779.4	12,698.8	14,657.7	16,650.9	18,675.4	20,739.6	22,851.1	24,997.5	27,179.1	29,399.7	31,656.1	33,952.2	36,279.5	38,671.0	41,113.6	43,608.6
Space Heating	1,400.7	2,820.6	4,266.4	5,740.8	7,239.4	8,761.6	10,310.8	11,887.3	13,260.5	14,656.2	16,080.4	17,539.1	19,023.8	20,533.4	21,389.4	22,270.8	23,176.4	24,097.0	25,041.8	25,905.6	26,799.2
Water Heating	11,555.7	23,232.6	35,143.5	47,310.8	59,693.8	72,296.5	85,144.8	91,472.2	98,019.9	104,658.9	111,555.8	116,236.4	120,696.3	125,364.0	130,284.4	135,437.4	140,838.2	145,496.9	150,524.5	155,867.4	161,533.2
Grocery	**7,468.6**	**15,091.2**	**22,864.6**	**30,804.8**	**38,885.4**	**47,108.6**	**55,491.4**	**63,081.2**	**70,811.8**	**78,675.1**	**86,705.9**	**94,634.0**	**102,708.8**	**110,913.6**	**116,465.7**	**122,169.0**	**128,031.9**	**134,014.4**	**140,229.9**	**143,245.4**	**146,469.6**
Cooking	1,405.0	2,846.2	4,316.7	5,819.6	7,349.8	8,908.0	10,497.5	12,119.5	13,769.7	15,445.8	17,154.7	18,902.5	20,679.3	22,485.0	22,881.6	23,307.9	23,766.3	24,250.1	24,785.0	25,362.6	25,983.1
Space Heating	4,795.2	9,694.6	14,690.2	19,792.0	24,983.6	30,265.9	35,649.9	41,138.8	46,716.4	52,378.6	58,147.6	64,044.7	70,037.1	76,123.8	80,939.4	85,851.4	90,864.0	95,951.2	101,181.7	103,135.7	105,220.9
Water Heating	1,268.4	2,550.4	3,857.8	5,193.2	6,552.0	7,934.7	9,344.0	9,822.9	10,325.7	10,850.6	11,403.5	11,686.8	11,992.4	12,304.8	12,644.7	13,009.8	13,401.6	13,813.1	14,263.2	14,747.1	15,265.5
Healthcare	**4,546.3**	**9,146.8**	**13,838.2**	**18,629.3**	**23,504.3**	**28,464.4**	**33,519.8**	**36,470.2**	**39,505.7**	**42,218.2**	**45,030.7**	**47,179.4**	**49,277.0**	**51,435.2**	**53,314.2**	**55,283.4**	**57,347.3**	**59,171.7**	**61,130.9**	**62,988.4**	**64,968.5**
Cooking	102.4	207.5	314.7	424.3	535.9	649.5	765.4	883.7	1,004.0	1,126.2	1,250.8	1,378.3	1,507.8	1,639.5	1,668.4	1,699.5	1,732.9	1,768.2	1,807.2	1,849.3	1,894.6
Space Heating	485.0	979.1	1,482.5	1,996.4	2,519.0	3,050.4	3,591.7	4,143.2	4,703.4	5,271.8	5,850.7	6,442.1	7,042.9	7,652.8	8,000.7	8,358.0	8,724.8	9,098.1	9,483.3	9,659.0	9,846.6
Water Heating	3,958.9	7,960.2	12,040.9	16,208.6	20,449.4	24,764.5	29,162.7	31,443.3	33,798.4	35,820.1	37,929.2	39,359.0	40,726.4	42,142.9	43,645.0	45,225.9	46,889.6	48,305.4	49,840.3	51,480.2	53,227.3
Lodging	**11,439.8**	**23,052.2**	**34,888.1**	**46,969.8**	**59,259.2**	**71,756.5**	**84,488.0**	**94,511.2**	**104,742.3**	**114,097.6**	**123,699.2**	**132,146.0**	**138,313.5**	**144,643.6**	**150,983.2**	**156,802.5**	**162,847.0**	**168,440.1**	**174,327.5**	**180,371.3**	**186,703.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	353.3	712.8	1,079.0	1,452.7	1,832.8	2,219.1	2,612.4	3,013.1	3,420.0	3,832.8	4,253.1	4,682.5	5,118.6	5,561.2	5,779.3	6,004.1	6,235.5	6,471.5	6,715.4	6,840.3	6,973.6
Water Heating	11,086.5	22,339.5	33,809.1	45,517.1	57,426.4	69,537.5	81,875.5	91,498.1	101,322.3	110,264.8	119,446.0	127,463.5	133,194.9	139,082.4	145,203.9	150,798.4	156,611.5	161,968.7	167,612.1	173,531.0	179,729.7
Misc.	**333.7**	**674.8**	**1,022.6**	**1,377.8**	**1,739.3**	**2,107.1**	**2,482.1**	**2,864.4**	**3,253.0**	**3,647.6**	**4,049.7**	**4,383.7**	**4,724.3**	**5,066.8**	**5,416.7**	**5,773.3**	**6,136.9**	**6,505.9**	**6,885.1**	**7,030.4**	**7,184.9**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	253.0	512.3	776.9	1,047.2	1,322.5	1,602.7	1,888.6	2,180.2	2,476.9	2,778.3	3,085.5	3,399.7	3,719.0	4,043.6	4,373.9	4,709.5	5,050.8	5,396.6	5,751.4	5,870.8	5,997.8
Water Heating	80.7	162.5	245.7	330.6	416.8	504.4	593.5	684.1	776.1	869.4	964.2	984.0	1,005.3	1,023.2	1,042.8	1,063.8	1,086.1	1,109.2	1,133.6	1,159.6	1,187.2
Office	**8,658.1**	**17,438.9**	**26,384.2**	**35,510.5**	**44,789.9**	**54,220.9**	**63,823.4**	**72,604.0**	**81,234.1**	**90,007.4**	**98,961.5**	**107,148.4**	**115,276.5**	**123,518.4**	**127,140.3**	**130,924.8**	**134,868.5**	**138,918.5**	**143,152.8**	**146,350.0**	**149,747.1**
Space Heating	6,432.4	12,962.5	19,613.6	26,397.6	33,294.5	40,302.4	47,436.3	54,698.3	61,769.3	68,945.6	76,254.6	83,724.8	91,316.0	99,023.6	102,064.3	105,224.3	108,499.4	111,849.4	115,324.8	117,707.8	120,234.3
Water Heating	2,225.7	4,476.3	6,770.7	9,112.8	11,495.4	13,918.4	16,387.1	17,905.7	19,464.8	21,061.9	22,706.9	23,423.6	23,960.5	24,494.8	25,076.0	25,700.5	26,369.1	27,069.1	27,828.0	28,642.1	29,512.8
Restaurant	**17,700.3**	**35,741.9**	**54,141.7**	**72,937.3**	**92,066.3**	**111,533.9**	**131,380.6**	**146,798.9**	**162,557.4**	**178,630.8**	**195,102.0**	**210,574.9**	**226,388.9**	**242,421.2**	**253,742.0**	**264,742.0**	**276,122.6**	**287,789.2**	**300,016.9**	**311,179.0**	**322,838.7**
Cooking	4,973.5	10,075.1	15,280.2	20,600.3	26,017.0	31,532.9	37,159.3	42,900.8	48,742.3	54,675.5	60,724.6	66,911.5	73,200.8	79,592.7	80,996.6	82,505.2	84,128.0	85,840.2	87,733.4	89,777.8	91,973.9
Space Heating	1,736.1	3,514.1	5,327.6	7,180.7	9,066.9	10,987.1	12,945.2	14,942.7	16,974.2	19,037.2	21,140.0	23,290.2	25,475.6	27,696.3	29,955.8	32,251.3	34,585.3	36,948.9	39,371.2	40,286.2	41,251.9
Water Heating	10,990.7	22,152.7	33,533.9	45,156.4	56,982.3	69,013.9	81,276.0	88,955.4	96,840.8	104,918.0	113,237.5	120,373.3	127,712.5	135,132.3	142,789.6	149,985.5	157,409.2	165,000.1	172,912.3	181,115.0	189,612.9
Retail	**8,778.1**	**17,698.6**	**26,787.8**	**36,063.0**	**45,495.3**	**55,084.1**	**64,849.5**	**74,606.8**	**84,408.8**	**94,358.2**	**104,493.5**	**114,334.2**	**124,337.6**	**134,474.4**	**139,533.5**	**144,760.0**	**150,152.8**	**155,659.6**	**161,369.1**	**164,735.8**	**168,313.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	8,042.3	16,219.3	24,550.2	33,050.4	41,694.1	50,480.0	59,426.8	68,537.8	77,679.4	86,955.3	96,400.5	106,050.5	115,854.2	125,806.5	130,664.9	135,675.7	140,836.8	146,099.6	151,540.7	154,618.5	157,886.1
Water Heating	735.8	1,479.2	2,237.7	3,012.5	3,801.2	4,604.1	5,422.7	6,069.0	6,729.4	7,402.9	8,093.0	8,283.7	8,483.4	8,667.9	8,868.6	9,084.3	9,316.0	9,559.9	9,828.4	10,117.3	10,427.3
Warehouse	**560.0**	**1,133.3**	**1,718.2**	**2,315.8**	**2,924.1**	**3,543.4**	**4,175.0**	**4,819.3**	**5,474.6**	**6,140.1**	**6,818.4**	**7,460.9**	**8,114.6**	**8,775.7**	**9,449.5**	**10,134.8**	**10,832.6**	**11,540.0**	**12,266.5**	**12,515.0**	**12,780.0**
Space Heating	505.4	1,023.5	1,552.1	2,092.3	2,642.4	3,202.5	3,773.9	4,356.9	4,950.0	5,552.4	6,166.6	6,794.8	7,433.4	8,082.4	8,742.9	9,414.0	10,096.7	10,788.4	11,498.4	11,729.4	11,975.6
Water Heating	54.6	109.8	166.1	223.4	281.7	340.9	401.2	462.4	524.6	587.6	651.8	666.1	681.2	693.4	706.6	720.8	735.9	751.6	768.1	785.7	804.4
Grand Total	**74,702.8**	**150,584.4**	**227,948.3**	**306,943.8**	**387,315.6**	**469,075.2**	**552,392.7**	**618,424.2**	**685,203.4**	**751,693.1**	**819,820.3**	**881,742.4**	**941,795.2**	**1,002,954.8**	**1,045,899.7**	**1,088,899.1**	**1,133,427.3**	**1,177,219.3**	**1,223,127.7**	**1,261,035.4**	**1,300,918.1**

C-25: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #25)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**4,973.6**	**10,089.4**	**15,407.8**	**20,974.7**	**26,814.1**	**32,967.8**	**39,487.7**	**43,846.9**	**48,486.9**	**53,436.2**	**58,755.9**	**63,379.0**	**68,102.1**	**73,083.9**	**78,009.7**	**83,158.2**	**88,527.6**	**94,041.7**	**99,867.7**	**105,918.4**	**112,215.4**
Cooking	18.7	45.0	81.5	131.6	199.0	287.5	401.3	543.6	715.7	917.5	1,148.4	1,407.0	1,688.9	1,990.6	2,283.6	2,590.9	2,911.0	3,244.7	3,592.8	3,950.5	4,319.0
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	544.1	1,096.7	1,661.4	2,239.8	2,831.1	3,435.9	4,056.4	4,693.2	5,250.0	5,821.7	6,410.5	7,018.4	7,641.2	8,277.7	8,642.2	9,019.6	9,408.7	9,806.2	10,215.1	10,631.6	11,061.4
Water Heating	3,896.2	7,905.1	12,074.9	16,442.2	21,026.1	25,859.6	30,983.1	33,861.8	37,032.0	40,427.8	44,106.8	47,000.7	49,922.6	53,038.7	56,350.4	59,832.3	63,485.5	67,237.7	71,240.5	75,425.8	79,806.0
Grocery	**1,215.5**	**2,516.1**	**3,932.3**	**5,497.5**	**7,242.7**	**9,205.5**	**11,426.0**	**13,629.3**	**16,130.2**	**18,927.4**	**22,020.1**	**25,270.7**	**28,756.2**	**32,439.3**	**35,660.2**	**39,035.3**	**42,549.3**	**46,203.4**	**50,015.7**	**53,779.2**	**57,669.4**
Cooking	48.7	117.3	212.6	343.2	518.7	749.5	1,046.0	1,416.6	1,864.9	2,390.7	2,992.4	3,666.2	4,400.4	5,186.7	5,949.7	6,750.4	7,584.3	8,453.7	9,360.5	10,292.1	11,252.1
Space Heating	734.2	1,523.5	2,387.0	3,346.6	4,422.6	5,639.6	7,023.6	8,594.6	10,358.5	12,315.1	14,463.6	16,797.6	19,285.8	21,907.6	24,071.2	26,334.8	28,687.4	31,129.9	33,670.2	36,119.2	38,647.7
Water Heating	432.5	875.3	1,332.6	1,807.6	2,301.4	2,816.4	3,356.4	3,618.1	3,906.8	4,221.6	4,564.1	4,806.8	5,070.0	5,345.0	5,639.2	5,950.2	6,277.6	6,619.9	6,985.1	7,367.9	7,769.5
Healthcare	**1,502.7**	**3,050.0**	**4,660.6**	**6,349.1**	**8,123.1**	**9,996.0**	**11,981.9**	**13,293.2**	**14,719.5**	**16,076.0**	**17,544.2**	**18,791.8**	**20,066.8**	**21,409.8**	**22,710.2**	**24,077.1**	**25,510.0**	**26,983.1**	**28,548.4**	**30,171.8**	**31,868.8**
Cooking	3.5	8.5	15.5	25.0	37.8	54.6	76.2	103.2	135.9	174.2	218.1	267.2	320.7	378.0	433.7	492.0	552.8	616.2	682.3	750.3	820.3
Space Heating	120.7	245.9	377.3	516.4	664.3	822.5	993.0	1,176.9	1,374.7	1,586.1	1,811.4	2,050.5	2,301.0	2,561.4	2,716.7	2,879.7	3,049.8	3,226.4	3,410.5	3,589.8	3,775.8
Water Heating	1,378.4	2,795.5	4,267.8	5,807.7	7,421.1	9,118.9	10,912.7	12,013.0	13,209.0	14,315.7	15,514.8	16,474.0	17,445.1	18,470.4	19,559.8	20,705.4	21,907.3	23,140.5	24,455.6	25,831.8	27,272.7
Lodging	**3,568.8**	**7,272.0**	**11,159.8**	**15,275.8**	**19,645.4**	**24,305.7**	**29,297.1**	**33,569.3**	**38,177.7**	**42,770.4**	**47,678.6**	**52,280.3**	**56,044.9**	**60,001.5**	**64,064.8**	**68,200.6**	**72,502.3**	**76,713.9**	**81,131.1**	**85,707.9**	**90,461.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	100.7	204.3	312.1	425.0	543.4	668.3	800.8	941.7	1,091.0	1,248.7	1,415.0	1,590.0	1,772.0	1,960.4	2,057.2	2,159.1	2,265.5	2,376.0	2,491.3	2,604.5	2,722.1
Water Heating	3,468.2	7,067.7	10,847.7	14,850.8	19,102.0	23,637.4	28,496.3	32,627.6	37,086.7	41,521.7	46,263.6	50,690.4	54,272.9	58,041.1	62,007.5	66,041.5	70,236.7	74,337.8	78,639.8	83,103.4	87,739.1
Misc.	**48.1**	**100.2**	**157.5**	**221.6**	**294.0**	**376.4**	**470.8**	**578.6**	**700.2**	**835.6**	**984.8**	**1,114.8**	**1,255.8**	**1,404.4**	**1,561.4**	**1,725.6**	**1,896.2**	**2,073.1**	**2,257.1**	**2,434.6**	**2,617.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	14.2	31.9	54.2	82.7	118.9	164.5	221.5	291.2	374.2	470.4	579.7	701.4	833.4	974.5	1,123.3	1,278.7	1,439.8	1,607.1	1,780.8	1,947.4	2,118.9
Water Heating	33.9	68.3	103.2	138.9	175.1	211.9	249.3	287.4	326.1	365.2	405.1	413.4	422.4	429.9	438.1	446.9	456.3	466.0	476.3	487.2	498.8
Office	**3,027.1**	**6,114.5**	**9,286.4**	**12,558.2**	**15,931.5**	**19,417.1**	**23,033.9**	**26,486.8**	**29,950.9**	**33,550.6**	**37,297.0**	**40,784.3**	**44,319.7**	**47,948.2**	**49,672.9**	**51,494.9**	**53,406.8**	**55,392.2**	**57,474.9**	**59,588.7**	**61,799.2**
Space Heating	2,226.8	4,499.2	6,834.8	9,245.3	11,732.4	14,304.2	16,975.1	19,752.7	22,507.8	25,365.5	28,333.5	31,418.1	34,596.0	37,857.7	39,187.4	40,589.3	42,056.9	43,577.9	45,165.6	46,758.7	48,421.2
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,385.7**	**7,021.6**	**10,996.7**	**15,405.6**	**20,329.3**	**25,862.5**	**32,095.0**	**36,988.4**	**42,640.3**	**49,020.3**	**56,115.3**	**63,268.2**	**70,971.2**	**79,099.2**	**87,411.9**	**95,962.2**	**104,850.5**	**114,071.2**	**123,703.2**	**133,558.4**	**143,739.4**
Cooking	178.9	430.4	778.5	1,255.1	1,894.0	2,732.8	3,808.8	5,151.7	6,773.9	8,673.3	10,844.4	13,273.2	15,917.4	18,746.7	21,486.7	24,360.7	27,353.4	30,472.1	33,724.5	37,066.1	40,509.1
Space Heating	142.9	308.6	504.8	741.0	1,027.4	1,375.1	1,795.6	2,298.2	2,886.4	3,559.8	4,317.3	5,155.0	6,059.8	7,022.5	8,036.2	9,092.2	10,185.9	11,318.7	12,493.5	13,623.0	14,785.0
Water Heating	3,063.9	6,282.6	9,713.4	13,409.5	17,407.9	21,754.7	26,490.5	29,538.5	32,980.0	36,787.2	40,953.7	44,840.0	48,994.0	53,330.0	57,889.0	62,509.3	67,311.3	72,280.3	77,485.1	82,869.3	88,445.3
Retail	**2,638.8**	**5,348.7**	**8,156.6**	**11,084.2**	**14,141.9**	**17,349.2**	**20,732.1**	**24,298.8**	**28,011.6**	**31,915.2**	**36,017.4**	**40,104.1**	**44,353.3**	**48,735.7**	**51,047.7**	**53,478.9**	**56,018.7**	**58,654.8**	**61,407.9**	**64,138.0**	**66,977.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	2,402.6	4,870.8	7,429.3	10,098.1	12,887.0	15,814.1	18,903.4	22,170.5	25,569.2	29,144.0	32,902.1	36,846.7	40,942.8	45,173.2	47,321.7	49,579.7	51,936.4	54,380.7	56,928.8	59,443.9	62,057.4
Water Heating	236.2	477.8	727.3	986.1	1,254.9	1,535.1	1,828.8	2,128.2	2,442.4	2,771.2	3,115.4	3,257.5	3,410.4	3,562.5	3,726.0	3,899.3	4,082.2	4,274.1	4,479.1	4,694.1	4,919.7
Warehouse	**47.7**	**102.7**	**167.4**	**245.1**	**338.8**	**452.2**	**588.9**	**751.9**	**942.4**	**1,160.1**	**1,404.8**	**1,653.8**	**1,924.3**	**2,211.7**	**2,515.4**	**2,832.8**	**3,162.2**	**3,504.3**	**3,860.0**	**4,200.8**	**4,552.1**
Space Heating	24.8	56.6	97.8	151.4	220.6	309.2	420.6	557.9	722.3	913.6	1,131.4	1,374.3	1,638.4	1,920.6	2,218.8	2,530.1	2,853.1	3,188.6	3,537.2	3,870.6	4,214.1
Water Heating	22.9	46.1	69.6	93.7	118.2	143.0	168.3	194.0	220.1	246.5	273.5	279.5	285.9	291.1	296.7	302.7	309.1	315.7	322.7	330.2	338.1
Grand Total	**20,408.0**	**41,615.2**	**63,925.1**	**87,611.6**	**112,860.9**	**139,932.5**	**169,113.4**	**193,443.1**	**219,759.7**	**247,691.7**	**277,818.2**	**306,647.0**	**335,794.4**	**366,333.7**	**392,654.2**	**419,965.8**	**448,423.5**	**477,637.7**	**508,266.0**	**539,497.7**	**571,900.3**

C-26: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #26)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**6,378.8**	**12,985.9**	**19,910.9**	**27,219.7**	**34,934.4**	**43,085.9**	**51,713.4**	**57,543.4**	**63,704.7**	**70,212.4**	**77,136.8**	**83,129.4**	**89,171.8**	**95,475.7**	**101,640.1**	**108,044.1**	**114,694.7**	**121,429.8**	**128,541.7**	**135,934.3**	**143,621.4**
Cooking	38.2	91.1	162.9	259.2	384.7	544.7	743.4	983.1	1,263.5	1,582.1	1,936.9	2,325.3	2,740.9	3,179.7	3,586.1	4,009.5	4,448.3	4,899.0	5,369.9	5,855.8	6,355.9
Other	658.1	1,337.8	2,047.9	2,795.0	3,582.4	4,415.4	5,300.2	6,239.9	7,232.9	8,276.0	9,370.5	10,516.4	11,703.0	12,926.5	14,185.4	15,475.2	16,796.2	18,142.1	19,536.7	20,966.6	22,432.1
Space Heating	683.2	1,378.2	2,089.6	2,819.7	3,567.7	4,334.2	5,121.7	5,931.0	6,640.9	7,369.7	8,119.8	8,893.6	9,685.6	10,494.4	10,963.0	11,447.4	11,946.3	12,454.7	12,977.9	13,507.2	14,053.3
Water Heating	4,999.2	10,178.9	15,610.5	21,345.8	27,399.5	33,791.6	40,548.1	44,389.4	48,567.5	52,984.6	57,709.6	61,394.1	65,042.3	68,875.1	72,905.6	77,112.0	81,503.9	85,933.9	90,657.1	95,604.7	100,780.1
Grocery	**1,658.8**	**3,472.3**	**5,488.7**	**7,760.3**	**10,330.8**	**13,246.7**	**16,551.0**	**19,872.1**	**23,592.7**	**27,690.2**	**32,150.8**	**36,795.6**	**41,715.4**	**46,864.5**	**51,369.9**	**56,057.8**	**60,913.4**	**65,896.0**	**71,096.7**	**76,140.5**	**81,348.2**
Cooking	99.5	237.4	424.7	675.4	1,002.7	1,419.5	1,937.1	2,561.8	3,292.2	4,122.3	5,046.7	6,058.6	7,141.4	8,284.6	9,343.3	10,446.4	11,589.7	12,763.9	13,990.7	15,256.5	16,559.4
Space Heating	1,009.1	2,118.7	3,359.4	4,765.4	6,365.4	8,190.0	10,267.3	12,612.5	15,219.2	18,073.6	21,166.5	24,485.1	27,985.4	31,642.0	34,717.6	37,912.0	41,214.2	44,597.4	48,116.7	51,417.3	54,821.4
Water Heating	550.2	1,116.2	1,704.5	2,319.5	2,962.7	3,637.1	4,346.5	4,697.9	5,081.3	5,494.2	5,937.6	6,251.9	6,588.7	6,937.9	7,309.0	7,699.5	8,109.5	8,534.8	8,989.2	9,466.7	9,967.4
Healthcare	**1,929.7**	**3,931.3**	**6,032.5**	**8,254.0**	**10,599.9**	**13,079.9**	**15,704.5**	**17,451.7**	**19,333.1**	**21,106.0**	**22,999.8**	**24,595.1**	**26,198.9**	**27,867.2**	**29,462.2**	**31,127.7**	**32,865.5**	**34,620.6**	**36,484.5**	**38,412.5**	**40,427.1**
Cooking	7.2	17.3	30.9	49.2	73.1	103.4	141.2	186.7	239.9	300.5	367.8	441.6	520.6	603.9	681.1	761.5	844.9	930.5	1,020.0	1,112.3	1,207.3
Space Heating	156.8	321.3	496.0	683.3	884.6	1,102.1	1,337.7	1,592.4	1,865.6	2,156.4	2,464.4	2,789.4	3,127.7	3,477.8	3,696.0	3,923.5	4,159.5	4,401.7	4,654.1	4,893.8	5,142.1
Water Heating	1,765.6	3,592.7	5,505.6	7,521.5	9,642.2	11,874.4	14,225.6	15,672.6	17,227.5	18,649.1	20,167.5	21,364.1	22,550.6	23,785.5	25,085.1	26,442.6	27,861.0	29,288.4	30,810.4	32,406.4	34,077.8
Lodging	**4,631.4**	**9,483.8**	**14,626.7**	**20,117.0**	**25,976.6**	**32,230.4**	**38,902.2**	**44,625.8**	**50,723.4**	**56,726.6**	**63,056.1**	**68,937.3**	**73,692.4**	**78,636.0**	**83,671.3**	**88,691.4**	**93,893.3**	**98,925.7**	**104,201.8**	**109,673.5**	**115,353.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	129.3	263.4	404.2	552.9	710.5	877.9	1,056.5	1,246.8	1,448.4	1,660.8	1,883.8	2,117.5	2,359.7	2,609.3	2,744.1	2,885.1	3,031.6	3,182.0	3,338.9	3,489.3	3,645.4
Water Heating	4,502.2	9,220.4	14,222.5	19,564.1	25,266.2	31,352.5	37,845.7	43,379.0	49,274.9	55,065.8	61,172.3	66,819.8	71,332.8	76,026.7	80,927.1	85,806.3	90,861.7	95,743.6	100,862.8	106,184.2	111,707.8
Misc.	**66.7**	**140.6**	**223.9**	**318.8**	**427.7**	**552.6**	**695.5**	**857.7**	**1,038.6**	**1,237.3**	**1,453.0**	**1,644.3**	**1,848.7**	**2,061.7**	**2,284.7**	**2,516.2**	**2,755.4**	**3,000.3**	**3,255.1**	**3,494.2**	**3,740.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	24.4	55.3	94.8	145.2	208.8	287.7	383.9	498.4	631.0	780.7	946.6	1,127.6	1,320.7	1,524.3	1,737.1	1,957.6	2,185.0	2,417.8	2,659.7	2,885.2	3,117.2
Water Heating	42.4	85.3	129.0	173.6	218.9	264.9	311.7	359.3	407.6	456.5	506.4	516.7	527.9	537.4	547.6	558.6	570.4	582.5	595.3	608.9	623.4
Office	**3,827.1**	**7,744.5**	**11,785.9**	**15,973.7**	**20,311.9**	**24,813.7**	**29,500.6**	**33,988.2**	**38,499.8**	**43,184.2**	**48,051.5**	**52,592.0**	**57,185.6**	**61,890.5**	**64,211.9**	**66,651.9**	**69,203.0**	**71,831.2**	**74,588.9**	**77,350.5**	**80,235.6**
Space Heating	2,817.4	5,703.4	8,682.7	11,772.4	14,975.9	18,303.3	21,770.7	25,384.4	28,977.4	32,701.2	36,562.5	40,567.3	44,684.5	48,902.5	50,702.5	52,590.5	54,559.4	56,583.2	58,695.9	60,777.7	62,947.9
Water Heating	1,009.7	2,041.1	3,103.2	4,201.3	5,336.0	6,510.4	7,729.9	8,603.9	9,522.4	10,483.0	11,488.9	12,024.7	12,501.1	12,988.0	13,509.4	14,061.4	14,643.6	15,247.9	15,893.0	16,572.8	17,287.8
Restaurant	**4,642.6**	**9,728.8**	**15,390.6**	**21,756.4**	**28,913.7**	**36,951.9**	**45,943.2**	**53,240.7**	**61,456.4**	**70,507.2**	**80,357.9**	**90,184.6**	**100,601.4**	**111,465.7**	**122,305.6**	**133,300.5**	**144,680.2**	**156,353.4**	**168,550.1**	**181,004.9**	**193,858.5**
Cooking	363.9	866.9	1,549.1	2,460.1	3,647.0	5,155.9	7,025.5	9,277.6	11,906.2	14,888.5	18,205.0	21,831.1	25,707.5	29,797.3	33,572.7	37,504.9	41,579.5	45,763.5	50,134.3	54,643.1	59,284.1
Space Heating	220.5	484.0	803.1	1,193.0	1,667.8	2,241.4	2,926.2	3,729.1	4,648.4	5,677.4	6,810.8	8,041.7	9,351.4	10,728.5	12,165.6	13,652.7	15,185.4	16,752.6	18,378.7	19,900.2	21,464.3
Water Heating	4,058.2	8,377.9	13,038.4	18,103.2	23,598.9	29,554.6	35,991.5	40,234.0	44,901.8	49,941.3	55,342.1	60,311.8	65,542.4	70,939.9	76,567.3	82,142.8	87,915.3	93,837.3	100,037.2	106,461.7	113,110.1
Retail	**3,373.3**	**6,861.1**	**10,503.0**	**14,331.4**	**18,362.4**	**22,620.1**	**27,133.4**	**31,897.6**	**36,861.4**	**42,069.4**	**47,524.8**	**52,955.7**	**58,580.6**	**64,363.4**	**67,551.5**	**70,883.7**	**74,349.0**	**77,909.1**	**81,627.8**	**85,241.2**	**88,994.8**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,072.8	6,251.8	9,572.8	13,066.1	16,746.7	20,636.8	24,763.1	29,137.8	33,692.4	38,472.5	43,480.6	48,717.2	54,134.7	59,711.8	62,680.5	65,781.2	69,002.9	72,310.0	75,757.6	79,086.2	82,541.1
Water Heating	300.5	609.3	930.1	1,265.3	1,615.8	1,983.3	2,370.3	2,759.8	3,169.0	3,596.9	4,044.1	4,238.5	4,445.9	4,651.6	4,871.0	5,102.5	5,346.1	5,599.1	5,870.1	6,155.0	6,453.6
Warehouse	**73.0**	**159.7**	**264.3**	**391.7**	**546.2**	**732.4**	**954.2**	**1,213.8**	**1,510.8**	**1,842.9**	**2,208.5**	**2,578.5**	**2,973.8**	**3,388.6**	**3,822.6**	**4,272.8**	**4,737.6**	**5,213.6**	**5,708.6**	**6,169.9**	**6,645.1**
Space Heating	44.4	102.2	177.3	274.5	398.5	553.6	743.8	971.3	1,235.7	1,534.7	1,866.6	2,229.1	2,616.3	3,024.6	3,451.7	3,894.3	4,351.1	4,818.7	5,305.0	5,757.0	6,222.3
Water Heating	28.6	57.6	87.1	117.1	147.7	178.8	210.4	242.5	275.2	308.3	341.9	349.5	357.5	364.0	371.0	378.5	386.5	394.8	403.6	412.9	422.8
Grand Total	**26,581.4**	**54,508.1**	**84,226.4**	**116,123.0**	**150,403.5**	**187,313.4**	**227,097.9**	**260,691.0**	**296,721.0**	**334,576.2**	**374,939.1**	**413,412.5**	**451,968.5**	**492,013.1**	**526,319.8**	**561,546.1**	**598,092.0**	**635,179.6**	**674,054.9**	**713,421.5**	**754,224.6**

C-27: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #27)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**8,453.6**	**17,188.9**	**26,313.3**	**35,897.0**	**45,947.6**	**56,498.9**	**67,591.2**	**74,890.2**	**82,532.7**	**90,537.0**	**98,974.7**	**106,081.7**	**113,199.9**	**120,619.9**	**127,817.3**	**135,298.8**	**143,070.6**	**150,930.6**	**159,231.6**	**167,858.1**	**176,824.3**
Cooking	47.7	113.0	200.7	316.9	466.9	656.1	888.9	1,167.6	1,491.6	1,858.0	2,264.6	2,708.8	3,183.5	3,684.3	4,143.0	4,621.2	5,117.0	5,626.5	6,161.7	6,713.0	7,279.0
Other	874.3	1,775.4	2,714.2	3,698.3	4,730.8	5,817.3	6,964.5	8,175.9	9,448.8	10,779.7	12,170.5	13,622.1	15,121.7	16,665.2	18,251.3	19,874.6	21,535.7	23,226.6	24,977.6	26,770.5	28,604.6
Space Heating	910.1	1,835.5	2,782.2	3,753.0	4,746.4	5,763.1	6,806.2	7,876.3	8,812.1	9,771.3	10,757.1	11,772.9	12,811.8	13,872.1	14,477.8	15,103.9	15,748.8	16,405.8	17,082.2	17,767.0	18,473.2
Water Heating	6,621.5	13,465.0	20,616.1	28,128.7	36,003.4	44,262.4	52,931.6	57,670.3	62,780.2	68,128.0	73,782.5	77,977.9	82,082.9	86,398.4	90,945.1	95,699.0	100,669.0	105,671.7	111,010.0	116,607.8	122,467.6
Grocery	**2,179.9**	**4,547.3**	**7,158.2**	**10,071.4**	**13,332.5**	**16,990.7**	**21,091.4**	**25,132.5**	**29,621.2**	**34,531.6**	**39,850.7**	**45,347.1**	**51,155.7**	**57,224.6**	**62,410.2**	**67,807.6**	**73,400.5**	**79,141.1**	**85,157.9**	**90,960.7**	**96,940.9**
Cooking	124.3	294.5	523.3	826.1	1,217.0	1,710.0	2,316.4	3,042.7	3,886.7	4,841.3	5,900.8	7,058.2	8,294.9	9,599.8	10,794.9	12,040.7	13,332.5	14,659.8	16,054.2	17,490.4	18,965.1
Space Heating	1,325.5	2,772.8	4,377.4	6,177.5	8,203.6	10,487.9	13,060.0	15,935.0	19,103.5	22,549.8	26,264.8	30,236.1	34,414.0	38,771.0	42,328.3	46,023.6	49,844.9	53,760.5	57,850.3	61,657.1	65,575.4
Water Heating	730.1	1,480.0	2,257.5	3,067.8	3,911.9	4,792.9	5,714.9	6,154.8	6,631.0	7,140.5	7,685.0	8,052.9	8,446.7	8,853.8	9,286.9	9,743.3	10,223.1	10,720.8	11,253.4	11,813.2	12,400.3
Healthcare	**2,554.9**	**5,198.4**	**7,963.3**	**10,869.2**	**13,918.6**	**17,120.3**	**20,484.9**	**22,659.9**	**24,983.1**	**27,130.5**	**29,402.4**	**31,251.9**	**33,098.1**	**35,015.7**	**36,822.6**	**38,711.8**	**40,684.8**	**42,674.0**	**44,788.1**	**46,974.3**	**49,259.7**
Cooking	9.0	21.4	38.1	60.2	88.7	124.6	168.8	221.7	283.3	352.9	430.1	514.5	604.6	699.8	786.9	877.8	972.0	1,068.7	1,170.4	1,275.1	1,382.7
Space Heating	207.8	425.1	654.8	899.6	1,161.2	1,441.5	1,742.8	2,066.0	2,410.4	2,774.8	3,159.0	3,562.8	3,982.3	4,415.5	4,671.1	4,937.9	5,214.9	5,499.2	5,796.6	6,077.7	6,368.5
Water Heating	2,338.1	4,751.8	7,270.4	9,909.4	12,668.8	15,554.3	18,573.4	20,372.2	22,289.4	24,002.9	25,813.2	27,174.6	28,511.1	29,900.4	31,364.5	32,896.1	34,498.0	36,106.1	37,821.0	39,621.4	41,508.5
Lodging	**6,112.3**	**12,491.1**	**19,217.4**	**26,349.1**	**33,899.2**	**41,888.3**	**50,337.7**	**57,441.3**	**64,945.7**	**72,240.2**	**79,885.4**	**86,862.8**	**92,291.8**	**97,925.3**	**103,639.5**	**109,323.7**	**115,216.7**	**120,861.0**	**126,787.8**	**132,937.4**	**139,323.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	171.6	349.3	535.1	730.7	936.7	1,154.4	1,385.2	1,629.6	1,887.0	2,156.7	2,438.8	2,733.5	3,038.1	3,351.6	3,511.2	3,678.1	3,851.7	4,030.1	4,216.9	4,395.2	4,580.2
Water Heating	5,940.7	12,141.9	18,682.3	25,618.4	32,962.4	40,733.9	48,952.5	55,811.7	63,058.8	70,083.5	77,446.6	84,129.3	89,253.7	94,573.7	100,128.3	105,645.6	111,364.9	116,830.9	122,570.9	128,542.1	134,743.2
Misc.	**87.6**	**183.8**	**291.1**	**412.4**	**549.8**	**705.7**	**882.1**	**1,080.1**	**1,299.3**	**1,538.3**	**1,796.5**	**2,019.0**	**2,256.3**	**2,503.0**	**2,761.3**	**3,029.4**	**3,306.4**	**3,590.2**	**3,886.4**	**4,162.5**	**4,446.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	31.0	70.0	119.1	181.0	258.0	352.6	466.6	601.2	755.9	929.7	1,121.5	1,330.1	1,552.5	1,786.6	2,031.2	2,284.6	2,546.0	2,813.6	3,092.8	3,350.7	3,615.3
Water Heating	56.5	113.8	172.0	231.4	291.8	353.1	415.5	479.0	543.4	608.7	675.1	688.9	703.8	716.4	730.1	744.8	760.4	776.6	793.7	811.8	831.2
Office	**5,091.9**	**10,298.4**	**15,661.8**	**21,208.6**	**26,939.9**	**32,869.6**	**39,022.3**	**44,886.9**	**50,756.6**	**56,831.4**	**63,125.8**	**68,963.0**	**74,854.1**	**80,879.1**	**83,713.6**	**86,696.3**	**89,817.6**	**93,034.3**	**96,417.6**	**99,805.4**	**103,343.6**
Space Heating	3,749.0	7,584.9	11,538.8	15,630.6	19,861.9	24,243.1	28,792.9	33,517.4	38,194.0	43,025.4	48,021.8	53,192.9	58,500.7	63,932.0	66,129.8	68,437.5	70,846.4	73,323.4	75,915.8	78,469.9	81,131.9
Water Heating	1,342.9	2,713.5	4,123.0	5,578.0	7,078.0	8,626.4	10,229.4	11,369.5	12,562.6	13,806.0	15,104.0	15,770.1	16,353.3	16,947.1	17,583.8	18,258.8	18,971.2	19,710.9	20,501.8	21,335.4	22,211.7
Restaurant	**6,080.0**	**12,690.1**	**19,976.7**	**28,074.1**	**37,066.6**	**47,040.1**	**58,063.7**	**66,619.5**	**76,169.9**	**86,622.6**	**97,947.1**	**109,068.2**	**120,838.4**	**133,091.0**	**145,260.9**	**157,587.8**	**170,351.3**	**183,446.5**	**197,171.7**	**211,161.2**	**225,580.2**
Cooking	454.3	1,075.2	1,907.9	3,007.3	4,423.8	6,205.9	8,393.6	11,007.6	14,039.2	17,461.8	21,254.7	25,392.3	29,809.2	34,465.7	38,714.2	43,140.8	47,729.7	52,443.9	57,394.5	62,493.6	67,729.0
Space Heating	284.9	621.5	1,024.2	1,510.0	2,093.9	2,790.7	3,613.2	4,568.4	5,653.4	6,860.7	8,184.5	9,618.0	11,140.2	12,738.8	14,405.9	16,130.4	17,907.4	19,724.4	21,616.3	23,372.8	25,174.0
Water Heating	5,340.9	10,993.4	17,044.7	23,556.8	30,549.0	38,043.6	46,057.0	51,043.5	56,477.2	62,300.1	68,507.8	74,057.9	79,889.0	85,886.6	92,140.8	98,316.6	104,714.3	111,278.2	118,160.9	125,294.8	132,677.2
Retail	**4,481.2**	**9,105.3**	**13,920.3**	**18,963.8**	**24,250.4**	**29,805.4**	**35,661.0**	**41,808.2**	**48,176.2**	**54,826.6**	**61,766.2**	**68,636.4**	**75,735.9**	**83,021.8**	**86,827.2**	**90,807.8**	**94,950.8**	**99,208.6**	**103,670.3**	**107,995.6**	**112,485.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,081.8	8,295.8	12,685.9	17,286.8	22,112.3	27,185.7	32,536.7	38,177.4	44,015.9	50,115.0	56,480.5	63,116.5	69,966.6	77,007.1	80,550.5	84,254.4	88,105.8	92,060.8	96,197.2	100,180.7	104,312.3
Water Heating	399.4	809.5	1,234.4	1,677.0	2,138.1	2,619.7	3,124.3	3,630.8	4,160.4	4,711.6	5,285.7	5,520.0	5,769.3	6,014.6	6,276.7	6,553.5	6,845.0	7,147.8	7,473.1	7,814.9	8,173.0
Warehouse	**94.4**	**205.3**	**337.5**	**496.4**	**686.7**	**913.2**	**1,179.9**	**1,489.2**	**1,840.2**	**2,230.2**	**2,657.7**	**3,084.6**	**3,539.9**	**4,016.9**	**4,515.9**	**5,033.4**	**5,567.8**	**6,115.1**	**6,686.7**	**7,214.6**	**7,756.9**
Space Heating	56.2	128.6	221.5	340.2	489.8	674.8	899.5	1,165.9	1,473.4	1,819.3	2,201.9	2,618.8	3,063.4	3,531.8	4,021.5	4,529.0	5,052.7	5,589.0	6,148.9	6,664.4	7,193.6
Water Heating	38.1	76.7	116.1	156.2	196.9	238.3	280.4	323.3	366.8	410.9	455.8	465.8	476.5	485.1	494.4	504.4	515.1	526.2	537.8	550.2	563.4
Grand Total	**35,135.8**	**71,908.5**	**110,839.7**	**152,341.9**	**196,591.4**	**243,832.3**	**294,314.2**	**336,007.9**	**380,324.9**	**426,488.5**	**475,406.5**	**521,314.7**	**566,970.1**	**614,297.1**	**653,768.4**	**694,296.5**	**736,366.5**	**779,001.5**	**823,798.0**	**869,069.6**	**915,960.6**

C-28: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #28)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**38,857.0**	**78,314.2**	**118,532.2**	**159,587.3**	**200,957.6**	**243,036.8**	**285,913.5**	**319,544.5**	**353,019.5**	**387,047.9**	**421,915.4**	**455,303.3**	**488,810.0**	**520,906.7**	**552,446.3**	**583,751.1**	**615,825.4**	**644,365.4**	**673,916.4**	**700,006.0**	**727,064.6**
Cooking	683.0	1,383.6	2,098.4	2,829.0	3,572.9	4,330.4	5,103.1	5,891.6	6,693.8	7,508.5	8,339.2	9,188.9	10,052.5	10,930.3	11,125.4	11,334.8	11,559.9	11,797.3	12,057.2	12,337.8	12,639.2
Other	2,363.0	4,749.4	7,185.0	9,674.5	12,209.3	14,790.7	17,423.9	20,111.2	22,204.2	24,340.1	26,530.4	28,785.2	31,088.0	33,438.9	35,843.1	38,296.5	40,803.9	43,353.6	45,990.4	48,696.8	51,474.7
Space Heating	15,223.8	30,702.9	46,480.2	62,586.1	78,577.8	94,847.8	111,430.8	126,960.2	142,544.2	158,389.0	174,563.0	191,133.3	207,999.8	223,027.3	237,696.3	252,662.2	267,930.2	282,243.5	296,954.9	307,616.0	318,647.5
Water Heating	20,587.2	41,478.3	62,768.6	84,497.6	106,597.6	129,067.9	151,955.7	166,581.5	181,577.3	196,810.3	212,482.8	226,195.9	239,669.7	253,510.2	267,781.5	281,457.6	295,531.5	306,971.0	318,914.0	331,355.4	344,303.2
Grocery	**17,365.5**	**35,025.3**	**53,025.7**	**71,401.4**	**90,091.5**	**109,099.6**	**128,465.3**	**146,038.3**	**163,927.0**	**182,113.8**	**200,676.8**	**219,395.8**	**238,450.4**	**256,141.8**	**271,033.2**	**286,119.9**	**301,552.3**	**316,230.0**	**331,359.4**	**343,511.4**	**356,059.3**
Cooking	1,754.3	3,554.0	5,390.2	7,266.9	9,177.7	11,123.4	13,108.2	15,133.5	17,194.1	19,287.0	21,420.8	23,603.2	25,821.7	28,076.4	28,577.6	29,115.8	29,694.2	30,304.1	30,971.6	31,692.5	32,466.8
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	12,740.7	25,687.6	38,882.6	52,350.6	66,046.9	79,974.0	94,160.9	107,446.4	120,960.3	134,690.8	148,694.9	163,028.5	177,608.6	190,752.4	202,789.1	215,072.2	227,604.3	239,857.5	252,430.8	261,902.2	271,643.5
Water Heating	2,870.5	5,783.6	8,752.9	11,783.9	14,866.9	18,002.2	21,196.2	23,458.3	25,772.7	28,136.0	30,561.1	32,764.1	35,020.0	37,313.0	39,666.5	41,931.9	44,253.9	46,068.4	47,957.0	49,916.8	51,949.1
Healthcare	**12,191.3**	**24,571.4**	**37,188.6**	**50,066.6**	**63,020.6**	**76,195.0**	**89,617.7**	**100,098.3**	**110,679.2**	**121,070.4**	**131,722.8**	**141,917.0**	**151,788.4**	**161,161.5**	**170,366.6**	**179,488.0**	**188,846.8**	**196,791.8**	**205,040.7**	**212,656.4**	**220,540.8**
Cooking	148.9	301.6	457.4	616.7	778.9	944.0	1,112.4	1,284.3	1,459.2	1,636.8	1,817.9	2,003.1	2,191.3	2,382.7	2,425.2	2,470.8	2,519.8	2,571.5	2,628.2	2,689.4	2,755.1
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,940.0	9,960.9	15,078.1	20,301.4	25,469.8	30,727.8	36,086.8	41,120.6	46,124.1	51,211.7	56,405.6	61,727.4	67,145.0	71,955.1	76,597.4	81,335.5	86,170.4	90,624.8	95,204.3	98,974.2	102,833.6
Water Heating	7,102.4	14,308.9	21,653.0	29,148.6	36,772.0	44,523.3	52,418.5	57,693.4	63,096.0	68,221.9	73,499.4	78,186.5	82,452.1	86,823.8	91,344.1	95,681.7	100,156.5	103,595.5	107,208.2	110,992.9	114,952.2
Lodging	**14,259.3**	**28,736.6**	**43,490.9**	**58,549.9**	**73,852.5**	**89,412.4**	**105,262.2**	**118,399.8**	**131,675.2**	**144,187.6**	**157,005.0**	**168,740.6**	**177,960.4**	**187,027.1**	**196,161.4**	**204,821.0**	**213,757.6**	**222,173.0**	**230,933.5**	**239,528.5**	**248,456.9**
Cooking	7.9	16.0	24.2	32.7	41.3	50.0	58.9	68.0	77.3	86.7	96.3	106.1	116.1	126.2	136.6	147.0	157.7	168.5	171.5	174.8	178.2
Other	287.2	577.3	873.4	1,176.0	1,484.1	1,797.9	2,117.9	2,444.5	2,662.9	2,886.6	3,116.9	3,355.0	3,598.9	3,848.7	4,104.9	4,367.1	4,635.8	4,909.6	5,193.8	5,486.4	5,787.7
Space Heating	2,659.7	5,362.8	8,117.8	10,929.7	13,775.9	16,670.3	19,619.0	22,406.9	25,237.5	28,113.3	31,046.2	34,048.0	37,101.2	39,837.3	42,397.9	45,009.9	47,673.9	50,252.1	52,897.2	55,094.5	57,338.6
Water Heating	11,304.5	22,780.5	34,475.5	46,411.5	58,551.2	70,894.2	83,466.3	93,480.3	103,697.5	113,100.9	122,745.6	131,231.5	137,144.2	143,214.8	149,522.1	155,297.0	161,290.2	166,842.8	172,671.0	178,772.8	185,152.4
Misc.	**9,015.8**	**18,183.9**	**27,528.8**	**37,068.6**	**46,661.3**	**56,419.1**	**66,362.6**	**75,643.5**	**85,042.2**	**94,591.4**	**104,335.9**	**114,238.6**	**124,296.9**	**133,196.3**	**141,479.2**	**149,911.9**	**158,524.0**	**167,002.1**	**175,710.2**	**181,881.5**	**188,274.8**
Cooking	51.1	103.4	156.9	211.5	267.1	323.7	381.5	440.4	500.4	561.3	623.4	686.9	751.5	817.1	838.8	861.5	885.4	910.2	929.6	950.6	973.1
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	8,615.5	17,376.8	26,307.0	35,423.3	44,585.5	53,905.3	63,402.6	72,372.5	81,452.8	90,681.0	100,095.8	109,735.1	119,542.2	128,187.4	136,252.8	144,486.3	152,891.3	161,168.0	169,671.6	175,628.3	181,797.0
Water Heating	349.2	703.7	1,065.0	1,433.7	1,808.8	2,190.1	2,578.5	2,830.6	3,089.0	3,349.1	3,616.7	3,816.6	4,003.2	4,191.8	4,387.7	4,564.1	4,747.3	4,923.9	5,109.0	5,302.6	5,504.7
Office	**62,451.2**	**125,929.3**	**190,627.3**	**256,668.5**	**323,252.4**	**390,972.7**	**459,972.4**	**524,012.0**	**588,890.8**	**654,836.0**	**722,127.0**	**790,059.8**	**859,029.8**	**921,279.5**	**980,058.1**	**1,039,542.3**	**1,100,256.4**	**1,156,830.2**	**1,214,999.6**	**1,260,632.0**	**1,307,646.9**
Cooking	6.8	13.8	20.9	28.2	35.6	43.2	50.9	58.7	66.7	74.8	83.1	91.6	100.2	109.0	117.9	126.9	136.1	145.4	148.0	150.8	153.8
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	56,670.1	114,274.8	172,985.3	232,913.4	293,278.1	354,672.6	417,226.7	476,632.6	536,771.0	597,875.9	660,200.7	723,994.8	788,887.6	846,993.4	901,504.6	957,115.2	1,013,839.0	1,067,230.4	1,122,065.8	1,164,215.9	1,207,598.0
Water Heating	5,774.3	11,640.7	17,621.1	23,726.9	29,938.6	36,256.9	42,694.8	47,320.6	52,053.1	56,885.2	61,843.2	65,973.4	70,041.9	74,177.1	78,435.7	82,300.2	86,281.3	89,454.3	92,785.8	96,265.3	99,895.0
Restaurant	**29,912.4**	**60,320.5**	**91,318.6**	**122,966.4**	**155,162.3**	**187,909.6**	**221,276.8**	**248,093.0**	**275,460.3**	**303,280.7**	**331,752.8**	**359,645.0**	**388,012.1**	**416,076.7**	**438,724.7**	**461,273.4**	**484,425.4**	**504,795.8**	**525,982.2**	**546,457.0**	**567,696.8**
Cooking	5,302.3	10,741.7	16,291.4	21,963.6	27,738.8	33,619.7	39,618.5	45,739.8	51,967.7	58,293.4	64,742.6	71,338.7	78,043.9	84,858.5	86,354.8	87,962.7	89,692.3	91,517.0	93,534.4	95,712.8	98,052.9
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	7,374.5	14,856.6	22,484.5	30,272.7	38,195.8	46,255.2	54,467.6	60,185.6	66,039.0	72,019.8	78,161.5	84,496.4	90,975.4	96,847.7	102,261.4	107,820.2	113,528.7	119,085.9	124,848.3	129,322.4	133,977.5
Water Heating	17,235.5	34,722.3	52,542.8	70,730.1	89,227.7	108,034.7	127,190.7	142,167.5	157,453.6	172,967.5	188,848.7	203,809.9	218,992.7	234,370.6	250,108.5	265,490.5	281,204.5	294,192.9	307,599.6	321,421.8	335,666.4
Retail	**56,554.1**	**114,035.9**	**172,620.3**	**232,418.9**	**293,059.5**	**354,726.7**	**417,549.9**	**476,700.3**	**536,767.6**	**597,798.6**	**660,045.9**	**723,240.3**	**787,525.2**	**845,340.9**	**899,098.3**	**953,126.4**	**1,008,263.3**	**1,061,234.5**	**1,115,640.0**	**1,156,015.4**	**1,197,413.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	53,968.6	108,823.2	164,729.1	221,792.5	279,650.3	338,486.4	398,424.7	455,691.5	513,827.1	572,881.3	633,095.1	694,705.8	757,361.5	813,527.2	865,578.9	918,675.6	972,828.0	1,024,856.3	1,078,244.7	1,117,535.3	1,157,779.5
Water Heating	2,585.6	5,212.7	7,891.2	10,626.3	13,409.2	16,240.2	19,125.3	21,008.8	22,940.5	24,917.2	26,950.8	28,534.4	30,163.7	31,813.7	33,519.4	34,450.7	35,435.3	36,378.2	37,395.3	38,480.1	39,633.6
Warehouse	**5,028.3**	**10,143.9**	**15,358.8**	**20,683.2**	**26,086.1**	**31,582.0**	**37,182.3**	**42,383.7**	**47,669.6**	**53,042.4**	**58,524.9**	**64,088.4**	**69,749.7**	**74,766.0**	**79,647.0**	**84,540.9**	**89,536.5**	**94,314.6**	**99,230.9**	**102,504.7**	**105,893.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,765.9	9,614.9	14,558.0	19,604.8	24,725.3	29,933.8	35,241.2	40,249.6	45,337.4	50,507.5	55,781.7	61,180.8	66,673.2	71,519.4	76,224.6	81,023.6	85,918.9	90,601.2	95,413.9	98,577.3	101,848.4
Water Heating	262.4	529.0	800.8	1,078.4	1,360.8	1,648.2	1,941.0	2,134.2	2,332.2	2,534.9	2,743.3	2,907.6	3,076.5	3,246.7	3,422.5	3,517.3	3,617.6	3,713.5	3,817.0	3,927.4	4,044.8
Grand Total	**245,634.9**	**495,261.1**	**749,691.2**	**1,009,410.7**	**1,272,143.8**	**1,539,353.9**	**1,811,602.7**	**2,050,913.3**	**2,293,131.6**	**2,537,968.8**	**2,788,106.5**	**3,036,628.6**	**3,285,622.9**	**3,515,896.6**	**3,729,015.0**	**3,942,574.9**	**4,160,987.7**	**4,363,737.4**	**4,572,813.0**	**4,743,192.9**	**4,919,046.5**

C-29: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #29)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**29,818.6**	**60,124.6**	**91,024.2**	**122,577.3**	**154,681.6**	**187,342.3**	**220,627.4**	**247,973.7**	**275,010.2**	**302,455.2**	**330,556.3**	**356,954.0**	**383,494.8**	**410,594.3**	**437,090.9**	**463,192.4**	**489,908.7**	**512,121.7**	**535,194.3**	**554,615.3**	**574,815.1**
Cooking	550.6	1,115.4	1,691.6	2,280.5	2,880.2	3,490.8	4,113.7	4,749.3	5,396.0	6,052.8	6,722.5	7,407.4	8,103.6	8,811.3	8,966.7	9,133.7	9,313.4	9,503.0	9,712.6	9,938.9	10,182.1
Other	2,357.0	4,737.2	7,166.4	9,649.4	12,177.6	14,752.3	17,378.7	20,059.0	22,144.9	24,273.6	26,456.6	28,704.0	30,999.2	33,342.5	35,738.9	38,184.3	40,683.7	43,225.3	45,853.9	48,552.0	51,321.4
Space Heating	7,149.2	14,446.4	21,885.3	29,481.1	37,209.2	45,070.5	53,081.6	61,247.0	69,319.7	77,517.1	85,871.8	94,415.4	103,100.0	111,923.3	120,219.6	128,657.9	137,242.5	145,214.9	153,388.8	157,315.0	161,413.7
Water Heating	19,761.7	39,825.7	60,280.9	81,166.3	102,414.7	124,028.7	146,053.4	161,918.5	178,149.7	194,611.7	211,505.5	226,427.2	241,291.9	256,517.2	272,165.7	287,216.6	302,669.1	314,178.5	326,239.0	338,809.4	351,897.9
Grocery	**10,144.4**	**20,482.1**	**31,021.2**	**41,782.4**	**52,731.1**	**63,868.6**	**75,218.4**	**85,919.0**	**96,806.5**	**107,870.7**	**119,157.8**	**130,409.7**	**141,858.7**	**153,486.2**	**162,164.9**	**171,044.7**	**180,132.3**	**189,238.0**	**198,623.9**	**204,858.1**	**211,313.1**
Cooking	1,753.0	3,551.2	5,385.9	7,261.1	9,170.4	11,114.7	13,097.9	15,121.6	17,180.6	19,271.9	21,404.0	23,584.7	25,801.5	28,054.4	28,555.3	29,093.1	29,671.1	30,280.6	30,947.6	31,668.0	32,441.8
Space Heating	7,020.0	14,173.8	21,464.6	28,906.5	36,476.2	44,173.6	52,015.0	60,004.0	68,118.5	76,353.0	84,739.0	93,307.3	102,012.0	110,850.0	118,461.1	126,208.6	134,094.1	141,943.8	149,971.5	154,756.5	159,670.2
Water Heating	1,371.4	2,757.1	4,170.6	5,614.7	7,084.4	8,580.4	10,105.6	10,793.4	11,507.5	12,245.8	13,014.8	13,517.7	14,045.2	14,581.8	15,148.6	15,743.0	16,367.1	17,013.6	17,704.7	18,433.6	19,201.1
Healthcare	**7,777.4**	**15,679.9**	**23,736.2**	**31,961.5**	**40,329.7**	**48,841.6**	**57,514.9**	**64,185.8**	**70,879.0**	**77,307.4**	**83,905.5**	**89,929.7**	**95,967.0**	**102,126.1**	**108,054.5**	**113,803.5**	**119,710.1**	**124,532.5**	**129,569.7**	**133,877.8**	**138,354.6**
Cooking	121.8	246.8	374.3	504.6	637.3	772.4	910.3	1,050.9	1,194.0	1,339.4	1,487.5	1,639.1	1,793.2	1,949.8	1,984.1	2,021.1	2,060.9	2,102.8	2,149.2	2,199.3	2,253.1
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	1,651.8	3,337.0	5,054.7	6,808.5	8,592.7	10,407.4	12,256.5	14,141.0	15,934.4	17,756.5	19,614.7	21,516.3	23,450.3	25,416.2	27,145.3	28,907.0	30,702.1	32,521.2	34,385.4	35,363.2	36,349.8
Water Heating	6,003.7	12,096.1	18,307.1	24,648.4	31,099.7	37,661.7	44,348.1	48,993.9	53,750.5	58,211.5	62,803.3	66,774.3	70,723.5	74,760.2	78,925.1	82,875.4	86,947.2	89,908.5	93,035.1	96,315.3	99,751.7
Lodging	**12,818.9**	**25,839.8**	**39,111.8**	**52,659.9**	**66,441.4**	**80,456.7**	**94,735.3**	**106,371.4**	**118,235.9**	**129,263.1**	**140,567.3**	**150,754.9**	**158,693.5**	**166,821.6**	**174,989.5**	**182,657.4**	**190,579.2**	**197,546.4**	**204,847.9**	**211,957.9**	**219,393.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	174.0	349.8	529.1	712.5	899.1	1,089.3	1,283.2	1,481.2	1,682.6	1,887.2	2,095.8	2,309.1	2,526.0	2,746.5	2,970.9	3,198.9	3,430.9	3,666.1	3,907.7	4,154.6	4,406.7
Space Heating	912.5	1,843.1	2,791.7	3,760.1	4,745.2	5,747.2	6,768.1	7,808.4	8,860.0	9,927.3	11,014.5	12,125.6	13,254.6	14,401.1	15,335.5	16,287.7	17,258.3	18,242.0	19,250.2	19,769.6	20,312.5
Water Heating	11,732.4	23,647.0	35,791.0	48,187.4	60,797.0	73,620.3	86,684.0	97,081.8	107,693.3	117,448.7	127,457.0	136,320.2	142,912.9	149,674.0	156,683.2	163,170.8	169,889.9	175,638.3	181,690.0	188,033.8	194,674.2
Misc.	**4,104.6**	**8,296.5**	**12,570.7**	**16,936.0**	**21,378.1**	**25,897.9**	**30,504.8**	**35,099.5**	**39,724.3**	**44,421.6**	**49,210.3**	**54,031.7**	**58,918.1**	**63,880.5**	**68,169.3**	**72,540.7**	**76,998.5**	**81,520.3**	**86,165.6**	**88,158.3**	**90,255.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,906.1	7,897.3	11,966.9	16,123.0	20,352.3	24,655.4	29,041.4	33,513.0	38,010.7	42,577.5	47,231.2	51,989.2	56,825.0	61,737.5	65,972.2	70,285.3	74,680.5	79,136.4	83,709.1	85,623.7	87,637.1
Water Heating	198.6	399.2	603.8	813.0	1,025.8	1,242.5	1,463.4	1,586.6	1,713.6	1,844.1	1,979.1	2,042.5	2,093.1	2,142.9	2,197.1	2,255.4	2,318.0	2,383.9	2,456.5	2,534.6	2,618.3
Office	**24,011.9**	**48,501.0**	**73,470.1**	**98,969.7**	**124,916.7**	**151,315.7**	**178,221.8**	**204,341.8**	**230,614.1**	**257,308.2**	**284,535.0**	**311,414.3**	**338,554.1**	**366,118.8**	**389,410.1**	**413,182.0**	**437,455.2**	**462,097.7**	**487,449.4**	**499,392.3**	**511,981.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	21,481.7	43,414.7	65,776.0	88,611.1	111,845.9	135,484.0	159,575.0	184,132.9	208,794.1	233,832.3	259,346.0	285,430.2	311,940.1	338,869.3	361,469.3	384,498.5	407,973.4	431,775.4	456,201.7	467,148.4	478,668.9
Water Heating	2,530.2	5,086.3	7,694.2	10,358.7	13,070.8	15,831.6	18,646.8	20,208.9	21,819.9	23,475.9	25,189.0	25,984.1	26,614.0	27,249.4	27,940.7	28,683.5	29,481.8	30,322.3	31,247.7	32,243.9	33,312.8
Restaurant	**19,732.7**	**39,833.8**	**60,330.5**	**81,263.9**	**102,565.4**	**124,239.4**	**146,331.1**	**164,078.2**	**182,198.0**	**200,599.6**	**219,439.7**	**237,331.7**	**255,602.3**	**274,126.9**	**287,344.2**	**300,270.6**	**313,611.4**	**327,079.2**	**341,139.7**	**354,169.9**	**367,726.6**
Cooking	4,986.2	10,101.1	15,319.8	20,653.8	26,084.6	31,614.8	37,255.8	43,012.2	48,868.7	54,817.2	60,881.8	67,084.6	73,390.0	79,798.2	81,205.4	82,717.5	84,344.0	86,060.1	87,957.4	90,006.1	92,206.9
Space Heating	3,675.7	7,418.4	11,232.2	15,124.5	19,083.2	23,107.9	27,207.3	31,383.2	35,624.1	39,927.2	44,308.9	48,785.4	53,332.7	57,949.1	62,020.3	66,162.3	70,375.0	74,511.7	78,736.9	81,487.9	84,316.4
Water Heating	11,070.8	22,314.2	33,778.4	45,485.6	57,397.6	69,516.7	81,867.9	89,682.9	97,705.3	105,855.2	114,249.0	121,461.8	128,879.6	136,379.5	144,118.5	151,390.8	158,892.4	166,507.3	174,445.4	182,675.8	191,203.3
Retail	**27,480.2**	**55,509.6**	**84,083.7**	**113,259.6**	**142,943.6**	**173,139.0**	**203,909.0**	**234,579.4**	**265,651.2**	**297,201.6**	**329,355.8**	**361,716.0**	**394,611.9**	**428,010.4**	**456,746.0**	**486,026.4**	**515,868.6**	**546,118.8**	**577,140.2**	**593,444.1**	**610,078.8**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	26,246.7	53,029.9	80,332.6	108,209.4	136,571.0	165,420.2	194,817.5	224,779.0	255,118.3	285,914.0	317,285.6	349,349.2	381,929.5	415,017.3	443,415.0	472,332.2	501,784.1	531,623.1	562,191.4	578,007.4	594,118.6
Water Heating	1,233.5	2,479.7	3,751.1	5,050.2	6,372.6	7,718.8	9,091.6	9,800.3	10,532.9	11,287.6	12,070.2	12,366.8	12,682.4	12,993.1	13,331.0	13,694.2	14,084.5	14,495.7	14,948.8	15,436.7	15,960.2
Warehouse	**2,264.6**	**4,580.2**	**6,941.8**	**9,354.6**	**11,810.4**	**14,310.0**	**16,858.5**	**19,389.7**	**21,956.1**	**24,563.3**	**27,221.8**	**29,890.6**	**32,604.5**	**35,359.9**	**37,922.7**	**40,531.8**	**43,190.4**	**45,886.6**	**48,656.9**	**49,723.4**	**50,854.8**
Space Heating	2,142.1	4,333.8	6,569.1	8,852.7	11,177.1	13,542.9	15,955.1	18,415.3	20,908.4	23,440.0	26,020.2	28,658.6	31,340.1	34,064.7	36,593.9	39,167.0	41,786.9	44,442.2	47,167.6	48,185.6	49,265.1
Water Heating	122.6	246.4	372.8	501.8	633.2	767.0	903.4	974.4	1,047.8	1,123.3	1,201.6	1,232.0	1,264.4	1,295.2	1,328.8	1,364.8	1,403.6	1,444.4	1,489.3	1,537.7	1,589.7
Grand Total	**138,153.4**	**278,847.6**	**422,290.2**	**568,765.0**	**717,797.8**	**869,411.2**	**1,023,921.2**	**1,161,938.5**	**1,301,075.4**	**1,440,990.7**	**1,583,949.5**	**1,722,432.7**	**1,860,304.9**	**2,000,524.7**	**2,121,892.2**	**2,243,249.6**	**2,367,454.5**	**2,486,141.2**	**2,608,787.4**	**2,690,197.0**	**2,774,773.5**

C-30: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #30)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**7,822.5**	**15,993.7**	**24,644.0**	**33,895.9**	**43,837.9**	**54,588.3**	**66,274.9**	**76,425.5**	**87,272.4**	**99,022.6**	**111,723.3**	**124,288.8**	**137,406.7**	**151,171.6**	**165,230.7**	**179,641.1**	**194,535.0**	**208,529.8**	**223,122.6**	**237,951.8**	**253,268.3**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	1,332.7	2,743.1	4,258.2	5,907.5	7,716.8	9,718.2	11,947.1	14,429.9	17,079.4	19,988.3	23,156.7	26,577.7	30,207.7	34,019.5	37,709.2	41,536.6	45,487.0	49,256.9	53,161.1	56,949.6	60,847.0
Water Heating	5,759.8	11,764.2	18,106.0	24,868.7	32,108.2	39,901.2	48,328.5	54,883.3	62,084.3	69,845.7	78,212.5	86,106.2	94,273.3	102,843.6	111,799.5	120,919.5	130,353.0	139,021.6	148,090.9	157,468.1	167,175.4
Grocery	**2,181.7**	**4,472.2**	**6,910.8**	**9,537.4**	**12,384.9**	**15,495.1**	**18,915.0**	**22,373.0**	**26,180.1**	**30,331.8**	**34,829.1**	**39,536.1**	**44,519.5**	**49,737.6**	**54,507.2**	**59,463.0**	**64,587.2**	**69,819.5**	**75,240.4**	**80,638.6**	**86,185.1**
Cooking	66.8	160.2	288.9	464.4	699.1	1,006.5	1,400.1	1,890.4	2,481.7	3,173.1	3,962.4	4,844.4	5,803.9	6,829.9	7,822.7	8,863.6	9,947.2	11,076.0	12,251.0	13,458.2	14,702.0
Space Heating	1,659.8	3,389.5	5,214.0	7,158.2	9,240.3	11,485.2	13,922.0	16,570.8	19,434.9	22,512.5	25,805.9	29,312.2	32,993.1	36,826.8	40,222.9	43,737.7	47,358.7	51,024.9	54,805.4	58,510.4	62,305.0
Water Heating	455.1	922.6	1,407.9	1,914.9	2,445.5	3,003.4	3,592.9	3,911.7	4,263.5	4,646.2	5,060.8	5,379.5	5,722.5	6,080.9	6,461.6	6,861.8	7,281.3	7,718.6	8,184.0	8,670.0	9,178.1
Healthcare	**2,168.6**	**4,432.9**	**6,828.6**	**9,388.8**	**12,136.9**	**15,104.0**	**18,321.5**	**21,012.2**	**23,912.1**	**26,880.0**	**30,092.1**	**33,210.2**	**36,457.3**	**39,858.8**	**43,295.0**	**46,808.5**	**50,446.3**	**53,801.9**	**57,312.7**	**60,898.7**	**64,607.0**
Cooking	4.2	10.2	18.5	29.8	45.1	65.1	90.9	123.1	162.0	207.7	260.0	318.5	382.2	450.5	516.7	586.2	658.6	734.1	812.8	893.6	977.0
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	335.2	688.9	1,067.6	1,478.2	1,926.7	2,420.5	2,967.9	3,575.1	4,192.5	4,869.5	5,605.6	6,399.1	7,239.6	8,121.1	8,925.4	9,761.0	10,624.4	11,515.0	12,436.3	13,336.6	14,256.4
Water Heating	1,829.2	3,733.8	5,742.5	7,880.8	10,165.1	12,618.3	15,262.7	17,314.0	19,557.6	21,802.8	24,226.5	26,492.7	28,835.4	31,287.2	33,852.9	36,461.3	39,163.3	41,552.8	44,063.6	46,668.5	49,373.7
Lodging	**3,809.7**	**7,769.7**	**11,935.9**	**16,357.8**	**21,066.4**	**26,105.4**	**31,522.3**	**36,272.7**	**41,410.6**	**46,585.8**	**52,129.4**	**57,418.0**	**61,912.3**	**66,635.3**	**71,498.1**	**76,458.2**	**81,608.9**	**86,668.7**	**91,961.6**	**97,416.2**	**103,069.8**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	52.0	105.4	160.7	218.4	278.7	342.0	408.9	479.8	554.7	633.5	716.5	803.6	894.3	988.0	1,084.6	1,183.9	1,285.6	1,389.8	1,497.5	1,607.8	1,720.8
Space Heating	191.1	391.5	604.5	833.5	1,081.5	1,351.9	1,649.0	1,975.8	2,330.6	2,715.7	3,131.3	3,576.7	4,046.7	4,538.3	4,952.0	5,382.2	5,827.1	6,286.4	6,761.5	7,224.5	7,701.0
Water Heating	3,566.6	7,272.9	11,170.7	15,305.9	19,706.2	24,411.5	29,464.3	33,817.1	38,525.3	43,236.6	48,281.7	53,037.7	56,971.3	61,109.1	65,461.5	69,892.2	74,496.2	78,992.5	83,702.6	88,583.9	93,648.0
Misc.	**669.5**	**1,387.3**	**2,169.9**	**3,036.1**	**4,003.2**	**5,091.7**	**6,323.7**	**7,690.6**	**9,202.5**	**10,877.8**	**12,715.7**	**14,678.3**	**16,765.1**	**18,962.7**	**20,941.0**	**23,004.0**	**25,142.7**	**27,357.5**	**29,656.7**	**31,882.4**	**34,170.0**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	605.7	1,258.0	1,973.0	2,769.0	3,663.0	4,675.2	5,827.1	7,134.9	8,583.5	10,191.5	11,957.7	13,876.7	15,922.2	18,077.2	20,009.8	22,024.4	24,112.1	26,273.4	28,515.3	30,681.1	32,905.7
Water Heating	63.9	129.3	196.9	267.1	340.2	416.5	496.6	555.7	619.0	686.3	757.9	801.6	842.9	885.5	931.2	979.6	1,030.7	1,084.2	1,141.4	1,201.4	1,264.3
Office	**4,517.1**	**9,290.9**	**14,413.3**	**19,982.2**	**26,082.9**	**32,821.9**	**40,316.8**	**48,332.9**	**57,093.0**	**66,716.8**	**77,206.9**	**88,126.8**	**99,669.5**	**111,801.9**	**122,470.1**	**133,600.8**	**145,147.2**	**157,106.4**	**169,532.3**	**181,633.1**	**194,114.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,704.5	7,646.3	11,908.8	16,584.0	21,754.8	27,522.6	33,997.8	41,263.4	49,219.9	57,988.1	67,567.7	77,935.1	88,955.9	100,544.1	110,628.3	121,140.3	132,033.9	143,309.0	155,003.4	166,337.8	178,015.3
Water Heating	812.6	1,644.6	2,504.5	3,398.2	4,328.1	5,299.3	6,319.0	7,069.5	7,873.1	8,728.6	9,639.1	10,191.6	10,713.6	11,257.8	11,841.8	12,460.5	13,113.3	13,797.5	14,528.9	15,295.3	16,099.4
Restaurant	**4,279.7**	**8,836.0**	**13,767.5**	**19,175.4**	**25,137.6**	**31,744.3**	**39,085.7**	**45,122.6**	**51,940.0**	**59,473.6**	**67,739.3**	**76,082.5**	**84,988.8**	**94,332.9**	**103,610.3**	**113,137.1**	**123,017.7**	**133,124.0**	**143,662.9**	**154,445.2**	**165,573.4**
Cooking	184.2	441.3	795.2	1,277.6	1,922.4	2,767.2	3,849.4	5,198.5	6,827.0	8,732.9	10,910.5	13,345.9	15,996.9	18,833.1	21,574.5	24,449.9	27,444.2	30,564.5	33,818.7	37,162.1	40,607.1
Space Heating	956.7	1,947.3	2,984.0	4,078.4	5,238.0	6,474.2	7,800.7	9,226.9	10,754.1	12,381.2	14,110.1	15,940.3	17,853.5	19,839.5	21,631.6	23,481.2	25,382.4	27,279.0	29,230.5	31,151.1	33,118.8
Water Heating	3,138.8	6,447.4	9,988.2	13,819.4	17,977.2	22,502.8	27,435.6	30,697.2	34,358.9	38,359.5	42,718.7	46,796.3	51,138.4	55,660.3	60,404.2	65,205.9	70,191.1	75,280.5	80,613.8	86,132.1	91,847.5
Retail	**5,509.2**	**11,321.2**	**17,542.1**	**24,285.7**	**31,649.6**	**39,756.3**	**48,741.5**	**58,535.7**	**69,291.3**	**81,031.4**	**93,750.3**	**107,203.9**	**121,439.8**	**136,345.1**	**149,660.4**	**163,495.7**	**177,797.6**	**192,556.3**	**207,831.9**	**222,745.1**	**238,017.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	5,116.5	10,526.1	16,331.1	22,642.3	29,556.0	37,192.3	45,683.2	55,126.6	65,505.2	76,842.7	89,131.9	102,345.9	116,321.9	130,959.5	143,987.6	157,518.6	171,499.4	185,921.4	200,837.1	215,373.2	230,249.9
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**270.3**	**568.4**	**903.9**	**1,288.1**	**1,732.4**	**2,249.9**	**2,854.3**	**3,539.3**	**4,322.2**	**5,205.9**	**6,189.6**	**7,247.8**	**8,385.9**	**9,591.5**	**10,756.5**	**11,972.8**	**13,234.9**	**14,544.0**	**15,904.6**	**17,216.4**	**18,568.7**
Space Heating	231.2	489.2	783.2	1,124.4	1,523.9	1,994.6	2,549.7	3,199.7	3,944.9	4,788.5	5,729.3	6,763.4	7,875.4	9,054.5	10,191.1	11,377.3	12,607.6	13,883.4	15,208.4	16,482.9	17,796.1
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**31,228.4**	**64,072.3**	**99,115.8**	**136,947.5**	**178,031.7**	**222,956.9**	**272,355.7**	**319,304.5**	**370,624.3**	**426,125.7**	**486,375.7**	**547,792.4**	**611,544.8**	**678,437.4**	**741,969.5**	**807,581.3**	**875,517.6**	**943,508.1**	**1,014,225.8**	**1,084,827.5**	**1,157,574.2**

C-31: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #31)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**8,087.8**	**16,537.1**	**25,478.8**	**35,022.9**	**45,226.9**	**56,160.4**	**67,899.2**	**77,193.0**	**87,159.4**	**97,794.0**	**109,156.9**	**119,890.9**	**130,914.4**	**142,405.6**	**153,944.2**	**165,880.9**	**178,208.6**	**189,552.7**	**201,453.4**	**213,367.8**	**225,717.1**
Cooking	39.0	93.1	166.6	264.9	393.3	556.7	759.7	1,004.7	1,291.1	1,616.5	1,979.0	2,375.7	2,800.2	3,248.3	3,663.3	4,095.7	4,543.9	5,004.1	5,485.0	5,981.2	6,491.9
Other	658.1	1,337.8	2,047.9	2,795.0	3,582.4	4,415.4	5,300.2	6,239.9	7,232.9	8,276.0	9,370.5	10,516.4	11,703.0	12,926.5	14,185.4	15,475.2	16,796.2	18,142.1	19,536.7	20,966.6	22,432.1
Space Heating	1,241.7	2,613.3	4,154.4	5,909.3	7,915.8	10,213.7	12,839.3	15,812.5	19,007.8	22,524.6	26,350.6	30,468.8	34,822.4	39,378.4	43,759.2	48,293.5	52,967.2	57,745.7	62,701.0	67,372.3	72,177.1
Water Heating	6,148.9	12,492.9	19,109.9	26,053.6	33,335.5	40,974.6	49,000.0	54,135.9	59,627.7	65,376.8	71,456.9	76,529.9	81,588.8	86,852.4	92,336.2	98,016.5	103,901.4	108,660.7	113,730.6	119,047.8	124,616.0
Grocery	**2,102.3**	**4,373.3**	**6,865.7**	**9,634.6**	**12,724.1**	**16,180.3**	**20,045.6**	**23,947.4**	**28,266.0**	**32,976.5**	**38,065.7**	**43,355.4**	**48,932.2**	**54,749.1**	**59,931.7**	**65,307.2**	**70,861.1**	**76,549.2**	**82,468.6**	**88,244.1**	**94,176.3**
Cooking	102.0	242.6	432.6	686.1	1,016.2	1,435.9	1,956.4	2,584.0	3,317.4	4,150.6	5,078.1	6,093.2	7,179.1	8,325.6	9,385.0	10,488.7	11,632.8	12,807.8	14,035.4	15,302.0	16,605.9
Space Heating	1,440.5	2,992.1	4,688.8	6,566.5	8,653.6	10,980.5	13,576.0	16,454.5	19,607.1	23,018.1	26,679.2	30,578.9	34,669.6	38,925.2	42,609.5	46,421.1	50,348.8	54,362.6	58,521.0	62,470.9	66,514.1
Water Heating	559.8	1,138.6	1,744.2	2,382.0	3,054.3	3,764.0	4,513.3	4,908.9	5,341.6	5,807.9	6,308.4	6,683.4	7,083.4	7,498.3	7,937.3	8,397.4	8,879.5	9,378.9	9,912.1	10,471.2	11,056.3
Healthcare	**2,193.8**	**4,481.5**	**6,897.6**	**9,470.0**	**12,209.1**	**15,130.8**	**18,251.7**	**20,553.3**	**22,981.7**	**25,355.0**	**27,901.0**	**30,197.6**	**32,542.4**	**34,985.7**	**37,385.3**	**39,881.6**	**42,473.9**	**44,995.7**	**47,656.0**	**50,336.7**	**53,127.0**
Cooking	8.3	19.8	35.5	56.4	83.8	118.6	161.8	214.0	275.0	344.4	421.6	506.1	596.6	692.0	780.5	872.6	968.1	1,066.2	1,168.7	1,274.4	1,383.2
Space Heating	315.6	659.3	1,039.4	1,465.4	1,945.2	2,486.9	3,098.4	3,783.7	4,477.5	5,239.6	6,067.5	6,958.1	7,899.0	8,883.3	9,764.1	10,678.0	11,622.0	12,588.6	13,593.0	14,538.4	15,512.8
Water Heating	1,869.8	3,802.4	5,822.7	7,948.1	10,180.2	12,525.3	14,991.6	16,555.5	18,229.2	19,771.1	21,411.9	22,733.4	24,046.8	25,410.4	26,840.8	28,331.0	29,883.7	31,340.9	32,894.4	34,523.9	36,230.9
Lodging	**4,869.8**	**9,987.0**	**15,428.4**	**21,259.7**	**27,510.1**	**34,211.8**	**41,395.4**	**47,699.2**	**54,439.9**	**61,148.2**	**68,242.0**	**74,943.8**	**80,565.5**	**86,414.3**	**92,389.7**	**98,375.5**	**104,569.5**	**110,562.5**	**116,831.8**	**123,286.1**	**129,973.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	231.4	478.9	747.6	1,042.8	1,368.4	1,729.1	2,129.3	2,571.3	3,051.2	3,569.5	4,125.3	4,716.9	5,337.3	5,982.6	6,529.0	7,094.6	7,677.8	8,274.0	8,891.8	9,478.2	10,081.8
Water Heating	4,638.4	9,508.1	14,680.8	20,217.0	26,141.7	32,482.6	39,266.0	45,127.9	51,388.7	57,578.7	64,116.7	70,226.9	75,228.2	80,431.7	85,860.7	91,280.9	96,891.7	102,288.5	107,940.0	113,807.9	119,891.5
Misc.	**811.7**	**1,704.7**	**2,704.1**	**3,837.3**	**5,127.9**	**6,600.6**	**8,278.1**	**10,172.9**	**12,280.7**	**14,589.5**	**17,091.6**	**19,736.2**	**22,520.5**	**25,429.1**	**28,051.6**	**30,770.2**	**33,576.3**	**36,448.1**	**39,430.5**	**42,236.3**	**45,126.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	761.9	1,604.6	2,552.4	3,633.0	4,869.9	6,287.9	7,909.5	9,747.1	11,796.6	14,046.0	16,487.5	19,110.5	21,879.6	24,774.4	27,382.0	30,084.7	32,874.0	35,728.3	38,692.2	41,478.3	44,347.3
Water Heating	49.7	100.2	151.6	204.3	258.0	312.7	368.7	425.8	484.1	543.5	604.1	625.7	640.9	654.7	669.6	685.5	702.4	719.8	738.4	758.0	778.8
Office	**5,573.6**	**11,591.3**	**18,191.9**	**25,523.3**	**33,704.8**	**42,866.4**	**53,130.9**	**64,171.3**	**76,196.9**	**89,300.9**	**103,449.4**	**118,075.5**	**133,404.7**	**149,401.2**	**163,509.3**	**178,148.7**	**193,274.1**	**208,762.9**	**224,867.9**	**240,117.8**	**255,842.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,563.9	9,550.3	15,088.8	21,322.0	28,368.8	36,356.0	45,401.0	55,567.4	66,674.5	78,817.9	91,960.5	106,050.8	120,903.6	136,413.2	149,999.9	164,087.3	178,630.5	193,514.9	208,974.9	223,545.0	238,554.7
Water Heating	1,009.7	2,041.1	3,103.2	4,201.3	5,336.0	6,510.4	7,729.9	8,603.9	9,522.4	10,483.0	11,488.9	12,024.7	12,501.1	12,988.0	13,509.4	14,061.4	14,643.6	15,247.9	15,893.0	16,572.8	17,287.8
Restaurant	**5,245.0**	**10,964.6**	**17,292.7**	**24,356.4**	**32,237.5**	**41,018.4**	**50,764.9**	**58,838.3**	**67,829.0**	**77,617.0**	**88,205.1**	**98,773.8**	**109,934.5**	**121,546.6**	**132,813.0**	**144,239.0**	**156,057.9**	**167,986.3**	**180,448.6**	**193,178.4**	**206,315.1**
Cooking	364.9	868.9	1,552.1	2,464.2	3,652.2	5,162.2	7,032.9	9,286.2	11,916.0	14,899.4	18,217.1	21,844.4	25,722.1	29,813.1	33,588.8	37,521.2	41,596.1	45,780.5	50,151.5	54,660.6	59,302.0
Space Heating	701.7	1,453.8	2,271.9	3,172.4	4,168.2	5,273.5	6,501.3	7,858.3	9,340.5	10,941.1	12,656.5	14,481.7	16,395.0	18,384.4	20,116.6	21,907.8	23,752.8	25,571.7	27,457.3	29,245.5	31,081.8
Water Heating	4,178.4	8,641.9	13,468.7	18,719.8	24,417.1	30,582.8	37,230.6	41,693.9	46,572.5	51,776.5	57,331.6	62,447.7	67,817.5	73,349.1	79,107.6	84,809.9	90,709.0	96,634.1	102,839.9	109,272.3	115,931.3
Retail	**6,490.0**	**13,468.8**	**21,089.4**	**29,513.4**	**38,869.2**	**49,297.7**	**60,933.5**	**73,623.2**	**87,504.3**	**102,564.4**	**118,767.6**	**135,790.6**	**153,687.8**	**172,327.4**	**188,899.3**	**206,055.7**	**223,746.5**	**241,835.4**	**260,596.9**	**278,423.1**	**296,772.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	5,989.5	12,453.0	19,537.3	27,399.6	36,166.7	45,976.2	56,958.8	69,183.8	82,565.8	97,094.3	112,732.7	129,429.6	146,976.8	165,257.9	181,447.7	198,201.7	215,469.2	233,118.5	251,409.1	268,740.8	286,571.6
Water Heating	500.4	1,015.8	1,552.1	2,113.8	2,702.5	3,321.5	3,974.7	4,439.4	4,938.6	5,470.1	6,034.9	6,361.0	6,711.1	7,069.5	7,451.5	7,854.0	8,277.3	8,716.8	9,187.7	9,682.4	10,200.9
Warehouse	**331.2**	**713.2**	**1,161.1**	**1,692.9**	**2,324.5**	**3,072.1**	**3,950.3**	**4,945.1**	**6,071.7**	**7,326.8**	**8,704.7**	**10,170.9**	**11,729.8**	**13,366.2**	**14,946.3**	**16,586.0**	**18,280.0**	**20,015.5**	**21,821.7**	**23,511.8**	**25,253.4**
Space Heating	281.3	612.0	1,006.6	1,482.4	2,055.4	2,741.4	3,554.7	4,503.0	5,579.8	6,782.0	8,103.6	9,537.0	11,060.7	12,661.7	14,204.0	15,803.9	17,456.1	19,148.1	20,907.7	22,548.9	24,239.2
Water Heating	49.9	101.2	154.6	210.5	269.1	330.7	395.6	442.0	491.8	544.8	601.1	633.9	669.1	704.5	742.3	782.1	823.9	867.4	914.0	962.9	1,014.2
Grand Total	**35,705.2**	**73,821.5**	**115,109.6**	**160,310.6**	**209,934.0**	**264,538.5**	**324,649.7**	**381,143.7**	**442,729.6**	**508,672.3**	**579,584.1**	**650,934.8**	**724,231.9**	**800,625.3**	**871,870.4**	**945,244.9**	**1,021,047.9**	**1,096,708.3**	**1,175,575.5**	**1,252,702.2**	**1,332,303.2**

C-32: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #32)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**8,830.5**	**18,080.8**	**27,896.3**	**38,393.5**	**49,622.5**	**61,658.8**	**74,577.3**	**84,062.5**	**94,244.8**	**105,121.5**	**116,746.9**	**127,335.5**	**138,174.0**	**149,519.1**	**160,822.0**	**172,561.2**	**184,729.1**	**197,092.2**	**210,098.0**	**223,046.8**	**236,450.8**
Cooking	48.7	115.5	205.2	324.0	477.3	670.6	908.4	1,193.2	1,524.1	1,898.4	2,313.7	2,767.4	3,252.2	3,763.7	4,232.2	4,720.4	5,226.7	5,746.9	6,293.4	6,856.4	7,434.3
Other	874.3	1,775.4	2,714.2	3,698.3	4,730.8	5,817.3	6,964.5	8,175.9	9,448.8	10,779.7	12,170.5	13,622.1	15,121.7	16,665.2	18,251.3	19,874.6	21,535.7	23,226.6	24,977.6	26,770.5	28,604.6
Space Heating	1,285.9	2,724.9	4,360.7	6,242.4	8,410.9	10,908.5	13,772.7	17,023.0	20,491.7	24,315.3	28,480.2	32,968.1	37,717.2	42,691.8	47,393.5	52,267.1	57,297.7	62,446.9	67,816.9	72,812.2	77,944.3
Water Heating	6,621.5	13,465.0	20,616.1	28,128.7	36,003.4	44,262.4	52,931.6	57,670.3	62,780.2	68,128.0	73,782.5	77,977.9	82,082.9	86,398.4	90,945.1	95,699.0	100,669.0	105,671.7	111,010.0	116,607.8	122,467.6
Grocery	**2,197.1**	**4,582.0**	**7,210.8**	**10,142.0**	**13,421.6**	**17,098.6**	**21,218.2**	**25,278.7**	**29,787.1**	**34,717.5**	**40,056.8**	**45,573.9**	**51,403.5**	**57,493.7**	**62,700.9**	**68,120.3**	**73,735.5**	**79,498.5**	**85,538.0**	**91,363.9**	**97,367.4**
Cooking	124.3	294.5	523.3	826.1	1,217.0	1,710.0	2,316.4	3,042.7	3,886.7	4,841.3	5,900.8	7,058.2	8,294.9	9,599.8	10,794.9	12,040.7	13,332.5	14,659.8	16,054.2	17,490.4	18,965.1
Space Heating	1,342.7	2,807.5	4,429.9	6,248.2	8,292.7	10,595.7	13,186.9	16,081.2	19,269.4	22,735.6	26,470.9	30,462.8	34,661.8	39,040.2	42,619.1	46,336.3	50,179.9	54,117.9	58,230.4	62,060.2	66,002.0
Water Heating	730.1	1,480.0	2,257.5	3,067.8	3,911.9	4,792.9	5,714.9	6,154.8	6,631.0	7,140.5	7,685.0	8,052.9	8,446.7	8,853.8	9,286.9	9,743.3	10,223.1	10,720.8	11,253.4	11,813.2	12,400.3
Healthcare	**2,622.7**	**5,356.5**	**8,240.8**	**11,302.5**	**14,551.3**	**18,002.7**	**21,672.9**	**24,212.6**	**26,958.5**	**29,583.2**	**32,384.0**	**34,810.9**	**37,273.6**	**39,841.3**	**42,328.3**	**44,922.6**	**47,623.5**	**50,358.2**	**53,250.8**	**56,152.8**	**59,173.1**
Cooking	9.0	21.4	38.1	60.2	88.7	124.6	168.8	221.7	283.3	352.9	430.1	514.5	604.6	699.8	786.9	877.8	972.0	1,068.7	1,170.4	1,275.1	1,382.7
Space Heating	275.5	583.2	932.2	1,332.9	1,793.8	2,323.8	2,930.7	3,618.7	4,385.8	5,227.5	6,140.7	7,121.8	8,157.8	9,241.1	10,176.9	11,148.7	12,153.6	13,183.3	14,259.3	15,256.3	16,281.9
Water Heating	2,338.1	4,751.8	7,270.4	9,909.4	12,668.8	15,554.3	18,573.4	20,372.2	22,289.4	24,002.9	25,813.2	27,174.6	28,511.1	29,900.4	31,364.5	32,896.1	34,498.0	36,106.1	37,821.0	39,621.4	41,508.5
Lodging	**6,162.1**	**12,607.0**	**19,419.9**	**26,663.7**	**34,356.1**	**42,521.8**	**51,185.3**	**58,542.9**	**66,335.6**	**73,954.2**	**81,957.3**	**89,324.1**	**95,168.4**	**101,238.9**	**107,409.6**	**113,566.6**	**119,946.9**	**126,026.3**	**132,408.2**	**139,025.9**	**145,892.0**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	175.6	357.4	547.3	747.1	957.5	1,179.5	1,414.7	1,663.6	1,921.7	2,192.1	2,475.1	2,770.7	3,076.3	3,390.8	3,551.5	3,719.6	3,894.5	4,074.2	4,262.4	4,442.2	4,628.7
Water Heating	5,986.5	12,249.6	18,872.6	25,916.6	33,398.6	41,342.2	49,770.6	56,879.2	64,413.9	71,762.0	79,482.2	86,553.4	92,092.1	97,848.1	103,858.1	109,847.0	116,052.3	121,952.0	128,145.8	134,583.8	141,263.4
Misc.	**307.4**	**703.7**	**1,213.6**	**1,866.8**	**2,690.1**	**3,710.2**	**4,949.3**	**6,419.5**	**8,116.5**	**10,026.7**	**12,139.6**	**14,387.8**	**16,789.1**	**19,318.9**	**21,966.3**	**24,712.0**	**27,547.1**	**30,451.3**	**33,485.4**	**36,275.7**	**39,141.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	250.5	589.2	1,040.2	1,633.2	2,395.2	3,352.7	4,527.8	5,932.5	7,562.9	9,405.3	11,448.9	13,680.1	16,063.6	18,577.8	21,208.2	23,935.7	26,751.6	29,635.8	32,648.8	35,416.7	38,258.5
Water Heating	56.8	114.5	173.4	233.6	295.0	357.6	421.6	486.9	553.6	621.4	690.7	707.7	725.5	741.2	758.1	776.3	795.5	815.5	836.6	859.0	882.8
Office	**5,208.6**	**10,533.9**	**16,019.3**	**21,691.6**	**27,551.8**	**33,614.1**	**39,903.5**	**45,909.1**	**51,923.7**	**58,147.3**	**64,594.6**	**70,589.2**	**76,641.2**	**82,830.5**	**85,832.6**	**88,985.9**	**92,280.8**	**95,673.2**	**99,235.9**	**102,806.5**	**106,531.0**
Space Heating	3,865.7	7,820.4	11,896.3	16,113.6	20,473.8	24,987.6	29,674.1	34,539.6	39,361.1	44,341.3	49,490.6	54,819.1	60,287.9	65,883.4	68,248.8	70,727.2	73,309.6	75,962.3	78,734.1	81,471.1	84,319.3
Water Heating	1,342.9	2,713.5	4,123.0	5,578.0	7,078.0	8,626.4	10,229.4	11,369.5	12,562.6	13,806.0	15,104.0	15,770.1	16,353.3	16,947.1	17,583.8	18,258.8	18,971.2	19,710.9	20,501.8	21,335.4	22,211.7
Restaurant	**6,253.9**	**13,059.7**	**20,562.5**	**28,894.4**	**38,131.9**	**48,353.0**	**59,619.3**	**68,433.5**	**78,228.5**	**88,865.5**	**100,362.6**	**111,647.8**	**123,574.0**	**135,975.8**	**148,290.5**	**160,756.5**	**173,658.0**	**186,739.3**	**200,450.3**	**214,427.5**	**228,837.0**
Cooking	454.3	1,075.2	1,907.9	3,007.3	4,423.8	6,205.9	8,393.6	11,007.6	14,039.2	17,461.8	21,254.7	25,392.3	29,809.2	34,465.7	38,714.2	43,140.8	47,729.7	52,443.9	57,394.5	62,493.6	67,729.0
Space Heating	309.7	671.4	1,099.7	1,611.6	2,221.9	2,945.6	3,795.6	4,778.5	5,891.9	7,127.8	8,480.8	9,944.0	11,496.4	13,125.6	14,823.8	16,580.0	18,388.9	20,238.1	22,162.7	23,952.1	25,786.7
Water Heating	5,490.0	11,313.1	17,555.0	24,275.5	31,486.2	39,201.4	47,430.2	52,647.3	58,297.4	64,276.0	70,627.1	76,311.5	82,268.4	88,384.5	94,752.4	101,035.7	107,539.4	114,057.3	120,893.2	127,981.8	135,321.3
Retail	**5,591.4**	**11,735.8**	**18,593.6**	**26,339.9**	**35,115.9**	**45,070.1**	**56,337.8**	**68,965.8**	**82,864.5**	**98,032.3**	**114,425.4**	**131,621.3**	**149,755.0**	**168,682.6**	**184,669.9**	**201,283.6**	**218,470.6**	**236,089.6**	**254,510.8**	**271,654.4**	**289,305.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	5,192.0	10,926.4	17,359.3	24,662.9	32,977.8	42,450.4	53,213.5	65,335.0	78,704.2	93,320.6	109,139.7	126,101.4	143,985.7	162,667.9	178,393.2	194,730.2	211,625.6	228,941.8	247,037.6	263,839.5	281,132.2
Water Heating	399.4	809.5	1,234.4	1,677.0	2,138.1	2,619.7	3,124.3	3,630.8	4,160.4	4,711.6	5,285.7	5,520.0	5,769.3	6,014.6	6,276.7	6,553.5	6,845.0	7,147.8	7,473.1	7,814.9	8,173.0
Warehouse	**287.7**	**594.9**	**927.7**	**1,292.0**	**1,692.1**	**2,133.0**	**2,619.4**	**3,151.4**	**3,723.7**	**4,339.7**	**4,998.4**	**5,662.5**	**6,359.4**	**7,082.4**	**7,661.9**	**8,264.1**	**8,887.2**	**9,525.8**	**10,193.2**	**10,821.7**	**11,469.3**
Space Heating	247.6	513.7	803.9	1,123.8	1,477.7	1,870.4	2,306.3	2,787.5	3,306.8	3,867.6	4,469.0	5,109.1	5,780.6	6,479.3	7,032.8	7,607.5	8,201.6	8,810.2	9,445.3	10,039.9	10,651.9
Water Heating	40.1	81.2	123.8	168.2	214.4	262.6	313.1	363.9	416.9	472.0	529.4	553.4	578.8	603.2	629.2	656.6	685.5	715.6	747.9	781.8	817.3
Grand Total	**37,461.4**	**77,254.5**	**120,084.5**	**166,586.3**	**217,133.4**	**272,162.2**	**332,083.0**	**384,975.9**	**442,183.0**	**502,787.7**	**567,665.6**	**630,952.9**	**695,138.2**	**761,983.2**	**821,682.3**	**883,172.8**	**946,878.7**	**1,011,454.3**	**1,079,170.5**	**1,145,575.2**	**1,214,166.9**

C-33: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #33)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**5,121.6**	**10,445.2**	**16,051.2**	**22,011.7**	**28,379.1**	**35,226.5**	**42,637.2**	**48,109.2**	**54,095.2**	**60,622.3**	**67,747.5**	**74,392.2**	**81,318.1**	**88,658.4**	**96,079.0**	**103,835.1**	**111,912.0**	**120,239.8**	**128,991.8**	**137,838.2**	**147,016.0**
Cooking	18.7	45.0	81.5	131.6	199.0	287.5	401.3	543.6	715.7	917.5	1,148.4	1,407.0	1,688.9	1,990.6	2,283.6	2,590.9	2,911.0	3,244.7	3,592.8	3,950.5	4,319.0
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	692.1	1,452.5	2,304.7	3,276.8	4,396.1	5,694.7	7,205.8	8,955.6	10,858.3	13,007.8	15,402.1	18,031.6	20,857.1	23,852.1	26,711.5	29,696.5	32,793.1	36,004.3	39,339.2	42,551.4	45,862.0
Water Heating	3,896.2	7,905.1	12,074.9	16,442.2	21,026.1	25,859.6	30,983.1	33,861.8	37,032.0	40,427.8	44,106.8	47,000.7	49,922.6	53,038.7	56,350.4	59,832.3	63,485.5	67,237.7	71,240.5	75,425.8	79,806.0
Grocery	**1,225.8**	**2,537.0**	**3,963.8**	**5,539.9**	**7,296.2**	**9,270.2**	**11,502.2**	**13,717.1**	**16,229.9**	**19,039.0**	**22,143.9**	**25,406.9**	**28,905.1**	**32,601.0**	**35,834.8**	**39,223.2**	**42,750.5**	**46,418.1**	**50,244.0**	**54,021.4**	**57,925.5**
Cooking	48.7	117.3	212.6	343.2	518.7	749.5	1,046.0	1,416.6	1,864.9	2,390.7	2,992.4	3,666.2	4,400.4	5,186.7	5,949.7	6,750.4	7,584.3	8,453.7	9,360.5	10,292.1	11,252.1
Space Heating	744.6	1,544.4	2,418.6	3,389.0	4,476.1	5,704.3	7,099.8	8,682.4	10,458.2	12,426.7	14,587.4	16,933.8	19,434.7	22,069.3	24,245.9	26,522.7	28,888.6	31,344.5	33,898.5	36,361.3	38,903.9
Water Heating	432.5	875.3	1,332.6	1,807.6	2,301.4	2,816.4	3,356.4	3,618.1	3,906.8	4,221.6	4,564.1	4,806.8	5,070.0	5,345.0	5,639.2	5,950.2	6,277.6	6,619.9	6,985.1	7,367.9	7,769.5
Healthcare	**1,528.2**	**3,110.8**	**4,769.8**	**6,524.0**	**8,385.9**	**10,373.8**	**12,506.9**	**14,001.9**	**15,650.2**	**17,266.5**	**19,032.0**	**20,612.2**	**22,249.7**	**23,980.6**	**25,691.3**	**27,487.0**	**29,365.0**	**31,300.7**	**33,347.0**	**35,429.9**	**37,600.4**
Cooking	3.5	8.5	15.5	25.0	37.8	54.6	76.2	103.2	135.9	174.2	218.1	267.2	320.7	378.0	433.7	492.0	552.8	616.2	682.3	750.3	820.3
Space Heating	146.2	306.7	486.5	691.3	927.0	1,200.2	1,518.0	1,885.6	2,305.3	2,776.6	3,299.2	3,871.0	4,483.8	5,132.2	5,697.8	6,289.6	6,904.8	7,544.0	8,209.0	8,847.9	9,507.4
Water Heating	1,378.4	2,795.5	4,267.8	5,807.7	7,421.1	9,118.9	10,912.7	12,013.0	13,209.0	14,315.7	15,514.8	16,474.0	17,445.1	18,470.4	19,559.8	20,705.4	21,907.3	23,140.5	24,455.6	25,831.8	27,272.7
Lodging	**3,589.5**	**7,320.6**	**11,245.9**	**15,412.0**	**19,847.6**	**24,593.2**	**29,692.6**	**34,098.4**	**38,864.3**	**43,640.3**	**48,757.1**	**53,591.4**	**57,608.4**	**61,834.6**	**66,182.2**	**70,614.8**	**75,224.0**	**79,728.8**	**84,450.8**	**89,340.4**	**94,415.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	103.0	209.0	319.2	434.5	555.4	682.8	817.9	961.4	1,111.1	1,269.1	1,435.7	1,611.2	1,793.7	1,982.6	2,080.0	2,182.5	2,289.6	2,400.8	2,516.8	2,630.7	2,749.1
Water Heating	3,486.5	7,111.6	10,926.7	14,977.5	19,292.2	23,910.4	28,874.7	33,137.0	37,753.2	42,371.2	47,321.4	51,980.2	55,814.7	59,851.9	64,102.2	68,432.3	72,934.4	77,328.0	81,934.0	86,709.7	91,666.6
Misc.	**133.1**	**304.9**	**528.5**	**820.7**	**1,199.5**	**1,685.0**	**2,297.2**	**3,052.4**	**3,957.3**	**5,011.2**	**6,211.5**	**7,518.8**	**8,942.5**	**10,464.5**	**12,074.6**	**13,757.5**	**15,505.0**	**17,320.8**	**19,209.2**	**21,015.2**	**22,876.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	99.0	236.3	424.7	680.9	1,023.0	1,471.1	2,045.2	2,761.2	3,626.3	4,639.6	5,798.5	7,095.6	8,508.6	10,021.1	11,620.9	13,292.7	15,028.5	16,832.2	18,707.7	20,500.1	22,346.9
Water Heating	34.0	68.6	103.8	139.8	176.5	213.9	252.1	291.1	331.0	371.6	413.0	423.2	433.9	443.4	453.7	464.8	476.5	488.6	501.5	515.2	529.6
Office	**3,096.7**	**6,254.9**	**9,499.4**	**12,845.6**	**16,295.4**	**19,859.6**	**23,557.3**	**27,093.8**	**30,643.9**	**34,332.1**	**38,169.7**	**41,751.3**	**45,383.2**	**49,110.4**	**50,936.0**	**52,860.9**	**54,877.4**	**56,969.1**	**59,160.2**	**61,384.4**	**63,707.6**
Space Heating	2,296.5	4,639.6	7,047.8	9,532.8	12,096.3	14,746.7	17,498.5	20,359.7	23,200.8	26,147.0	29,206.2	32,385.1	35,659.5	39,019.9	40,450.4	41,955.2	43,527.5	45,154.7	46,850.9	48,554.5	50,329.6
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,427.8**	**7,106.4**	**11,124.9**	**15,578.1**	**20,546.7**	**26,125.6**	**32,404.6**	**37,345.3**	**43,045.3**	**49,446.2**	**56,562.9**	**63,738.6**	**71,465.2**	**79,617.5**	**87,955.4**	**96,531.6**	**105,446.5**	**114,694.2**	**124,353.9**	**134,237.6**	**144,448.0**
Cooking	178.9	430.4	778.5	1,255.1	1,894.0	2,732.8	3,808.8	5,151.7	6,773.9	8,673.3	10,844.4	13,273.2	15,917.4	18,746.7	21,486.7	24,360.7	27,353.4	30,472.1	33,724.5	37,066.1	40,509.1
Space Heating	157.7	338.4	549.8	801.6	1,103.7	1,467.4	1,904.3	2,423.4	3,028.4	3,718.9	4,493.7	5,349.2	6,272.0	7,253.0	8,285.2	9,360.1	10,472.7	11,624.8	12,819.0	13,968.2	15,150.3
Water Heating	3,091.2	6,337.6	9,796.6	13,521.4	17,549.1	21,925.4	26,691.5	29,770.2	33,243.0	37,053.9	41,224.7	45,116.2	49,275.8	53,617.8	58,183.5	62,810.9	67,620.4	72,597.3	77,810.3	83,203.3	88,788.6
Retail	**3,074.3**	**6,397.5**	**10,056.2**	**14,150.4**	**18,774.6**	**24,041.6**	**30,070.7**	**36,944.7**	**44,658.7**	**53,253.5**	**62,724.7**	**72,823.7**	**83,624.1**	**95,021.4**	**104,754.1**	**114,941.5**	**125,534.6**	**136,540.0**	**147,996.7**	**159,041.6**	**170,448.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	2,838.1	5,919.6	9,329.0	13,164.3	17,519.8	22,506.5	28,241.9	34,816.5	42,216.2	50,482.3	59,609.3	69,566.2	80,213.7	91,458.9	101,028.1	111,042.3	121,452.4	132,266.0	143,517.5	154,347.5	165,528.9
Water Heating	236.2	477.8	727.3	986.1	1,254.9	1,535.1	1,828.8	2,128.2	2,442.4	2,771.2	3,115.4	3,257.5	3,410.4	3,562.5	3,726.0	3,899.3	4,082.2	4,274.1	4,479.1	4,694.1	4,919.7
Warehouse	**158.1**	**325.3**	**504.5**	**699.3**	**912.7**	**1,148.2**	**1,410.1**	**1,700.5**	**2,017.6**	**2,364.7**	**2,742.1**	**3,127.4**	**3,536.9**	**3,966.0**	**4,312.1**	**4,674.4**	**5,051.2**	**5,442.4**	**5,849.7**	**6,245.0**	**6,653.5**
Space Heating	134.4	277.3	431.5	600.4	786.8	994.3	1,226.8	1,487.2	1,772.8	2,087.0	2,430.0	2,800.8	3,194.7	3,608.6	3,938.6	4,283.7	4,642.3	5,014.4	5,401.5	5,775.4	6,161.6
Water Heating	23.7	48.0	73.0	98.9	125.9	154.0	183.4	213.4	244.8	277.7	312.1	326.7	342.3	357.4	373.6	390.8	408.9	427.9	448.3	469.6	492.0
Grand Total	**21,355.2**	**43,802.5**	**67,744.1**	**93,581.7**	**121,637.8**	**152,323.7**	**186,078.8**	**216,063.3**	**249,162.2**	**284,975.8**	**324,091.5**	**362,962.4**	**403,033.2**	**445,254.3**	**483,819.5**	**523,926.1**	**565,666.3**	**608,653.9**	**653,603.3**	**698,553.8**	**745,091.9**

C-34: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #34)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**5,325.7**	**10,856.2**	**16,673.1**	**22,848.9**	**29,435.3**	**36,505.7**	**44,143.6**	**49,847.5**	**56,069.3**	**62,836.2**	**70,205.7**	**77,100.4**	**84,280.5**	**91,879.0**	**99,561.5**	**107,583.5**	**115,929.9**	**124,529.6**	**133,556.9**	**142,682.8**	**152,144.5**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	895.8	1,862.5	2,924.8	4,111.0	5,447.9	6,967.4	8,703.4	10,681.8	12,816.7	15,201.5	17,835.2	20,709.1	23,782.7	27,029.4	30,144.4	33,388.7	36,748.0	40,223.9	43,826.7	47,310.7	50,897.3
Water Heating	3,896.2	7,905.1	12,074.9	16,442.2	21,026.1	25,859.6	30,983.1	33,861.8	37,032.0	40,427.8	44,106.8	47,000.7	49,922.6	53,038.7	56,350.4	59,832.3	63,485.5	67,237.7	71,240.5	75,425.8	79,806.0
Grocery	**1,227.9**	**2,541.2**	**3,970.1**	**5,548.4**	**7,307.0**	**9,283.3**	**11,517.6**	**13,734.9**	**16,250.0**	**19,061.6**	**22,169.0**	**25,434.5**	**28,935.3**	**32,633.8**	**35,868.2**	**39,257.1**	**42,785.0**	**46,453.2**	**50,279.8**	**54,057.8**	**57,962.8**
Cooking	50.7	121.5	218.9	351.8	529.5	762.5	1,061.4	1,434.3	1,885.1	2,413.3	3,017.5	3,693.8	4,430.7	5,219.5	5,983.0	6,784.3	7,618.8	8,488.8	9,396.2	10,328.6	11,289.3
Space Heating	744.6	1,544.4	2,418.6	3,389.0	4,476.1	5,704.3	7,099.8	8,682.4	10,458.2	12,426.7	14,587.4	16,933.8	19,434.7	22,069.3	24,245.9	26,522.7	28,888.6	31,344.5	33,898.5	36,361.3	38,903.9
Water Heating	432.5	875.3	1,332.6	1,807.6	2,301.4	2,816.4	3,356.4	3,618.1	3,906.8	4,221.6	4,564.1	4,806.8	5,070.0	5,345.0	5,639.2	5,950.2	6,277.6	6,619.9	6,985.1	7,367.9	7,769.5
Healthcare	**1,615.9**	**3,287.4**	**5,037.2**	**6,884.2**	**8,840.6**	**10,924.9**	**13,156.5**	**14,752.1**	**16,502.9**	**18,223.7**	**20,096.0**	**21,785.6**	**23,534.4**	**25,378.6**	**27,204.1**	**29,116.6**	**31,113.0**	**33,083.5**	**35,166.1**	**37,287.4**	**39,498.1**
Cooking	3.8	9.2	16.7	27.0	40.7	58.9	82.2	111.3	146.5	187.8	235.1	288.1	345.8	407.6	467.6	530.5	596.1	664.4	735.7	808.9	884.4
Space Heating	150.0	314.3	498.1	707.0	946.8	1,224.3	1,546.5	1,918.7	2,343.1	2,819.3	3,346.8	3,923.8	4,542.0	5,195.7	5,766.8	6,364.4	6,985.3	7,630.4	8,301.4	8,946.3	9,612.0
Water Heating	1,462.1	2,963.9	4,522.5	6,150.3	7,853.1	9,641.7	11,527.8	12,722.0	14,013.3	15,216.6	16,514.0	17,573.7	18,646.6	19,775.2	20,969.7	22,221.7	23,531.6	24,788.7	26,129.1	27,532.1	29,001.7
Lodging	**3,626.8**	**7,395.7**	**11,359.6**	**15,564.9**	**20,040.5**	**24,826.6**	**29,967.3**	**34,415.0**	**39,223.5**	**44,042.7**	**49,203.5**	**54,082.6**	**58,145.2**	**62,417.5**	**66,812.1**	**71,289.3**	**75,943.8**	**80,494.1**	**85,262.4**	**90,198.9**	**95,321.9**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	137.5	278.4	424.1	575.6	733.3	898.1	1,071.2	1,253.4	1,442.3	1,640.1	1,847.2	2,064.0	2,288.5	2,519.9	2,660.6	2,807.0	2,958.5	3,114.4	3,275.7	3,435.6	3,600.7
Water Heating	3,489.3	7,117.3	10,935.5	14,989.4	19,307.2	23,928.6	28,896.1	33,161.7	37,781.2	42,402.6	47,356.3	52,018.6	55,856.7	59,897.5	64,151.5	68,482.4	72,985.3	77,379.7	81,986.7	86,763.3	91,721.2
Misc.	**134.8**	**308.5**	**533.8**	**827.9**	**1,208.6**	**1,696.0**	**2,310.3**	**3,067.4**	**3,974.4**	**5,030.3**	**6,232.8**	**7,542.1**	**8,968.0**	**10,492.2**	**12,104.5**	**13,789.7**	**15,539.5**	**17,357.7**	**19,248.4**	**21,056.4**	**22,919.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	100.8	239.9	430.1	688.2	1,032.2	1,482.2	2,058.2	2,776.3	3,643.4	4,658.8	5,819.7	7,119.0	8,534.1	10,048.8	11,650.8	13,325.0	15,063.0	16,869.0	18,746.9	20,541.3	22,390.1
Water Heating	34.0	68.6	103.8	139.8	176.5	213.9	252.1	291.1	331.0	371.6	413.0	423.2	433.9	443.4	453.7	464.8	476.5	488.6	501.5	515.2	529.6
Office	**3,608.1**	**7,456.8**	**11,631.0**	**16,224.9**	**21,324.0**	**27,032.9**	**33,464.3**	**40,398.3**	**48,042.1**	**56,516.6**	**65,820.8**	**75,515.2**	**85,801.4**	**96,648.6**	**106,002.3**	**115,792.8**	**125,974.2**	**136,548.3**	**147,558.6**	**158,216.8**	**169,229.3**
Space Heating	2,807.9	5,841.5	9,179.4	12,912.0	17,124.9	21,920.0	27,405.5	33,664.2	40,599.0	48,331.4	56,857.3	66,149.0	76,077.7	86,558.1	95,516.8	104,887.2	114,624.3	124,733.9	135,249.3	145,386.8	155,851.4
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,486.3**	**7,238.0**	**11,349.6**	**15,920.7**	**21,031.1**	**26,771.0**	**33,228.8**	**38,364.5**	**44,265.9**	**50,869.0**	**58,186.9**	**65,561.8**	**73,484.2**	**81,829.8**	**90,358.8**	**99,122.4**	**108,226.2**	**117,599.8**	**127,393.3**	**137,416.1**	**147,770.4**
Cooking	179.7	432.0	781.0	1,258.4	1,898.2	2,737.8	3,814.8	5,158.5	6,781.7	8,682.0	10,854.1	13,283.8	15,929.0	18,759.4	21,499.5	24,373.7	27,366.7	30,485.6	33,738.3	37,080.2	40,523.5
Space Heating	167.8	358.7	580.6	843.0	1,156.0	1,530.7	1,978.7	2,509.2	3,125.8	3,828.0	4,614.7	5,482.3	6,417.5	7,410.9	8,455.9	9,543.6	10,669.3	11,834.6	13,042.1	14,204.7	15,400.4
Water Heating	3,138.7	6,447.3	9,988.1	13,819.2	17,976.9	22,502.5	27,435.3	30,696.8	34,358.4	38,359.0	42,718.1	46,795.7	51,137.7	55,659.5	60,403.4	65,205.1	70,190.2	75,279.6	80,612.9	86,131.2	91,846.6
Retail	**3,804.2**	**7,868.7**	**12,285.1**	**17,155.5**	**22,573.5**	**28,652.6**	**35,515.1**	**43,084.3**	**51,514.2**	**60,845.2**	**71,075.7**	**81,959.8**	**93,565.4**	**105,786.5**	**116,363.3**	**127,412.3**	**138,883.6**	**150,779.6**	**163,145.5**	**175,118.5**	**187,473.0**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,411.4	7,073.6	11,074.1	15,512.1	20,480.0	26,088.7	32,456.9	39,675.2	47,728.1	56,656.5	66,457.3	77,101.9	88,447.5	100,401.0	110,690.5	121,435.2	132,585.3	144,144.7	156,150.8	167,746.6	179,705.5
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**163.3**	**335.7**	**520.3**	**720.5**	**939.4**	**1,180.5**	**1,448.1**	**1,744.3**	**2,067.3**	**2,420.4**	**2,803.8**	**3,195.3**	**3,611.1**	**4,046.6**	**4,399.2**	**4,768.1**	**5,151.5**	**5,549.4**	**5,963.5**	**6,365.7**	**6,781.2**
Space Heating	139.6	287.7	447.3	621.6	813.5	1,026.6	1,264.7	1,530.9	1,822.4	2,142.7	2,491.7	2,868.7	3,268.9	3,689.2	4,025.7	4,377.3	4,742.6	5,121.5	5,515.3	5,896.1	6,289.3
Water Heating	23.7	48.0	73.0	98.9	125.9	154.0	183.4	213.4	244.8	277.7	312.1	326.7	342.3	357.4	373.6	390.8	408.9	427.9	448.3	469.6	492.0
Grand Total	**22,993.0**	**47,288.2**	**73,359.8**	**101,695.9**	**132,700.1**	**166,873.6**	**204,751.6**	**239,408.3**	**277,909.6**	**319,845.8**	**365,794.2**	**412,177.4**	**460,325.4**	**511,112.5**	**558,674.1**	**608,131.9**	**659,546.7**	**712,395.2**	**767,574.5**	**822,400.4**	**879,100.9**

C-35: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #35)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**6,251.0**	**12,718.5**	**19,489.3**	**26,637.7**	**34,212.5**	**42,286.5**	**50,945.7**	**57,690.9**	**64,969.2**	**72,807.5**	**81,266.9**	**89,277.5**	**97,591.2**	**106,339.4**	**115,189.8**	**124,396.3**	**133,942.4**	**142,809.7**	**152,118.6**	**161,544.5**	**171,324.8**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	898.2	1,867.4	2,932.3	4,121.1	5,460.6	6,982.8	8,721.5	10,702.7	12,840.4	15,228.1	17,864.6	20,741.4	23,818.1	27,067.8	30,186.0	33,433.4	36,795.8	40,274.9	43,881.0	47,368.3	50,958.2
Water Heating	4,819.0	9,762.4	14,883.7	20,221.0	25,790.6	31,625.1	37,767.1	41,684.3	45,908.2	50,372.6	55,138.6	59,145.4	63,197.9	67,460.7	71,937.2	76,600.4	81,450.2	85,466.8	89,747.9	94,229.9	98,925.4
Grocery	**1,234.4**	**2,555.9**	**3,995.7**	**5,588.2**	**7,365.1**	**9,364.7**	**11,627.9**	**13,880.7**	**16,436.3**	**19,292.1**	**22,446.9**	**25,762.6**	**29,316.6**	**33,071.1**	**36,363.9**	**39,813.3**	**43,404.0**	**47,137.4**	**51,033.3**	**54,883.0**	**58,862.2**
Cooking	50.7	121.5	218.9	351.8	529.5	762.5	1,061.4	1,434.3	1,885.1	2,413.3	3,017.5	3,693.8	4,430.7	5,219.5	5,983.0	6,784.3	7,618.8	8,488.8	9,396.2	10,328.6	11,289.3
Space Heating	746.3	1,547.8	2,423.8	3,396.1	4,485.0	5,715.1	7,112.4	8,697.0	10,474.7	12,445.3	14,607.9	16,956.5	19,459.4	22,096.1	24,274.9	26,553.9	28,922.0	31,380.2	33,936.4	36,401.5	38,946.4
Water Heating	437.3	886.6	1,353.0	1,840.4	2,350.6	2,887.0	3,454.1	3,749.4	4,076.5	4,433.5	4,821.4	5,112.2	5,426.5	5,755.5	6,106.0	6,475.2	6,863.2	7,268.4	7,700.7	8,152.9	8,626.5
Healthcare	**1,647.4**	**3,351.0**	**5,133.6**	**7,014.1**	**9,004.9**	**11,124.2**	**13,391.8**	**15,024.4**	**16,813.2**	**18,572.8**	**20,484.8**	**22,215.3**	**24,005.9**	**25,892.6**	**27,761.2**	**29,717.4**	**31,758.3**	**33,773.8**	**35,902.1**	**38,069.7**	**40,327.6**
Cooking	4.1	9.8	17.7	28.7	43.3	62.6	87.4	118.3	155.8	199.7	250.0	306.3	367.6	433.3	497.0	563.9	633.6	706.2	782.0	859.8	940.0
Space Heating	181.3	377.4	593.4	835.2	1,108.5	1,419.9	1,776.7	2,184.1	2,644.1	3,156.4	3,720.8	4,335.3	4,991.6	5,684.0	6,294.4	6,931.8	7,593.1	8,278.8	8,991.0	9,677.8	10,385.8
Water Heating	1,462.1	2,963.9	4,522.5	6,150.3	7,853.1	9,641.7	11,527.8	12,722.0	14,013.3	15,216.6	16,514.0	17,573.7	18,646.6	19,775.2	20,969.7	22,221.7	23,531.6	24,788.7	26,129.1	27,532.1	29,001.7
Lodging	**3,740.7**	**7,630.2**	**11,723.6**	**16,070.0**	**20,700.2**	**25,657.5**	**30,988.8**	**35,649.3**	**40,693.0**	**45,769.8**	**51,210.5**	**56,391.6**	**60,774.6**	**65,383.0**	**70,127.8**	**74,967.2**	**79,994.3**	**84,927.9**	**90,090.9**	**95,412.5**	**100,930.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	174.2	357.4	553.0	764.3	994.2	1,246.3	1,524.7	1,832.5	2,168.1	2,533.7	2,929.3	3,354.4	3,803.9	4,274.5	4,667.0	5,075.7	5,498.8	5,936.1	6,389.0	6,829.3	7,283.0
Water Heating	3,566.6	7,272.8	11,170.6	15,305.7	19,706.0	24,411.2	29,464.0	33,816.8	38,524.9	43,236.2	48,281.2	53,037.1	56,970.7	61,108.5	65,460.8	69,891.5	74,495.5	78,991.8	83,701.9	88,583.2	93,647.3
Misc.	**472.2**	**987.4**	**1,560.6**	**2,209.2**	**2,950.2**	**3,803.5**	**4,790.1**	**5,925.9**	**7,217.2**	**8,662.7**	**10,261.5**	**11,975.5**	**13,812.1**	**15,753.1**	**17,468.0**	**19,261.9**	**21,126.0**	**23,061.9**	**25,075.4**	**27,013.0**	**29,012.6**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	438.1	918.8	1,456.8	2,069.4	2,773.8	3,589.7	4,538.0	5,634.8	6,886.2	8,291.2	9,848.5	11,552.4	13,378.2	15,309.6	17,014.3	18,797.2	20,649.6	22,573.3	24,573.9	26,497.8	28,483.0
Water Heating	34.0	68.6	103.8	139.8	176.5	213.9	252.1	291.1	331.0	371.6	413.0	423.2	433.9	443.4	453.7	464.8	476.5	488.6	501.5	515.2	529.6
Office	**3,696.0**	**7,633.6**	**11,898.4**	**16,584.6**	**21,777.5**	**27,581.7**	**34,110.1**	**41,142.6**	**48,886.5**	**57,462.4**	**66,869.8**	**76,669.6**	**87,062.8**	**98,018.5**	**107,482.6**	**117,385.0**	**127,679.6**	**138,368.0**	**149,493.8**	**160,269.4**	**171,401.0**
Space Heating	2,895.7	6,018.3	9,446.8	13,271.7	17,578.4	22,468.8	28,051.2	34,408.5	41,443.4	49,277.3	57,906.3	67,303.4	77,339.1	87,928.0	96,997.0	106,479.3	116,329.8	126,553.6	137,184.5	147,439.4	158,023.0
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,780.0**	**7,829.3**	**12,243.8**	**17,123.6**	**22,547.7**	**28,606.4**	**35,388.3**	**40,853.9**	**47,089.5**	**54,031.5**	**61,694.1**	**69,420.9**	**77,700.6**	**86,408.6**	**95,044.2**	**103,919.7**	**113,140.2**	**122,633.5**	**132,551.0**	**142,703.7**	**153,193.8**
Cooking	179.7	432.0	781.0	1,258.4	1,898.2	2,737.8	3,814.8	5,158.5	6,781.7	8,682.0	10,854.1	13,283.8	15,929.0	18,759.4	21,499.5	24,373.7	27,366.7	30,485.6	33,738.3	37,080.2	40,523.5
Space Heating	461.6	950.0	1,474.7	2,045.9	2,672.7	3,366.0	4,138.3	4,998.6	5,949.4	6,990.5	8,121.9	9,341.5	10,633.9	11,989.8	13,141.3	14,340.9	15,583.3	16,868.2	18,199.8	19,492.4	20,823.8
Water Heating	3,138.7	6,447.3	9,988.1	13,819.2	17,976.9	22,502.5	27,435.3	30,696.8	34,358.4	38,359.0	42,718.1	46,795.7	51,137.7	55,659.5	60,403.4	65,205.1	70,190.2	75,279.6	80,612.9	86,131.2	91,846.6
Retail	**4,853.6**	**9,980.9**	**15,479.3**	**21,452.8**	**27,991.8**	**35,209.2**	**43,230.0**	**51,977.4**	**61,602.9**	**72,146.1**	**83,609.8**	**95,752.6**	**108,636.2**	**122,153.7**	**134,047.4**	**146,432.2**	**159,256.6**	**172,516.3**	**186,261.9**	**199,635.2**	**213,411.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,460.8	9,185.9	14,268.4	19,809.4	25,898.3	32,645.3	40,171.7	48,568.3	57,816.8	67,957.4	78,991.3	90,894.6	103,518.3	116,768.1	128,374.5	140,455.0	152,958.3	165,881.4	179,267.1	192,263.4	205,644.0
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**167.7**	**344.5**	**533.8**	**738.9**	**962.8**	**1,209.2**	**1,482.4**	**1,784.5**	**2,113.7**	**2,473.3**	**2,863.6**	**3,262.3**	**3,685.6**	**4,128.7**	**4,489.3**	**4,866.3**	**5,258.1**	**5,664.5**	**6,087.5**	**6,498.6**	**6,923.5**
Space Heating	144.0	296.6	460.8	639.9	836.9	1,055.3	1,299.0	1,571.1	1,868.8	2,195.6	2,551.5	2,935.6	3,343.3	3,771.4	4,115.7	4,475.6	4,849.2	5,236.6	5,639.2	6,029.0	6,431.5
Water Heating	23.7	48.0	73.0	98.9	125.9	154.0	183.4	213.4	244.8	277.7	312.1	326.7	342.3	357.4	373.6	390.8	408.9	427.9	448.3	469.6	492.0
Grand Total	**25,842.9**	**53,031.5**	**82,058.1**	**113,419.1**	**147,512.7**	**184,843.0**	**225,955.0**	**263,929.6**	**305,821.4**	**351,218.2**	**400,708.0**	**450,727.9**	**502,585.5**	**557,148.6**	**607,974.2**	**660,759.3**	**715,559.6**	**770,892.9**	**828,614.5**	**886,029.7**	**945,387.2**

C-36: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #36)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**4,811.3**	**9,762.5**	**14,913.0**	**20,308.1**	**25,972.4**	**31,947.4**	**38,284.6**	**42,456.9**	**46,906.2**	**51,661.0**	**56,781.9**	**61,201.1**	**65,716.5**	**70,487.0**	**75,198.4**	**80,129.0**	**85,277.4**	**90,576.8**	**96,185.0**	**102,014.3**	**108,086.2**
Cooking	18.1	43.5	78.9	127.3	192.5	278.1	388.2	525.8	692.3	887.5	1,111.0	1,361.2	1,633.9	1,925.8	2,209.3	2,506.6	2,816.4	3,139.3	3,476.1	3,822.1	4,178.7
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	390.8	788.2	1,194.8	1,612.0	2,039.3	2,477.5	2,928.2	3,392.2	3,773.4	4,166.9	4,574.2	4,996.7	5,431.2	5,876.5	6,046.7	6,226.9	6,416.2	6,612.2	6,817.2	7,026.5	7,246.0
Water Heating	3,887.9	7,888.2	12,049.3	16,407.8	20,982.8	25,807.1	30,921.4	33,790.7	36,951.2	40,337.4	44,006.5	46,890.3	49,801.9	52,907.7	56,208.9	59,680.0	63,322.4	67,072.2	71,072.5	75,255.1	79,632.4
Grocery	**1,109.5**	**2,261.2**	**3,471.2**	**4,754.1**	**6,120.7**	**7,586.0**	**9,167.5**	**10,572.5**	**12,107.9**	**13,773.1**	**15,570.6**	**17,370.7**	**19,275.9**	**21,266.8**	**22,697.7**	**24,201.9**	**25,773.4**	**27,408.8**	**29,121.9**	**30,880.1**	**32,703.9**
Cooking	48.7	117.3	212.6	343.2	518.7	749.5	1,046.0	1,416.6	1,864.9	2,390.7	2,992.4	3,666.2	4,400.4	5,186.7	5,949.7	6,750.4	7,584.3	8,453.7	9,360.5	10,292.1	11,252.1
Space Heating	628.2	1,268.6	1,926.0	2,603.3	3,300.6	4,020.0	4,765.1	5,537.8	6,336.2	7,160.9	8,014.0	8,897.6	9,805.5	10,735.1	11,108.7	11,501.4	11,911.5	12,335.2	12,776.4	13,220.0	13,682.2
Water Heating	432.5	875.3	1,332.6	1,807.6	2,301.4	2,816.4	3,356.4	3,618.1	3,906.8	4,221.6	4,564.1	4,806.8	5,070.0	5,345.0	5,639.2	5,950.2	6,277.6	6,619.9	6,985.1	7,367.9	7,769.5
Healthcare	**1,311.0**	**2,660.3**	**4,063.8**	**5,533.8**	**7,077.2**	**8,705.3**	**10,432.4**	**11,472.8**	**12,614.8**	**13,844.9**	**15,174.5**	**16,270.2**	**17,384.0**	**18,557.0**	**19,679.0**	**20,860.1**	**22,099.4**	**23,387.6**	**24,756.3**	**26,174.6**	**27,657.5**
Cooking	3.5	8.5	15.5	25.0	37.8	54.6	76.2	103.2	135.9	174.2	218.1	267.2	320.7	378.0	433.7	492.0	552.8	616.2	682.3	750.3	820.3
Space Heating	120.7	245.9	377.2	516.2	664.1	822.2	992.6	1,176.5	1,374.2	1,585.6	1,810.8	2,049.9	2,300.3	2,560.6	2,715.8	2,878.8	3,048.8	3,225.4	3,409.4	3,588.6	3,774.5
Water Heating	1,186.8	2,405.9	3,671.1	4,992.6	6,375.4	7,828.5	9,363.5	10,193.0	11,104.6	12,085.1	13,145.6	13,953.1	14,763.0	15,618.3	16,529.5	17,489.2	18,497.8	19,546.0	20,664.7	21,835.8	23,062.7
Lodging	**3,352.7**	**6,779.4**	**10,310.9**	**13,967.1**	**17,751.7**	**21,678.3**	**25,767.5**	**28,959.8**	**32,314.4**	**35,490.3**	**38,828.8**	**41,720.0**	**43,660.6**	**45,698.4**	**47,759.3**	**49,926.3**	**52,197.7**	**54,387.9**	**56,715.7**	**59,151.8**	**61,708.6**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	100.7	204.3	312.1	424.9	543.3	668.2	800.7	941.5	1,090.8	1,248.5	1,414.7	1,589.7	1,771.8	1,960.1	2,056.9	2,158.7	2,265.1	2,375.6	2,490.8	2,604.0	2,721.6
Water Heating	3,252.1	6,575.1	9,998.9	13,542.2	17,208.4	21,010.1	24,966.8	28,018.3	31,223.6	34,241.8	37,414.1	40,130.4	41,888.9	43,738.3	45,702.4	47,767.6	49,932.6	52,012.3	54,224.8	56,547.9	58,987.1
Misc.	**44.4**	**92.6**	**145.9**	**206.0**	**274.4**	**352.6**	**442.7**	**546.1**	**663.2**	**794.0**	**938.3**	**1,063.5**	**1,199.5**	**1,343.0**	**1,494.9**	**1,653.8**	**1,819.0**	**1,990.5**	**2,169.0**	**2,340.9**	**2,518.3**
Space Heating	10.5	24.3	42.7	67.2	99.2	140.7	193.4	258.6	337.1	428.7	533.2	650.1	777.1	913.1	1,056.8	1,206.9	1,362.7	1,524.5	1,692.7	1,853.7	2,019.5
Water Heating	33.9	68.3	103.2	138.9	175.1	211.9	249.3	287.4	326.1	365.2	405.1	413.4	422.4	429.9	438.1	446.9	456.3	466.0	476.3	487.2	498.8
Office	**586.5**	**1,198.1**	**1,843.8**	**2,532.7**	**3,271.6**	**4,070.0**	**4,938.6**	**5,885.3**	**6,911.9**	**8,017.8**	**9,204.0**	**10,054.9**	**10,895.0**	**11,773.1**	**12,703.6**	**13,678.3**	**14,692.9**	**15,746.1**	**16,843.5**	**17,915.0**	**19,024.3**
Space Heating	83.9	185.9	312.0	470.0	668.0	915.2	1,220.9	1,592.5	2,033.2	2,542.4	3,119.2	3,760.4	4,455.5	5,197.0	5,979.3	6,795.5	7,641.9	8,520.1	9,432.5	10,307.8	11,209.2
Water Heating	502.6	1,012.2	1,531.8	2,062.7	2,603.7	3,154.8	3,717.7	4,292.7	4,878.7	5,475.4	6,084.8	6,294.5	6,439.5	6,576.1	6,724.2	6,882.8	7,051.0	7,226.0	7,411.0	7,607.2	7,815.1
Restaurant	**2,635.5**	**5,477.9**	**8,602.5**	**12,090.0**	**16,013.4**	**20,457.2**	**25,501.7**	**29,705.4**	**34,572.7**	**40,082.3**	**46,226.4**	**52,352.4**	**58,970.7**	**65,965.3**	**73,119.2**	**80,471.3**	**88,127.9**	**96,090.2**	**104,432.8**	**112,965.8**	**121,790.5**
Cooking	164.1	395.6	716.8	1,157.2	1,748.7	2,526.1	3,524.5	4,771.7	6,279.6	8,046.6	10,067.7	12,329.8	14,793.7	17,431.1	19,988.9	22,672.3	25,466.8	28,379.4	31,417.2	34,538.2	37,754.1
Space Heating	69.6	161.0	281.5	440.7	648.7	916.8	1,256.4	1,676.6	2,181.2	2,769.9	3,441.2	4,191.0	5,006.5	5,878.5	6,800.2	7,762.9	8,761.9	9,799.5	10,877.9	11,909.5	12,972.1
Water Heating	2,401.7	4,921.3	7,604.2	10,492.0	13,616.1	17,014.4	20,720.8	23,257.1	26,111.9	29,265.8	32,717.5	35,831.6	39,170.5	42,655.6	46,330.0	50,036.2	53,899.2	57,911.2	62,137.8	66,518.2	71,064.3
Retail	**380.7**	**801.0**	**1,274.1**	**1,816.4**	**2,443.9**	**3,175.0**	**4,029.2**	**5,021.5**	**6,157.8**	**7,437.0**	**8,858.0**	**10,197.0**	**11,649.5**	**13,187.5**	**14,812.6**	**16,510.3**	**18,272.7**	**20,101.6**	**22,002.6**	**23,829.9**	**25,714.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	152.9	342.4	580.7	883.5	1,267.5	1,751.3	2,353.9	3,090.2	3,966.5	4,982.2	6,135.0	7,418.3	8,810.8	10,297.5	11,866.8	13,504.6	15,203.1	16,965.9	18,797.4	20,550.4	22,355.8
Water Heating	227.8	458.5	693.4	933.0	1,176.4	1,423.7	1,675.3	1,931.4	2,191.3	2,454.8	2,723.0	2,778.7	2,838.6	2,890.0	2,945.8	3,005.8	3,069.6	3,135.7	3,205.3	3,279.5	3,358.3
Warehouse	**47.0**	**101.3**	**165.4**	**242.3**	**335.3**	**448.0**	**584.0**	**746.2**	**935.9**	**1,152.9**	**1,396.8**	**1,645.0**	**1,914.6**	**2,201.2**	**2,504.1**	**2,820.6**	**3,149.1**	**3,490.3**	**3,845.1**	**4,185.7**	**4,536.8**
Space Heating	24.1	55.3	95.8	148.6	217.2	305.0	415.7	552.2	715.8	906.3	1,123.3	1,365.5	1,628.7	1,910.1	2,207.4	2,517.9	2,840.0	3,174.6	3,522.4	3,855.5	4,198.7
Water Heating	22.9	46.1	69.6	93.7	118.2	143.0	168.3	194.0	220.1	246.5	273.5	279.5	285.9	291.1	296.7	302.7	309.1	315.7	322.7	330.2	338.1
Grand Total	**14,278.6**	**29,134.2**	**44,790.6**	**61,450.7**	**79,260.6**	**98,419.8**	**119,148.1**	**135,366.5**	**153,184.8**	**172,253.3**	**192,979.2**	**211,874.8**	**230,666.3**	**250,479.2**	**269,968.6**	**290,251.7**	**311,409.5**	**333,179.8**	**356,072.1**	**379,458.2**	**403,740.2**

C-37: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #37)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**4,072.9**	**8,256.3**	**12,597.0**	**17,129.9**	**21,872.3**	**26,855.4**	**32,119.6**	**35,143.6**	**38,472.7**	**42,081.1**	**45,980.9**	**49,105.3**	**52,267.5**	**55,632.4**	**58,889.7**	**62,323.6**	**65,931.6**	**69,697.3**	**73,704.6**	**77,887.6**	**82,264.4**
Cooking	17.4	41.8	75.8	122.4	185.0	267.4	373.2	505.5	665.5	853.2	1,068.0	1,308.5	1,570.6	1,851.3	2,123.8	2,409.6	2,707.4	3,017.8	3,341.6	3,674.2	4,017.0
Space Heating	292.5	590.4	895.6	1,209.4	1,531.7	1,863.3	2,205.5	2,559.1	2,923.7	3,299.1	3,686.3	4,086.3	4,496.4	4,915.7	5,058.0	5,208.4	5,366.3	5,530.0	5,701.2	5,874.8	6,056.5
Water Heating	3,763.0	7,624.1	11,625.6	15,798.1	20,155.5	24,724.7	29,541.0	32,079.0	34,883.5	37,928.8	41,226.6	43,710.5	46,200.5	48,865.4	51,708.0	54,705.6	57,857.9	61,149.5	64,661.9	68,338.7	72,190.9
Grocery	**298.1**	**628.1**	**1,001.5**	**1,431.6**	**1,931.5**	**2,516.6**	**3,202.7**	**3,894.0**	**4,703.4**	**5,629.8**	**6,672.2**	**7,696.8**	**8,811.5**	**9,997.8**	**11,185.9**	**12,432.9**	**13,733.6**	**15,090.2**	**16,512.1**	**17,963.0**	**19,463.1**
Cooking	48.7	117.3	212.6	343.2	518.7	749.5	1,046.0	1,416.6	1,864.9	2,390.7	2,992.4	3,666.2	4,400.4	5,186.7	5,949.7	6,750.4	7,584.3	8,453.7	9,360.5	10,292.1	11,252.1
Space Heating	11.0	26.2	47.1	75.6	113.6	163.4	227.3	306.9	403.0	515.7	644.5	788.8	945.9	1,114.0	1,291.9	1,477.8	1,670.8	1,871.4	2,079.9	2,278.7	2,483.6
Water Heating	238.4	484.6	741.8	1,012.8	1,299.2	1,603.7	1,929.5	2,170.6	2,435.5	2,723.4	3,035.3	3,241.8	3,465.2	3,697.1	3,944.3	4,204.7	4,478.5	4,765.1	5,071.8	5,392.2	5,727.4
Healthcare	**1,197.9**	**2,432.5**	**3,719.3**	**5,070.4**	**6,492.8**	**7,998.2**	**9,600.3**	**10,513.7**	**11,526.7**	**12,626.1**	**13,822.7**	**14,782.7**	**15,758.6**	**16,791.8**	**17,886.0**	**19,037.4**	**20,245.2**	**21,500.5**	**22,834.9**	**24,216.7**	**25,660.9**
Cooking	3.5	8.5	15.5	25.0	37.8	54.6	76.2	103.2	135.9	174.2	218.1	267.2	320.7	378.0	433.7	492.0	552.8	616.2	682.3	750.3	820.3
Space Heating	7.5	18.1	32.7	52.8	79.7	115.1	160.6	217.4	286.2	366.8	459.0	562.3	674.9	795.4	922.9	1,056.2	1,194.5	1,338.3	1,487.9	1,630.7	1,777.9
Water Heating	1,186.8	2,405.9	3,671.1	4,992.6	6,375.4	7,828.5	9,363.5	10,193.0	11,104.6	12,085.1	13,145.6	13,953.1	14,763.0	15,618.3	16,529.5	17,489.2	18,497.8	19,546.0	20,664.7	21,835.8	23,062.7
Lodging	**3,256.4**	**6,585.5**	**10,017.6**	**13,572.5**	**17,254.2**	**21,076.3**	**25,059.1**	**28,143.3**	**31,388.1**	**34,452.7**	**37,678.0**	**40,453.7**	**42,276.9**	**44,195.7**	**46,233.0**	**48,374.8**	**50,619.4**	**52,781.8**	**55,080.3**	**57,485.5**	**60,009.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4.3	10.4	18.8	30.3	45.8	66.2	92.3	125.0	164.5	210.9	263.9	323.3	388.0	457.3	530.6	607.3	686.8	769.5	855.5	937.6	1,022.3
Water Heating	3,252.1	6,575.1	9,998.9	13,542.2	17,208.4	21,010.1	24,966.8	28,018.3	31,223.6	34,241.8	37,414.1	40,130.4	41,888.9	43,738.3	45,702.4	47,767.6	49,932.6	52,012.3	54,224.8	56,547.9	58,987.1
Misc.	**11.5**	**26.4**	**45.9**	**71.5**	**104.6**	**147.3**	**201.1**	**267.5**	**347.2**	**440.0**	**545.8**	**663.8**	**792.2**	**927.5**	**1,070.5**	**1,219.9**	**1,375.1**	**1,536.3**	**1,703.9**	**1,864.2**	**2,029.4**
Space Heating	9.5	22.5	39.9	63.4	94.5	135.0	186.6	250.8	328.2	418.8	522.2	638.0	763.9	898.7	1,041.3	1,190.2	1,344.8	1,505.4	1,672.4	1,832.2	1,996.7
Water Heating	2.0	4.0	6.0	8.1	10.2	12.3	14.5	16.7	18.9	21.2	23.5	25.9	28.3	28.7	29.2	29.7	30.3	30.8	31.4	32.1	32.7
Office	**102.9**	**224.6**	**371.7**	**552.1**	**774.5**	**1,048.1**	**1,382.9**	**1,786.5**	**2,262.1**	**2,809.3**	**3,427.2**	**4,112.4**	**4,851.7**	**5,620.5**	**6,432.2**	**7,279.4**	**8,158.6**	**9,071.4**	**10,021.1**	**10,937.1**	**11,881.0**
Space Heating	82.3	182.6	307.0	463.2	659.4	904.8	1,208.6	1,578.3	2,017.0	2,524.3	3,099.1	3,738.3	4,431.3	5,170.8	5,951.0	6,765.1	7,609.2	8,485.2	9,395.5	10,270.2	11,171.0
Water Heating	20.6	42.0	64.7	89.0	115.1	143.4	174.3	208.2	245.1	285.0	328.0	374.1	420.4	449.7	481.2	514.4	549.3	586.1	625.7	666.9	710.0
Restaurant	**2,450.5**	**5,041.5**	**7,826.2**	**10,857.2**	**14,178.8**	**17,844.1**	**21,904.5**	**24,900.8**	**28,332.8**	**32,185.3**	**36,457.7**	**40,510.1**	**44,888.0**	**49,499.2**	**54,144.2**	**59,013.5**	**64,094.3**	**69,384.1**	**74,947.5**	**80,699.0**	**86,660.5**
Cooking	164.1	395.6	716.8	1,157.2	1,748.7	2,526.1	3,524.5	4,771.7	6,279.6	8,046.6	10,067.7	12,329.8	14,793.7	17,431.1	19,988.9	22,672.3	25,466.8	28,379.4	31,417.2	34,538.2	37,754.1
Space Heating	2.8	6.8	12.3	19.7	29.7	42.8	59.6	80.6	106.0	135.8	169.8	207.9	249.4	293.8	340.8	390.0	441.0	494.0	549.1	601.8	656.0
Water Heating	2,283.5	4,639.2	7,097.2	9,680.2	12,400.4	15,275.2	18,320.4	20,048.5	21,947.2	24,003.0	26,220.3	27,972.5	29,844.9	31,774.3	33,814.4	35,951.3	38,186.6	40,510.7	42,981.3	45,559.0	48,250.5
Retail	**351.3**	**741.6**	**1,184.3**	**1,695.5**	**2,291.4**	**2,990.4**	**3,812.0**	**4,771.1**	**5,873.7**	**7,118.8**	**8,505.0**	**9,808.6**	**11,225.0**	**12,726.5**	**14,314.5**	**15,974.6**	**17,698.8**	**19,489.3**	**21,351.5**	**23,142.7**	**24,990.4**
Space Heating	123.5	283.1	490.8	762.6	1,115.0	1,566.8	2,136.7	2,839.8	3,682.4	4,664.0	5,782.0	7,029.9	8,386.4	9,836.5	11,368.7	12,968.8	14,629.3	16,353.6	18,146.2	19,863.3	21,632.1
Water Heating	227.8	458.5	693.4	933.0	1,176.4	1,423.7	1,675.3	1,931.4	2,191.3	2,454.8	2,723.0	2,778.7	2,838.6	2,890.0	2,945.8	3,005.8	3,069.6	3,135.7	3,205.3	3,279.5	3,358.3
Warehouse	**47.0**	**101.3**	**165.4**	**242.3**	**335.3**	**447.9**	**583.9**	**746.1**	**935.7**	**1,152.7**	**1,396.5**	**1,644.7**	**1,914.3**	**2,200.7**	**2,503.6**	**2,820.0**	**3,148.5**	**3,489.6**	**3,844.3**	**4,184.8**	**4,535.8**
Space Heating	24.1	55.3	95.8	148.6	217.2	305.0	415.7	552.2	715.8	906.3	1,123.3	1,365.5	1,628.7	1,910.1	2,207.4	2,517.9	2,840.0	3,174.6	3,522.4	3,855.5	4,198.7
Water Heating	22.9	46.0	69.6	93.7	118.1	142.9	168.2	193.9	219.9	246.3	273.2	279.2	285.5	290.6	296.2	302.1	308.4	315.0	321.9	329.2	337.1
Grand Total	**11,788.5**	**24,037.9**	**36,928.9**	**50,623.1**	**65,235.3**	**80,924.2**	**97,866.1**	**110,166.6**	**123,842.5**	**138,495.9**	**154,486.0**	**168,778.0**	**182,785.8**	**197,592.0**	**212,659.6**	**228,476.2**	**245,005.1**	**262,040.5**	**280,000.2**	**298,380.6**	**317,494.9**

C-38: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #38)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**8,492.0**	**17,350.2**	**26,712.2**	**36,706.3**	**47,423.4**	**58,986.8**	**71,530.9**	**82,588.0**	**94,390.4**	**107,144.1**	**120,898.6**	**134,569.1**	**148,833.3**	**163,103.2**	**177,703.3**	**192,680.7**	**208,172.4**	**222,793.8**	**238,056.7**	**253,587.3**	**269,638.9**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	1,997.7	4,090.2	6,312.2	8,698.6	11,277.9	14,087.2	17,168.4	20,552.2	24,151.9	28,058.8	32,275.4	36,795.7	41,566.2	45,877.1	50,101.7	54,495.0	59,041.9	63,437.0	68,009.8	72,498.2	77,129.1
Water Heating	5,764.3	11,773.6	18,120.2	24,887.9	32,132.6	39,930.6	48,363.3	54,923.4	62,129.8	69,896.7	78,269.1	86,168.5	94,341.4	102,917.6	111,879.5	121,000.7	130,435.5	139,105.5	148,176.3	157,555.1	167,264.0
Grocery	**2,182.3**	**4,473.5**	**6,912.7**	**9,540.1**	**12,388.2**	**15,499.2**	**18,919.3**	**22,377.5**	**26,184.9**	**30,336.8**	**34,834.6**	**39,541.9**	**44,525.8**	**49,744.3**	**54,514.4**	**59,470.8**	**64,595.5**	**69,828.4**	**75,250.0**	**80,648.8**	**86,195.9**
Cooking	66.8	160.2	288.9	464.4	699.1	1,006.5	1,400.1	1,890.4	2,481.7	3,173.1	3,962.4	4,844.4	5,803.9	6,829.9	7,822.7	8,863.6	9,947.2	11,076.0	12,251.0	13,458.2	14,702.0
Space Heating	1,660.4	3,390.8	5,216.0	7,160.8	9,243.6	11,489.4	13,926.3	16,575.3	19,439.7	22,517.6	25,811.3	29,318.0	32,999.4	36,833.5	40,230.1	43,745.4	47,367.0	51,033.7	54,814.9	58,520.6	62,315.9
Water Heating	455.1	922.6	1,407.9	1,914.9	2,445.5	3,003.4	3,592.9	3,911.7	4,263.5	4,646.2	5,060.8	5,379.5	5,722.5	6,080.9	6,461.6	6,861.8	7,281.3	7,718.6	8,184.0	8,670.0	9,178.1
Healthcare	**2,560.5**	**5,225.5**	**8,033.9**	**11,021.4**	**14,211.6**	**17,637.4**	**21,332.8**	**24,205.4**	**27,307.3**	**30,496.7**	**33,951.0**	**37,333.1**	**40,861.4**	**44,559.7**	**48,307.9**	**52,146.5**	**56,121.5**	**59,740.5**	**63,526.5**	**67,398.3**	**71,404.7**
Cooking	4.2	10.2	18.5	29.8	45.1	65.1	90.9	123.1	162.0	207.7	260.0	318.5	382.2	450.5	516.7	586.2	658.6	734.1	812.8	893.6	977.0
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	404.8	829.1	1,279.6	1,763.4	2,286.3	2,855.7	3,480.0	4,165.4	4,862.2	5,619.7	6,437.7	7,314.7	8,240.1	9,207.7	10,099.5	11,023.7	11,977.1	12,888.7	13,832.0	14,754.6	15,698.2
Water Heating	2,151.5	4,386.2	6,735.9	9,228.2	11,880.2	14,716.6	17,761.9	19,916.9	22,283.1	24,669.3	27,253.4	29,700.0	32,239.1	34,901.5	37,691.7	40,536.6	43,485.8	46,117.7	48,881.7	51,750.0	54,729.6
Lodging	**3,945.2**	**8,043.5**	**12,351.7**	**16,920.1**	**21,779.7**	**26,974.6**	**32,553.0**	**37,471.2**	**42,782.5**	**48,136.2**	**53,863.3**	**59,340.5**	**64,027.5**	**68,946.8**	**74,009.5**	**79,172.9**	**84,529.9**	**89,798.0**	**95,302.5**	**100,972.0**	**106,840.6**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	52.0	105.4	160.7	218.4	278.7	342.0	408.9	479.8	554.7	633.5	716.5	803.6	894.3	988.0	1,084.6	1,183.9	1,285.6	1,389.8	1,497.5	1,607.8	1,720.8
Space Heating	326.6	665.3	1,020.3	1,395.9	1,794.8	2,221.1	2,679.8	3,174.2	3,702.6	4,266.1	4,865.1	5,499.2	6,162.0	6,849.8	7,463.4	8,096.9	8,748.1	9,415.7	10,102.4	10,780.3	11,471.7
Water Heating	3,566.6	7,272.9	11,170.7	15,305.9	19,706.2	24,411.5	29,464.3	33,817.1	38,525.3	43,236.6	48,281.7	53,037.7	56,971.3	61,109.1	65,461.5	69,892.2	74,496.2	78,992.5	83,702.6	88,583.9	93,648.0
Misc.	**929.8**	**1,911.0**	**2,962.0**	**4,101.7**	**5,346.7**	**6,717.5**	**8,236.7**	**9,895.7**	**11,704.1**	**13,680.0**	**15,823.6**	**18,098.3**	**20,502.0**	**23,021.1**	**25,326.0**	**27,720.2**	**30,194.5**	**32,688.4**	**35,270.6**	**37,784.4**	**40,365.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	865.9	1,781.7	2,765.1	3,834.6	5,006.5	6,301.0	7,740.1	9,340.0	11,085.1	12,993.7	15,065.7	17,296.7	19,659.1	22,135.6	24,394.8	26,740.6	29,163.9	31,604.2	34,129.2	36,583.1	39,101.1
Water Heating	63.9	129.3	196.9	267.1	340.2	416.5	496.6	555.7	619.0	686.3	757.9	801.6	842.9	885.5	931.2	979.6	1,030.7	1,084.2	1,141.4	1,201.4	1,264.3
Office	**4,871.8**	**10,017.0**	**15,532.1**	**21,520.6**	**28,069.7**	**35,289.6**	**43,301.1**	**51,870.3**	**61,217.5**	**71,458.8**	**82,595.4**	**94,189.4**	**106,427.0**	**119,271.9**	**130,669.7**	**142,544.5**	**154,848.6**	**167,576.2**	**180,786.1**	**193,666.4**	**206,902.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,059.2	8,372.4	13,027.6	18,122.4	23,741.6	29,990.3	36,982.0	44,800.8	53,344.4	62,730.2	72,956.3	83,997.8	95,713.4	108,014.1	118,827.8	130,084.0	141,735.3	153,778.8	166,257.2	178,371.2	190,803.1
Water Heating	812.6	1,644.6	2,504.5	3,398.2	4,328.1	5,299.3	6,319.0	7,069.5	7,873.1	8,728.6	9,639.1	10,191.6	10,713.6	11,257.8	11,841.8	12,460.5	13,113.3	13,797.5	14,528.9	15,295.3	16,099.4
Restaurant	**5,501.4**	**11,297.8**	**17,495.4**	**24,199.0**	**31,483.8**	**39,440.9**	**48,164.7**	**55,621.4**	**63,888.8**	**72,901.6**	**82,680.3**	**92,579.7**	**103,071.8**	**114,029.6**	**124,950.0**	**136,146.0**	**147,720.0**	**158,295.7**	**169,316.9**	**180,608.7**	**192,274.5**
Cooking	191.4	458.5	826.2	1,327.5	1,997.5	2,875.2	3,999.2	5,400.0	7,090.3	9,067.8	11,326.6	13,852.0	16,600.3	19,540.2	22,390.6	25,379.6	28,491.4	31,733.6	35,104.1	38,567.1	42,135.2
Space Heating	956.7	1,947.3	2,984.0	4,078.4	5,238.0	6,474.2	7,800.7	9,226.9	10,754.1	12,381.2	14,110.1	15,940.3	17,853.5	19,839.5	21,631.6	23,481.2	25,382.4	27,279.0	29,230.5	31,151.1	33,118.8
Water Heating	4,353.4	8,892.0	13,685.2	18,793.1	24,248.3	30,091.5	36,364.8	40,994.5	46,044.4	51,452.6	57,243.7	62,787.4	68,618.0	74,649.9	80,927.8	87,285.2	93,846.1	99,283.1	104,982.2	110,890.6	117,020.6
Retail	**7,114.1**	**14,551.4**	**22,427.1**	**30,857.6**	**39,935.8**	**49,783.5**	**60,540.0**	**72,136.2**	**84,720.2**	**98,314.1**	**112,918.9**	**128,297.4**	**144,487.8**	**161,375.6**	**176,705.5**	**192,584.3**	**208,956.2**	**225,273.1**	**242,131.3**	**258,658.9**	**275,578.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,721.3	13,756.4	21,216.1	29,214.3	37,842.3	47,219.6	57,481.8	68,727.1	80,934.1	94,125.4	108,300.4	123,439.5	139,370.0	155,990.0	171,032.7	186,607.1	202,657.9	218,638.2	235,136.5	251,287.0	267,810.6
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**271.0**	**569.9**	**906.1**	**1,291.2**	**1,736.3**	**2,254.6**	**2,859.7**	**3,545.6**	**4,329.3**	**5,213.9**	**6,198.4**	**7,257.5**	**8,396.5**	**9,603.0**	**10,769.0**	**11,986.3**	**13,249.2**	**14,559.3**	**15,920.9**	**17,233.7**	**18,587.0**
Space Heating	231.9	490.7	785.5	1,127.5	1,527.7	1,999.2	2,555.2	3,206.0	3,952.0	4,796.4	5,738.1	6,773.1	7,886.0	9,066.0	10,203.6	11,390.7	12,621.9	13,898.7	15,224.7	16,500.2	17,814.4
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**35,868.1**	**73,439.8**	**113,333.3**	**156,158.0**	**202,375.2**	**252,584.0**	**307,438.2**	**359,711.2**	**416,525.0**	**477,682.3**	**543,764.1**	**611,207.2**	**681,133.1**	**753,655.3**	**822,955.3**	**894,452.2**	**968,387.9**	**1,040,553.4**	**1,115,561.3**	**1,190,558.6**	**1,267,787.7**

C-39: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #39)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**8,492.0**	**17,350.2**	**26,712.2**	**36,706.3**	**47,423.4**	**58,986.8**	**71,530.9**	**82,588.0**	**94,390.4**	**107,144.1**	**120,898.6**	**134,569.1**	**148,833.3**	**163,103.2**	**177,703.3**	**192,680.7**	**208,172.4**	**222,793.8**	**238,056.7**	**253,587.3**	**269,638.9**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	1,997.7	4,090.2	6,312.2	8,698.6	11,277.9	14,087.2	17,168.4	20,552.2	24,151.9	28,058.8	32,275.4	36,795.7	41,566.2	45,877.1	50,101.7	54,495.0	59,041.9	63,437.0	68,009.8	72,498.2	77,129.1
Water Heating	5,764.3	11,773.6	18,120.2	24,887.9	32,132.6	39,930.6	48,363.3	54,923.4	62,129.8	69,896.7	78,269.1	86,168.5	94,341.4	102,917.6	111,879.5	121,000.7	130,435.5	139,105.5	148,176.3	157,555.1	167,264.0
Grocery	**2,933.7**	**5,999.9**	**9,246.6**	**12,721.5**	**16,461.7**	**20,516.4**	**24,939.1**	**29,463.8**	**34,402.2**	**39,748.6**	**45,506.0**	**51,536.5**	**57,894.5**	**64,532.2**	**70,764.0**	**77,218.7**	**83,875.2**	**90,658.5**	**97,667.6**	**104,685.2**	**111,885.0**
Cooking	66.8	160.2	288.9	464.4	699.1	1,006.5	1,400.1	1,890.4	2,481.7	3,173.1	3,962.4	4,844.4	5,803.9	6,829.9	7,822.7	8,863.6	9,947.2	11,076.0	12,251.0	13,458.2	14,702.0
Space Heating	2,405.7	4,902.5	7,523.6	10,300.1	13,254.0	16,416.3	19,823.4	23,501.3	27,453.6	31,677.8	36,178.4	40,953.1	45,952.5	51,148.7	55,949.0	60,903.7	65,996.8	71,161.5	76,474.2	81,740.7	87,128.6
Water Heating	461.3	937.2	1,434.2	1,957.1	2,508.7	3,093.6	3,715.6	4,072.1	4,466.9	4,897.7	5,365.3	5,739.0	6,138.1	6,553.6	6,992.3	7,451.3	7,931.1	8,421.0	8,942.3	9,486.4	10,054.5
Healthcare	**2,563.2**	**5,231.0**	**8,042.3**	**11,032.6**	**14,225.8**	**17,654.6**	**21,353.1**	**24,228.7**	**27,333.7**	**30,526.3**	**33,983.9**	**37,369.4**	**40,901.0**	**44,602.7**	**48,354.4**	**52,194.9**	**56,171.8**	**59,792.8**	**63,580.9**	**67,454.8**	**71,463.4**
Cooking	4.2	10.2	18.5	29.8	45.1	65.1	90.9	123.1	162.0	207.7	260.0	318.5	382.2	450.5	516.7	586.2	658.6	734.1	812.8	893.6	977.0
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	406.0	831.5	1,283.2	1,768.2	2,292.4	2,863.0	3,488.7	4,175.4	4,873.5	5,632.4	6,451.7	7,330.2	8,257.1	9,226.1	10,119.4	11,045.1	12,000.0	12,913.1	13,858.0	14,782.2	15,727.3
Water Heating	2,153.0	4,389.3	6,740.6	9,234.6	11,888.3	14,726.4	17,773.5	19,930.2	22,298.2	24,686.2	27,272.2	29,720.7	32,261.7	34,926.1	37,718.3	40,563.6	43,513.3	46,145.6	48,910.1	51,778.9	54,759.1
Lodging	**4,067.1**	**8,290.1**	**12,727.1**	**17,429.1**	**22,427.4**	**27,766.4**	**33,495.0**	**38,570.1**	**44,044.5**	**49,566.9**	**55,468.6**	**61,126.9**	**65,891.7**	**70,893.2**	**76,042.7**	**81,296.7**	**86,748.4**	**92,098.0**	**97,689.4**	**103,449.5**	**109,413.2**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	52.0	105.4	160.7	218.4	278.7	342.0	408.9	479.8	554.7	633.5	716.5	803.6	894.3	988.0	1,084.6	1,183.9	1,285.6	1,389.8	1,497.5	1,607.8	1,720.8
Space Heating	343.4	699.1	1,071.4	1,464.7	1,881.5	2,326.1	2,803.3	3,316.6	3,864.1	4,447.1	5,065.8	5,720.1	6,403.3	7,111.9	7,746.7	8,401.5	9,074.4	9,747.4	10,439.7	11,123.0	11,820.1
Water Heating	3,671.7	7,485.7	11,495.0	15,746.1	20,267.1	25,098.2	30,282.7	34,773.7	39,625.7	44,486.3	49,686.3	54,603.2	58,594.1	62,793.4	67,211.4	71,711.4	76,388.3	80,960.9	85,752.2	90,718.7	95,872.3
Misc.	**929.8**	**1,911.0**	**2,962.0**	**4,101.7**	**5,346.7**	**6,717.5**	**8,236.7**	**9,895.7**	**11,704.1**	**13,680.0**	**15,823.6**	**18,098.3**	**20,502.0**	**23,021.1**	**25,326.0**	**27,720.2**	**30,194.5**	**32,688.4**	**35,270.6**	**37,784.4**	**40,365.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	865.9	1,781.7	2,765.1	3,834.6	5,006.5	6,301.0	7,740.1	9,340.0	11,085.1	12,993.7	15,065.7	17,296.7	19,659.1	22,135.6	24,394.8	26,740.6	29,163.9	31,604.2	34,129.2	36,583.1	39,101.1
Water Heating	63.9	129.3	196.9	267.1	340.2	416.5	496.6	555.7	619.0	686.3	757.9	801.6	842.9	885.5	931.2	979.6	1,030.7	1,084.2	1,141.4	1,201.4	1,264.3
Office	**6,887.8**	**14,074.7**	**21,668.4**	**29,776.0**	**38,478.6**	**47,885.4**	**58,121.9**	**68,954.7**	**80,598.7**	**93,168.8**	**106,674.4**	**120,686.5**	**135,379.2**	**150,714.5**	**164,643.0**	**179,084.6**	**193,989.0**	**208,546.1**	**223,615.9**	**238,396.4**	**253,573.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,075.2	12,430.1	19,163.9	26,377.8	34,150.5	42,586.1	51,802.9	61,885.2	72,725.6	84,440.2	97,035.2	110,494.8	124,665.6	139,456.7	152,801.1	166,624.1	180,875.7	194,748.6	209,087.1	223,101.1	237,473.9
Water Heating	812.6	1,644.6	2,504.5	3,398.2	4,328.1	5,299.3	6,319.0	7,069.5	7,873.1	8,728.6	9,639.1	10,191.6	10,713.6	11,257.8	11,841.8	12,460.5	13,113.3	13,797.5	14,528.9	15,295.3	16,099.4
Restaurant	**6,190.3**	**12,693.4**	**19,623.6**	**27,090.9**	**35,173.5**	**43,967.5**	**53,574.0**	**61,270.7**	**69,828.3**	**79,180.3**	**89,349.5**	**99,691.8**	**110,668.8**	**122,149.7**	**133,630.8**	**145,419.3**	**157,617.1**	**168,828.5**	**180,529.9**	**192,534.4**	**204,947.3**
Cooking	191.4	458.5	826.2	1,327.5	1,997.5	2,875.2	3,999.2	5,400.0	7,090.3	9,067.8	11,326.6	13,852.0	16,600.3	19,540.2	22,390.6	25,379.6	28,491.4	31,733.6	35,104.1	38,567.1	42,135.2
Space Heating	1,628.7	3,308.8	5,060.1	6,899.7	8,837.9	10,891.0	13,079.4	14,723.9	16,518.7	18,461.6	20,556.9	22,805.1	25,177.7	27,660.7	29,986.8	32,401.5	34,898.7	37,420.1	40,040.3	42,661.1	45,363.2
Water Heating	4,370.2	8,926.2	13,737.2	18,863.7	24,338.1	30,201.3	36,495.5	41,146.9	46,219.3	51,650.9	57,466.0	63,034.7	68,890.8	74,948.9	81,253.5	87,638.2	94,227.0	99,674.8	105,385.6	111,306.1	117,449.0
Retail	**7,114.1**	**14,551.4**	**22,427.1**	**30,857.6**	**39,935.8**	**49,783.5**	**60,540.0**	**72,136.2**	**84,720.2**	**98,314.1**	**112,918.9**	**128,297.4**	**144,487.8**	**161,375.6**	**176,705.5**	**192,584.3**	**208,956.2**	**225,273.1**	**242,131.3**	**258,658.9**	**275,578.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,721.3	13,756.4	21,216.1	29,214.3	37,842.3	47,219.6	57,481.8	68,727.1	80,934.1	94,125.4	108,300.4	123,439.5	139,370.0	155,990.0	171,032.7	186,607.1	202,657.9	218,638.2	235,136.5	251,287.0	267,810.6
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**325.5**	**683.1**	**1,083.8**	**1,540.3**	**2,064.8**	**2,671.3**	**3,374.0**	**4,166.9**	**5,066.1**	**6,073.2**	**7,186.5**	**8,380.0**	**9,657.3**	**11,005.3**	**12,315.9**	**13,680.2**	**15,092.7**	**16,554.2**	**18,070.4**	**19,540.7**	**21,041.0**
Space Heating	286.3	603.9	963.2	1,376.6	1,856.3	2,415.9	3,069.5	3,827.3	4,688.9	5,655.8	6,726.3	7,895.7	9,146.8	10,468.3	11,750.4	13,084.7	14,465.5	15,893.7	17,374.2	18,807.3	20,268.4
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**39,503.4**	**80,784.9**	**124,493.1**	**171,256.3**	**221,537.8**	**275,949.3**	**335,164.7**	**391,274.9**	**452,088.2**	**517,402.3**	**587,810.1**	**659,756.0**	**734,215.7**	**811,397.6**	**885,485.5**	**961,879.6**	**1,040,817.3**	**1,117,233.5**	**1,196,612.6**	**1,276,091.6**	**1,357,905.6**

C-40: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #40)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**9,053.6**	**18,483.2**	**28,430.8**	**39,026.8**	**50,361.7**	**62,560.3**	**75,709.6**	**87,393.4**	**99,843.0**	**113,263.6**	**127,707.1**	**142,090.5**	**157,086.2**	**172,105.6**	**187,462.4**	**203,212.2**	**219,491.2**	**234,912.1**	**250,992.8**	**267,357.5**	**284,260.7**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	2,559.2	5,223.1	8,030.6	11,018.8	14,215.9	17,660.3	21,346.6	25,357.1	29,603.8	34,177.6	39,083.1	44,316.2	49,818.2	54,878.5	59,859.7	65,025.3	70,359.5	75,554.1	80,944.8	86,267.3	91,749.7
Water Heating	5,764.4	11,773.7	18,120.4	24,888.2	32,132.9	39,931.0	48,363.7	54,923.9	62,130.4	69,897.4	78,269.9	86,169.3	94,342.3	102,918.6	111,880.5	121,001.8	130,436.6	139,106.6	148,177.4	157,556.3	167,265.2
Grocery	**3,038.7**	**6,212.7**	**9,571.0**	**13,162.4**	**17,024.3**	**21,206.6**	**25,763.8**	**30,430.8**	**35,519.1**	**41,022.9**	**46,945.5**	**53,149.2**	**59,686.7**	**66,509.7**	**72,932.5**	**79,582.8**	**86,439.8**	**93,428.1**	**100,648.8**	**107,883.0**	**115,304.6**
Cooking	66.8	160.2	288.9	464.4	699.1	1,006.5	1,400.1	1,890.4	2,481.7	3,173.1	3,962.4	4,844.4	5,803.9	6,829.9	7,822.7	8,863.6	9,947.2	11,076.0	12,251.0	13,458.2	14,702.0
Space Heating	2,510.7	5,115.3	7,848.0	10,741.0	13,816.5	17,106.5	20,648.1	24,468.3	28,570.5	32,952.1	37,617.9	42,565.7	47,744.7	53,126.2	58,117.4	63,267.9	68,561.4	73,931.0	79,455.4	84,938.5	90,548.2
Water Heating	461.3	937.2	1,434.2	1,957.1	2,508.7	3,093.6	3,715.6	4,072.1	4,466.9	4,897.7	5,365.3	5,739.0	6,138.1	6,553.6	6,992.3	7,451.3	7,931.1	8,421.0	8,942.3	9,486.4	10,054.5
Healthcare	**2,764.1**	**5,635.3**	**8,653.7**	**11,855.2**	**15,263.0**	**18,909.6**	**22,829.8**	**25,932.0**	**29,267.0**	**32,692.8**	**36,387.7**	**40,015.6**	**43,793.5**	**47,744.9**	**51,750.3**	**55,848.1**	**60,085.7**	**63,850.3**	**67,785.1**	**71,809.7**	**75,973.0**
Cooking	4.2	10.2	18.5	29.8	45.1	65.1	90.9	123.1	162.0	207.7	260.0	318.5	382.2	450.5	516.7	586.2	658.6	734.1	812.8	893.6	977.0
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	523.7	1,068.4	1,641.5	2,250.3	2,900.3	3,598.7	4,354.2	5,173.1	6,005.4	6,900.3	7,858.1	8,877.8	9,948.1	11,062.6	12,103.6	13,179.3	14,286.0	15,232.8	16,213.1	17,175.2	18,160.5
Water Heating	2,236.1	4,556.7	6,993.7	9,575.0	12,317.6	15,245.8	18,384.7	20,635.8	23,099.5	25,584.8	28,269.7	30,819.4	33,463.2	36,231.9	39,130.0	42,082.7	45,141.1	47,883.5	50,759.2	53,740.9	56,835.6
Lodging	**4,073.0**	**8,302.1**	**12,745.2**	**17,453.5**	**22,458.0**	**27,803.4**	**33,538.6**	**38,620.4**	**44,101.5**	**49,630.8**	**55,539.5**	**61,205.0**	**65,976.9**	**70,985.8**	**76,142.7**	**81,404.3**	**86,863.6**	**92,215.6**	**97,809.3**	**103,572.0**	**109,538.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	52.0	105.4	160.7	218.4	278.7	342.0	408.9	479.8	554.7	633.5	716.5	803.6	894.3	988.0	1,084.6	1,183.9	1,285.6	1,389.8	1,497.5	1,607.8	1,720.8
Space Heating	349.3	711.0	1,089.5	1,489.0	1,912.2	2,363.2	2,847.0	3,366.9	3,921.2	4,511.0	5,136.7	5,798.1	6,488.6	7,204.5	7,846.7	8,509.1	9,189.7	9,865.0	10,559.7	11,245.5	11,945.3
Water Heating	3,671.7	7,485.7	11,495.0	15,746.1	20,267.1	25,098.2	30,282.7	34,773.7	39,625.7	44,486.3	49,686.3	54,603.2	58,594.1	62,793.4	67,211.4	71,711.4	76,388.3	80,960.9	85,752.2	90,718.7	95,872.3
Misc.	**929.8**	**1,911.0**	**2,962.0**	**4,101.7**	**5,346.7**	**6,717.5**	**8,236.7**	**9,895.7**	**11,704.1**	**13,680.0**	**15,823.6**	**18,098.3**	**20,502.0**	**23,021.1**	**25,326.0**	**27,720.2**	**30,194.5**	**32,688.4**	**35,270.6**	**37,784.4**	**40,365.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	865.9	1,781.7	2,765.1	3,834.6	5,006.5	6,301.0	7,740.1	9,340.0	11,085.1	12,993.7	15,065.7	17,296.7	19,659.1	22,135.6	24,394.8	26,740.6	29,163.9	31,604.2	34,129.2	36,583.1	39,101.1
Water Heating	63.9	129.3	196.9	267.1	340.2	416.5	496.6	555.7	619.0	686.3	757.9	801.6	842.9	885.5	931.2	979.6	1,030.7	1,084.2	1,141.4	1,201.4	1,264.3
Office	**6,887.8**	**14,074.7**	**21,668.4**	**29,776.0**	**38,478.6**	**47,885.4**	**58,121.9**	**68,954.7**	**80,598.7**	**93,168.8**	**106,674.4**	**120,686.5**	**135,379.2**	**150,714.5**	**164,643.0**	**179,084.6**	**193,989.0**	**208,546.1**	**223,615.9**	**238,396.4**	**253,573.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,075.2	12,430.1	19,163.9	26,377.8	34,150.5	42,586.1	51,802.9	61,885.2	72,725.6	84,440.2	97,035.2	110,494.8	124,665.6	139,456.7	152,801.1	166,624.1	180,875.7	194,748.6	209,087.1	223,101.1	237,473.9
Water Heating	812.6	1,644.6	2,504.5	3,398.2	4,328.1	5,299.3	6,319.0	7,069.5	7,873.1	8,728.6	9,639.1	10,191.6	10,713.6	11,257.8	11,841.8	12,460.5	13,113.3	13,797.5	14,528.9	15,295.3	16,099.4
Restaurant	**6,190.3**	**12,693.4**	**19,623.6**	**27,090.9**	**35,173.5**	**43,967.5**	**53,574.0**	**61,270.7**	**69,828.3**	**79,180.3**	**89,349.5**	**99,691.8**	**110,668.8**	**122,149.7**	**133,630.8**	**145,419.3**	**157,617.1**	**168,828.5**	**180,529.9**	**192,534.4**	**204,947.3**
Cooking	191.4	458.5	826.2	1,327.5	1,997.5	2,875.2	3,999.2	5,400.0	7,090.3	9,067.8	11,326.6	13,852.0	16,600.3	19,540.2	22,390.6	25,379.6	28,491.4	31,733.6	35,104.1	38,567.1	42,135.2
Space Heating	1,628.7	3,308.8	5,060.1	6,899.7	8,837.9	10,891.0	13,079.4	14,723.9	16,518.7	18,461.6	20,556.9	22,805.1	25,177.7	27,660.7	29,986.8	32,401.5	34,898.7	37,420.1	40,040.3	42,661.1	45,363.2
Water Heating	4,370.2	8,926.2	13,737.2	18,863.7	24,338.1	30,201.3	36,495.5	41,146.9	46,219.3	51,650.9	57,466.0	63,034.7	68,890.8	74,948.9	81,253.5	87,638.2	94,227.0	99,674.8	105,385.6	111,306.1	117,449.0
Retail	**7,114.1**	**14,551.4**	**22,427.1**	**30,857.6**	**39,935.8**	**49,783.5**	**60,540.0**	**72,136.2**	**84,720.2**	**98,314.1**	**112,918.9**	**128,297.4**	**144,487.8**	**161,375.6**	**176,705.5**	**192,584.3**	**208,956.2**	**225,273.1**	**242,131.3**	**258,658.9**	**275,578.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,721.3	13,756.4	21,216.1	29,214.3	37,842.3	47,219.6	57,481.8	68,727.1	80,934.1	94,125.4	108,300.4	123,439.5	139,370.0	155,990.0	171,032.7	186,607.1	202,657.9	218,638.2	235,136.5	251,287.0	267,810.6
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**359.0**	**750.6**	**1,186.0**	**1,677.9**	**2,238.3**	**2,881.2**	**3,621.1**	**4,451.7**	**5,389.2**	**6,435.1**	**7,588.0**	**8,821.8**	**10,140.0**	**11,529.6**	**12,882.3**	**14,289.4**	**15,745.3**	**17,250.5**	**18,810.8**	**20,324.2**	**21,868.2**
Space Heating	319.9	671.4	1,065.4	1,514.2	2,029.8	2,625.9	3,316.5	4,112.1	5,011.9	6,017.7	7,127.7	8,337.4	9,629.5	10,992.6	12,316.9	13,693.9	15,118.0	16,589.9	18,114.7	19,590.7	21,095.5
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**40,410.3**	**82,614.5**	**127,267.8**	**175,002.0**	**226,279.9**	**281,715.1**	**341,935.7**	**399,085.7**	**460,971.1**	**527,388.5**	**598,934.2**	**672,056.1**	**747,721.2**	**826,136.5**	**901,475.5**	**979,145.2**	**1,059,382.3**	**1,136,992.6**	**1,217,594.6**	**1,298,320.5**	**1,381,408.9**

C- 41: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #41)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**6,756.6**	**13,847.3**	**21,396.3**	**29,524.1**	**38,321.9**	**47,908.1**	**58,407.7**	**67,342.2**	**76,952.3**	**87,446.2**	**98,867.4**	**110,123.1**	**121,909.9**	**134,324.1**	**147,010.7**	**160,028.7**	**173,511.8**	**186,384.4**	**199,838.0**	**213,512.5**	**227,655.0**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	926.9	1,925.2	3,019.6	4,238.6	5,608.8	7,162.1	8,932.5	10,945.9	13,116.3	15,537.2	18,207.4	21,118.7	24,230.3	27,515.5	30,669.7	33,953.6	37,353.1	40,869.5	44,513.3	48,038.9	51,667.5
Water Heating	5,099.7	10,435.7	16,096.8	22,165.7	28,700.2	35,777.1	43,475.9	49,283.9	55,727.3	62,720.5	70,305.8	77,399.4	84,754.0	92,500.2	100,619.0	108,890.1	117,463.7	125,263.6	133,454.2	141,939.6	150,741.7
Grocery	**1,842.5**	**3,783.7**	**5,858.6**	**8,104.3**	**10,551.6**	**13,239.8**	**16,212.3**	**19,195.2**	**22,499.9**	**26,122.6**	**30,063.8**	**34,187.2**	**38,565.1**	**43,158.2**	**47,305.1**	**51,622.5**	**56,094.0**	**60,716.8**	**65,512.9**	**70,272.8**	**75,166.6**
Cooking	52.1	124.8	225.0	361.5	544.2	783.6	1,090.7	1,473.8	1,936.7	2,479.1	3,099.3	3,793.4	4,549.5	5,358.9	6,144.1	6,967.9	7,825.8	8,720.0	9,650.7	10,606.9	11,592.2
Space Heating	1,353.1	2,772.2	4,280.6	5,902.4	7,656.9	9,569.2	11,667.5	13,972.0	16,486.7	19,210.1	22,143.1	25,281.5	28,589.0	32,043.8	35,055.1	38,179.4	41,404.9	44,728.4	48,161.6	51,513.0	54,948.0
Water Heating	437.3	886.6	1,353.0	1,840.4	2,350.6	2,887.0	3,454.1	3,749.4	4,076.5	4,433.5	4,821.4	5,112.2	5,426.5	5,755.5	6,106.0	6,475.2	6,863.2	7,268.4	7,700.7	8,152.9	8,626.5
Healthcare	**1,771.7**	**3,620.0**	**5,574.7**	**7,663.1**	**9,905.3**	**12,328.6**	**14,960.3**	**17,021.3**	**19,251.4**	**21,514.0**	**23,988.3**	**26,337.0**	**28,791.4**	**31,381.1**	**33,987.1**	**36,654.1**	**39,431.8**	**42,210.3**	**45,131.6**	**48,113.5**	**51,209.1**
Cooking	4.2	10.2	18.5	29.8	45.0	65.1	90.8	123.0	161.9	207.6	259.8	318.3	382.0	450.3	516.5	586.0	658.4	733.9	812.6	893.4	976.8
Space Heating	255.1	525.9	818.0	1,137.4	1,489.6	1,881.1	2,319.3	2,809.5	3,302.5	3,848.8	4,448.7	5,100.6	5,795.5	6,527.9	7,179.7	7,859.8	8,565.2	9,295.6	10,053.5	10,787.6	11,544.4
Water Heating	1,512.4	3,083.9	4,738.2	6,495.9	8,370.7	10,382.4	12,550.2	14,088.7	15,787.0	17,457.6	19,279.8	20,918.1	22,613.8	24,402.8	26,290.8	28,208.3	30,208.2	32,180.9	34,265.5	36,432.5	38,687.9
Lodging	**3,742.4**	**7,633.7**	**11,728.8**	**16,077.0**	**20,709.1**	**25,668.3**	**31,001.4**	**35,663.9**	**40,709.5**	**45,788.4**	**51,231.1**	**56,414.2**	**60,799.3**	**65,409.9**	**70,156.8**	**74,998.3**	**80,027.6**	**84,963.4**	**90,128.6**	**95,452.6**	**100,972.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	175.8	360.8	558.1	771.2	1,002.9	1,256.8	1,537.1	1,846.7	2,184.3	2,551.8	2,949.4	3,376.5	3,828.0	4,300.8	4,695.4	5,106.2	5,531.5	5,970.9	6,426.0	6,868.6	7,324.5
Water Heating	3,566.6	7,272.9	11,170.7	15,305.9	19,706.2	24,411.5	29,464.3	33,817.1	38,525.3	43,236.6	48,281.7	53,037.7	56,971.3	61,109.1	65,461.5	69,892.2	74,496.2	78,992.5	83,702.6	88,583.9	93,648.0
Misc.	**598.5**	**1,242.0**	**1,946.3**	**2,729.3**	**3,607.6**	**4,601.5**	**5,732.3**	**7,015.0**	**8,456.7**	**10,056.4**	**11,813.4**	**13,690.1**	**15,687.3**	**17,792.1**	**19,674.4**	**21,638.7**	**23,676.1**	**25,787.6**	**27,980.0**	**30,099.7**	**32,284.9**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	557.8	1,159.7	1,821.1	2,559.6	3,391.8	4,337.6	5,418.0	6,649.2	8,036.9	9,580.2	11,278.2	13,125.6	15,097.2	17,176.5	19,031.4	20,966.6	22,973.3	25,052.6	27,210.6	29,294.3	31,441.6
Water Heating	40.7	82.3	125.2	169.7	215.8	264.0	314.3	365.8	419.8	476.2	535.2	564.5	590.1	615.6	643.0	672.1	702.8	735.0	769.4	805.5	843.3
Office	**4,307.3**	**8,864.0**	**13,759.1**	**19,087.8**	**24,933.8**	**31,401.1**	**38,604.1**	**46,323.0**	**54,763.4**	**64,045.5**	**74,171.2**	**84,704.3**	**95,842.0**	**107,552.8**	**117,784.1**	**128,464.7**	**139,547.7**	**151,030.5**	**162,960.1**	**174,551.5**	**186,511.3**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,507.0	7,248.7	11,307.5	15,775.0	20,734.7	26,288.2	32,545.3	39,589.0	47,320.3	55,860.3	65,207.7	75,338.1	86,118.2	97,462.3	107,298.5	117,559.0	128,197.8	139,216.1	150,650.8	161,721.5	173,133.3
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,958.0**	**8,188.5**	**12,788.3**	**17,858.1**	**23,476.7**	**29,734.4**	**36,720.8**	**42,396.5**	**48,847.4**	**56,009.4**	**63,897.1**	**71,854.5**	**80,369.0**	**89,315.7**	**98,189.5**	**107,306.8**	**116,772.6**	**126,461.0**	**136,577.0**	**146,930.0**	**157,622.4**
Cooking	184.2	441.3	795.2	1,277.6	1,922.4	2,767.2	3,849.4	5,198.5	6,827.0	8,732.9	10,910.5	13,345.9	15,996.9	18,833.1	21,574.5	24,449.9	27,444.2	30,564.5	33,818.7	37,162.1	40,607.1
Space Heating	635.0	1,299.8	2,004.9	2,761.1	3,577.1	4,464.3	5,435.8	6,500.8	7,661.5	8,917.1	10,267.9	11,712.3	13,233.7	14,822.4	16,210.8	17,651.0	19,137.4	20,615.9	22,144.6	23,635.9	25,167.8
Water Heating	3,138.8	6,447.4	9,988.2	13,819.4	17,977.2	22,502.8	27,435.6	30,697.2	34,358.9	38,359.5	42,718.7	46,796.3	51,138.4	55,660.3	60,404.2	65,205.9	70,191.1	75,280.5	80,613.8	86,132.1	91,847.5
Retail	**5,084.5**	**10,445.7**	**16,182.2**	**22,398.5**	**29,184.1**	**36,652.1**	**44,927.7**	**53,934.4**	**63,823.0**	**74,633.0**	**86,368.0**	**98,787.9**	**111,952.7**	**125,755.4**	**137,939.0**	**150,617.8**	**163,740.1**	**177,300.0**	**191,349.1**	**205,030.8**	**219,119.9**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,691.7	9,650.7	14,971.3	20,755.1	27,090.6	34,088.1	41,869.5	50,525.3	60,036.9	70,444.3	81,749.6	93,929.9	106,834.8	120,369.9	132,266.2	144,640.7	157,441.8	170,665.1	184,354.4	197,658.9	211,352.4
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**246.9**	**521.3**	**832.7**	**1,192.3**	**1,611.7**	**2,103.8**	**2,682.3**	**3,341.0**	**4,097.3**	**4,954.0**	**5,910.1**	**6,940.3**	**8,049.9**	**9,226.6**	**10,362.3**	**11,548.8**	**12,780.7**	**14,059.4**	**15,389.2**	**16,669.9**	**17,990.5**
Space Heating	207.8	442.1	712.0	1,028.6	1,403.1	1,848.4	2,377.7	3,001.4	3,720.0	4,536.5	5,449.9	6,455.9	7,539.4	8,689.6	9,796.9	10,953.3	12,153.4	13,398.8	14,693.1	15,936.4	17,217.9
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**28,308.5**	**58,146.2**	**90,067.0**	**124,634.5**	**162,301.8**	**203,637.7**	**249,248.9**	**292,232.5**	**339,401.0**	**390,569.4**	**446,310.4**	**503,038.6**	**561,966.6**	**623,915.9**	**682,409.1**	**742,880.5**	**805,582.5**	**868,913.4**	**934,866.6**	**1,000,633.2**	**1,068,532.2**

C-42: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #42)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**5,328.2**	**10,861.2**	**16,680.6**	**22,858.9**	**29,448.1**	**36,521.0**	**44,161.7**	**49,868.4**	**56,093.0**	**62,862.7**	**70,235.1**	**77,132.8**	**84,315.9**	**91,917.4**	**99,603.0**	**107,628.2**	**115,977.7**	**124,580.7**	**133,611.2**	**142,740.4**	**152,205.4**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	898.2	1,867.4	2,932.3	4,121.1	5,460.6	6,982.8	8,721.5	10,702.7	12,840.4	15,228.1	17,864.6	20,741.4	23,818.1	27,067.8	30,186.0	33,433.4	36,795.8	40,274.9	43,881.0	47,368.3	50,958.2
Water Heating	3,896.2	7,905.1	12,074.9	16,442.2	21,026.1	25,859.6	30,983.1	33,861.8	37,032.0	40,427.8	44,106.8	47,000.7	49,922.6	53,038.7	56,350.4	59,832.3	63,485.5	67,237.7	71,240.5	75,425.8	79,806.0
Grocery	**1,234.4**	**2,555.9**	**3,995.7**	**5,588.2**	**7,365.1**	**9,364.7**	**11,627.9**	**13,880.7**	**16,436.3**	**19,292.1**	**22,446.9**	**25,762.6**	**29,316.6**	**33,071.1**	**36,363.9**	**39,813.3**	**43,404.0**	**47,137.4**	**51,033.3**	**54,883.0**	**58,862.2**
Cooking	50.7	121.5	218.9	351.8	529.5	762.5	1,061.4	1,434.3	1,885.1	2,413.3	3,017.5	3,693.8	4,430.7	5,219.5	5,983.0	6,784.3	7,618.8	8,488.8	9,396.2	10,328.6	11,289.3
Space Heating	746.3	1,547.8	2,423.8	3,396.1	4,485.0	5,715.1	7,112.4	8,697.0	10,474.7	12,445.3	14,607.9	16,956.5	19,459.4	22,096.1	24,274.9	26,553.9	28,922.0	31,380.2	33,936.4	36,401.5	38,946.4
Water Heating	437.3	886.6	1,353.0	1,840.4	2,350.6	2,887.0	3,454.1	3,749.4	4,076.5	4,433.5	4,821.4	5,112.2	5,426.5	5,755.5	6,106.0	6,475.2	6,863.2	7,268.4	7,700.7	8,152.9	8,626.5
Healthcare	**1,616.1**	**3,288.0**	**5,038.3**	**6,885.9**	**8,843.2**	**10,928.6**	**13,161.7**	**14,759.1**	**16,512.2**	**18,235.6**	**20,110.8**	**21,803.8**	**23,556.2**	**25,404.3**	**27,233.6**	**29,150.0**	**31,150.5**	**33,125.3**	**35,212.4**	**37,338.3**	**39,553.8**
Cooking	4.1	9.8	17.7	28.7	43.3	62.6	87.4	118.3	155.8	199.7	250.0	306.3	367.6	433.3	497.0	563.9	633.6	706.2	782.0	859.8	940.0
Space Heating	150.0	314.3	498.1	707.0	946.8	1,224.3	1,546.5	1,918.7	2,343.1	2,819.3	3,346.8	3,923.8	4,542.0	5,195.7	5,766.8	6,364.4	6,985.3	7,630.4	8,301.4	8,946.3	9,612.0
Water Heating	1,462.1	2,963.9	4,522.5	6,150.3	7,853.1	9,641.7	11,527.8	12,722.0	14,013.3	15,216.6	16,514.0	17,573.7	18,646.6	19,775.2	20,969.7	22,221.7	23,531.6	24,788.7	26,129.1	27,532.1	29,001.7
Lodging	**3,726.2**	**7,601.1**	**11,679.5**	**16,010.7**	**20,625.4**	**25,567.0**	**30,882.3**	**35,526.5**	**40,553.7**	**45,613.8**	**51,037.5**	**56,201.2**	**60,566.6**	**65,157.1**	**69,883.7**	**74,704.6**	**79,713.0**	**84,627.8**	**89,771.7**	**95,074.0**	**100,572.0**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	159.7	328.3	508.9	705.0	919.4	1,155.8	1,418.2	1,709.7	2,028.8	2,377.6	2,756.3	3,164.0	3,595.8	4,048.6	4,422.9	4,813.1	5,217.5	5,635.9	6,069.8	6,490.8	6,924.8
Water Heating	3,566.6	7,272.8	11,170.6	15,305.7	19,706.0	24,411.2	29,464.0	33,816.8	38,524.9	43,236.2	48,281.2	53,037.1	56,970.7	61,108.5	65,460.8	69,891.5	74,495.5	78,991.8	83,701.9	88,583.2	93,647.3
Misc.	**472.2**	**987.4**	**1,560.6**	**2,209.2**	**2,950.2**	**3,803.5**	**4,790.1**	**5,925.9**	**7,217.2**	**8,662.7**	**10,261.5**	**11,975.5**	**13,812.1**	**15,753.1**	**17,468.0**	**19,261.9**	**21,126.0**	**23,061.9**	**25,075.4**	**27,013.0**	**29,012.6**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	438.1	918.8	1,456.8	2,069.4	2,773.8	3,589.7	4,538.0	5,634.8	6,886.2	8,291.2	9,848.5	11,552.4	13,378.2	15,309.6	17,014.3	18,797.2	20,649.6	22,573.3	24,573.9	26,497.8	28,483.0
Water Heating	34.0	68.6	103.8	139.8	176.5	213.9	252.1	291.1	331.0	371.6	413.0	423.2	433.9	443.4	453.7	464.8	476.5	488.6	501.5	515.2	529.6
Office	**3,696.0**	**7,633.6**	**11,898.4**	**16,584.6**	**21,777.5**	**27,581.7**	**34,110.1**	**41,142.6**	**48,886.5**	**57,462.4**	**66,869.8**	**76,669.6**	**87,062.8**	**98,018.5**	**107,482.6**	**117,385.0**	**127,679.6**	**138,368.0**	**149,493.8**	**160,269.4**	**171,401.0**
Space Heating	2,895.7	6,018.3	9,446.8	13,271.7	17,578.4	22,468.8	28,051.2	34,408.5	41,443.4	49,277.3	57,906.3	67,303.4	77,339.1	87,928.0	96,997.0	106,479.3	116,329.8	126,553.6	137,184.5	147,439.4	158,023.0
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,779.9**	**7,829.0**	**12,243.4**	**17,123.1**	**22,547.2**	**28,605.7**	**35,387.5**	**40,852.9**	**47,088.4**	**54,030.3**	**61,692.8**	**69,419.4**	**77,698.9**	**86,406.9**	**95,042.3**	**103,917.6**	**113,138.0**	**122,631.1**	**132,548.5**	**142,701.0**	**153,191.1**
Cooking	179.7	432.0	781.0	1,258.4	1,898.2	2,737.8	3,814.8	5,158.5	6,781.7	8,682.0	10,854.1	13,283.8	15,929.0	18,759.4	21,499.5	24,373.7	27,366.7	30,485.6	33,738.3	37,080.2	40,523.5
Space Heating	461.5	949.8	1,474.4	2,045.5	2,672.1	3,365.3	4,137.4	4,997.6	5,948.3	6,989.2	8,120.6	9,340.0	10,632.3	11,988.0	13,139.4	14,338.8	15,581.1	16,865.8	18,197.3	19,489.7	20,821.1
Water Heating	3,138.7	6,447.3	9,988.1	13,819.2	17,976.9	22,502.5	27,435.3	30,696.8	34,358.4	38,359.0	42,718.1	46,795.7	51,137.7	55,659.5	60,403.4	65,205.1	70,190.2	75,279.6	80,612.9	86,131.2	91,846.6
Retail	**4,853.6**	**9,980.9**	**15,479.3**	**21,452.8**	**27,991.8**	**35,209.2**	**43,230.0**	**51,977.4**	**61,602.9**	**72,146.1**	**83,609.8**	**95,752.6**	**108,636.2**	**122,153.7**	**134,047.4**	**146,432.2**	**159,256.6**	**172,516.3**	**186,261.9**	**199,635.2**	**213,411.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,460.8	9,185.9	14,268.4	19,809.4	25,898.3	32,645.3	40,171.7	48,568.3	57,816.8	67,957.4	78,991.3	90,894.6	103,518.3	116,768.1	128,374.5	140,455.0	152,958.3	165,881.4	179,267.1	192,263.4	205,644.0
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**163.5**	**336.0**	**520.9**	**721.5**	**940.9**	**1,182.8**	**1,451.3**	**1,748.7**	**2,073.0**	**2,427.8**	**2,813.1**	**3,206.8**	**3,624.9**	**4,062.8**	**4,418.1**	**4,789.7**	**5,176.0**	**5,577.0**	**5,994.4**	**6,399.9**	**6,819.0**
Space Heating	139.8	288.1	447.9	622.6	815.0	1,028.8	1,267.9	1,535.3	1,828.2	2,150.1	2,501.0	2,880.1	3,282.6	3,705.4	4,044.5	4,399.0	4,767.1	5,149.0	5,546.1	5,930.3	6,327.0
Water Heating	23.7	48.0	73.0	98.9	125.9	154.0	183.4	213.4	244.8	277.7	312.1	326.7	342.3	357.4	373.6	390.8	408.9	427.9	448.3	469.6	492.0
Grand Total	**24,870.0**	**51,073.2**	**79,096.7**	**109,435.0**	**142,489.4**	**178,764.3**	**218,802.5**	**255,682.3**	**296,463.2**	**340,733.5**	**389,077.4**	**437,924.2**	**488,590.2**	**541,944.6**	**591,542.5**	**643,082.5**	**696,621.5**	**751,625.3**	**809,002.6**	**866,054.2**	**925,028.5**

C-43: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #43)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**5,121.6**	**10,445.2**	**16,051.2**	**22,011.7**	**28,379.1**	**35,226.5**	**42,637.2**	**48,109.2**	**54,095.2**	**60,622.3**	**67,747.5**	**74,392.2**	**81,318.1**	**88,658.4**	**96,079.0**	**103,835.1**	**111,912.0**	**120,239.8**	**128,991.8**	**137,838.2**	**147,016.0**
Cooking	18.7	45.0	81.5	131.6	199.0	287.5	401.3	543.6	715.7	917.5	1,148.4	1,407.0	1,688.9	1,990.6	2,283.6	2,590.9	2,911.0	3,244.7	3,592.8	3,950.5	4,319.0
Other	514.6	1,042.6	1,590.0	2,161.0	2,757.9	3,384.7	4,046.9	4,748.3	5,489.2	6,269.2	7,090.1	7,952.9	8,849.5	9,776.9	10,733.5	11,715.4	12,722.4	13,753.1	14,819.3	15,910.5	17,029.1
Space Heating	692.1	1,452.5	2,304.7	3,276.8	4,396.1	5,694.7	7,205.8	8,955.6	10,858.3	13,007.8	15,402.1	18,031.6	20,857.1	23,852.1	26,711.5	29,696.5	32,793.1	36,004.3	39,339.2	42,551.4	45,862.0
Water Heating	3,896.2	7,905.1	12,074.9	16,442.2	21,026.1	25,859.6	30,983.1	33,861.8	37,032.0	40,427.8	44,106.8	47,000.7	49,922.6	53,038.7	56,350.4	59,832.3	63,485.5	67,237.7	71,240.5	75,425.8	79,806.0
Grocery	**1,225.8**	**2,537.0**	**3,963.8**	**5,539.9**	**7,296.2**	**9,270.2**	**11,502.2**	**13,717.1**	**16,229.9**	**19,039.0**	**22,143.9**	**25,406.9**	**28,905.1**	**32,601.0**	**35,834.8**	**39,223.2**	**42,750.5**	**46,418.1**	**50,244.0**	**54,021.4**	**57,925.5**
Cooking	48.7	117.3	212.6	343.2	518.7	749.5	1,046.0	1,416.6	1,864.9	2,390.7	2,992.4	3,666.2	4,400.4	5,186.7	5,949.7	6,750.4	7,584.3	8,453.7	9,360.5	10,292.1	11,252.1
Space Heating	744.6	1,544.4	2,418.6	3,389.0	4,476.1	5,704.3	7,099.8	8,682.4	10,458.2	12,426.7	14,587.4	16,933.8	19,434.7	22,069.3	24,245.9	26,522.7	28,888.6	31,344.5	33,898.5	36,361.3	38,903.9
Water Heating	432.5	875.3	1,332.6	1,807.6	2,301.4	2,816.4	3,356.4	3,618.1	3,906.8	4,221.6	4,564.1	4,806.8	5,070.0	5,345.0	5,639.2	5,950.2	6,277.6	6,619.9	6,985.1	7,367.9	7,769.5
Healthcare	**1,531.9**	**3,118.4**	**4,781.3**	**6,539.6**	**8,405.7**	**10,397.9**	**12,535.4**	**14,035.0**	**15,688.0**	**17,309.2**	**19,079.7**	**20,665.1**	**22,307.8**	**24,044.1**	**25,760.4**	**27,561.7**	**29,445.5**	**31,387.1**	**33,439.3**	**35,528.3**	**37,705.0**
Cooking	3.5	8.5	15.5	25.0	37.8	54.6	76.2	103.2	135.9	174.2	218.1	267.2	320.7	378.0	433.7	492.0	552.8	616.2	682.3	750.3	820.3
Space Heating	150.0	314.3	498.1	707.0	946.8	1,224.3	1,546.5	1,918.7	2,343.1	2,819.3	3,346.8	3,923.8	4,542.0	5,195.7	5,766.8	6,364.4	6,985.3	7,630.4	8,301.4	8,946.3	9,612.0
Water Heating	1,378.4	2,795.5	4,267.8	5,807.7	7,421.1	9,118.9	10,912.7	12,013.0	13,209.0	14,315.7	15,514.8	16,474.0	17,445.1	18,470.4	19,559.8	20,705.4	21,907.3	23,140.5	24,455.6	25,831.8	27,272.7
Lodging	**3,608.0**	**7,357.8**	**11,302.1**	**15,487.6**	**19,942.9**	**24,708.6**	**29,828.4**	**34,254.9**	**39,044.2**	**43,843.9**	**48,984.8**	**53,843.6**	**57,885.5**	**62,136.8**	**66,510.0**	**70,968.5**	**75,603.9**	**80,135.0**	**84,883.7**	**89,800.3**	**94,902.9**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	121.5	246.2	375.4	510.1	650.8	798.2	953.7	1,118.0	1,291.0	1,472.7	1,663.4	1,863.4	2,070.8	2,284.8	2,407.8	2,536.2	2,669.4	2,807.0	2,949.6	3,090.6	3,236.4
Water Heating	3,486.5	7,111.6	10,926.7	14,977.5	19,292.2	23,910.4	28,874.7	33,137.0	37,753.2	42,371.2	47,321.4	51,980.2	55,814.7	59,851.9	64,102.2	68,432.3	72,934.4	77,328.0	81,934.0	86,709.7	91,666.6
Misc.	**134.8**	**308.5**	**533.8**	**827.9**	**1,208.6**	**1,696.0**	**2,310.3**	**3,067.4**	**3,974.4**	**5,030.3**	**6,232.8**	**7,542.1**	**8,968.0**	**10,492.2**	**12,104.5**	**13,789.7**	**15,539.5**	**17,357.7**	**19,248.4**	**21,056.4**	**22,919.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	100.8	239.9	430.1	688.2	1,032.2	1,482.2	2,058.2	2,776.3	3,643.4	4,658.8	5,819.7	7,119.0	8,534.1	10,048.8	11,650.8	13,325.0	15,063.0	16,869.0	18,746.9	20,541.3	22,390.1
Water Heating	34.0	68.6	103.8	139.8	176.5	213.9	252.1	291.1	331.0	371.6	413.0	423.2	433.9	443.4	453.7	464.8	476.5	488.6	501.5	515.2	529.6
Office	**3,173.7**	**6,409.8**	**9,733.6**	**13,160.7**	**16,692.6**	**20,340.3**	**24,122.9**	**27,745.8**	**31,383.5**	**35,160.6**	**39,088.6**	**42,762.5**	**46,488.1**	**50,310.3**	**52,232.6**	**54,255.4**	**56,371.3**	**58,563.0**	**60,855.3**	**63,182.3**	**65,609.8**
Space Heating	2,373.4	4,794.5	7,281.9	9,847.8	12,493.5	15,227.3	18,064.1	21,011.7	23,940.5	26,975.5	30,125.2	33,396.3	36,764.4	40,219.8	41,747.0	43,349.8	45,021.4	46,748.6	48,546.0	50,352.4	52,231.8
Water Heating	800.2	1,615.3	2,451.6	3,312.9	4,199.1	5,112.9	6,058.9	6,734.1	7,443.0	8,185.1	8,963.5	9,366.2	9,723.7	10,090.5	10,485.6	10,905.6	11,349.9	11,814.4	12,309.3	12,830.0	13,378.0
Restaurant	**3,462.3**	**7,189.6**	**11,276.4**	**15,822.1**	**20,906.7**	**26,620.5**	**33,051.6**	**38,160.1**	**44,033.9**	**50,637.0**	**57,954.3**	**65,327.9**	**73,248.6**	**81,592.1**	**90,119.3**	**98,884.5**	**107,989.4**	**117,364.0**	**127,157.9**	**137,180.7**	**147,534.6**
Cooking	178.9	430.4	778.5	1,255.1	1,894.0	2,732.8	3,808.8	5,151.7	6,773.9	8,673.3	10,844.4	13,273.2	15,917.4	18,746.7	21,486.7	24,360.7	27,353.4	30,472.1	33,724.5	37,066.1	40,509.1
Space Heating	175.6	374.3	604.1	874.7	1,195.9	1,579.0	2,035.6	2,574.8	3,200.2	3,911.3	4,707.1	5,584.1	6,528.6	7,531.6	8,586.3	9,683.9	10,819.6	11,994.9	13,212.6	14,385.5	15,591.7
Water Heating	3,107.8	6,384.9	9,893.7	13,692.2	17,816.8	22,308.7	27,207.1	30,433.6	34,059.8	38,052.3	42,402.7	46,470.7	50,802.6	55,313.7	60,046.3	64,839.9	69,816.5	74,897.0	80,220.8	85,729.1	91,433.9
Retail	**4,157.5**	**8,577.9**	**13,353.6**	**18,586.4**	**24,367.8**	**30,809.8**	**38,034.5**	**46,124.8**	**55,072.9**	**64,919.1**	**75,663.2**	**87,061.6**	**99,181.3**	**111,916.8**	**123,009.6**	**134,576.7**	**146,567.4**	**158,981.4**	**171,862.9**	**184,354.3**	**197,229.7**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	3,921.3	8,100.0	12,626.3	17,600.3	23,112.9	29,274.7	36,205.7	43,996.6	52,630.5	62,147.9	72,547.9	83,804.1	95,770.8	108,354.2	119,283.7	130,677.5	142,485.2	154,707.3	167,383.8	179,660.2	192,309.9
Water Heating	236.2	477.8	727.3	986.1	1,254.9	1,535.1	1,828.8	2,128.2	2,442.4	2,771.2	3,115.4	3,257.5	3,410.4	3,562.5	3,726.0	3,899.3	4,082.2	4,274.1	4,479.1	4,694.1	4,919.7
Warehouse	**162.7**	**334.1**	**517.5**	**716.0**	**932.6**	**1,170.7**	**1,434.4**	**1,726.5**	**2,044.3**	**2,391.2**	**2,767.4**	**3,150.6**	**3,557.3**	**3,982.8**	**4,324.9**	**4,682.7**	**5,054.4**	**5,439.9**	**5,840.8**	**6,229.1**	**6,630.3**
Space Heating	139.6	287.7	447.3	621.6	813.5	1,026.6	1,264.7	1,530.9	1,822.4	2,142.7	2,491.7	2,868.7	3,268.9	3,689.2	4,025.7	4,377.3	4,742.6	5,121.5	5,515.3	5,896.1	6,289.3
Water Heating	23.1	46.4	70.2	94.5	119.1	144.2	169.6	195.6	221.9	248.6	275.7	282.0	288.4	293.6	299.3	305.3	311.8	318.5	325.5	333.0	341.0
Grand Total	**22,578.4**	**46,278.2**	**71,513.3**	**98,692.0**	**128,132.3**	**160,240.5**	**195,456.9**	**226,940.9**	**261,566.2**	**298,952.6**	**339,662.2**	**380,152.5**	**421,859.7**	**465,734.5**	**505,975.1**	**547,777.6**	**591,233.9**	**635,885.9**	**682,524.1**	**729,191.1**	**777,473.6**

C-44: Commercial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #44)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Education	**7,981.8**	**16,316.5**	**25,136.0**	**34,564.3**	**44,690.3**	**55,633.4**	**67,523.0**	**77,887.9**	**88,960.5**	**100,947.3**	**113,896.3**	**126,721.9**	**140,109.5**	**154,152.7**	**168,498.5**	**183,197.9**	**198,387.9**	**212,685.4**	**227,591.1**	**242,740.3**	**258,384.7**
Cooking	19.1	46.0	83.4	134.6	203.5	294.0	410.3	555.6	731.4	937.6	1,173.6	1,437.8	1,725.7	2,034.0	2,333.2	2,647.1	2,974.1	3,314.9	3,670.4	4,035.7	4,412.1
Other	710.9	1,440.3	2,196.4	2,985.2	3,809.5	4,675.0	5,589.0	6,556.8	7,377.2	8,250.9	9,180.6	10,167.2	11,199.9	12,274.5	13,388.9	14,537.9	15,721.0	16,936.4	18,200.2	19,498.3	20,833.7
Space Heating	1,487.5	3,056.5	4,736.0	6,556.6	8,544.8	10,733.8	13,160.5	15,852.2	18,721.9	21,862.0	25,273.1	28,948.5	32,842.4	36,926.6	40,896.9	45,012.1	49,257.3	53,328.6	57,544.2	61,651.2	65,874.9
Water Heating	5,764.3	11,773.6	18,120.2	24,887.9	32,132.6	39,930.6	48,363.3	54,923.4	62,129.8	69,896.7	78,269.1	86,168.5	94,341.4	102,917.6	111,879.5	121,000.7	130,435.5	139,105.5	148,176.3	157,555.1	167,264.0
Grocery	**2,924.5**	**5,979.2**	**9,211.1**	**12,667.0**	**16,383.0**	**20,407.3**	**24,794.7**	**29,278.9**	**34,171.3**	**39,466.5**	**45,167.9**	**51,140.1**	**57,438.7**	**64,015.9**	**70,186.3**	**76,578.6**	**83,171.4**	**89,900.8**	**96,852.6**	**103,810.8**	**110,949.0**
Cooking	66.8	160.2	288.9	464.4	699.1	1,006.5	1,400.1	1,890.4	2,481.7	3,173.1	3,962.4	4,844.4	5,803.9	6,829.9	7,822.7	8,863.6	9,947.2	11,076.0	12,251.0	13,458.2	14,702.0
Space Heating	2,402.7	4,896.5	7,514.4	10,287.7	13,238.4	16,397.4	19,801.7	23,476.8	27,426.1	31,647.3	36,144.7	40,916.2	45,912.3	51,105.1	55,902.0	60,853.3	65,942.8	71,106.2	76,417.6	81,682.6	87,069.0
Water Heating	455.1	922.6	1,407.9	1,914.9	2,445.5	3,003.4	3,592.9	3,911.7	4,263.5	4,646.2	5,060.8	5,379.5	5,722.5	6,080.9	6,461.6	6,861.8	7,281.3	7,718.6	8,184.0	8,670.0	9,178.1
Healthcare	**2,561.7**	**5,227.9**	**8,037.5**	**11,026.2**	**14,217.7**	**17,644.8**	**21,341.5**	**24,215.4**	**27,318.6**	**30,509.4**	**33,965.1**	**37,348.6**	**40,878.3**	**44,578.1**	**48,327.8**	**52,167.9**	**56,144.4**	**59,764.9**	**63,552.5**	**67,425.8**	**71,433.9**
Cooking	4.2	10.2	18.5	29.8	45.1	65.1	90.9	123.1	162.0	207.7	260.0	318.5	382.2	450.5	516.7	586.2	658.6	734.1	812.8	893.6	977.0
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	406.0	831.5	1,283.2	1,768.2	2,292.4	2,863.0	3,488.7	4,175.4	4,873.5	5,632.4	6,451.7	7,330.2	8,257.1	9,226.1	10,119.4	11,045.1	12,000.0	12,913.1	13,858.0	14,782.2	15,727.3
Water Heating	2,151.5	4,386.2	6,735.9	9,228.2	11,880.2	14,716.6	17,761.9	19,916.9	22,283.1	24,669.3	27,253.4	29,700.0	32,239.1	34,901.5	37,691.7	40,536.6	43,485.8	46,117.7	48,881.7	51,750.0	54,729.6
Lodging	**3,945.8**	**8,044.6**	**12,353.4**	**16,922.4**	**21,782.6**	**26,978.1**	**32,557.2**	**37,475.9**	**42,788.0**	**48,142.3**	**53,870.0**	**59,348.0**	**64,035.6**	**68,955.7**	**74,019.1**	**79,183.2**	**84,540.9**	**89,809.8**	**95,315.0**	**100,984.7**	**106,853.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	52.0	105.4	160.7	218.4	278.7	342.0	408.9	479.8	554.7	633.5	716.5	803.6	894.3	988.0	1,084.6	1,183.9	1,285.6	1,389.8	1,497.5	1,607.8	1,720.8
Space Heating	327.2	666.4	1,022.0	1,398.2	1,797.7	2,224.6	2,683.9	3,179.0	3,708.0	4,272.2	4,871.9	5,506.7	6,170.1	6,858.6	7,473.0	8,107.2	8,759.1	9,427.5	10,114.9	10,793.0	11,484.6
Water Heating	3,566.6	7,272.9	11,170.7	15,305.9	19,706.2	24,411.5	29,464.3	33,817.1	38,525.3	43,236.6	48,281.7	53,037.7	56,971.3	61,109.1	65,461.5	69,892.2	74,496.2	78,992.5	83,702.6	88,583.9	93,648.0
Misc.	**929.8**	**1,911.0**	**2,962.0**	**4,101.7**	**5,346.7**	**6,717.5**	**8,236.7**	**9,895.7**	**11,704.1**	**13,680.0**	**15,823.6**	**18,098.3**	**20,502.0**	**23,021.1**	**25,326.0**	**27,720.2**	**30,194.5**	**32,688.4**	**35,270.6**	**37,784.4**	**40,365.4**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	865.9	1,781.7	2,765.1	3,834.6	5,006.5	6,301.0	7,740.1	9,340.0	11,085.1	12,993.7	15,065.7	17,296.7	19,659.1	22,135.6	24,394.8	26,740.6	29,163.9	31,604.2	34,129.2	36,583.1	39,101.1
Water Heating	63.9	129.3	196.9	267.1	340.2	416.5	496.6	555.7	619.0	686.3	757.9	801.6	842.9	885.5	931.2	979.6	1,030.7	1,084.2	1,141.4	1,201.4	1,264.3
Office	**4,871.8**	**10,017.0**	**15,532.1**	**21,520.6**	**28,069.7**	**35,289.6**	**43,301.1**	**51,870.3**	**61,217.5**	**71,458.8**	**82,595.4**	**94,189.4**	**106,427.0**	**119,271.9**	**130,669.7**	**142,544.5**	**154,848.6**	**167,576.2**	**180,786.1**	**193,666.4**	**206,902.5**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	4,059.2	8,372.4	13,027.6	18,122.4	23,741.6	29,990.3	36,982.0	44,800.8	53,344.4	62,730.2	72,956.3	83,997.8	95,713.4	108,014.1	118,827.8	130,084.0	141,735.3	153,778.8	166,257.2	178,371.2	190,803.1
Water Heating	812.6	1,644.6	2,504.5	3,398.2	4,328.1	5,299.3	6,319.0	7,069.5	7,873.1	8,728.6	9,639.1	10,191.6	10,713.6	11,257.8	11,841.8	12,460.5	13,113.3	13,797.5	14,528.9	15,295.3	16,099.4
Restaurant	**5,501.4**	**11,297.8**	**17,495.4**	**24,199.0**	**31,483.8**	**39,440.9**	**48,164.7**	**55,621.4**	**63,888.8**	**72,901.6**	**82,680.3**	**92,579.7**	**103,071.8**	**114,029.6**	**124,950.0**	**136,146.0**	**147,720.0**	**158,295.7**	**169,316.9**	**180,608.7**	**192,274.5**
Cooking	191.4	458.5	826.2	1,327.5	1,997.5	2,875.2	3,999.2	5,400.0	7,090.3	9,067.8	11,326.6	13,852.0	16,600.3	19,540.2	22,390.6	25,379.6	28,491.4	31,733.6	35,104.1	38,567.1	42,135.2
Space Heating	956.7	1,947.3	2,984.0	4,078.4	5,238.0	6,474.2	7,800.7	9,226.9	10,754.1	12,381.2	14,110.1	15,940.3	17,853.5	19,839.5	21,631.6	23,481.2	25,382.4	27,279.0	29,230.5	31,151.1	33,118.8
Water Heating	4,353.4	8,892.0	13,685.2	18,793.1	24,248.3	30,091.5	36,364.8	40,994.5	46,044.4	51,452.6	57,243.7	62,787.4	68,618.0	74,649.9	80,927.8	87,285.2	93,846.1	99,283.1	104,982.2	110,890.6	117,020.6
Retail	**7,114.1**	**14,551.4**	**22,427.1**	**30,857.6**	**39,935.8**	**49,783.5**	**60,540.0**	**72,136.2**	**84,720.2**	**98,314.1**	**112,918.9**	**128,297.4**	**144,487.8**	**161,375.6**	**176,705.5**	**192,584.3**	**208,956.2**	**225,273.1**	**242,131.3**	**258,658.9**	**275,578.1**
Cooking	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heating	6,721.3	13,756.4	21,216.1	29,214.3	37,842.3	47,219.6	57,481.8	68,727.1	80,934.1	94,125.4	108,300.4	123,439.5	139,370.0	155,990.0	171,032.7	186,607.1	202,657.9	218,638.2	235,136.5	251,287.0	267,810.6
Water Heating	392.8	795.1	1,210.9	1,643.4	2,093.5	2,564.0	3,058.2	3,409.1	3,786.1	4,188.7	4,618.4	4,858.0	5,117.9	5,385.6	5,672.8	5,977.2	6,298.3	6,634.9	6,994.8	7,371.9	7,767.5
Warehouse	**307.9**	**644.0**	**1,018.2**	**1,441.9**	**1,926.3**	**2,484.6**	**3,130.3**	**3,857.5**	**4,683.2**	**5,610.3**	**6,638.1**	**7,741.4**	**8,925.2**	**10,177.2**	**11,389.4**	**12,653.4**	**13,963.9**	**15,321.8**	**16,731.8**	**18,093.7**	**19,496.9**
Space Heating	268.7	564.8	897.5	1,278.2	1,717.8	2,229.2	2,825.8	3,517.9	4,306.0	5,192.9	6,177.8	7,257.0	8,414.6	9,640.2	10,823.9	12,057.9	13,336.6	14,661.2	16,035.6	17,360.2	18,724.3
Water Heating	39.1	79.2	120.6	163.7	208.5	255.4	304.5	339.6	377.2	417.4	460.3	484.4	510.5	537.0	565.4	595.5	627.3	660.6	696.2	733.5	772.6
Grand Total	**36,138.7**	**73,989.4**	**114,172.8**	**157,300.7**	**203,835.9**	**254,379.6**	**309,589.1**	**362,239.3**	**419,452.1**	**481,030.4**	**547,555.6**	**615,464.9**	**685,876.0**	**759,577.7**	**830,072.2**	**902,776.0**	**977,927.7**	**1,051,316.1**	**1,127,547.7**	**1,203,773.9**	**1,282,238.5**

C.3 Industrial Sector Scenario Findings

C-45: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #45)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**10,837.9**	**21,740.9**	**32,830.8**	**44,128.7**	**55,230.2**	**66,504.0**	**77,671.3**	**89,039.3**	**100,574.3**	**112,010.7**	**123,657.7**	**135,559.9**	**147,655.0**	**159,562.4**	**171,089.5**	**182,805.2**	**194,693.8**	**204,405.5**	**214,372.8**	**221,048.7**	**227,932.9**
Process Heating	7,811.7	15,660.5	23,644.7	31,779.5	40,041.9	48,429.1	56,655.2	65,026.7	73,523.0	82,137.9	90,905.1	99,856.7	108,948.0	118,171.4	127,543.6	137,052.1	146,685.7	154,157.3	161,812.9	166,632.2	171,612.6
Space Heating	3,026.2	6,080.4	9,186.1	12,349.2	15,188.3	18,074.9	21,016.0	24,012.6	27,051.4	29,872.9	32,752.6	35,703.2	38,707.0	41,391.0	43,546.0	45,753.1	48,008.1	50,248.2	52,560.0	54,416.5	56,320.2
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LumberWood	**1,125.8**	**2,257.0**	**3,407.7**	**4,580.1**	**5,731.4**	**6,900.8**	**8,052.9**	**9,225.9**	**10,416.3**	**11,596.0**	**12,797.7**	**14,025.9**	**15,274.3**	**16,502.5**	**17,689.9**	**18,897.1**	**20,122.2**	**21,243.2**	**22,390.7**	**23,134.0**	**23,898.8**
Process Heating	805.1	1,612.6	2,434.1	3,271.3	4,121.7	4,985.1	5,825.5	6,680.9	7,549.3	8,430.0	9,326.4	10,242.0	11,172.0	12,115.6	13,074.7	14,047.9	15,034.1	15,917.7	16,820.2	17,366.7	17,929.8
Space Heating	320.7	644.4	973.6	1,308.8	1,609.7	1,915.7	2,227.4	2,545.0	2,867.0	3,166.1	3,471.3	3,784.0	4,102.4	4,386.8	4,615.2	4,849.1	5,088.1	5,325.5	5,570.5	5,767.3	5,969.1
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MetalsFab	**6,635.4**	**13,305.3**	**20,090.0**	**27,002.4**	**33,867.8**	**40,839.0**	**47,709.6**	**54,703.4**	**61,800.8**	**68,889.4**	**76,107.3**	**83,481.6**	**90,974.4**	**98,424.9**	**105,757.4**	**113,205.6**	**120,759.9**	**127,055.9**	**133,508.3**	**137,695.1**	**142,012.4**
Process Heating	5,374.1	10,771.0	16,261.1	21,855.2	27,537.1	33,305.2	38,949.9	44,694.7	50,525.5	56,438.2	62,455.7	68,600.2	74,841.0	81,172.8	87,607.1	94,135.3	100,749.7	106,112.0	111,600.9	115,013.9	118,537.8
Space Heating	1,261.4	2,534.4	3,828.9	5,147.2	6,330.6	7,533.8	8,759.7	10,008.7	11,275.2	12,451.3	13,651.6	14,881.4	16,133.4	17,252.1	18,150.3	19,070.3	20,010.1	20,943.8	21,907.4	22,681.2	23,474.7
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	**11,712.0**	**23,480.1**	**35,451.1**	**47,647.9**	**59,778.6**	**72,096.5**	**84,212.8**	**96,546.9**	**109,064.4**	**121,578.3**	**134,320.5**	**147,339.3**	**160,567.3**	**173,737.4**	**186,725.4**	**199,917.9**	**213,298.0**	**224,771.6**	**236,521.2**	**244,057.2**	**251,824.0**
Process Heating	9,619.4	19,275.5	29,098.8	39,108.4	49,275.7	59,597.4	69,679.8	79,941.7	90,357.8	100,920.4	111,671.2	122,649.4	133,800.1	145,113.9	156,611.4	168,277.2	180,097.5	190,022.5	200,173.9	206,426.4	212,877.1
Space Heating	2,091.8	4,202.9	6,349.6	8,536.0	10,498.5	12,493.7	14,526.7	16,598.0	18,698.4	20,648.7	22,639.2	24,678.7	26,755.0	28,610.3	30,099.8	31,625.4	33,184.1	34,732.4	36,330.4	37,613.6	38,929.5
Water Heating	0.9	1.7	2.6	3.5	4.4	5.3	6.3	7.2	8.2	9.1	10.1	11.1	12.2	13.2	14.3	15.3	16.4	16.7	16.9	17.2	17.5
PaperMfg	**989.4**	**1,984.8**	**2,997.2**	**4,028.6**	**5,051.9**	**6,090.9**	**7,118.7**	**8,164.9**	**9,226.5**	**10,285.9**	**11,364.6**	**12,466.6**	**13,586.2**	**14,698.3**	**15,791.2**	**16,901.3**	**18,027.1**	**18,901.6**	**19,799.5**	**20,396.4**	**21,012.7**
Process Heating	792.7	1,589.4	2,399.9	3,225.7	4,064.4	4,915.7	5,752.3	6,603.6	7,467.6	8,343.6	9,235.1	10,145.2	11,069.5	12,007.2	12,959.9	13,926.5	14,905.8	15,634.6	16,382.1	16,858.3	17,350.9
Space Heating	196.8	395.3	597.3	802.9	987.5	1,175.2	1,366.4	1,561.2	1,758.8	1,942.3	2,129.5	2,321.3	2,516.6	2,691.2	2,831.3	2,974.8	3,121.4	3,267.0	3,417.3	3,538.0	3,661.8
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
StoneClayGlass	**3,264.8**	**6,543.7**	**9,879.2**	**13,277.8**	**16,681.8**	**20,138.1**	**23,527.8**	**26,978.4**	**30,480.5**	**33,998.4**	**37,580.0**	**41,238.8**	**44,956.0**	**48,680.7**	**52,392.0**	**56,160.4**	**59,981.1**	**63,272.3**	**66,640.3**	**68,764.1**	**70,953.2**
Process Heating	2,874.3	5,759.1	8,693.9	11,684.4	14,722.1	17,805.9	20,816.2	23,880.1	26,990.1	30,144.0	33,354.1	36,632.1	39,961.7	43,340.1	46,773.4	50,257.0	53,786.8	56,788.9	59,858.7	61,742.9	63,686.4
Space Heating	390.5	784.5	1,185.3	1,593.4	1,959.7	2,332.2	2,711.6	3,098.3	3,490.4	3,854.4	4,226.0	4,606.7	4,994.3	5,340.6	5,618.6	5,903.4	6,194.3	6,483.4	6,781.6	7,021.2	7,266.8
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	**34,565.4**	**69,311.8**	**104,655.9**	**140,665.5**	**176,341.8**	**212,569.2**	**248,293.0**	**284,658.8**	**321,562.8**	**358,358.8**	**395,827.8**	**434,112.1**	**473,013.3**	**511,606.2**	**549,445.5**	**587,887.5**	**626,882.1**	**659,650.1**	**693,232.8**	**715,095.5**	**737,634.1**

C-46: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #46)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**4,108.4**	**8,266.0**	**12,492.9**	**16,796.7**	**21,165.2**	**25,597.4**	**30,102.8**	**34,682.9**	**39,327.0**	**44,032.0**	**48,815.4**	**53,694.4**	**58,645.1**	**63,663.9**	**68,759.5**	**73,925.5**	**79,155.9**	**82,180.3**	**85,302.3**	**86,603.0**	**87,988.6**
Process Heating	3,791.7	7,634.1	11,540.0	15,516.5	19,552.4	23,646.5	27,808.0	32,038.2	36,327.1	40,671.8	45,088.6	49,593.5	54,164.2	58,797.6	63,501.6	68,270.2	73,098.1	75,716.2	78,424.5	79,619.7	80,893.2
Space Heating	316.7	632.0	952.9	1,280.2	1,612.9	1,950.8	2,294.8	2,644.8	3,000.0	3,360.2	3,726.7	4,100.9	4,480.8	4,866.3	5,258.0	5,655.3	6,057.8	6,464.1	6,877.8	6,983.3	7,095.4
LumberWood	**339.4**	**682.7**	**1,031.7**	**1,387.2**	**1,747.9**	**2,114.0**	**2,486.1**	**2,864.3**	**3,247.9**	**3,636.5**	**4,031.6**	**4,434.6**	**4,843.5**	**5,258.1**	**5,679.0**	**6,105.7**	**6,537.7**	**6,861.7**	**7,193.7**	**7,301.3**	**7,415.9**
Process Heating	305.8	615.7	930.8	1,251.5	1,577.0	1,907.2	2,242.8	2,584.0	2,929.9	3,280.4	3,636.6	3,999.9	4,368.6	4,742.3	5,121.7	5,506.3	5,895.7	6,176.6	6,464.7	6,561.1	6,663.9
Space Heating	33.6	67.0	101.0	135.7	170.9	206.8	243.2	280.3	318.0	356.1	395.0	434.6	474.9	515.8	557.3	599.4	642.0	685.1	729.0	740.1	752.0
MetalsFab	**2,574.3**	**5,180.7**	**7,830.3**	**10,528.0**	**13,266.3**	**16,044.3**	**18,868.1**	**21,738.7**	**24,649.3**	**27,598.0**	**30,595.8**	**33,653.4**	**36,755.8**	**39,900.9**	**43,094.1**	**46,331.3**	**49,608.7**	**51,601.0**	**53,654.4**	**54,468.2**	**55,335.2**
Process Heating	2,442.3	4,917.2	7,433.1	9,994.4	12,594.0	15,231.1	17,911.6	20,636.3	23,398.9	26,197.4	29,042.4	31,944.0	34,888.1	37,872.6	40,902.5	43,974.0	47,083.8	48,906.6	50,787.6	51,557.4	52,377.7
Space Heating	132.0	263.4	397.2	533.6	672.3	813.1	956.5	1,102.4	1,250.4	1,400.6	1,553.4	1,709.3	1,867.7	2,028.4	2,191.6	2,357.2	2,525.0	2,694.3	2,866.8	2,910.8	2,957.5
Other	**4,346.0**	**8,746.3**	**13,219.6**	**17,774.1**	**22,397.0**	**27,087.0**	**31,854.4**	**36,700.7**	**41,614.5**	**46,592.6**	**51,653.6**	**56,815.6**	**62,053.4**	**67,363.1**	**72,753.9**	**78,219.1**	**83,752.3**	**87,327.8**	**91,006.5**	**92,380.4**	**93,844.1**
Process Heating	4,127.1	8,309.5	12,560.9	16,889.2	21,282.1	25,738.5	30,268.2	34,872.5	39,540.9	44,270.0	49,077.6	53,981.0	58,956.1	63,999.3	69,119.5	74,310.0	79,564.9	82,859.6	86,252.4	87,553.3	88,939.5
Space Heating	218.9	436.8	658.7	884.9	1,114.9	1,348.5	1,586.2	1,828.1	2,073.7	2,322.7	2,576.0	2,834.7	3,097.3	3,363.8	3,634.5	3,909.1	4,187.3	4,468.2	4,754.1	4,827.1	4,904.6
PaperMfg	**427.3**	**859.9**	**1,299.6**	**1,747.4**	**2,201.9**	**2,663.0**	**3,131.7**	**3,608.1**	**4,091.2**	**4,580.6**	**5,078.2**	**5,585.7**	**6,100.6**	**6,622.6**	**7,152.6**	**7,689.9**	**8,233.8**	**8,523.1**	**8,822.5**	**8,957.5**	**9,101.4**
Process Heating	406.7	818.8	1,237.7	1,664.2	2,097.0	2,536.2	2,982.5	3,436.2	3,896.2	4,362.2	4,835.9	5,319.0	5,809.3	6,306.2	6,810.7	7,322.2	7,840.0	8,102.8	8,375.3	8,503.5	8,640.1
Space Heating	20.6	41.1	62.0	83.2	104.9	126.8	149.2	172.0	195.1	218.5	242.3	266.6	291.3	316.4	341.9	367.7	393.9	420.3	447.2	454.1	461.3
StoneClayGlass	**1,246.8**	**2,509.5**	**3,793.1**	**5,100.0**	**6,426.5**	**7,772.2**	**9,140.0**	**10,530.5**	**11,940.4**	**13,368.7**	**14,820.7**	**16,301.6**	**17,804.3**	**19,327.6**	**20,874.2**	**22,442.1**	**24,029.4**	**25,069.9**	**26,139.9**	**26,533.7**	**26,953.1**
Process Heating	1,205.9	2,427.9	3,670.1	4,934.8	6,218.4	7,520.4	8,844.0	10,189.3	11,553.3	12,935.1	14,339.8	15,772.5	17,226.2	18,699.7	20,195.8	21,712.4	23,247.8	24,235.8	25,252.5	25,632.6	26,037.6
Space Heating	40.9	81.5	123.0	165.2	208.1	251.7	296.1	341.3	387.1	433.6	480.9	529.1	578.2	627.9	678.4	729.7	781.6	834.1	887.4	901.1	915.5
Grand Total	**13,042.1**	**26,245.0**	**39,667.3**	**53,333.4**	**67,204.8**	**81,277.7**	**95,583.1**	**110,125.3**	**124,870.5**	**139,808.4**	**154,995.1**	**170,485.2**	**186,202.7**	**202,136.2**	**218,313.3**	**234,713.4**	**251,317.9**	**261,563.6**	**272,119.3**	**276,244.1**	**280,638.3**

C-47: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #47)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,606.0**	**3,237.4**	**4,901.2**	**6,602.3**	**8,337.9**	**10,109.9**	**11,924.2**	**13,783.0**	**15,682.9**	**17,622.6**	**19,608.5**	**21,646.5**	**23,725.0**	**25,840.4**	**27,994.9**	**30,184.2**	**32,404.7**	**33,703.7**	**35,046.9**	**35,741.1**	**36,472.9**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	12.1	28.3	50.2	79.7	118.8	169.7	234.6	315.2	412.2	525.5	654.8	799.1	956.1	1,123.8	1,300.9	1,485.6	1,676.6	1,874.3	2,078.2	2,270.0	2,466.5
LumberWood	**129.8**	**261.7**	**396.4**	**534.3**	**675.3**	**819.4**	**967.4**	**1,119.3**	**1,274.9**	**1,434.2**	**1,597.6**	**1,765.6**	**1,937.1**	**2,111.9**	**2,290.1**	**2,471.4**	**2,655.2**	**2,794.2**	**2,937.0**	**2,997.8**	**3,061.8**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	1.3	3.0	5.3	8.4	12.6	18.0	24.9	33.4	43.7	55.7	69.4	84.7	101.3	119.1	137.9	157.5	177.7	198.7	220.3	240.6	261.4
MetalsFab	**1,031.6**	**2,078.7**	**3,145.3**	**4,234.2**	**5,343.2**	**6,472.9**	**7,626.6**	**8,805.5**	**10,007.1**	**11,230.7**	**12,480.4**	**13,760.2**	**15,063.1**	**16,387.5**	**17,734.9**	**19,103.0**	**20,489.7**	**21,338.7**	**22,214.8**	**22,618.3**	**23,045.0**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	5.1	11.8	20.9	33.2	49.5	70.7	97.8	131.4	171.8	219.0	272.9	333.1	398.5	468.4	542.2	619.2	698.9	781.2	866.2	946.2	1,028.1
Other	**1,743.0**	**3,512.0**	**5,314.0**	**7,153.6**	**9,027.0**	**10,935.2**	**12,883.9**	**14,874.8**	**16,903.9**	**18,969.9**	**21,079.9**	**23,240.6**	**25,440.1**	**27,675.8**	**29,950.2**	**32,259.4**	**34,600.1**	**36,122.1**	**37,689.6**	**38,369.0**	**39,087.4**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	8.4	19.5	34.7	55.1	82.1	117.3	162.2	217.9	284.9	363.2	452.6	552.4	660.9	776.8	899.2	1,026.9	1,158.9	1,295.6	1,436.5	1,569.1	1,704.9
PaperMfg	**171.7**	**346.0**	**523.6**	**704.8**	**889.3**	**1,077.2**	**1,269.1**	**1,465.0**	**1,664.7**	**1,868.0**	**2,075.5**	**2,288.0**	**2,504.3**	**2,724.2**	**2,947.8**	**3,174.8**	**3,404.9**	**3,528.3**	**3,656.2**	**3,722.6**	**3,792.8**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	0.8	1.8	3.3	5.2	7.7	11.0	15.3	20.5	26.8	34.2	42.6	52.0	62.2	73.1	84.6	96.6	109.0	121.9	135.1	147.6	160.4
StoneClayGlass	**508.4**	**1,024.1**	**1,549.0**	**2,084.3**	**2,628.8**	**3,182.6**	**3,747.3**	**4,323.1**	**4,908.9**	**5,504.3**	**6,111.3**	**6,732.1**	**7,363.3**	**8,004.3**	**8,655.9**	**9,317.1**	**9,987.1**	**10,428.0**	**10,881.8**	**11,066.3**	**11,261.8**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	1.6	3.6	6.5	10.3	15.3	21.9	30.3	40.7	53.2	67.8	84.5	103.1	123.4	145.0	167.9	191.7	216.3	241.8	268.1	292.9	318.2
Grand Total	**5,190.6**	**10,459.9**	**15,829.5**	**21,313.5**	**26,901.5**	**32,597.3**	**38,418.4**	**44,370.7**	**50,442.5**	**56,629.6**	**62,953.3**	**69,433.0**	**76,033.0**	**82,744.0**	**89,573.7**	**96,509.8**	**103,541.6**	**107,915.1**	**112,426.3**	**114,515.1**	**116,721.7**

C-48: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #48)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,015.9**	**4,066.0**	**6,160.2**	**8,305.0**	**10,497.5**	**12,739.7**	**15,038.7**	**17,396.3**	**19,807.1**	**22,268.2**	**24,786.8**	**27,370.0**	**30,002.5**	**32,680.4**	**35,406.2**	**38,175.0**	**40,982.3**	**42,635.0**	**44,343.7**	**45,231.5**	**46,166.5**
Process Heating	1,992.1	4,010.8	6,062.8	8,152.0	10,272.3	12,423.3	14,609.7	16,832.1	19,085.3	21,368.0	23,688.5	26,055.2	28,456.6	30,890.8	33,362.2	35,867.5	38,403.9	39,780.3	41,204.0	41,831.9	42,501.0
Space Heating	23.8	55.2	97.4	153.1	225.2	316.4	429.0	564.3	721.7	900.2	1,098.4	1,314.8	1,546.0	1,789.6	2,044.1	2,307.5	2,578.4	2,854.7	3,139.7	3,399.6	3,665.5
LumberWood	**163.1**	**329.3**	**499.2**	**673.5**	**852.2**	**1,035.3**	**1,223.5**	**1,417.0**	**1,615.4**	**1,818.4**	**2,026.5**	**2,240.2**	**2,458.4**	**2,680.5**	**2,906.7**	**3,136.6**	**3,369.9**	**3,546.7**	**3,728.3**	**3,806.5**	**3,888.6**
Process Heating	160.6	323.4	488.9	657.3	828.3	1,001.7	1,178.0	1,357.2	1,538.9	1,723.0	1,910.1	2,100.9	2,294.5	2,490.8	2,690.1	2,892.1	3,096.6	3,244.2	3,395.5	3,446.2	3,500.1
Space Heating	2.5	5.9	10.3	16.2	23.9	33.5	45.5	59.8	76.5	95.4	116.4	139.3	163.9	189.7	216.6	244.6	273.3	302.6	332.8	360.3	388.5
MetalsFab	**1,293.0**	**2,606.3**	**3,945.5**	**5,314.3**	**6,710.0**	**8,133.4**	**9,588.5**	**11,076.3**	**12,593.2**	**14,137.8**	**15,715.0**	**17,329.5**	**18,972.5**	**20,641.9**	**22,339.7**	**24,063.1**	**25,809.7**	**26,882.9**	**27,990.3**	**28,503.1**	**29,044.8**
Process Heating	1,283.0	2,583.2	3,904.9	5,250.5	6,616.1	8,001.5	9,409.7	10,841.1	12,292.4	13,762.6	15,257.1	16,781.5	18,328.1	19,896.0	21,487.7	23,101.3	24,735.0	25,693.1	26,681.7	27,086.1	27,517.0
Space Heating	9.9	23.0	40.6	63.8	93.9	131.9	178.8	235.2	300.8	375.2	457.8	548.0	644.4	745.9	852.0	961.8	1,074.7	1,189.9	1,308.7	1,417.0	1,527.8
Other	**2,184.5**	**4,403.2**	**6,665.6**	**8,977.8**	**11,335.3**	**13,739.3**	**16,196.7**	**18,708.8**	**21,270.0**	**23,877.6**	**26,540.0**	**29,265.4**	**32,038.7**	**34,856.3**	**37,721.9**	**40,630.6**	**43,578.3**	**45,500.6**	**47,480.5**	**48,343.5**	**49,255.5**
Process Heating	2,168.0	4,365.0	6,598.3	8,872.0	11,179.7	13,520.6	15,900.1	18,318.8	20,771.1	23,255.3	25,780.8	28,356.6	30,970.1	33,619.3	36,309.0	39,035.6	41,796.1	43,527.4	45,310.3	45,993.6	46,721.8
Space Heating	16.4	38.2	67.3	105.8	155.7	218.7	296.6	390.0	498.9	622.2	759.2	908.8	1,068.6	1,237.0	1,412.9	1,595.0	1,782.2	1,973.2	2,170.2	2,349.9	2,533.7
PaperMfg	**215.2**	**433.8**	**656.6**	**884.3**	**1,116.4**	**1,353.1**	**1,594.9**	**1,842.1**	**2,094.0**	**2,350.4**	**2,612.2**	**2,880.1**	**3,152.7**	**3,429.7**	**3,711.3**	**3,997.1**	**4,286.8**	**4,442.9**	**4,604.8**	**4,689.0**	**4,778.1**
Process Heating	213.7	430.2	650.3	874.4	1,101.8	1,332.5	1,567.0	1,805.4	2,047.1	2,291.9	2,540.8	2,794.6	3,052.2	3,313.3	3,578.4	3,847.1	4,119.1	4,257.3	4,400.6	4,468.0	4,539.7
Space Heating	1.5	3.6	6.3	10.0	14.6	20.6	27.9	36.7	46.9	58.5	71.4	85.5	100.5	116.4	132.9	150.0	167.6	185.6	204.1	221.0	238.3
StoneClayGlass	**636.5**	**1,282.5**	**1,940.5**	**2,612.0**	**3,295.5**	**3,991.3**	**4,701.0**	**5,425.2**	**6,162.0**	**6,910.9**	**7,674.3**	**8,454.8**	**9,248.3**	**10,053.8**	**10,872.5**	**11,703.1**	**12,544.6**	**13,099.4**	**13,670.4**	**13,903.6**	**14,150.7**
Process Heating	633.4	1,275.4	1,927.9	2,592.2	3,266.5	3,950.4	4,645.7	5,352.4	6,068.9	6,794.7	7,532.6	8,285.2	9,048.8	9,822.9	10,608.7	11,405.4	12,211.9	12,731.1	13,265.3	13,465.0	13,677.7
Space Heating	3.1	7.1	12.6	19.8	29.1	40.8	55.4	72.8	93.1	116.2	141.7	169.6	199.5	230.9	263.7	297.7	332.7	368.3	405.1	438.6	473.0
Grand Total	**6,508.1**	**13,121.0**	**19,867.6**	**26,767.0**	**33,807.0**	**40,992.1**	**48,343.3**	**55,865.7**	**63,541.7**	**71,363.2**	**79,354.8**	**87,540.1**	**95,873.1**	**104,342.5**	**112,958.3**	**121,705.7**	**130,571.6**	**136,107.6**	**141,818.0**	**144,477.2**	**147,284.1**

C-49: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #49)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,685.2**	**5,415.1**	**8,202.1**	**11,054.4**	**13,967.2**	**16,942.5**	**19,989.1**	**23,109.1**	**26,295.0**	**29,543.2**	**32,863.9**	**36,266.6**	**39,732.0**	**43,255.2**	**46,840.3**	**50,480.9**	**54,171.4**	**56,321.4**	**58,545.9**	**59,678.1**	**60,871.2**
Process Heating	2,655.4	5,346.3	8,081.6	10,866.4	13,692.8	16,560.1	19,474.4	22,436.8	25,440.4	28,483.1	31,576.3	34,731.1	37,932.1	41,176.9	44,471.2	47,810.7	51,191.8	53,026.0	54,923.4	55,760.4	56,652.2
Space Heating	29.8	68.8	120.5	187.9	274.3	382.5	514.7	672.3	854.5	1,060.1	1,287.6	1,535.4	1,799.9	2,078.3	2,369.1	2,670.1	2,979.6	3,295.4	3,622.5	3,917.7	4,218.9
LumberWood	**217.3**	**438.4**	**664.5**	**896.2**	**1,133.3**	**1,375.9**	**1,625.0**	**1,880.6**	**2,142.1**	**2,409.3**	**2,682.8**	**2,963.5**	**3,249.6**	**3,540.8**	**3,837.3**	**4,138.5**	**4,443.9**	**4,674.1**	**4,910.6**	**5,009.3**	**5,113.2**
Process Heating	214.1	431.1	651.7	876.3	1,104.2	1,335.4	1,570.4	1,809.3	2,051.5	2,296.9	2,546.3	2,800.7	3,058.9	3,320.5	3,586.2	3,855.5	4,128.1	4,324.8	4,526.6	4,594.1	4,666.0
Space Heating	3.2	7.3	12.8	19.9	29.1	40.5	54.6	71.2	90.6	112.4	136.5	162.7	190.8	220.3	251.1	283.0	315.8	349.3	383.9	415.2	447.2
MetalsFab	**1,722.7**	**3,472.2**	**5,255.5**	**7,077.3**	**8,933.8**	**10,825.6**	**12,757.8**	**14,731.6**	**16,742.1**	**18,787.6**	**20,874.7**	**23,010.0**	**25,181.9**	**27,387.9**	**29,631.0**	**31,907.4**	**34,214.1**	**35,622.6**	**37,076.6**	**37,738.7**	**38,438.7**
Process Heating	1,710.3	3,443.5	5,205.3	6,999.0	8,819.4	10,666.2	12,543.3	14,451.4	16,385.9	18,345.7	20,338.0	22,370.0	24,431.7	26,521.6	28,643.5	30,794.4	32,972.1	34,249.0	35,566.6	36,105.7	36,680.2
Space Heating	12.4	28.7	50.2	78.3	114.3	159.4	214.5	280.2	356.2	441.9	536.7	640.0	750.2	866.3	987.5	1,113.0	1,242.0	1,373.6	1,509.9	1,633.0	1,758.5
Other	**2,910.7**	**5,866.4**	**8,879.1**	**11,956.7**	**15,092.6**	**18,288.0**	**21,551.3**	**24,884.5**	**28,279.5**	**31,733.2**	**35,257.0**	**38,862.0**	**42,528.7**	**46,252.7**	**50,039.1**	**53,881.9**	**57,775.7**	**60,301.5**	**62,904.1**	**64,019.1**	**65,198.0**
Process Heating	2,890.1	5,818.8	8,795.9	11,826.8	14,903.0	18,023.6	21,195.6	24,419.8	27,688.8	31,000.4	34,367.0	37,800.6	41,284.5	44,816.1	48,401.5	52,036.2	55,716.1	58,023.7	60,400.0	61,311.0	62,281.7
Space Heating	20.6	47.6	83.3	129.9	189.6	264.4	355.8	464.7	590.7	732.8	890.0	1,061.3	1,244.2	1,436.6	1,637.6	1,845.7	2,059.6	2,277.9	2,504.0	2,708.0	2,916.3
PaperMfg	**286.7**	**577.9**	**874.6**	**1,177.7**	**1,486.5**	**1,801.0**	**2,122.2**	**2,450.2**	**2,784.2**	**3,123.9**	**3,470.5**	**3,825.0**	**4,185.5**	**4,551.6**	**4,923.8**	**5,301.6**	**5,684.4**	**5,889.1**	**6,101.3**	**6,210.2**	**6,325.5**
Process Heating	284.8	573.4	866.8	1,165.5	1,468.6	1,776.2	2,088.8	2,406.5	2,728.6	3,055.0	3,386.8	3,725.1	4,068.5	4,416.5	4,769.8	5,128.0	5,490.6	5,674.8	5,865.7	5,955.5	6,051.2
Space Heating	1.9	4.5	7.8	12.2	17.8	24.9	33.5	43.7	55.6	68.9	83.7	99.8	117.0	135.1	154.0	173.6	193.7	214.3	235.5	254.7	274.3
StoneClayGlass	**848.3**	**1,709.0**	**2,585.5**	**3,479.8**	**4,389.8**	**5,315.5**	**6,259.4**	**7,221.8**	**8,200.4**	**9,194.6**	**10,207.6**	**11,242.8**	**12,294.8**	**13,362.6**	**14,447.7**	**15,548.6**	**16,663.7**	**17,396.4**	**18,150.7**	**18,454.9**	**18,777.4**
Process Heating	844.4	1,700.1	2,570.0	3,455.6	4,354.4	5,266.2	6,193.0	7,135.0	8,090.2	9,057.8	10,041.4	11,044.7	12,062.6	13,094.4	14,142.0	15,204.0	16,279.2	16,971.2	17,683.3	17,949.4	18,233.1
Space Heating	3.9	8.9	15.5	24.2	35.4	49.3	66.4	86.7	110.3	136.8	166.1	198.1	232.2	268.2	305.7	344.5	384.5	425.2	467.4	505.5	544.4
Grand Total	**8,671.0**	**17,479.0**	**26,461.4**	**35,642.1**	**45,003.1**	**54,548.6**	**64,304.9**	**74,277.7**	**84,443.3**	**94,791.7**	**105,356.4**	**116,169.7**	**127,172.5**	**138,350.9**	**149,719.3**	**161,258.8**	**172,953.1**	**180,205.1**	**187,689.0**	**191,110.4**	**194,723.9**

C-50: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #50)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**10,837.9**	**21,740.9**	**32,830.8**	**44,128.7**	**55,230.2**	**66,504.0**	**77,671.3**	**89,039.3**	**100,574.3**	**112,010.7**	**123,657.7**	**135,559.9**	**147,655.0**	**159,562.4**	**171,089.5**	**182,805.2**	**194,693.8**	**204,405.5**	**214,372.8**	**221,048.7**	**227,932.9**
Process Heating	7,811.7	15,660.5	23,644.7	31,779.5	40,041.9	48,429.1	56,655.2	65,026.7	73,523.0	82,137.9	90,905.1	99,856.7	108,948.0	118,171.4	127,543.6	137,052.1	146,685.7	154,157.3	161,812.9	166,632.2	171,612.6
Space Heating	3,026.2	6,080.4	9,186.1	12,349.2	15,188.3	18,074.9	21,016.0	24,012.6	27,051.4	29,872.9	32,752.6	35,703.2	38,707.0	41,391.0	43,546.0	45,753.1	48,008.1	50,248.2	52,560.0	54,416.5	56,320.2
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LumberWood	**1,125.8**	**2,257.0**	**3,407.7**	**4,580.1**	**5,731.4**	**6,900.8**	**8,052.9**	**9,225.9**	**10,416.3**	**11,596.0**	**12,797.7**	**14,025.9**	**15,274.3**	**16,502.5**	**17,689.9**	**18,897.1**	**20,122.2**	**21,243.2**	**22,390.7**	**23,134.0**	**23,898.8**
Process Heating	805.1	1,612.6	2,434.1	3,271.3	4,121.7	4,985.1	5,825.5	6,680.9	7,549.3	8,430.0	9,326.4	10,242.0	11,172.0	12,115.6	13,074.7	14,047.9	15,034.1	15,917.7	16,820.2	17,366.7	17,929.8
Space Heating	320.7	644.4	973.6	1,308.8	1,609.7	1,915.7	2,227.4	2,545.0	2,867.0	3,166.1	3,471.3	3,784.0	4,102.4	4,386.8	4,615.2	4,849.1	5,088.1	5,325.5	5,570.5	5,767.3	5,969.1
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MetalsFab	**6,635.4**	**13,305.3**	**20,090.0**	**27,002.4**	**33,867.8**	**40,839.0**	**47,709.6**	**54,703.4**	**61,800.8**	**68,889.4**	**76,107.3**	**83,481.6**	**90,974.4**	**98,424.9**	**105,757.4**	**113,205.6**	**120,759.9**	**127,055.9**	**133,508.3**	**137,695.1**	**142,012.4**
Process Heating	5,374.1	10,771.0	16,261.1	21,855.2	27,537.1	33,305.2	38,949.9	44,694.7	50,525.5	56,438.2	62,455.7	68,600.2	74,841.0	81,172.8	87,607.1	94,135.3	100,749.7	106,112.0	111,600.9	115,013.9	118,537.8
Space Heating	1,261.4	2,534.4	3,828.9	5,147.2	6,330.6	7,533.8	8,759.7	10,008.7	11,275.2	12,451.3	13,651.6	14,881.4	16,133.4	17,252.1	18,150.3	19,070.3	20,010.1	20,943.8	21,907.4	22,681.2	23,474.7
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	**11,712.0**	**23,480.1**	**35,451.1**	**47,647.9**	**59,778.6**	**72,096.5**	**84,212.8**	**96,546.9**	**109,064.4**	**121,578.3**	**134,320.5**	**147,339.3**	**160,567.3**	**173,737.4**	**186,725.4**	**199,917.9**	**213,298.0**	**224,771.6**	**236,521.2**	**244,057.2**	**251,824.0**
Process Heating	9,619.4	19,275.5	29,098.8	39,108.4	49,275.7	59,597.4	69,679.8	79,941.7	90,357.8	100,920.4	111,671.2	122,649.4	133,800.1	145,113.9	156,611.4	168,277.2	180,097.5	190,022.5	200,173.9	206,426.4	212,877.1
Space Heating	2,091.8	4,202.9	6,349.6	8,536.0	10,498.5	12,493.7	14,526.7	16,598.0	18,698.4	20,648.7	22,639.2	24,678.7	26,755.0	28,610.3	30,099.8	31,625.4	33,184.1	34,732.4	36,330.4	37,613.6	38,929.5
Water Heating	0.9	1.7	2.6	3.5	4.4	5.3	6.3	7.2	8.2	9.1	10.1	11.1	12.2	13.2	14.3	15.3	16.4	16.7	16.9	17.2	17.5
PaperMfg	**989.4**	**1,984.8**	**2,997.2**	**4,028.6**	**5,051.9**	**6,090.9**	**7,118.7**	**8,164.9**	**9,226.5**	**10,285.9**	**11,364.6**	**12,466.6**	**13,586.2**	**14,698.3**	**15,791.2**	**16,901.3**	**18,027.1**	**18,901.6**	**19,799.5**	**20,396.4**	**21,012.7**
Process Heating	792.7	1,589.4	2,399.9	3,225.7	4,064.4	4,915.7	5,752.3	6,603.6	7,467.6	8,343.6	9,235.1	10,145.2	11,069.5	12,007.2	12,959.9	13,926.5	14,905.8	15,634.6	16,382.1	16,858.3	17,350.9
Space Heating	196.8	395.3	597.3	802.9	987.5	1,175.2	1,366.4	1,561.2	1,758.8	1,942.3	2,129.5	2,321.3	2,516.6	2,691.2	2,831.3	2,974.8	3,121.4	3,267.0	3,417.3	3,538.0	3,661.8
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
StoneClayGlass	**3,264.8**	**6,543.7**	**9,879.2**	**13,277.8**	**16,681.8**	**20,138.1**	**23,527.8**	**26,978.4**	**30,480.5**	**33,998.4**	**37,580.0**	**41,238.8**	**44,956.0**	**48,680.7**	**52,392.0**	**56,160.4**	**59,981.1**	**63,272.3**	**66,640.3**	**68,764.1**	**70,953.2**
Process Heating	2,874.3	5,759.1	8,693.9	11,684.4	14,722.1	17,805.9	20,816.2	23,880.1	26,990.1	30,144.0	33,354.1	36,632.1	39,961.7	43,340.1	46,773.4	50,257.0	53,786.8	56,788.9	59,858.7	61,742.9	63,686.4
Space Heating	390.5	784.5	1,185.3	1,593.4	1,959.7	2,332.2	2,711.6	3,098.3	3,490.4	3,854.4	4,226.0	4,606.7	4,994.3	5,340.6	5,618.6	5,903.4	6,194.3	6,483.4	6,781.6	7,021.2	7,266.8
Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	**34,565.4**	**69,311.8**	**104,655.9**	**140,665.5**	**176,341.8**	**212,569.2**	**248,293.0**	**284,658.8**	**321,562.8**	**358,358.8**	**395,827.8**	**434,112.1**	**473,013.3**	**511,606.2**	**549,445.5**	**587,887.5**	**626,882.1**	**659,650.1**	**693,232.8**	**715,095.5**	**737,634.1**

C-51: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #51)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**6,693.9**	**13,442.9**	**20,306.4**	**27,297.2**	**34,053.8**	**40,915.7**	**47,898.8**	**55,005.0**	**62,216.8**	**69,529.1**	**76,970.6**	**84,569.0**	**92,285.8**	**100,114.7**	**107,504.2**	**115,009.5**	**122,620.9**	**128,056.0**	**133,649.5**	**135,885.7**	**138,260.0**
Process Heating	5,175.1	10,394.3	15,701.9	21,107.8	26,596.7	32,166.8	37,830.5	43,589.4	49,429.8	55,347.8	61,365.6	67,504.7	73,735.1	80,052.1	86,466.8	92,970.9	99,557.0	103,949.8	108,465.1	110,108.1	111,857.9
Space Heating	1,518.8	3,048.6	4,604.5	6,189.4	7,457.1	8,748.9	10,068.2	11,415.6	12,787.0	14,181.3	15,605.0	17,064.4	18,550.7	20,062.5	21,037.4	22,038.6	23,063.9	24,106.2	25,184.4	25,777.6	26,402.0
LumberWood	**638.5**	**1,281.5**	**1,935.5**	**2,601.6**	**3,241.9**	**3,892.3**	**4,554.3**	**5,228.0**	**5,911.9**	**6,605.4**	**7,311.3**	**8,032.2**	**8,764.5**	**9,507.4**	**10,202.5**	**10,908.7**	**11,625.1**	**12,236.8**	**12,863.5**	**13,078.4**	**13,306.4**
Process Heating	477.6	958.4	1,447.5	1,945.6	2,451.5	2,965.0	3,487.2	4,018.1	4,556.7	5,102.4	5,657.4	6,223.6	6,798.3	7,381.1	7,972.9	8,572.9	9,180.6	9,681.8	10,194.3	10,346.3	10,508.2
Space Heating	161.0	323.1	488.0	656.0	790.4	927.3	1,067.1	1,209.9	1,355.3	1,503.0	1,653.9	1,808.6	1,966.1	2,126.4	2,229.7	2,335.8	2,444.5	2,554.9	2,669.2	2,732.1	2,798.3
MetalsFab	**4,084.0**	**8,200.5**	**12,386.9**	**16,651.0**	**20,838.4**	**25,090.2**	**29,415.9**	**33,816.8**	**38,282.3**	**42,809.0**	**47,414.7**	**52,116.2**	**56,889.9**	**61,732.1**	**66,415.7**	**71,169.9**	**75,988.9**	**79,540.3**	**83,188.1**	**84,531.8**	**85,959.6**
Process Heating	3,450.9	6,929.8	10,467.6	14,071.2	17,730.2	21,443.5	25,219.3	29,058.6	32,952.4	36,898.0	40,910.3	45,003.5	49,157.7	53,369.7	57,646.9	61,983.9	66,375.5	69,492.4	72,690.8	73,787.2	74,954.8
Space Heating	633.1	1,270.7	1,919.2	2,579.8	3,108.3	3,646.7	4,196.6	4,758.2	5,329.9	5,911.0	6,504.4	7,112.7	7,732.3	8,362.4	8,768.7	9,186.1	9,613.4	10,047.9	10,497.3	10,744.5	11,004.8
Other	**7,066.5**	**14,186.8**	**21,428.2**	**28,804.3**	**36,058.1**	**43,423.4**	**50,916.8**	**58,540.5**	**66,275.9**	**74,117.6**	**82,096.0**	**90,240.2**	**98,509.6**	**106,897.5**	**115,028.1**	**123,281.0**	**131,646.1**	**138,085.2**	**144,691.4**	**147,014.0**	**149,482.4**
Process Heating	6,016.6	12,079.5	18,245.4	24,526.0	30,903.5	37,375.9	43,957.3	50,649.6	57,437.1	64,315.0	71,309.3	78,444.7	85,686.7	93,029.6	100,486.3	108,047.2	115,703.6	121,422.2	127,283.0	129,195.7	131,232.4
Space Heating	1,049.9	2,107.3	3,182.8	4,278.3	5,154.6	6,047.5	6,959.5	7,890.8	8,838.8	9,802.6	10,786.7	11,795.5	12,822.9	13,867.9	14,541.7	15,233.8	15,942.5	16,663.0	17,408.3	17,818.3	18,250.0
PaperMfg	**638.2**	**1,282.0**	**1,936.6**	**2,603.4**	**3,258.2**	**3,923.0**	**4,599.3**	**5,287.4**	**5,985.5**	**6,693.1**	**7,413.1**	**8,148.1**	**8,894.3**	**9,651.1**	**10,383.3**	**11,126.4**	**11,879.7**	**12,380.7**	**12,896.7**	**13,106.5**	**13,329.4**
Process Heating	539.5	1,083.8	1,637.2	2,201.0	2,773.3	3,354.1	3,944.7	4,545.1	5,154.1	5,771.1	6,398.5	7,038.5	7,688.1	8,346.7	9,015.4	9,693.5	10,380.1	10,813.3	11,259.3	11,430.4	11,612.8
Space Heating	98.8	198.2	299.4	402.4	484.9	568.8	654.6	742.2	831.4	922.1	1,014.6	1,109.5	1,206.2	1,304.4	1,367.8	1,432.9	1,499.6	1,567.4	1,637.5	1,676.0	1,716.6
StoneClayGlass	**1,975.8**	**3,966.5**	**5,991.0**	**8,053.3**	**10,103.2**	**12,184.4**	**14,301.4**	**16,454.9**	**18,639.6**	**20,854.0**	**23,106.7**	**25,405.7**	**27,739.8**	**30,107.0**	**32,438.6**	**34,804.4**	**37,201.6**	**39,060.4**	**40,965.9**	**41,608.4**	**42,291.6**
Process Heating	1,779.9	3,573.1	5,396.9	7,254.6	9,141.0	11,055.5	13,002.3	14,981.9	16,989.7	19,024.2	21,093.1	23,203.9	25,346.2	27,518.3	29,724.1	31,960.7	34,225.7	35,950.0	37,716.4	38,282.3	38,885.0
Space Heating	196.0	393.4	594.1	798.6	962.2	1,128.9	1,299.1	1,473.0	1,649.9	1,829.8	2,013.5	2,201.8	2,393.6	2,588.7	2,714.4	2,843.6	2,975.9	3,110.4	3,249.5	3,326.1	3,406.6
Grand Total	**21,096.9**	**42,360.2**	**63,984.6**	**86,010.8**	**107,553.7**	**129,429.0**	**151,686.5**	**174,332.5**	**197,312.0**	**220,608.4**	**244,312.4**	**268,511.5**	**293,083.8**	**318,009.9**	**341,972.3**	**366,299.9**	**390,962.3**	**409,359.4**	**428,255.3**	**435,224.7**	**442,629.3**

C-52: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #52)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,081.8**	**4,214.8**	**6,416.2**	**8,701.0**	**10,931.5**	**13,264.3**	**15,717.5**	**18,301.9**	**21,016.8**	**23,860.0**	**26,837.9**	**29,953.6**	**33,180.9**	**36,506.4**	**39,688.1**	**42,950.5**	**46,282.1**	**48,730.6**	**51,264.3**	**53,096.6**	**54,998.8**
Process Heating	1,641.8	3,322.4	5,055.1	6,850.8	8,713.8	10,653.3	12,682.8	14,810.1	17,034.4	19,354.1	21,774.4	24,297.9	26,905.0	29,585.6	32,337.0	35,149.3	38,013.9	39,980.0	42,011.1	43,351.9	44,746.2
Space Heating	440.1	892.4	1,361.2	1,850.2	2,217.7	2,611.0	3,034.7	3,491.8	3,982.3	4,505.8	5,063.5	5,655.7	6,276.0	6,920.8	7,351.1	7,801.2	8,268.2	8,750.6	9,253.2	9,744.7	10,252.5
LumberWood	**181.1**	**367.4**	**560.7**	**762.7**	**959.2**	**1,166.7**	**1,387.4**	**1,622.6**	**1,872.3**	**2,136.3**	**2,415.0**	**2,708.7**	**3,014.5**	**3,330.8**	**3,632.0**	**3,941.6**	**4,258.4**	**4,534.9**	**4,820.0**	**5,016.7**	**5,220.4**
Process Heating	134.5	272.8	416.5	566.6	724.1	890.0	1,065.8	1,252.5	1,450.2	1,658.7	1,878.4	2,109.3	2,349.3	2,597.3	2,852.9	3,114.8	3,382.1	3,607.5	3,839.3	3,983.9	4,133.7
Space Heating	46.6	94.6	144.3	196.1	235.0	276.7	321.6	370.1	422.1	477.6	536.7	599.4	665.2	733.5	779.1	826.8	876.3	927.5	980.7	1,032.8	1,086.6
MetalsFab	**1,244.9**	**2,521.5**	**3,840.5**	**5,211.5**	**6,578.7**	**8,010.4**	**9,517.9**	**11,108.3**	**12,781.2**	**14,535.4**	**16,374.6**	**18,300.3**	**20,296.3**	**22,353.9**	**24,371.2**	**26,438.8**	**28,549.5**	**30,147.6**	**31,798.4**	**32,938.2**	**34,120.9**
Process Heating	1,061.5	2,149.5	3,273.1	4,440.3	5,654.4	6,922.1	8,253.0	9,652.8	11,121.3	12,657.3	14,264.0	15,942.9	17,680.4	19,469.2	21,307.1	23,187.1	25,103.2	26,500.2	27,941.5	28,876.4	29,847.5
Space Heating	183.4	372.0	567.4	771.2	924.4	1,088.3	1,264.9	1,455.4	1,659.9	1,878.1	2,110.6	2,357.4	2,615.9	2,884.7	3,064.1	3,251.7	3,446.3	3,647.4	3,856.9	4,061.8	4,273.4
Other	**2,104.2**	**4,264.1**	**6,498.9**	**8,825.7**	**11,153.5**	**13,596.7**	**16,176.0**	**18,904.0**	**21,780.8**	**24,804.0**	**27,979.9**	**31,310.3**	**34,766.7**	**38,333.1**	**41,839.8**	**45,435.6**	**49,107.8**	**52,007.6**	**54,999.6**	**57,031.4**	**59,138.2**
Process Heating	1,800.0	3,647.3	5,558.0	7,546.8	9,620.5	11,791.9	14,078.3	16,490.3	19,028.0	21,689.4	24,479.8	27,401.0	30,428.5	33,549.3	36,758.4	40,043.2	43,392.6	45,958.9	48,603.5	50,295.5	52,051.3
Space Heating	304.2	616.9	940.9	1,278.9	1,532.9	1,804.8	2,097.7	2,413.7	2,752.7	3,114.6	3,500.1	3,909.4	4,338.2	4,783.9	5,081.4	5,392.5	5,715.2	6,048.7	6,396.1	6,735.9	7,086.9
PaperMfg	**204.2**	**413.1**	**628.4**	**851.4**	**1,073.3**	**1,304.4**	**1,546.5**	**1,800.5**	**2,066.2**	**2,343.5**	**2,633.0**	**2,935.1**	**3,247.3**	**3,568.5**	**3,882.9**	**4,204.7**	**4,532.9**	**4,757.9**	**4,990.8**	**5,157.2**	**5,330.1**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.6	1,349.2	1,573.4	1,807.3	2,050.5	2,303.8	2,567.3	2,839.3	3,118.5	3,404.9	3,697.5	3,995.3	4,188.9	4,389.2	4,523.6	4,663.5
Space Heating	28.6	58.0	88.5	120.3	144.2	169.8	197.3	227.0	258.9	293.0	329.2	367.7	408.1	450.0	478.0	507.2	537.6	569.0	601.6	633.6	666.6
StoneClayGlass	**583.5**	**1,182.6**	**1,802.8**	**2,448.9**	**3,104.9**	**3,793.5**	**4,520.6**	**5,289.9**	**6,101.3**	**6,954.3**	**7,850.4**	**8,790.3**	**9,765.8**	**10,772.4**	**11,777.8**	**12,808.4**	**13,860.5**	**14,696.9**	**15,559.2**	**16,130.3**	**16,722.4**
Process Heating	526.7	1,067.4	1,627.2	2,210.2	2,818.7	3,456.6	4,129.1	4,839.4	5,587.5	6,372.9	7,197.1	8,060.6	8,956.0	9,879.4	10,829.3	11,801.9	12,793.7	13,567.8	14,365.3	14,872.9	15,399.5
Space Heating	56.8	115.1	175.6	238.7	286.1	336.9	391.6	450.5	513.8	581.4	653.3	729.8	809.8	893.0	948.5	1,006.6	1,066.8	1,129.1	1,193.9	1,257.4	1,322.9
Grand Total	**6,399.7**	**12,963.5**	**19,747.5**	**26,801.3**	**33,801.0**	**41,136.1**	**48,866.0**	**57,027.2**	**65,618.5**	**74,633.5**	**84,090.8**	**93,998.3**	**104,271.5**	**114,865.2**	**125,191.8**	**135,779.6**	**146,591.3**	**154,875.6**	**163,432.4**	**169,370.4**	**175,530.8**

C-53: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #53)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,424.4**	**4,925.6**	**7,529.5**	**10,258.2**	**13,121.9**	**16,136.2**	**19,320.6**	**22,683.1**	**26,215.6**	**29,908.6**	**33,764.4**	**37,783.2**	**41,931.5**	**46,192.4**	**50,264.6**	**54,429.9**	**58,675.6**	**61,797.3**	**65,025.9**	**67,312.8**	**69,683.2**
Process Heating	2,089.9	4,240.2	6,470.7	8,798.2	11,229.1	13,774.7	16,450.1	19,261.0	22,200.9	25,262.5	28,448.8	31,761.6	35,174.2	38,674.3	42,259.3	45,917.7	49,639.8	52,225.7	54,897.2	56,662.1	58,494.5
Space Heating	334.4	685.4	1,058.8	1,460.0	1,892.8	2,361.5	2,870.6	3,422.1	4,014.7	4,646.1	5,315.5	6,021.7	6,757.3	7,518.1	8,005.3	8,512.2	9,035.8	9,571.6	10,128.7	10,650.7	11,188.7
LumberWood	**208.2**	**424.5**	**651.7**	**892.3**	**1,147.7**	**1,419.8**	**1,710.7**	**2,021.5**	**2,351.2**	**2,698.9**	**3,064.4**	**3,447.6**	**3,844.7**	**4,254.0**	**4,643.1**	**5,042.0**	**5,449.2**	**5,803.7**	**6,169.1**	**6,416.2**	**6,671.6**
Process Heating	172.8	351.9	539.5	737.5	947.1	1,169.5	1,406.5	1,658.8	1,925.7	2,206.5	2,501.1	2,809.3	3,128.5	3,457.1	3,794.7	4,139.8	4,491.5	4,789.3	5,095.6	5,287.3	5,485.7
Space Heating	35.4	72.6	112.2	154.7	200.6	250.3	304.2	362.7	425.5	492.4	563.4	638.2	716.2	796.8	848.5	902.2	957.7	1,014.5	1,073.5	1,128.8	1,185.9
MetalsFab	**1,493.8**	**3,036.2**	**4,643.6**	**6,330.2**	**8,102.7**	**9,971.2**	**11,948.1**	**14,038.5**	**16,237.4**	**18,538.7**	**20,943.6**	**23,452.1**	**26,042.7**	**28,704.8**	**31,311.5**	**33,977.2**	**36,693.6**	**38,756.9**	**40,887.5**	**42,338.5**	**43,841.9**
Process Heating	1,354.4	2,750.5	4,202.3	5,721.6	7,313.7	8,986.9	10,751.6	12,612.1	14,564.0	16,602.1	18,728.0	20,942.1	23,226.1	25,571.1	27,974.8	30,429.2	32,927.3	34,767.3	36,665.7	37,899.1	39,178.2
Space Heating	139.4	285.7	441.3	608.6	789.0	984.3	1,196.5	1,426.4	1,673.4	1,936.6	2,215.6	2,509.9	2,816.6	3,133.7	3,336.7	3,548.0	3,766.3	3,989.6	4,221.8	4,439.4	4,663.7
Other	**2,532.9**	**5,152.2**	**7,887.3**	**10,763.8**	**13,794.8**	**16,998.8**	**20,398.0**	**24,001.8**	**27,801.5**	**31,786.2**	**35,957.0**	**40,313.0**	**44,816.2**	**49,447.1**	**53,994.5**	**58,646.5**	**63,388.3**	**67,142.0**	**71,014.3**	**73,611.4**	**76,300.4**
Process Heating	2,301.7	4,678.4	7,155.4	9,754.6	12,486.4	15,366.5	18,413.8	21,636.4	25,026.4	28,574.6	32,282.7	36,150.6	40,145.3	44,250.3	48,461.0	52,762.6	57,142.4	60,525.8	64,013.0	66,249.2	68,566.3
Space Heating	231.2	473.8	731.9	1,009.2	1,308.4	1,632.3	1,984.2	2,365.5	2,775.1	3,211.5	3,674.3	4,162.4	4,670.9	5,196.8	5,533.5	5,883.9	6,245.9	6,616.2	7,001.3	7,362.1	7,734.0
PaperMfg	**244.8**	**496.8**	**758.3**	**1,031.3**	**1,316.7**	**1,615.8**	**1,930.3**	**2,261.1**	**2,607.2**	**2,967.9**	**3,343.4**	**3,734.0**	**4,136.5**	**4,549.4**	**4,953.0**	**5,365.4**	**5,785.3**	**6,074.5**	**6,373.8**	**6,584.2**	**6,802.6**
Process Heating	223.1	452.2	689.4	936.4	1,193.6	1,462.2	1,743.7	2,038.6	2,346.2	2,665.8	2,997.8	3,342.5	3,697.1	4,060.5	4,432.5	4,811.9	5,197.8	5,452.1	5,715.2	5,891.7	6,075.1
Space Heating	21.7	44.6	68.8	94.9	123.1	153.5	186.6	222.5	261.0	302.1	345.6	391.5	439.4	488.8	520.5	553.5	587.5	622.3	658.6	692.5	727.5
StoneClayGlass	**717.2**	**1,459.0**	**2,233.7**	**3,048.7**	**3,907.7**	**4,815.9**	**5,779.7**	**6,801.7**	**7,879.5**	**9,010.0**	**10,193.6**	**11,429.8**	**12,707.9**	**14,022.3**	**15,333.1**	**16,673.6**	**18,039.6**	**19,129.7**	**20,253.6**	**20,992.3**	**21,757.1**
Process Heating	674.1	1,370.6	2,097.1	2,860.3	3,663.4	4,511.2	5,409.3	6,360.1	7,361.5	8,410.6	9,507.7	10,652.8	11,836.0	13,052.2	14,300.2	15,575.2	16,873.7	17,894.7	18,946.6	19,618.0	20,313.5
Space Heating	43.2	88.4	136.6	188.4	244.2	304.7	370.4	441.6	518.0	599.5	685.9	777.0	871.9	970.1	1,032.9	1,098.3	1,165.9	1,235.0	1,306.9	1,374.3	1,443.7
Grand Total	**7,621.2**	**15,494.3**	**23,704.2**	**32,324.5**	**41,391.5**	**50,957.7**	**61,087.5**	**71,807.7**	**83,092.5**	**94,910.2**	**107,266.4**	**120,159.6**	**133,479.4**	**147,169.8**	**160,499.8**	**174,134.5**	**188,031.6**	**198,704.2**	**209,724.1**	**217,255.3**	**225,056.8**

C-54: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #54)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**3,077.6**	**6,205.1**	**9,396.2**	**12,660.0**	**15,990.4**	**19,389.4**	**22,866.7**	**26,424.3**	**30,054.0**	**33,751.9**	**37,529.6**	**41,398.4**	**45,336.8**	**49,339.5**	**53,015.2**	**56,753.2**	**60,547.2**	**62,804.9**	**65,146.5**	**66,403.9**	**67,730.2**
Process Heating	2,655.4	5,346.3	8,081.6	10,866.4	13,692.8	16,560.1	19,474.4	22,436.8	25,440.4	28,483.1	31,576.3	34,731.1	37,932.1	41,176.9	44,471.2	47,810.7	51,191.8	53,026.0	54,923.4	55,760.4	56,652.2
Space Heating	422.2	858.8	1,314.6	1,793.6	2,297.6	2,829.4	3,392.2	3,987.5	4,613.6	5,268.7	5,953.3	6,667.3	7,404.7	8,162.6	8,544.1	8,942.4	9,355.4	9,778.9	10,223.1	10,643.5	11,078.0
LumberWood	**258.9**	**522.1**	**791.0**	**1,066.4**	**1,347.7**	**1,635.3**	**1,930.0**	**2,231.9**	**2,540.5**	**2,855.3**	**3,177.3**	**3,507.4**	**3,843.7**	**4,185.7**	**4,491.7**	**4,803.3**	**5,119.7**	**5,361.3**	**5,610.1**	**5,722.2**	**5,840.2**
Process Heating	214.1	431.1	651.7	876.3	1,104.2	1,335.4	1,570.4	1,809.3	2,051.5	2,296.9	2,546.3	2,800.7	3,058.9	3,320.5	3,586.2	3,855.5	4,128.1	4,324.8	4,526.6	4,594.1	4,666.0
Space Heating	44.7	91.0	139.3	190.1	243.5	299.9	359.5	422.6	489.0	558.4	631.0	706.6	784.8	865.1	905.6	947.8	991.6	1,036.4	1,083.5	1,128.1	1,174.1
MetalsFab	**1,886.3**	**3,801.4**	**5,753.2**	**7,746.6**	**9,777.1**	**11,845.5**	**13,957.2**	**16,113.4**	**18,309.0**	**20,541.8**	**22,819.4**	**25,149.0**	**27,518.1**	**29,924.0**	**32,204.8**	**34,521.8**	**36,871.6**	**38,325.0**	**39,827.8**	**40,542.1**	**41,297.7**
Process Heating	1,710.3	3,443.5	5,205.3	6,999.0	8,819.4	10,666.2	12,543.3	14,451.4	16,385.9	18,345.7	20,338.0	22,370.0	24,431.7	26,521.6	28,643.5	30,794.4	32,972.1	34,249.0	35,566.6	36,105.7	36,680.2
Space Heating	176.0	358.0	547.9	747.6	957.7	1,179.3	1,413.9	1,662.1	1,923.0	2,196.1	2,481.4	2,779.0	3,086.4	3,402.3	3,561.3	3,727.4	3,899.5	4,076.0	4,261.2	4,436.4	4,617.5
Other	**3,181.9**	**6,412.4**	**9,704.6**	**13,066.6**	**16,491.2**	**19,979.4**	**23,540.4**	**27,176.1**	**30,877.9**	**34,642.4**	**38,482.1**	**42,409.3**	**46,402.9**	**50,458.4**	**54,307.5**	**58,217.5**	**62,182.8**	**64,783.2**	**67,466.6**	**68,668.1**	**69,939.2**
Process Heating	2,890.1	5,818.8	8,795.9	11,826.8	14,903.0	18,023.6	21,195.6	24,419.8	27,688.8	31,000.4	34,367.0	37,800.6	41,284.5	44,816.1	48,401.5	52,036.2	55,716.1	58,023.7	60,400.0	61,311.0	62,281.7
Space Heating	291.8	593.6	908.7	1,239.8	1,588.2	1,955.7	2,344.8	2,756.3	3,189.1	3,641.9	4,115.1	4,608.6	5,118.4	5,642.3	5,905.9	6,181.3	6,466.8	6,759.5	7,066.5	7,357.1	7,657.5
PaperMfg	**312.3**	**629.3**	**952.3**	**1,282.1**	**1,618.0**	**1,960.1**	**2,309.3**	**2,665.8**	**3,028.6**	**3,397.6**	**3,773.8**	**4,158.6**	**4,549.9**	**4,947.2**	**5,325.3**	**5,709.4**	**6,098.9**	**6,310.6**	**6,530.4**	**6,647.5**	**6,771.4**
Process Heating	284.8	573.4	866.8	1,165.5	1,468.6	1,776.2	2,088.8	2,406.5	2,728.6	3,055.0	3,386.8	3,725.1	4,068.5	4,416.5	4,769.8	5,128.0	5,490.6	5,674.8	5,865.7	5,955.5	6,051.2
Space Heating	27.5	55.8	85.5	116.6	149.4	184.0	220.6	259.3	300.0	342.6	387.1	433.5	481.4	530.7	555.5	581.4	608.3	635.8	664.7	692.0	720.3
StoneClayGlass	**898.9**	**1,810.9**	**2,739.6**	**3,687.0**	**4,650.8**	**5,631.2**	**6,630.7**	**7,649.5**	**8,685.5**	**9,737.6**	**10,809.6**	**11,904.9**	**13,018.0**	**14,147.7**	**15,244.5**	**16,357.9**	**17,486.3**	**18,233.0**	**19,002.4**	**19,322.8**	**19,662.4**
Process Heating	844.4	1,700.1	2,570.0	3,455.6	4,354.4	5,266.2	6,193.0	7,135.0	8,090.2	9,057.8	10,041.4	11,044.7	12,062.6	13,094.4	14,142.0	15,204.0	16,279.2	16,971.2	17,683.3	17,949.4	18,233.1
Space Heating	54.5	110.8	169.6	231.4	296.5	365.1	437.7	514.5	595.3	679.8	768.2	860.3	955.4	1,053.2	1,102.4	1,153.8	1,207.1	1,261.8	1,319.1	1,373.3	1,429.4
Grand Total	**9,615.8**	**19,381.3**	**29,337.0**	**39,508.6**	**49,875.3**	**60,440.9**	**71,234.2**	**82,261.1**	**93,495.5**	**104,926.5**	**116,591.8**	**128,527.7**	**140,669.4**	**153,002.4**	**164,589.0**	**176,363.0**	**188,306.6**	**195,817.9**	**203,583.8**	**207,306.6**	**211,241.1**

C-55: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #55)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,841.4**	**3,711.4**	**5,617.7**	**7,565.7**	**9,551.9**	**11,578.1**	**13,650.7**	**15,772.1**	**17,938.3**	**20,147.8**	**22,408.0**	**24,725.7**	**27,087.9**	**29,491.0**	**31,699.9**	**33,947.6**	**36,230.2**	**37,593.9**	**39,007.3**	**39,776.6**	**40,588.4**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	247.5	502.3	766.7	1,043.0	1,332.7	1,637.8	1,961.1	2,304.4	2,667.6	3,050.7	3,454.2	3,878.2	4,319.0	4,774.4	5,005.9	5,249.1	5,502.2	5,764.5	6,038.6	6,305.5	6,582.0
LumberWood	**154.7**	**312.0**	**472.4**	**636.5**	**803.9**	**975.0**	**1,150.4**	**1,330.1**	**1,514.0**	**1,701.8**	**1,894.3**	**2,091.9**	**2,293.6**	**2,498.9**	**2,682.8**	**2,870.2**	**3,060.7**	**3,206.5**	**3,356.7**	**3,425.5**	**3,498.0**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	26.2	53.2	81.3	110.5	141.3	173.6	207.9	244.2	282.7	323.3	366.1	411.0	457.8	506.0	530.6	556.3	583.2	611.0	640.0	668.3	697.6
MetalsFab	**1,129.8**	**2,276.2**	**3,443.9**	**4,635.7**	**5,849.2**	**7,084.8**	**8,346.3**	**9,634.6**	**10,947.2**	**12,283.2**	**13,647.2**	**15,043.6**	**16,464.9**	**17,909.1**	**19,279.2**	**20,671.6**	**22,084.2**	**22,960.2**	**23,865.5**	**24,300.4**	**24,760.4**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	103.2	209.4	319.6	434.8	555.5	682.7	817.4	960.5	1,111.9	1,271.6	1,439.8	1,616.5	1,800.2	1,990.1	2,086.6	2,187.9	2,293.4	2,402.7	2,517.0	2,628.2	2,743.5
Other	**1,905.7**	**3,839.6**	**5,809.3**	**7,819.5**	**9,866.1**	**11,950.0**	**14,077.3**	**16,249.8**	**18,463.0**	**20,715.4**	**23,015.0**	**25,369.0**	**27,764.7**	**30,199.2**	**32,511.2**	**34,860.8**	**37,244.4**	**38,811.1**	**40,427.2**	**41,158.5**	**41,932.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	171.1	347.2	529.9	721.0	921.2	1,132.1	1,355.6	1,592.8	1,844.0	2,108.8	2,387.7	2,680.8	2,985.5	3,300.2	3,460.3	3,628.3	3,803.3	3,984.6	4,174.1	4,358.6	4,549.7
PaperMfg	**187.1**	**376.9**	**570.2**	**767.4**	**968.2**	**1,172.7**	**1,381.3**	**1,594.4**	**1,811.4**	**2,032.2**	**2,257.6**	**2,488.2**	**2,723.0**	**2,961.5**	**3,188.7**	**3,419.5**	**3,653.6**	**3,781.3**	**3,913.8**	**3,985.0**	**4,060.4**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	16.1	32.7	49.8	67.8	86.7	106.5	127.5	149.8	173.4	198.4	224.6	252.2	280.8	310.4	325.5	341.3	357.7	374.8	392.6	410.0	428.0
StoneClayGlass	**538.8**	**1,085.2**	**1,641.4**	**2,208.6**	**2,785.5**	**3,372.1**	**3,970.0**	**4,579.8**	**5,199.9**	**5,830.1**	**6,472.5**	**7,129.4**	**7,797.2**	**8,475.3**	**9,133.9**	**9,802.7**	**10,480.7**	**10,930.0**	**11,392.8**	**11,587.0**	**11,792.9**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	31.9	64.8	98.9	134.6	172.0	211.3	253.0	297.3	344.2	393.6	445.7	500.4	557.3	616.0	645.9	677.3	709.9	743.8	779.2	813.6	849.3
Grand Total	**5,757.5**	**11,601.3**	**17,554.9**	**23,633.4**	**29,824.8**	**36,132.7**	**42,576.0**	**49,160.8**	**55,873.8**	**62,710.5**	**69,694.6**	**76,847.9**	**84,131.2**	**91,535.0**	**98,495.7**	**105,572.5**	**112,753.9**	**117,283.0**	**121,963.3**	**124,233.0**	**126,632.2**

C-56: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #56)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,841.4**	**3,711.4**	**5,617.7**	**7,565.7**	**9,551.9**	**11,578.1**	**13,650.7**	**15,772.1**	**17,938.3**	**20,147.8**	**22,408.0**	**24,725.7**	**27,087.9**	**29,491.0**	**31,699.9**	**33,947.6**	**36,230.2**	**37,593.9**	**39,007.3**	**39,776.6**	**40,588.4**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	247.5	502.3	766.7	1,043.0	1,332.7	1,637.8	1,961.1	2,304.4	2,667.6	3,050.7	3,454.2	3,878.2	4,319.0	4,774.4	5,005.9	5,249.1	5,502.2	5,764.5	6,038.6	6,305.5	6,582.0
LumberWood	**154.7**	**312.0**	**472.4**	**636.5**	**803.9**	**975.0**	**1,150.4**	**1,330.1**	**1,514.0**	**1,701.8**	**1,894.3**	**2,091.9**	**2,293.6**	**2,498.9**	**2,682.8**	**2,870.2**	**3,060.7**	**3,206.5**	**3,356.7**	**3,425.5**	**3,498.0**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	26.2	53.2	81.3	110.5	141.3	173.6	207.9	244.2	282.7	323.3	366.1	411.0	457.8	506.0	530.6	556.3	583.2	611.0	640.0	668.3	697.6
MetalsFab	**1,129.8**	**2,276.2**	**3,443.9**	**4,635.7**	**5,849.2**	**7,084.8**	**8,346.3**	**9,634.6**	**10,947.2**	**12,283.2**	**13,647.2**	**15,043.6**	**16,464.9**	**17,909.1**	**19,279.2**	**20,671.6**	**22,084.2**	**22,960.2**	**23,865.5**	**24,300.4**	**24,760.4**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	103.2	209.4	319.6	434.8	555.5	682.7	817.4	960.5	1,111.9	1,271.6	1,439.8	1,616.5	1,800.2	1,990.1	2,086.6	2,187.9	2,293.4	2,402.7	2,517.0	2,628.2	2,743.5
Other	**1,905.7**	**3,839.6**	**5,809.3**	**7,819.5**	**9,866.1**	**11,950.0**	**14,077.3**	**16,249.8**	**18,463.0**	**20,715.4**	**23,015.0**	**25,369.0**	**27,764.7**	**30,199.2**	**32,511.2**	**34,860.8**	**37,244.4**	**38,811.1**	**40,427.2**	**41,158.5**	**41,932.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	171.1	347.2	529.9	721.0	921.2	1,132.1	1,355.6	1,592.8	1,844.0	2,108.8	2,387.7	2,680.8	2,985.5	3,300.2	3,460.3	3,628.3	3,803.3	3,984.6	4,174.1	4,358.6	4,549.7
PaperMfg	**187.1**	**376.9**	**570.2**	**767.4**	**968.2**	**1,172.7**	**1,381.3**	**1,594.4**	**1,811.4**	**2,032.2**	**2,257.6**	**2,488.2**	**2,723.0**	**2,961.5**	**3,188.7**	**3,419.5**	**3,653.6**	**3,781.3**	**3,913.8**	**3,985.0**	**4,060.4**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	16.1	32.7	49.8	67.8	86.7	106.5	127.5	149.8	173.4	198.4	224.6	252.2	280.8	310.4	325.5	341.3	357.7	374.8	392.6	410.0	428.0
StoneClayGlass	**538.8**	**1,085.2**	**1,641.4**	**2,208.6**	**2,785.5**	**3,372.1**	**3,970.0**	**4,579.8**	**5,199.9**	**5,830.1**	**6,472.5**	**7,129.4**	**7,797.2**	**8,475.3**	**9,133.9**	**9,802.7**	**10,480.7**	**10,930.0**	**11,392.8**	**11,587.0**	**11,792.9**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	31.9	64.8	98.9	134.6	172.0	211.3	253.0	297.3	344.2	393.6	445.7	500.4	557.3	616.0	645.9	677.3	709.9	743.8	779.2	813.6	849.3
Grand Total	**5,757.5**	**11,601.3**	**17,554.9**	**23,633.4**	**29,824.8**	**36,132.7**	**42,576.0**	**49,160.8**	**55,873.8**	**62,710.5**	**69,694.6**	**76,847.9**	**84,131.2**	**91,535.0**	**98,495.7**	**105,572.5**	**112,753.9**	**117,283.0**	**121,963.3**	**124,233.0**	**126,632.2**

C-57: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #57)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,843.2**	**3,714.8**	**5,622.9**	**7,572.6**	**9,560.7**	**11,588.7**	**13,663.2**	**15,786.6**	**17,954.7**	**20,166.1**	**22,428.3**	**24,748.0**	**27,112.3**	**29,517.5**	**31,728.5**	**33,978.4**	**36,263.1**	**37,629.0**	**39,044.7**	**39,816.3**	**40,630.4**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	249.3	505.7	771.9	1,050.0	1,341.5	1,648.5	1,973.7	2,318.8	2,684.0	3,069.0	3,474.5	3,900.6	4,343.4	4,800.9	5,034.5	5,279.8	5,535.1	5,799.6	6,076.0	6,345.2	6,623.9
LumberWood	**154.9**	**312.3**	**472.9**	**637.2**	**804.9**	**976.2**	**1,151.7**	**1,331.6**	**1,515.7**	**1,703.8**	**1,896.5**	**2,094.3**	**2,296.1**	**2,501.7**	**2,685.9**	**2,873.5**	**3,064.2**	**3,210.3**	**3,360.7**	**3,429.7**	**3,502.4**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	26.4	53.6	81.8	111.3	142.2	174.7	209.2	245.8	284.5	325.3	368.3	413.4	460.3	508.8	533.6	559.6	586.7	614.7	644.0	672.5	702.0
MetalsFab	**1,130.5**	**2,277.7**	**3,446.1**	**4,638.7**	**5,852.9**	**7,089.3**	**8,351.5**	**9,640.6**	**10,954.1**	**12,290.9**	**13,655.7**	**15,052.9**	**16,475.0**	**17,920.2**	**19,291.1**	**20,684.4**	**22,098.0**	**22,974.9**	**23,881.1**	**24,316.9**	**24,777.9**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	103.9	210.8	321.7	437.7	559.2	687.1	822.7	966.5	1,118.7	1,279.2	1,448.2	1,625.8	1,810.4	2,001.1	2,098.5	2,200.7	2,307.1	2,417.4	2,532.6	2,644.8	2,761.0
Other	**1,906.9**	**3,842.0**	**5,812.9**	**7,824.4**	**9,872.2**	**11,957.4**	**14,086.0**	**16,259.8**	**18,474.3**	**20,728.1**	**23,029.0**	**25,384.4**	**27,781.6**	**30,217.5**	**32,531.0**	**34,882.1**	**37,267.2**	**38,835.4**	**40,453.0**	**41,185.9**	**41,961.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	172.3	349.6	533.5	725.8	927.3	1,139.5	1,364.3	1,602.8	1,855.3	2,121.4	2,401.7	2,696.2	3,002.3	3,318.6	3,480.0	3,649.6	3,826.1	4,008.9	4,199.9	4,386.0	4,578.7
PaperMfg	**187.2**	**377.1**	**570.5**	**767.9**	**968.8**	**1,173.4**	**1,382.1**	**1,595.3**	**1,812.4**	**2,033.4**	**2,258.9**	**2,489.7**	**2,724.6**	**2,963.2**	**3,190.5**	**3,421.5**	**3,655.8**	**3,783.6**	**3,916.2**	**3,987.6**	**4,063.1**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	16.2	32.9	50.2	68.3	87.2	107.2	128.3	150.8	174.5	199.5	225.9	253.6	282.4	312.2	327.3	343.3	359.9	377.1	395.1	412.6	430.7
StoneClayGlass	**539.0**	**1,085.7**	**1,642.1**	**2,209.5**	**2,786.6**	**3,373.5**	**3,971.7**	**4,581.6**	**5,202.0**	**5,832.5**	**6,475.2**	**7,132.3**	**7,800.4**	**8,478.7**	**9,137.6**	**9,806.7**	**10,485.0**	**10,934.5**	**11,397.6**	**11,592.1**	**11,798.3**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	32.2	65.3	99.6	135.5	173.1	212.7	254.7	299.2	346.3	396.0	448.3	503.3	560.4	619.5	649.6	681.3	714.2	748.3	784.0	818.7	854.7
Grand Total	**5,761.6**	**11,609.6**	**17,567.4**	**23,650.2**	**29,846.1**	**36,158.4**	**42,606.2**	**49,195.5**	**55,913.3**	**62,754.7**	**69,743.5**	**76,901.7**	**84,190.0**	**91,598.8**	**98,564.6**	**105,646.6**	**112,833.2**	**117,367.6**	**122,053.3**	**124,328.4**	**126,733.2**

C-58: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #58)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,606.0**	**3,237.4**	**4,901.2**	**6,602.2**	**8,337.9**	**10,109.8**	**11,924.1**	**13,782.9**	**15,682.8**	**17,622.5**	**19,608.4**	**21,646.4**	**23,724.8**	**25,840.2**	**27,994.7**	**30,184.0**	**32,404.4**	**33,703.5**	**35,046.6**	**35,740.9**	**36,472.7**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	12.1	28.3	50.1	79.6	118.7	169.6	234.5	315.1	412.1	525.4	654.6	798.9	955.9	1,123.7	1,300.7	1,485.4	1,676.4	1,874.1	2,077.9	2,269.7	2,466.2
LumberWood	**129.8**	**261.7**	**396.4**	**534.3**	**675.3**	**819.4**	**967.4**	**1,119.3**	**1,274.9**	**1,434.2**	**1,597.6**	**1,765.6**	**1,937.1**	**2,111.9**	**2,290.1**	**2,471.3**	**2,655.2**	**2,794.2**	**2,936.9**	**2,997.8**	**3,061.8**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	1.3	3.0	5.3	8.4	12.6	18.0	24.9	33.4	43.7	55.7	69.4	84.7	101.3	119.1	137.9	157.4	177.7	198.6	220.2	240.6	261.4
MetalsFab	**1,031.6**	**2,078.7**	**3,145.3**	**4,234.2**	**5,343.2**	**6,472.8**	**7,626.6**	**8,805.5**	**10,007.1**	**11,230.6**	**12,480.3**	**13,760.1**	**15,063.1**	**16,387.4**	**17,734.8**	**19,102.9**	**20,489.6**	**21,338.6**	**22,214.7**	**22,618.2**	**23,044.9**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	5.1	11.8	20.9	33.2	49.5	70.7	97.7	131.3	171.8	219.0	272.9	333.0	398.4	468.4	542.2	619.2	698.8	781.1	866.1	946.1	1,027.9
Other	**1,743.0**	**3,512.0**	**5,314.0**	**7,153.6**	**9,026.9**	**10,935.1**	**12,883.8**	**14,874.7**	**16,903.9**	**18,969.8**	**21,079.8**	**23,240.5**	**25,440.0**	**27,675.6**	**29,950.0**	**32,259.3**	**34,600.0**	**36,121.9**	**37,689.4**	**38,368.8**	**39,087.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	8.4	19.5	34.6	55.0	82.1	117.2	162.1	217.8	284.8	363.1	452.5	552.2	660.8	776.7	899.1	1,026.8	1,158.8	1,295.4	1,436.3	1,568.9	1,704.7
PaperMfg	**171.7**	**346.0**	**523.6**	**704.8**	**889.3**	**1,077.2**	**1,269.1**	**1,465.0**	**1,664.7**	**1,868.0**	**2,075.5**	**2,288.0**	**2,504.3**	**2,724.1**	**2,947.8**	**3,174.8**	**3,404.9**	**3,528.3**	**3,656.2**	**3,722.6**	**3,792.8**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	0.8	1.8	3.3	5.2	7.7	11.0	15.2	20.5	26.8	34.2	42.6	51.9	62.2	73.1	84.6	96.6	109.0	121.9	135.1	147.6	160.3
StoneClayGlass	**508.4**	**1,024.1**	**1,549.0**	**2,084.3**	**2,628.8**	**3,182.6**	**3,747.3**	**4,323.1**	**4,908.9**	**5,504.2**	**6,111.3**	**6,732.1**	**7,363.3**	**8,004.2**	**8,655.9**	**9,317.1**	**9,987.1**	**10,428.0**	**10,881.7**	**11,066.2**	**11,261.8**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	1.6	3.6	6.5	10.3	15.3	21.9	30.3	40.7	53.2	67.8	84.5	103.1	123.3	145.0	167.8	191.7	216.3	241.8	268.1	292.9	318.2
Grand Total	**5,190.6**	**10,459.9**	**15,829.4**	**21,313.4**	**26,901.4**	**32,597.1**	**38,418.2**	**44,370.4**	**50,442.2**	**56,629.3**	**62,952.9**	**69,432.6**	**76,032.6**	**82,743.6**	**89,573.2**	**96,509.3**	**103,541.1**	**107,914.5**	**112,425.7**	**114,514.4**	**116,721.1**

C-59: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #59)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,606.0**	**3,237.4**	**4,901.2**	**6,602.2**	**8,337.9**	**10,109.8**	**11,924.1**	**13,782.9**	**15,682.8**	**17,622.5**	**19,608.4**	**21,646.4**	**23,724.8**	**25,840.2**	**27,994.7**	**30,184.0**	**32,404.4**	**33,703.5**	**35,046.6**	**35,740.9**	**36,472.7**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	12.1	28.3	50.1	79.6	118.7	169.6	234.5	315.1	412.1	525.4	654.6	798.9	955.9	1,123.7	1,300.7	1,485.4	1,676.4	1,874.1	2,077.9	2,269.7	2,466.2
LumberWood	**129.8**	**261.7**	**396.4**	**534.3**	**675.3**	**819.4**	**967.4**	**1,119.3**	**1,274.9**	**1,434.2**	**1,597.6**	**1,765.6**	**1,937.1**	**2,111.9**	**2,290.1**	**2,471.3**	**2,655.2**	**2,794.2**	**2,936.9**	**2,997.8**	**3,061.8**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	1.3	3.0	5.3	8.4	12.6	18.0	24.9	33.4	43.7	55.7	69.4	84.7	101.3	119.1	137.9	157.4	177.7	198.6	220.2	240.6	261.4
MetalsFab	**1,031.6**	**2,078.7**	**3,145.3**	**4,234.2**	**5,343.2**	**6,472.8**	**7,626.6**	**8,805.5**	**10,007.1**	**11,230.6**	**12,480.3**	**13,760.1**	**15,063.1**	**16,387.4**	**17,734.8**	**19,102.9**	**20,489.6**	**21,338.6**	**22,214.7**	**22,618.2**	**23,044.9**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	5.1	11.8	20.9	33.2	49.5	70.7	97.7	131.3	171.8	219.0	272.9	333.0	398.4	468.4	542.2	619.2	698.8	781.1	866.1	946.1	1,027.9
Other	**1,743.0**	**3,512.0**	**5,314.0**	**7,153.6**	**9,026.9**	**10,935.1**	**12,883.8**	**14,874.7**	**16,903.9**	**18,969.8**	**21,079.8**	**23,240.5**	**25,440.0**	**27,675.6**	**29,950.0**	**32,259.3**	**34,600.0**	**36,121.9**	**37,689.4**	**38,368.8**	**39,087.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	8.4	19.5	34.6	55.0	82.1	117.2	162.1	217.8	284.8	363.1	452.5	552.2	660.8	776.7	899.1	1,026.8	1,158.8	1,295.4	1,436.3	1,568.9	1,704.7
PaperMfg	**171.7**	**346.0**	**523.6**	**704.8**	**889.3**	**1,077.2**	**1,269.1**	**1,465.0**	**1,664.7**	**1,868.0**	**2,075.5**	**2,288.0**	**2,504.3**	**2,724.1**	**2,947.8**	**3,174.8**	**3,404.9**	**3,528.3**	**3,656.2**	**3,722.6**	**3,792.8**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	0.8	1.8	3.3	5.2	7.7	11.0	15.2	20.5	26.8	34.2	42.6	51.9	62.2	73.1	84.6	96.6	109.0	121.9	135.1	147.6	160.3
StoneClayGlass	**508.4**	**1,024.1**	**1,549.0**	**2,084.3**	**2,628.8**	**3,182.6**	**3,747.3**	**4,323.1**	**4,908.9**	**5,504.2**	**6,111.3**	**6,732.1**	**7,363.3**	**8,004.2**	**8,655.9**	**9,317.1**	**9,987.1**	**10,428.0**	**10,881.7**	**11,066.2**	**11,261.8**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	1.6	3.6	6.5	10.3	15.3	21.9	30.3	40.7	53.2	67.8	84.5	103.1	123.3	145.0	167.8	191.7	216.3	241.8	268.1	292.9	318.2
Grand Total	**5,190.6**	**10,459.9**	**15,829.4**	**21,313.4**	**26,901.4**	**32,597.1**	**38,418.2**	**44,370.4**	**50,442.2**	**56,629.3**	**62,952.9**	**69,432.6**	**76,032.6**	**82,743.6**	**89,573.2**	**96,509.3**	**103,541.1**	**107,914.5**	**112,425.7**	**114,514.4**	**116,721.1**

C-60: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #60)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,193.3**	**4,439.3**	**6,755.5**	**9,157.3**	**11,506.4**	**13,959.6**	**16,535.1**	**19,244.0**	**22,084.9**	**24,944.1**	**27,940.0**	**31,076.4**	**34,326.4**	**37,676.2**	**40,884.5**	**44,175.2**	**47,537.0**	**50,016.9**	**52,584.5**	**54,453.2**	**56,394.0**
Process Heating	1,641.8	3,322.4	5,055.1	6,850.8	8,713.8	10,653.3	12,682.8	14,810.1	17,034.4	19,354.1	21,774.4	24,297.9	26,905.0	29,585.6	32,337.0	35,149.3	38,013.9	39,980.0	42,011.1	43,351.9	44,746.2
Space Heating	551.6	1,116.9	1,700.5	2,306.5	2,792.6	3,306.3	3,852.4	4,433.8	5,050.5	5,589.9	6,165.7	6,778.5	7,421.4	8,090.6	8,547.5	9,026.0	9,523.1	10,036.9	10,573.5	11,101.3	11,647.7
LumberWood	**192.9**	**391.2**	**596.7**	**811.1**	**1,020.1**	**1,240.4**	**1,474.1**	**1,722.5**	**1,985.5**	**2,251.2**	**2,531.9**	**2,827.7**	**3,135.9**	**3,454.8**	**3,758.8**	**4,071.4**	**4,391.4**	**4,671.3**	**4,960.0**	**5,160.5**	**5,368.2**
Process Heating	134.5	272.8	416.5	566.6	724.1	890.0	1,065.8	1,252.5	1,450.2	1,658.7	1,878.4	2,109.3	2,349.3	2,597.3	2,852.9	3,114.8	3,382.1	3,607.5	3,839.3	3,983.9	4,133.7
Space Heating	58.5	118.4	180.2	244.5	296.0	350.4	408.3	469.9	535.3	592.5	653.5	718.4	786.6	857.5	905.9	956.6	1,009.3	1,063.8	1,120.7	1,176.6	1,234.5
MetalsFab	**1,291.4**	**2,615.0**	**3,981.9**	**5,401.6**	**6,818.4**	**8,300.2**	**9,858.7**	**11,501.0**	**13,226.4**	**14,987.3**	**16,834.0**	**18,768.3**	**20,773.7**	**22,841.5**	**24,869.8**	**26,949.3**	**29,072.5**	**30,683.8**	**32,348.7**	**33,503.7**	**34,702.5**
Process Heating	1,061.5	2,149.5	3,273.1	4,440.3	5,654.4	6,922.1	8,253.0	9,652.8	11,121.3	12,657.3	14,264.0	15,942.9	17,680.4	19,469.2	21,307.1	23,187.1	25,103.2	26,500.2	27,941.5	28,876.4	29,847.5
Space Heating	229.9	465.5	708.8	961.4	1,164.0	1,378.1	1,605.7	1,848.1	2,105.1	2,330.0	2,570.0	2,825.4	3,093.4	3,372.3	3,562.7	3,762.2	3,969.4	4,183.5	4,407.2	4,627.2	4,855.0
Other	**2,181.3**	**4,419.3**	**6,733.4**	**9,141.1**	**11,550.9**	**14,077.3**	**16,741.2**	**19,555.2**	**22,519.1**	**25,553.4**	**28,741.7**	**32,086.5**	**35,558.4**	**39,141.8**	**42,666.7**	**46,282.2**	**49,975.3**	**52,896.7**	**55,912.2**	**57,969.1**	**60,102.6**
Process Heating	1,800.0	3,647.3	5,558.0	7,546.8	9,620.5	11,791.9	14,078.3	16,490.3	19,028.0	21,689.4	24,479.8	27,401.0	30,428.5	33,549.3	36,758.4	40,043.2	43,392.6	45,958.9	48,603.5	50,295.5	52,051.3
Space Heating	381.3	772.0	1,175.4	1,594.3	1,930.3	2,285.4	2,662.9	3,064.8	3,491.1	3,864.0	4,261.9	4,685.5	5,129.9	5,592.5	5,908.3	6,239.1	6,582.7	6,937.8	7,308.7	7,673.6	8,051.3
PaperMfg	**211.4**	**427.7**	**650.5**	**881.1**	**1,110.6**	**1,349.6**	**1,599.6**	**1,861.7**	**2,135.6**	**2,414.0**	**2,704.6**	**3,008.1**	**3,321.8**	**3,644.6**	**3,960.7**	**4,284.3**	**4,614.5**	**4,841.5**	**5,076.7**	**5,245.4**	**5,420.8**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.6	1,349.2	1,573.4	1,807.3	2,050.5	2,303.8	2,567.3	2,839.3	3,118.5	3,404.9	3,697.5	3,995.3	4,188.9	4,389.2	4,523.6	4,663.5
Space Heating	35.9	72.6	110.6	150.0	181.6	215.0	250.5	288.3	328.4	363.5	400.9	440.7	482.5	526.0	555.8	586.9	619.2	652.6	687.5	721.8	757.3
StoneClayGlass	**597.8**	**1,211.6**	**1,846.6**	**2,507.8**	**3,179.1**	**3,883.2**	**4,626.1**	**5,411.5**	**6,239.2**	**7,094.2**	**7,992.7**	**8,935.2**	**9,913.6**	**10,923.4**	**11,932.2**	**12,966.5**	**14,022.5**	**14,862.9**	**15,729.6**	**16,305.3**	**16,902.5**
Process Heating	526.7	1,067.4	1,627.2	2,210.2	2,818.7	3,456.6	4,129.1	4,839.4	5,587.5	6,372.9	7,197.1	8,060.6	8,956.0	9,879.4	10,829.3	11,801.9	12,793.7	13,567.8	14,365.3	14,872.9	15,399.5
Space Heating	71.2	144.1	219.4	297.6	360.3	426.6	497.1	572.1	651.7	721.3	795.6	874.6	957.6	1,043.9	1,102.9	1,164.6	1,228.8	1,295.1	1,364.3	1,432.4	1,502.9
Grand Total	**6,668.2**	**13,504.1**	**20,564.6**	**27,900.0**	**35,185.5**	**42,810.4**	**50,835.0**	**59,295.7**	**68,190.7**	**77,244.0**	**86,744.9**	**96,702.1**	**107,029.8**	**117,682.3**	**128,072.7**	**138,728.9**	**149,613.2**	**157,973.1**	**166,611.7**	**172,637.2**	**178,890.6**

C-61: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #61)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,237.7**	**4,530.9**	**6,898.1**	**9,355.4**	**11,765.5**	**14,285.5**	**16,934.1**	**19,722.3**	**22,648.3**	**25,597.4**	**28,687.5**	**31,922.0**	**35,272.9**	**38,725.9**	**42,039.4**	**45,437.3**	**48,907.7**	**51,497.4**	**54,177.0**	**56,159.0**	**58,206.3**
Process Heating	1,641.8	3,322.4	5,055.1	6,850.8	8,713.8	10,653.3	12,682.8	14,810.1	17,034.4	19,354.1	21,774.4	24,297.9	26,905.0	29,585.6	32,337.0	35,149.3	38,013.9	39,980.0	42,011.1	43,351.9	44,746.2
Space Heating	595.9	1,208.4	1,843.0	2,504.6	3,051.7	3,632.1	4,251.3	4,912.2	5,613.9	6,243.2	6,913.2	7,624.1	8,367.9	9,140.3	9,702.5	10,288.1	10,893.8	11,517.4	12,165.9	12,807.1	13,460.0
LumberWood	**197.6**	**400.9**	**611.8**	**832.1**	**1,047.5**	**1,274.9**	**1,516.4**	**1,773.2**	**2,045.2**	**2,320.4**	**2,611.1**	**2,917.3**	**3,236.2**	**3,566.1**	**3,881.2**	**4,205.2**	**4,536.7**	**4,828.2**	**5,128.8**	**5,341.3**	**5,560.3**
Process Heating	134.5	272.8	416.5	566.6	724.1	890.0	1,065.8	1,252.5	1,450.2	1,658.7	1,878.4	2,109.3	2,349.3	2,597.3	2,852.9	3,114.8	3,382.1	3,607.5	3,839.3	3,983.9	4,133.7
Space Heating	63.2	128.1	195.3	265.5	323.4	385.0	450.6	520.6	595.0	661.7	732.7	808.1	886.9	968.8	1,028.3	1,090.4	1,154.6	1,220.7	1,289.4	1,357.4	1,426.6
MetalsFab	**1,309.9**	**2,653.2**	**4,041.3**	**5,484.2**	**6,926.3**	**8,436.0**	**10,025.0**	**11,700.3**	**13,461.3**	**15,259.6**	**17,145.5**	**19,120.8**	**21,168.2**	**23,279.0**	**25,351.2**	**27,475.3**	**29,643.9**	**31,300.9**	**33,012.5**	**34,214.7**	**35,457.9**
Process Heating	1,061.5	2,149.5	3,273.1	4,440.3	5,654.4	6,922.1	8,253.0	9,652.8	11,121.3	12,657.3	14,264.0	15,942.9	17,680.4	19,469.2	21,307.1	23,187.1	25,103.2	26,500.2	27,941.5	28,876.4	29,847.5
Space Heating	248.4	503.7	768.2	1,044.0	1,272.0	1,513.9	1,772.0	2,047.5	2,340.0	2,602.3	2,881.5	3,177.9	3,487.9	3,809.8	4,044.2	4,288.2	4,540.7	4,800.7	5,071.0	5,338.2	5,610.4
Other	**2,211.9**	**4,482.5**	**6,832.0**	**9,278.0**	**11,729.9**	**14,302.6**	**17,016.9**	**19,885.8**	**22,908.5**	**26,005.0**	**29,258.4**	**32,671.0**	**36,212.7**	**39,867.3**	**43,465.1**	**47,154.6**	**50,922.7**	**53,920.1**	**57,013.0**	**59,148.2**	**61,355.3**
Process Heating	1,800.0	3,647.3	5,558.0	7,546.8	9,620.5	11,791.9	14,078.3	16,490.3	19,028.0	21,689.4	24,479.8	27,401.0	30,428.5	33,549.3	36,758.4	40,043.2	43,392.6	45,958.9	48,603.5	50,295.5	52,051.3
Space Heating	411.9	835.3	1,273.9	1,731.3	2,109.4	2,510.6	2,938.7	3,395.5	3,880.5	4,315.5	4,778.6	5,270.0	5,784.2	6,318.1	6,706.7	7,111.5	7,530.2	7,961.2	8,409.5	8,852.7	9,304.0
PaperMfg	**214.3**	**433.7**	**659.7**	**894.0**	**1,127.5**	**1,370.8**	**1,625.6**	**1,892.8**	**2,172.3**	**2,456.4**	**2,753.2**	**3,063.1**	**3,383.3**	**3,712.8**	**4,035.8**	**4,366.4**	**4,703.6**	**4,937.8**	**5,180.2**	**5,356.3**	**5,538.6**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.6	1,349.2	1,573.4	1,807.3	2,050.5	2,303.8	2,567.3	2,839.3	3,118.5	3,404.9	3,697.5	3,995.3	4,188.9	4,389.2	4,523.6	4,663.5
Space Heating	38.7	78.6	119.8	162.8	198.4	236.2	276.4	319.4	365.0	405.9	449.5	495.7	544.1	594.3	630.8	668.9	708.3	748.9	791.0	832.7	875.2
StoneClayGlass	**603.6**	**1,223.4**	**1,865.0**	**2,533.4**	**3,212.5**	**3,925.3**	**4,677.6**	**5,473.2**	**6,311.8**	**7,178.5**	**8,089.1**	**9,044.3**	**10,035.7**	**11,058.8**	**12,081.2**	**13,129.3**	**14,199.3**	**15,053.9**	**15,935.1**	**16,525.4**	**17,136.3**
Process Heating	526.7	1,067.4	1,627.2	2,210.2	2,818.7	3,456.6	4,129.1	4,839.4	5,587.5	6,372.9	7,197.1	8,060.6	8,956.0	9,879.4	10,829.3	11,801.9	12,793.7	13,567.8	14,365.3	14,872.9	15,399.5
Space Heating	76.9	155.9	237.8	323.2	393.8	468.7	548.5	633.8	724.4	805.6	892.0	983.7	1,079.7	1,179.4	1,251.9	1,327.5	1,405.6	1,486.1	1,569.8	1,652.5	1,736.7
Grand Total	**6,775.0**	**13,724.5**	**20,907.8**	**28,377.1**	**35,809.3**	**43,595.1**	**51,795.7**	**60,447.6**	**69,547.4**	**78,817.2**	**88,544.9**	**98,738.5**	**109,309.1**	**120,210.0**	**130,854.0**	**141,768.1**	**152,914.0**	**161,538.3**	**170,446.5**	**176,744.9**	**183,254.7**

C-62: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #62)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,264.8**	**4,585.4**	**6,980.5**	**9,466.3**	**11,905.3**	**14,454.5**	**17,132.9**	**19,951.4**	**22,908.1**	**25,888.3**	**29,010.1**	**32,276.8**	**35,660.4**	**39,146.6**	**42,493.8**	**45,925.8**	**49,430.8**	**52,055.4**	**54,770.4**	**56,788.5**	**58,872.3**
Process Heating	1,641.8	3,322.6	5,055.2	6,851.0	8,714.1	10,653.7	12,683.2	14,810.6	17,035.0	19,354.7	21,775.0	24,298.6	26,905.8	29,586.5	32,337.9	35,150.3	38,015.0	39,981.1	42,012.3	43,353.2	44,747.5
Space Heating	623.0	1,262.9	1,925.3	2,615.3	3,191.2	3,800.8	4,449.8	5,140.8	5,873.1	6,533.5	7,235.1	7,978.2	8,754.6	9,560.1	10,155.9	10,775.6	11,415.8	12,074.2	12,758.2	13,435.3	14,124.8
LumberWood	**200.5**	**406.7**	**620.5**	**843.8**	**1,062.3**	**1,292.9**	**1,537.5**	**1,797.4**	**2,072.7**	**2,351.2**	**2,645.2**	**2,954.9**	**3,277.2**	**3,610.6**	**3,929.3**	**4,256.9**	**4,592.1**	**4,887.3**	**5,191.6**	**5,408.0**	**5,630.9**
Process Heating	134.5	272.8	416.5	566.7	724.1	890.0	1,065.9	1,252.6	1,450.3	1,658.8	1,878.5	2,109.3	2,349.4	2,597.4	2,853.0	3,114.9	3,382.2	3,607.6	3,839.5	3,984.1	4,133.9
Space Heating	66.0	133.8	204.0	277.2	338.2	402.8	471.6	544.8	622.5	692.4	766.8	845.5	927.8	1,013.2	1,076.4	1,142.0	1,209.9	1,279.7	1,352.1	1,423.9	1,497.0
MetalsFab	**1,321.2**	**2,676.0**	**4,075.7**	**5,530.5**	**6,984.6**	**8,506.5**	**10,108.0**	**11,795.9**	**13,569.6**	**15,380.9**	**17,280.1**	**19,268.7**	**21,329.9**	**23,454.5**	**25,540.8**	**27,679.1**	**29,862.0**	**31,533.6**	**33,260.0**	**34,477.2**	**35,735.6**
Process Heating	1,061.5	2,149.6	3,273.3	4,440.4	5,654.6	6,922.3	8,253.3	9,653.2	11,121.7	12,657.7	14,264.5	15,943.4	17,680.9	19,469.8	21,307.8	23,187.8	25,103.9	26,501.1	27,942.4	28,877.3	29,848.4
Space Heating	259.7	526.4	802.5	1,090.1	1,330.1	1,584.2	1,854.7	2,142.7	2,447.9	2,723.2	3,015.6	3,325.3	3,648.9	3,984.7	4,233.0	4,491.3	4,758.1	5,032.5	5,317.6	5,599.8	5,887.2
Other	**2,230.7**	**4,520.3**	**6,889.0**	**9,354.8**	**11,826.7**	**14,419.5**	**17,154.5**	**20,044.4**	**23,088.3**	**26,206.3**	**29,481.6**	**32,916.5**	**36,480.9**	**40,158.5**	**43,779.5**	**47,492.7**	**51,284.7**	**54,306.2**	**57,423.7**	**59,583.7**	**61,816.1**
Process Heating	1,800.1	3,647.4	5,558.3	7,547.1	9,620.9	11,792.4	14,078.8	16,491.0	19,028.8	21,690.3	24,480.7	27,401.9	30,429.6	33,550.4	36,759.7	40,044.5	43,394.0	45,960.5	48,605.2	50,297.2	52,053.0
Space Heating	430.6	872.9	1,330.8	1,807.7	2,205.7	2,627.2	3,075.7	3,553.4	4,059.5	4,516.0	5,000.9	5,514.6	6,051.2	6,608.0	7,019.8	7,448.1	7,890.7	8,345.8	8,818.5	9,286.5	9,763.1
PaperMfg	**216.1**	**437.2**	**665.1**	**901.2**	**1,136.6**	**1,381.8**	**1,638.5**	**1,907.7**	**2,189.2**	**2,475.4**	**2,774.2**	**3,086.1**	**3,408.5**	**3,740.2**	**4,065.3**	**4,398.2**	**4,737.7**	**4,974.1**	**5,218.8**	**5,397.2**	**5,581.9**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.7	1,349.2	1,573.5	1,807.3	2,050.6	2,303.8	2,567.4	2,839.3	3,118.6	3,405.0	3,697.6	3,995.4	4,189.1	4,389.3	4,523.7	4,663.6
Space Heating	40.5	82.1	125.2	170.0	207.5	247.1	289.3	334.2	381.9	424.8	470.4	518.7	569.2	621.6	660.3	700.6	742.2	785.0	829.5	873.5	918.3
StoneClayGlass	**607.1**	**1,230.4**	**1,875.6**	**2,547.7**	**3,230.6**	**3,947.2**	**4,703.4**	**5,502.9**	**6,345.5**	**7,216.1**	**8,130.9**	**9,090.3**	**10,085.9**	**11,113.3**	**12,140.1**	**13,192.6**	**14,267.1**	**15,126.2**	**16,011.9**	**16,606.9**	**17,222.5**
Process Heating	526.7	1,067.5	1,627.2	2,210.3	2,818.9	3,456.8	4,129.2	4,839.6	5,587.7	6,373.2	7,197.4	8,060.9	8,956.4	9,879.8	10,829.7	11,802.3	12,794.1	13,568.3	14,365.8	14,873.5	15,400.1
Space Heating	80.4	162.9	248.4	337.4	411.7	490.4	574.1	663.3	757.8	843.0	933.5	1,029.4	1,129.6	1,233.5	1,310.4	1,390.3	1,472.9	1,557.9	1,646.1	1,733.5	1,822.4
Grand Total	**6,840.3**	**13,856.0**	**21,106.6**	**28,644.3**	**36,146.1**	**44,002.4**	**52,274.8**	**60,999.7**	**70,173.4**	**79,518.2**	**89,322.1**	**99,593.3**	**110,242.8**	**121,223.7**	**131,948.8**	**142,945.2**	**154,174.4**	**162,882.7**	**171,876.4**	**178,261.5**	**184,859.3**

C-63: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #63)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,917.2**	**3,883.3**	**5,915.1**	**8,027.2**	**10,226.4**	**12,525.4**	**14,941.8**	**17,486.6**	**20,159.1**	**22,957.6**	**25,887.7**	**28,951.8**	**32,124.6**	**35,392.8**	**38,514.3**	**41,713.5**	**44,979.5**	**47,360.5**	**49,822.8**	**51,580.4**	**53,404.3**
Process Heating	1,641.8	3,322.4	5,055.1	6,850.8	8,713.8	10,653.3	12,682.8	14,810.1	17,034.4	19,354.1	21,774.4	24,297.9	26,905.0	29,585.6	32,337.0	35,149.3	38,013.9	39,980.0	42,011.1	43,351.9	44,746.2
Space Heating	275.4	560.9	860.0	1,176.4	1,512.6	1,872.1	2,259.1	2,676.4	3,124.7	3,603.5	4,113.4	4,653.9	5,219.6	5,807.2	6,177.3	6,564.3	6,965.5	7,380.5	7,811.7	8,228.4	8,658.1
LumberWood	**163.6**	**332.3**	**507.6**	**691.3**	**884.4**	**1,088.4**	**1,305.2**	**1,536.2**	**1,781.4**	**2,040.6**	**2,314.3**	**2,602.5**	**2,902.5**	**3,212.8**	**3,507.6**	**3,810.5**	**4,120.3**	**4,389.7**	**4,667.3**	**4,856.0**	**5,051.4**
Process Heating	134.5	272.8	416.5	566.6	724.1	890.0	1,065.8	1,252.5	1,450.2	1,658.7	1,878.4	2,109.3	2,349.3	2,597.3	2,852.9	3,114.8	3,382.1	3,607.5	3,839.3	3,983.9	4,133.7
Space Heating	29.2	59.4	91.2	124.7	160.3	198.4	239.4	283.7	331.2	381.9	436.0	493.2	553.2	615.5	654.7	695.7	738.3	782.2	827.9	872.1	917.6
MetalsFab	**1,176.3**	**2,383.3**	**3,631.6**	**4,930.6**	**6,284.8**	**7,702.4**	**9,194.6**	**10,768.4**	**12,423.7**	**14,159.3**	**15,978.5**	**17,882.7**	**19,856.0**	**21,889.7**	**23,881.9**	**25,923.2**	**28,006.5**	**29,576.6**	**31,197.6**	**32,306.2**	**33,456.4**
Process Heating	1,061.5	2,149.5	3,273.1	4,440.3	5,654.4	6,922.1	8,253.0	9,652.8	11,121.3	12,657.3	14,264.0	15,942.9	17,680.4	19,469.2	21,307.1	23,187.1	25,103.2	26,500.2	27,941.5	28,876.4	29,847.5
Space Heating	114.8	233.8	358.5	490.4	630.5	780.3	941.6	1,115.6	1,302.4	1,502.0	1,714.5	1,939.8	2,175.6	2,420.6	2,574.8	2,736.1	2,903.4	3,076.3	3,256.1	3,429.8	3,608.8
Other	**1,990.4**	**4,035.0**	**6,152.5**	**8,360.0**	**10,666.1**	**13,086.0**	**15,639.8**	**18,340.4**	**21,187.9**	**24,180.3**	**27,323.1**	**30,617.9**	**34,036.5**	**37,563.4**	**41,028.3**	**44,580.6**	**48,207.4**	**51,060.5**	**54,003.2**	**55,983.3**	**58,036.1**
Process Heating	1,800.0	3,647.3	5,558.0	7,546.8	9,620.5	11,791.9	14,078.3	16,490.3	19,028.0	21,689.4	24,479.8	27,401.0	30,428.5	33,549.3	36,758.4	40,043.2	43,392.6	45,958.9	48,603.5	50,295.5	52,051.3
Space Heating	190.4	387.7	594.5	813.2	1,045.6	1,294.0	1,561.6	1,850.0	2,159.9	2,490.9	2,843.3	3,216.9	3,608.0	4,014.2	4,269.9	4,537.4	4,814.8	5,101.7	5,399.7	5,687.8	5,984.8
PaperMfg	**193.5**	**391.6**	**595.8**	**807.6**	**1,027.4**	**1,256.4**	**1,496.1**	**1,747.4**	**2,010.4**	**2,284.8**	**2,571.2**	**2,869.9**	**3,178.6**	**3,496.1**	**3,806.6**	**4,124.3**	**4,448.2**	**4,668.8**	**4,897.1**	**5,058.6**	**5,226.4**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.6	1,349.2	1,573.4	1,807.3	2,050.5	2,303.8	2,567.3	2,839.3	3,118.5	3,404.9	3,697.5	3,995.3	4,188.9	4,389.2	4,523.6	4,663.5
Space Heating	17.9	36.5	55.9	76.5	98.3	121.7	146.9	174.0	203.2	234.3	267.4	302.6	339.4	377.6	401.6	426.8	452.9	479.9	507.9	535.0	562.9
StoneClayGlass	**562.2**	**1,139.8**	**1,738.1**	**2,362.0**	**3,013.9**	**3,698.2**	**4,420.6**	**5,184.7**	**5,990.7**	**6,837.9**	**7,727.8**	**8,661.1**	**9,629.5**	**10,628.7**	**11,626.4**	**12,648.8**	**13,692.5**	**14,520.2**	**15,373.3**	**15,934.7**	**16,516.7**
Process Heating	526.7	1,067.4	1,627.2	2,210.2	2,818.7	3,456.6	4,129.1	4,839.4	5,587.5	6,372.9	7,197.1	8,060.6	8,956.0	9,879.4	10,829.3	11,801.9	12,793.7	13,567.8	14,365.3	14,872.9	15,399.5
Space Heating	35.5	72.4	111.0	151.8	195.2	241.6	291.5	345.3	403.2	465.0	530.7	600.5	673.5	749.3	797.1	847.0	898.8	952.3	1,007.9	1,061.7	1,117.2
Grand Total	**6,003.2**	**12,165.2**	**18,540.8**	**25,178.7**	**32,103.1**	**39,356.7**	**46,998.1**	**55,063.7**	**63,553.3**	**72,460.5**	**81,802.7**	**91,585.8**	**101,727.8**	**112,183.6**	**122,365.0**	**132,800.9**	**143,454.4**	**151,576.3**	**159,961.2**	**165,719.1**	**171,691.2**

C-64: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #64)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,841.4**	**3,711.4**	**5,617.7**	**7,565.7**	**9,551.9**	**11,578.1**	**13,650.7**	**15,772.1**	**17,938.3**	**20,147.8**	**22,408.0**	**24,725.7**	**27,087.9**	**29,491.0**	**31,699.9**	**33,947.6**	**36,230.2**	**37,593.9**	**39,007.3**	**39,776.6**	**40,588.4**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	247.5	502.3	766.7	1,043.0	1,332.7	1,637.8	1,961.1	2,304.4	2,667.6	3,050.7	3,454.2	3,878.2	4,319.0	4,774.4	5,005.9	5,249.1	5,502.2	5,764.5	6,038.6	6,305.5	6,582.0
LumberWood	**154.7**	**312.0**	**472.4**	**636.5**	**803.9**	**975.0**	**1,150.4**	**1,330.1**	**1,514.0**	**1,701.8**	**1,894.3**	**2,091.9**	**2,293.6**	**2,498.9**	**2,682.8**	**2,870.2**	**3,060.7**	**3,206.5**	**3,356.7**	**3,425.5**	**3,498.0**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	26.2	53.2	81.3	110.5	141.3	173.6	207.9	244.2	282.7	323.3	366.1	411.0	457.8	506.0	530.6	556.3	583.2	611.0	640.0	668.3	697.6
MetalsFab	**1,129.8**	**2,276.2**	**3,443.9**	**4,635.7**	**5,849.2**	**7,084.8**	**8,346.3**	**9,634.6**	**10,947.2**	**12,283.2**	**13,647.2**	**15,043.6**	**16,464.9**	**17,909.1**	**19,279.2**	**20,671.6**	**22,084.2**	**22,960.2**	**23,865.5**	**24,300.4**	**24,760.4**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	103.2	209.4	319.6	434.8	555.5	682.7	817.4	960.5	1,111.9	1,271.6	1,439.8	1,616.5	1,800.2	1,990.1	2,086.6	2,187.9	2,293.4	2,402.7	2,517.0	2,628.2	2,743.5
Other	**1,905.7**	**3,839.6**	**5,809.3**	**7,819.5**	**9,866.1**	**11,950.0**	**14,077.3**	**16,249.8**	**18,463.0**	**20,715.4**	**23,015.0**	**25,369.0**	**27,764.7**	**30,199.2**	**32,511.2**	**34,860.8**	**37,244.4**	**38,811.1**	**40,427.2**	**41,158.5**	**41,932.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	171.1	347.2	529.9	721.0	921.2	1,132.1	1,355.6	1,592.8	1,844.0	2,108.8	2,387.7	2,680.8	2,985.5	3,300.2	3,460.3	3,628.3	3,803.3	3,984.6	4,174.1	4,358.6	4,549.7
PaperMfg	**187.1**	**376.9**	**570.2**	**767.4**	**968.2**	**1,172.7**	**1,381.3**	**1,594.4**	**1,811.4**	**2,032.2**	**2,257.6**	**2,488.2**	**2,723.0**	**2,961.5**	**3,188.7**	**3,419.5**	**3,653.6**	**3,781.3**	**3,913.8**	**3,985.0**	**4,060.4**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	16.1	32.7	49.8	67.8	86.7	106.5	127.5	149.8	173.4	198.4	224.6	252.2	280.8	310.4	325.5	341.3	357.7	374.8	392.6	410.0	428.0
StoneClayGlass	**538.8**	**1,085.2**	**1,641.4**	**2,208.6**	**2,785.5**	**3,372.1**	**3,970.0**	**4,579.8**	**5,199.9**	**5,830.1**	**6,472.5**	**7,129.4**	**7,797.2**	**8,475.3**	**9,133.9**	**9,802.7**	**10,480.7**	**10,930.0**	**11,392.8**	**11,587.0**	**11,792.9**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	31.9	64.8	98.9	134.6	172.0	211.3	253.0	297.3	344.2	393.6	445.7	500.4	557.3	616.0	645.9	677.3	709.9	743.8	779.2	813.6	849.3
Grand Total	**5,757.5**	**11,601.3**	**17,554.9**	**23,633.4**	**29,824.8**	**36,132.7**	**42,576.0**	**49,160.8**	**55,873.8**	**62,710.5**	**69,694.6**	**76,847.9**	**84,131.2**	**91,535.0**	**98,495.7**	**105,572.5**	**112,753.9**	**117,283.0**	**121,963.3**	**124,233.0**	**126,632.2**

C-65: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #65)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**1,841.4**	**3,711.4**	**5,617.7**	**7,565.7**	**9,551.9**	**11,578.1**	**13,650.7**	**15,772.1**	**17,938.3**	**20,147.8**	**22,408.0**	**24,725.7**	**27,087.9**	**29,491.0**	**31,699.9**	**33,947.6**	**36,230.2**	**37,593.9**	**39,007.3**	**39,776.6**	**40,588.4**
Process Heating	1,593.9	3,209.1	4,851.0	6,522.6	8,219.2	9,940.2	11,689.6	13,467.8	15,270.7	17,097.1	18,953.8	20,847.5	22,768.9	24,716.6	26,694.0	28,698.5	30,728.0	31,829.4	32,968.7	33,471.1	34,006.5
Space Heating	247.5	502.3	766.7	1,043.0	1,332.7	1,637.8	1,961.1	2,304.4	2,667.6	3,050.7	3,454.2	3,878.2	4,319.0	4,774.4	5,005.9	5,249.1	5,502.2	5,764.5	6,038.6	6,305.5	6,582.0
LumberWood	**154.7**	**312.0**	**472.4**	**636.5**	**803.9**	**975.0**	**1,150.4**	**1,330.1**	**1,514.0**	**1,701.8**	**1,894.3**	**2,091.9**	**2,293.6**	**2,498.9**	**2,682.8**	**2,870.2**	**3,060.7**	**3,206.5**	**3,356.7**	**3,425.5**	**3,498.0**
Process Heating	128.5	258.7	391.1	525.9	662.7	801.5	942.5	1,085.9	1,231.2	1,378.5	1,528.2	1,680.9	1,835.8	1,992.8	2,152.3	2,313.9	2,477.5	2,595.6	2,716.7	2,757.2	2,800.4
Space Heating	26.2	53.2	81.3	110.5	141.3	173.6	207.9	244.2	282.7	323.3	366.1	411.0	457.8	506.0	530.6	556.3	583.2	611.0	640.0	668.3	697.6
MetalsFab	**1,129.8**	**2,276.2**	**3,443.9**	**4,635.7**	**5,849.2**	**7,084.8**	**8,346.3**	**9,634.6**	**10,947.2**	**12,283.2**	**13,647.2**	**15,043.6**	**16,464.9**	**17,909.1**	**19,279.2**	**20,671.6**	**22,084.2**	**22,960.2**	**23,865.5**	**24,300.4**	**24,760.4**
Process Heating	1,026.6	2,066.9	3,124.4	4,201.0	5,293.7	6,402.1	7,528.8	8,674.1	9,835.3	11,011.6	12,207.5	13,427.1	14,664.6	15,919.1	17,192.6	18,483.7	19,790.8	20,557.5	21,348.5	21,672.1	22,016.9
Space Heating	103.2	209.4	319.6	434.8	555.5	682.7	817.4	960.5	1,111.9	1,271.6	1,439.8	1,616.5	1,800.2	1,990.1	2,086.6	2,187.9	2,293.4	2,402.7	2,517.0	2,628.2	2,743.5
Other	**1,905.7**	**3,839.6**	**5,809.3**	**7,819.5**	**9,866.1**	**11,950.0**	**14,077.3**	**16,249.8**	**18,463.0**	**20,715.4**	**23,015.0**	**25,369.0**	**27,764.7**	**30,199.2**	**32,511.2**	**34,860.8**	**37,244.4**	**38,811.1**	**40,427.2**	**41,158.5**	**41,932.2**
Process Heating	1,734.6	3,492.5	5,279.4	7,098.5	8,944.9	10,817.9	12,721.7	14,656.9	16,619.0	18,606.7	20,627.3	22,688.2	24,779.3	26,898.9	29,050.9	31,232.5	33,441.2	34,826.5	36,253.1	36,799.9	37,382.5
Space Heating	171.1	347.2	529.9	721.0	921.2	1,132.1	1,355.6	1,592.8	1,844.0	2,108.8	2,387.7	2,680.8	2,985.5	3,300.2	3,460.3	3,628.3	3,803.3	3,984.6	4,174.1	4,358.6	4,549.7
PaperMfg	**187.1**	**376.9**	**570.2**	**767.4**	**968.2**	**1,172.7**	**1,381.3**	**1,594.4**	**1,811.4**	**2,032.2**	**2,257.6**	**2,488.2**	**2,723.0**	**2,961.5**	**3,188.7**	**3,419.5**	**3,653.6**	**3,781.3**	**3,913.8**	**3,985.0**	**4,060.4**
Process Heating	171.0	344.2	520.3	699.6	881.6	1,066.2	1,253.8	1,444.5	1,637.9	1,833.8	2,033.0	2,236.1	2,442.2	2,651.1	2,863.2	3,078.2	3,295.9	3,406.5	3,521.1	3,575.0	3,632.4
Space Heating	16.1	32.7	49.8	67.8	86.7	106.5	127.5	149.8	173.4	198.4	224.6	252.2	280.8	310.4	325.5	341.3	357.7	374.8	392.6	410.0	428.0
StoneClayGlass	**538.8**	**1,085.2**	**1,641.4**	**2,208.6**	**2,785.5**	**3,372.1**	**3,970.0**	**4,579.8**	**5,199.9**	**5,830.1**	**6,472.5**	**7,129.4**	**7,797.2**	**8,475.3**	**9,133.9**	**9,802.7**	**10,480.7**	**10,930.0**	**11,392.8**	**11,587.0**	**11,792.9**
Process Heating	506.8	1,020.4	1,542.5	2,074.0	2,613.5	3,160.7	3,717.0	4,282.4	4,855.7	5,436.5	6,026.8	6,629.0	7,239.9	7,859.3	8,488.0	9,125.4	9,770.8	10,186.2	10,613.6	10,773.4	10,943.6
Space Heating	31.9	64.8	98.9	134.6	172.0	211.3	253.0	297.3	344.2	393.6	445.7	500.4	557.3	616.0	645.9	677.3	709.9	743.8	779.2	813.6	849.3
Grand Total	**5,757.5**	**11,601.3**	**17,554.9**	**23,633.4**	**29,824.8**	**36,132.7**	**42,576.0**	**49,160.8**	**55,873.8**	**62,710.5**	**69,694.6**	**76,847.9**	**84,131.2**	**91,535.0**	**98,495.7**	**105,572.5**	**112,753.9**	**117,283.0**	**121,963.3**	**124,233.0**	**126,632.2**

C-66: Industrial Energy Savings Potential (dth) by Segment, by End Use, by Year (Scenario #66)

Segment/End Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
FoodMfg	**2,114.3**	**4,280.1**	**6,514.8**	**8,833.6**	**11,098.7**	**13,466.5**	**15,955.3**	**18,575.9**	**21,327.5**	**24,207.8**	**27,223.5**	**30,377.8**	**33,644.2**	**37,009.3**	**40,231.3**	**43,534.5**	**46,907.4**	**49,397.5**	**51,973.6**	**53,849.1**	**55,795.0**
Process Heating	1,641.8	3,322.4	5,055.1	6,850.8	8,713.8	10,653.3	12,682.8	14,810.1	17,034.4	19,354.1	21,774.4	24,297.9	26,905.0	29,585.6	32,337.0	35,149.3	38,013.9	39,980.0	42,011.1	43,351.9	44,746.2
Space Heating	472.5	957.6	1,459.8	1,982.8	2,384.8	2,813.2	3,272.5	3,765.8	4,293.0	4,853.7	5,449.2	6,079.9	6,739.2	7,423.7	7,894.3	8,385.2	8,893.4	9,417.5	9,962.5	10,497.1	11,048.7
LumberWood	**184.5**	**374.3**	**571.2**	**776.8**	**976.9**	**1,188.2**	**1,412.7**	**1,651.7**	**1,905.2**	**2,173.1**	**2,455.9**	**2,753.6**	**3,063.6**	**3,384.1**	**3,689.6**	**4,003.5**	**4,324.7**	**4,605.6**	**4,895.2**	**5,096.5**	**5,304.8**
Process Heating	134.5	272.8	416.5	566.6	724.1	890.0	1,065.8	1,252.5	1,450.2	1,658.7	1,878.4	2,109.3	2,349.3	2,597.3	2,852.9	3,114.8	3,382.1	3,607.5	3,839.3	3,983.9	4,133.7
Space Heating	50.1	101.5	154.7	210.2	252.8	298.2	346.8	399.1	455.0	514.4	577.5	644.4	714.3	786.8	836.7	888.7	942.6	998.1	1,055.9	1,112.6	1,171.0
MetalsFab	**1,258.4**	**2,548.7**	**3,881.6**	**5,266.8**	**6,648.4**	**8,094.7**	**9,617.0**	**11,222.5**	**12,910.7**	**14,680.4**	**16,535.3**	**18,477.1**	**20,489.4**	**22,563.5**	**24,597.6**	**26,682.2**	**28,810.1**	**30,425.6**	**32,094.1**	**33,251.8**	**34,452.8**
Process Heating	1,061.5	2,149.5	3,273.1	4,440.3	5,654.4	6,922.1	8,253.0	9,652.8	11,121.3	12,657.3	14,264.0	15,942.9	17,680.4	19,469.2	21,307.1	23,187.1	25,103.2	26,500.2	27,941.5	28,876.4	29,847.5
Space Heating	196.9	399.2	608.5	826.5	994.0	1,172.6	1,364.0	1,569.6	1,789.4	2,023.1	2,271.3	2,534.2	2,809.0	3,094.3	3,290.5	3,495.1	3,706.9	3,925.4	4,152.6	4,375.4	4,605.3
Other	**2,126.6**	**4,309.2**	**6,567.1**	**8,917.4**	**11,269.0**	**13,736.5**	**16,340.3**	**19,093.4**	**21,995.5**	**25,044.5**	**28,246.4**	**31,603.6**	**35,086.9**	**38,680.8**	**42,215.2**	**45,839.3**	**49,540.0**	**52,468.6**	**55,489.9**	**57,551.5**	**59,688.5**
Process Heating	1,800.0	3,647.3	5,558.0	7,546.8	9,620.5	11,791.9	14,078.3	16,490.3	19,028.0	21,689.4	24,479.8	27,401.0	30,428.5	33,549.3	36,758.4	40,043.2	43,392.6	45,958.9	48,603.5	50,295.5	52,051.3
Space Heating	326.6	662.0	1,009.1	1,370.6	1,648.5	1,944.6	2,262.1	2,603.0	2,967.5	3,355.0	3,766.6	4,202.6	4,658.4	5,131.5	5,456.8	5,796.1	6,147.4	6,509.7	6,886.4	7,256.0	7,637.3
PaperMfg	**206.3**	**417.4**	**634.8**	**860.0**	**1,084.1**	**1,317.6**	**1,561.9**	**1,818.3**	**2,086.4**	**2,366.1**	**2,658.1**	**2,962.6**	**3,277.4**	**3,601.2**	**3,918.2**	**4,242.7**	**4,573.6**	**4,801.3**	**5,037.0**	**5,206.1**	**5,381.9**
Process Heating	175.6	355.1	539.9	731.1	929.1	1,134.6	1,349.2	1,573.4	1,807.3	2,050.5	2,303.8	2,567.3	2,839.3	3,118.5	3,404.9	3,697.5	3,995.3	4,188.9	4,389.2	4,523.6	4,663.5
Space Heating	30.7	62.3	94.9	128.9	155.1	182.9	212.8	244.8	279.1	315.6	354.3	395.3	438.2	482.7	513.3	545.2	578.2	612.3	647.8	682.5	718.4
StoneClayGlass	**587.6**	**1,191.0**	**1,815.5**	**2,466.0**	**3,126.5**	**3,819.6**	**4,551.3**	**5,325.3**	**6,141.4**	**6,999.2**	**7,900.2**	**8,845.1**	**9,825.6**	**10,837.3**	**11,847.9**	**12,883.8**	**13,941.2**	**14,783.0**	**15,650.8**	**16,227.4**	**16,825.2**
Process Heating	526.7	1,067.4	1,627.2	2,210.2	2,818.7	3,456.6	4,129.1	4,839.4	5,587.5	6,372.9	7,197.1	8,060.6	8,956.0	9,879.4	10,829.3	11,801.9	12,793.7	13,567.8	14,365.3	14,872.9	15,399.5
Space Heating	61.0	123.6	188.4	255.8	307.7	363.0	422.3	485.9	553.9	626.3	703.1	784.5	869.6	957.9	1,018.6	1,081.9	1,147.5	1,215.1	1,285.5	1,354.4	1,425.6
Grand Total	**6,477.7**	**13,120.6**	**19,985.0**	**27,120.7**	**34,203.5**	**41,623.0**	**49,438.6**	**57,687.0**	**66,366.7**	**75,471.1**	**85,019.4**	**95,019.8**	**105,387.2**	**116,076.3**	**126,499.8**	**137,185.9**	**148,097.0**	**156,481.6**	**165,140.6**	**171,182.3**	**177,448.1**

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Energy Efficiency Resource Assessment Report

Final Report

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Executive Summary

Introduction and Background

Energy Trust of Oregon (Energy Trust) engaged Navigant Consulting, Inc. (Navigant) to prepare an energy efficiency resource assessment of its service territory in August 2013. The primary purpose of this energy efficiency resource assessment is to enable Energy Trust to support the Integrated Resource Planning (IRP) planning process of its four funding utilities by providing a 20-year forecast of efficiency resource potential of each utility, as well as informing Energy Trust's strategic program planning, including program development. A primary product of this resource assessment is the Energy Trust Resource Assessment Model, which provides a flexible yet robust platform in which to estimate the technical and cost-effective achievable potential for demand-side resources in Energy Trust's service territory across the residential, commercial, and industrial sectors.

Approach

This section provides a high-level summary of the approach detailed in section 2 of this report.

Measure Identification and Characterization

Through a review of the previous Energy Trust potential model to identify high impact measures, the Regional Technical Forum (RTF) measures, and measure lists from other Navigant potential studies, Navigant considered over 530 measures across the residential, commercial, and industrial sectors for this resource assessment. Of these, 159 (68 residential, 49 commercial, and 42 industrial) conventional measures were characterized, which are considered to be commercialized technologies with noticeable market penetration and relatively stable price trajectories. Navigant characterized measures for 27 different customer segments across all three sectors. Additionally, Navigant identified numerous emerging technology measures for this study, and ultimately characterized 32 of the measures (10 residential, 17 commercial, and 5 industrial) considered most likely to become commercially available and cost-effective over the study period, and thus contribute to future savings. For all measures characterized, 33 measure inputs across all three customer segments were estimated using a combination of Energy Trust primary data review and analysis,[1] regional secondary sources, and engineering analysis. Navigant also adjusted cost and savings profiles for several measures that are subject to codes and standards, as well as emerging technology measures that are expected to evolve over time without codes and standards.

Estimation of Technical, Achievable, and Cost-Effective Achievable Potential

The Navigant team built a flexible and robust potential model as part of this resource assessment, which was used to estimate the technical, achievable, and cost-effective achievable potential for electric energy,

[1] Energy Trust measure analyses provide a synthesis of data from the other sources. In many cases, the Energy Trust uses RTF analyses directly. Navigant went to other sources for measure characterization where Energy Trust did not have an analysis or new data, or when an updated analysis had become available since Energy Trust's last update.

peak demand, and gas savings across all sectors. Technical potential was calculated differently depending on whether a measure is a retrofit, end of life replacement, or new construction measure. New construction technical potential is driven by new efficiency opportunities coming into the market due to new building stock and is used to determine the incremental annual addition to technical potential. Technical potential is considered to be "constrained" for Replace-on-Burnout (ROB) measures in that potential is limited by the rate at which baseline measures turn over due to burnout. This view of potential was adopted for consistency with Energy Trust's existing planning framework and program opportunities. For retrofit measures, technical potential is calculated using the entire building stock and is not constrained by any pre-assumed rate of adoption.[2] Achievable potential is specified as a percentage of the technical potential. The percentage of technical potential that is deemed "achievable" is by default 85% based on the Northwest Power and Conservation Council (Council) planning assumptions.[3]

Cost-effective achievable potential was estimated as a subset of achievable potential when limited to only measures that, based on the first-cut analysis incorporated into this study, pass the Total Resource Cost (TRC) test. To account for measures with multiple tiers of efficiency that could compete for the same installation, Navigant employed a tiered "incremental" approach where savings and incremental costs of a competing measure were compared with the measure just below it in ranking, from a TRC perspective. The study also provides an expanded view of emerging technology measures by quantifying the cost, potential, and risks associated with them over the modeling period. Finally, Navigant estimated the risk-adjusted tiered potential by program type, end use, and customer segment, along with cost-effectiveness outputs, including levelized cost of energy and energy efficiency supply curves.[4]

Findings

This section of the executive summary discusses high-level findings of the analysis in addition to providing aggregate electric energy and natural gas savings results. The potential estimates presented in this section and in the main body of the report are estimates of "gross" savings, which represent changes in consumption that result directly from program-related actions taken by consumers that are exposed to the program. Detailed results of the resource assessment including sector level views of potential disaggregated by customer segment, end use, and program type are provided in the main body of this report.

Electric Energy Potential

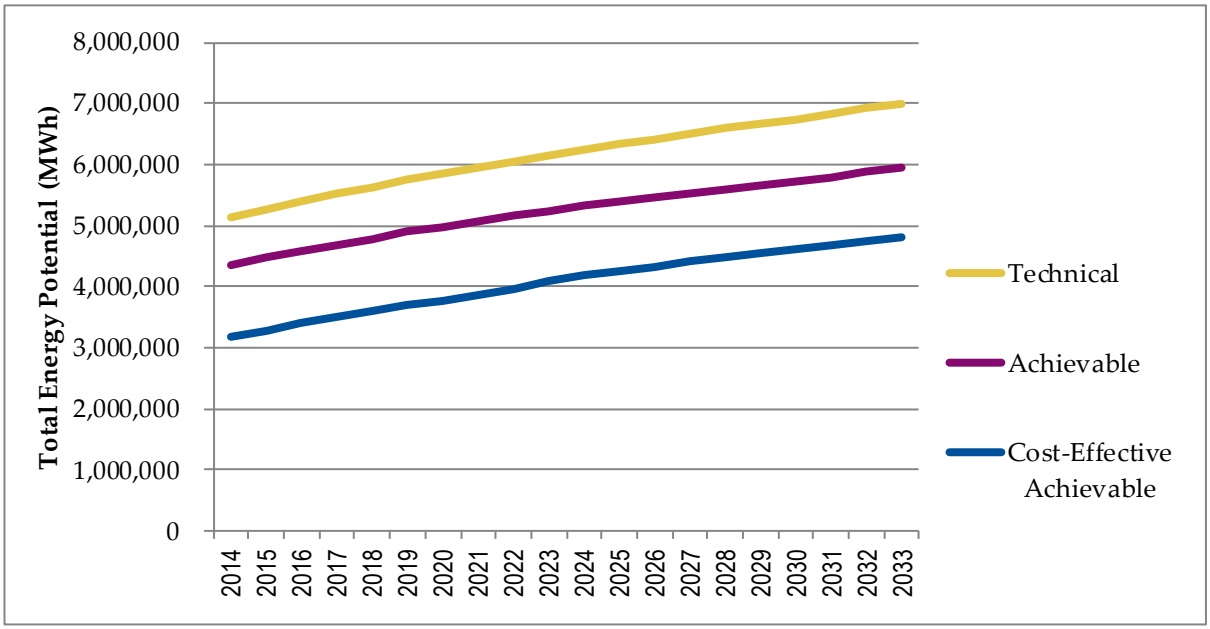
Cumulative technical, achievable, and cost-effective achievable electric energy savings for all sectors are listed in Figure ES-1. This represents potential from conventional measures only and excludes savings from any emerging technologies. Technical and achievable potential at the end of the 20-year forecast

[2] The rate of adoption is considered at a later stage in Energy Trust's planning process.
[3] Achievable Savings – A Retrospective Look at the Northwest Power and Conservation Council's Conservation Planning Assumptions - http://www.nwcouncil.org/media/29388/2007_13.pdf
[4] While tiered potential includes savings from both conventional and emerging technology measures, risk-adjustments were only made to emerging technology measures to account for uncertainty in their ability to reliably produce future savings.

horizon are 6,984,232 and 5,936,598 MWh, respectively. Both forecasts follow similar paths with achievable potential estimated using an 85% achievability factor. Cost-effective achievable potential by 2034 is estimated to be 4,806,536 MWh, which is 80% of achievable potential, thus showing significant cost-effective achievable electric energy potential over the forecast horizon. The overall increase in potential over the time horizon is driven by the projected growth in building stock, lending additional opportunities for savings in new buildings.

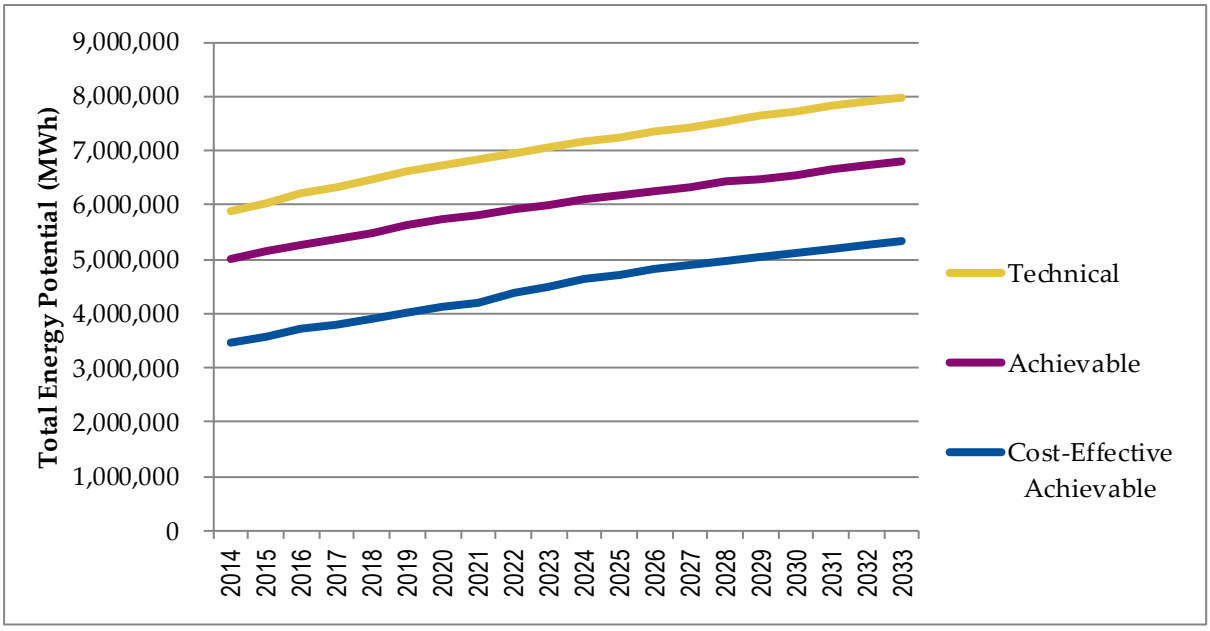
Navigant's modeling approach includes an emerging technology (ET) overlay that enables the model to capture the range of possible savings from ETs due to cost and efficiency improvements over time. Figure ES-2 shows the technical, achievable, and cost-effective achievable potential with the inclusion of emerging technologies. Technical and achievable potential at the end of the 20-year forecast horizon are 7,994,648 and 6,795,451 MWh, respectively. By 2033, cost-effective achievable potential increases to 5,329,351 MWh, after the addition of emerging technologies. Figure ES-3 shows the contribution of emerging and conventional measures toward cumulative risk-adjusted, cost-effective achievable electric savings potential across all three sectors over the study period. By 2033, emerging technologies constitute about 15% of total cost-effective achievable potential. Cumulative cost-effective achievable electric energy potential as a percentage of baseline forecast energy sales (with emerging technology overlay) in 2033 is 11.9%, as shown in Table ES-2**Error! Reference source not found.**. More detail on the key drivers of electric energy savings potential, including on emerging technology savings, are provided in sections 3 and 4 of this report. Table ES-1 shows a summary of electric savings potential in 2033 in units of Average Megawatts (aMW).

Figure ES-1. Cumulative Electric Energy Savings Potential (MWh) – without ETs



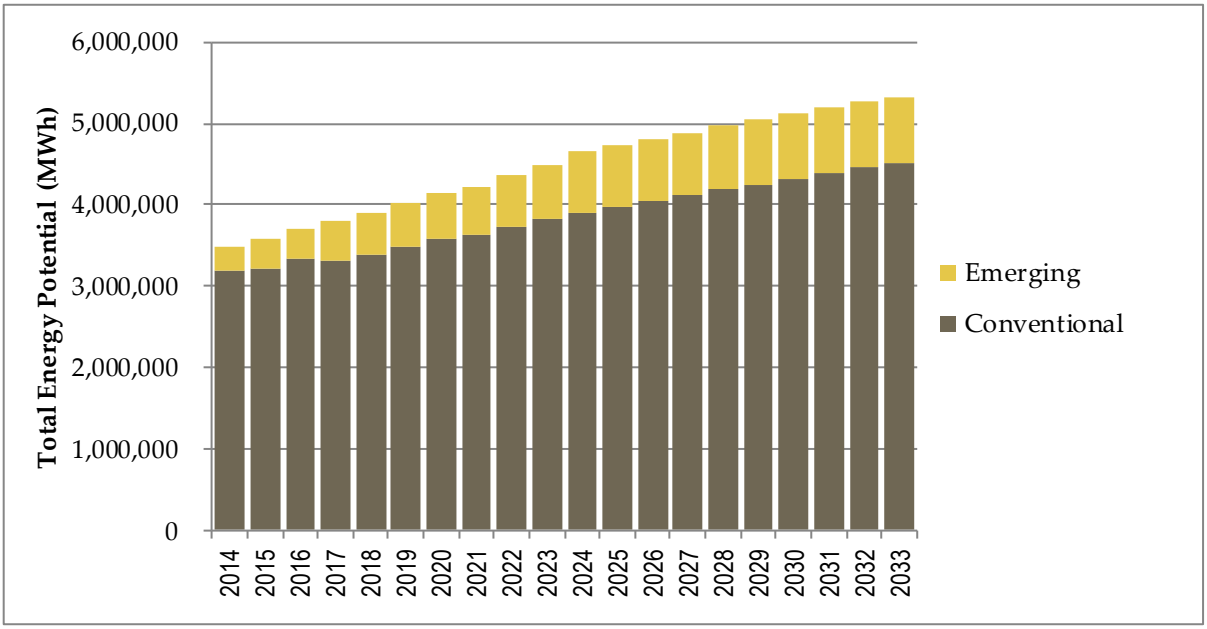
Source: Navigant analysis, 2014

Figure ES-2. Cumulative Electric Energy Savings Potential (MWh) – with ETs



Source: Navigant analysis, 2014

Figure ES-3. Cumulative Cost-effective Electric Energy Savings - Emerging vs. Conventional



Source: Navigant analysis, 2014

Navigant also estimated peak demand (MW) savings for summer and winter periods as part of this resource assessment. The model estimates peak demand savings using peak demand multipliers for each

energy loadshape.[5] Cumulative cost-effective achievable peak demand savings are projected to be 640 and 801 MW by 2033 for summer and winter periods respectively, as shown in Table ES-2**Error! Reference source not found.**.

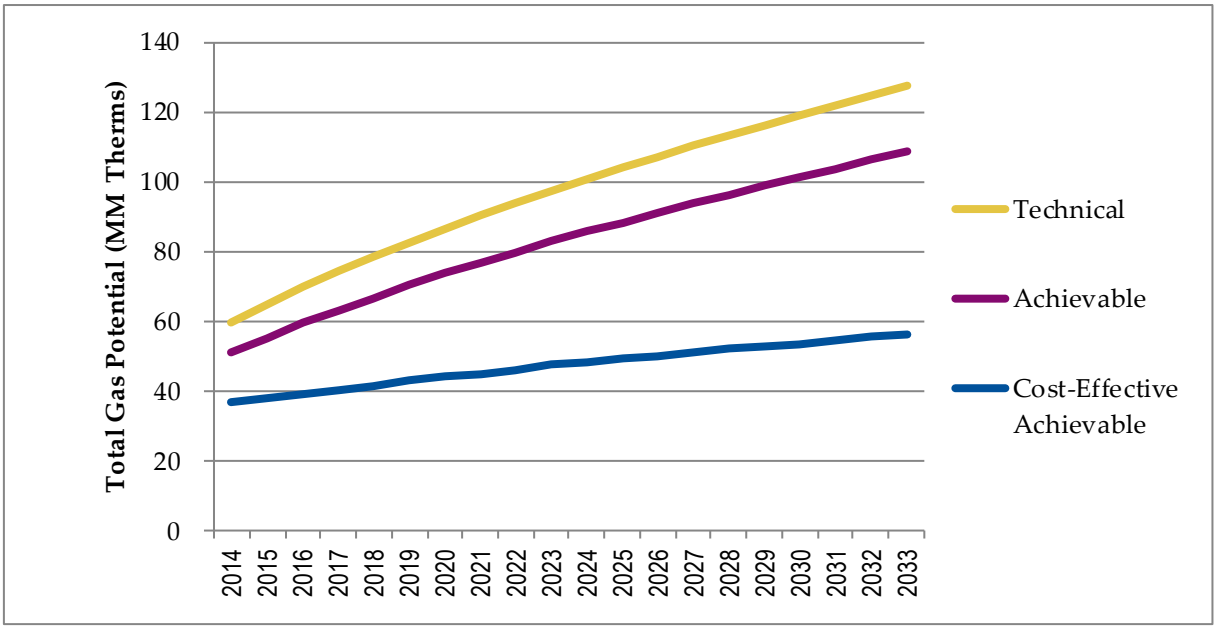
Natural Gas Potential

Cumulative technical, achievable, and cost-effective achievable gas savings potential for conventional measures across all sectors are presented in Figure ES-4. Technical potential increases steadily from 60 MMtherms in 2014 to about 128 MMtherms in 2033. This increase in potential is driven by the forecasted growth in building stock within the Northwest Natural (NWN) and Cascade Natural Gas (CNG) service territories. Similar to electric technical potential, gas technical potential also shows a sharp rise over the 20-year forecast horizon as it is driven by future growth in ROB and new construction measures. Cost-effective achievable potential is 56 MMtherms by 2033, which represents about 51% of achievable potential.

Figure ES-5 presents the cumulative gas savings potential with the inclusion of the emerging technology overlay. In this case, technical potential increases from 84 MMtherms in 2014 to about 157 MMtherms in 2033. Cost-effective achievable gas potential increases to 61 MMtherms by 2033 with addition of the emerging technologies. Similar to electric savings, achievable gas savings potential is also estimated using an 85% achievability factor over the forecast horizon. Cumulative cost-effective achievable gas potential as a percentage of baseline forecast gas sales by 2033 is 5.3% (with emerging technology overlay), as shown in **Error! Reference source not found.**. Navigant notes that there is a larger gap between achievable and cost-effective achievable potential for gas savings compared with electric. Low gas cost-effectiveness is driven by low forecasts of future avoided gas costs, which result in relatively low benefits in the TRC calculation. Section 3.1.2 has more details on the drivers of low gas cost-effectiveness. Figure ES-6 shows the contribution of emerging and conventional measures toward cumulative risk-adjusted cost-effective achievable gas savings potential across all three sectors over the study period. By 2033, emerging technology measures contribute up to 19% of total cost-effective gas potential.

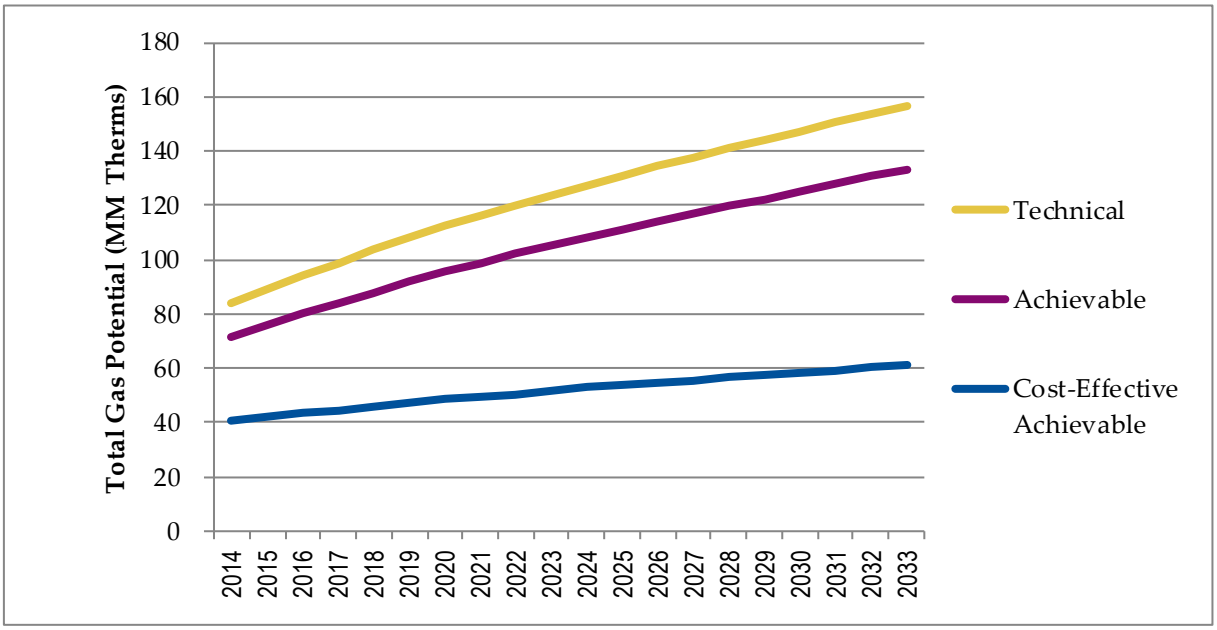
[5] The peak demand multipliers used in this study were calculated based upon the Northwest Power and Conservation Council loadshapes.

Figure ES-4. Cumulative Gas Savings Potential (MMtherms) – without ETs



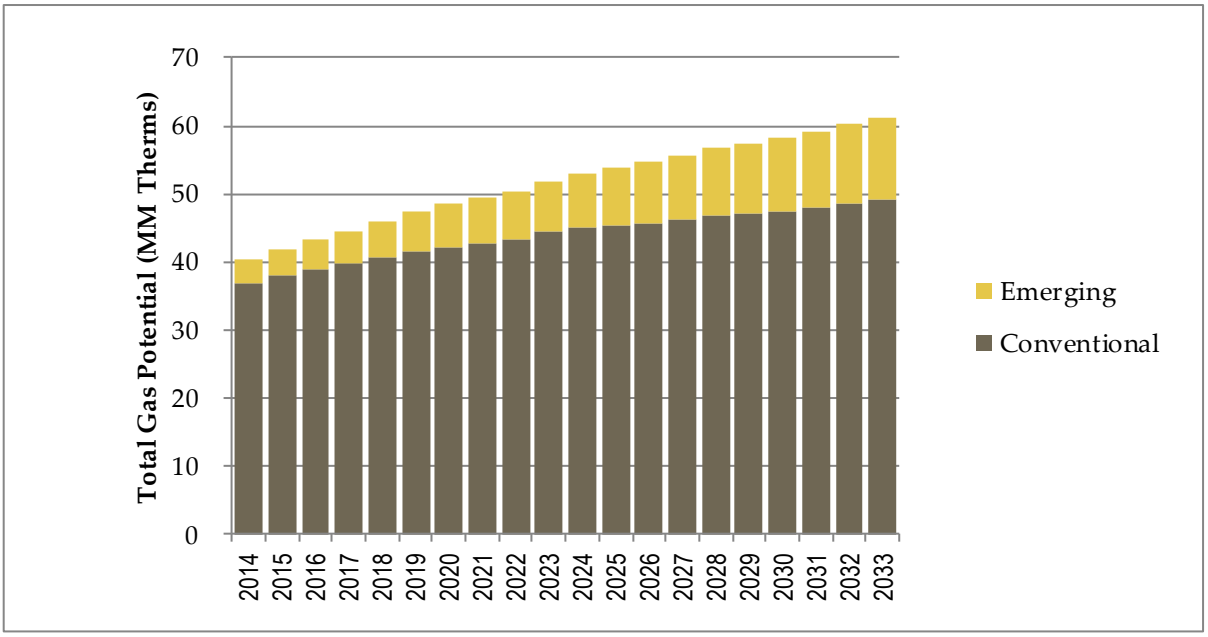
Source: Navigant analysis, 2014

Figure ES-5. Cumulative Gas Savings Potential (MMtherms) – with ETs



Source: Navigant analysis, 2014

Figure ES-6. Cumulative Cost-effective Gas Savings - Emerging vs. Conventional



Source: Navigant analysis, 2014

Table ES-1. Summary of Electric Savings Potential in 2033 (Average Megawatts)

Sector	Program	Technical	Achievable	Cost-Effective Achievable
Residential	New	81	69	60
	Retrofit	155	132	62
	Replace	161	136	105
Commercial	New	108	92	77
	Retrofit	184	157	118
	Replace	17	14	11
Industrial	New	12	10	10
	Retrofit	176	150	150
	Replace	19	16	15

Source: Navigant analysis, 2014

Table ES-2. Aggregate Cumulative Cost-effective Achievable Potential - All Sectors

	Electric Savings		Demand Savings		Gas Savings	
Year	MWh	% of Sales	Summer MW	Winter MW	MM Therms	% of Sales
2014	3,477,238	10.3%	442	530	40.3	4.7%
2015	3,575,951	10.5%	452	544	41.8	4.8%
2016	3,706,599	10.6%	468	563	43.3	4.9%
2017	3,802,344	10.7%	478	577	44.6	5.0%
2018	3,904,252	10.8%	490	591	45.9	5.1%
2019	4,012,545	10.9%	501	607	47.3	5.2%
2020	4,137,989	11.1%	513	626	48.5	5.2%
2021	4,212,197	11.2%	521	637	49.3	5.2%
2022	4,363,789	11.4%	541	659	50.3	5.3%
2023	4,478,869	11.5%	551	677	51.9	5.4%
2024	4,651,288	11.8%	574	702	53.0	5.4%
2025	4,728,601	11.8%	582	714	53.8	5.4%
2026	4,810,133	11.9%	590	725	54.7	5.4%
2027	4,878,684	11.9%	597	736	55.6	5.4%
2028	4,968,898	11.9%	606	749	56.7	5.4%
2029	5,043,665	11.9%	614	760	57.4	5.4%
2030	5,115,290	11.9%	620	770	58.3	5.4%
2031	5,185,445	11.9%	627	780	59.2	5.4%
2032	5,266,927	11.9%	635	792	60.2	5.4%
2033	5,329,351	11.9%	640	801	61.1	5.3%

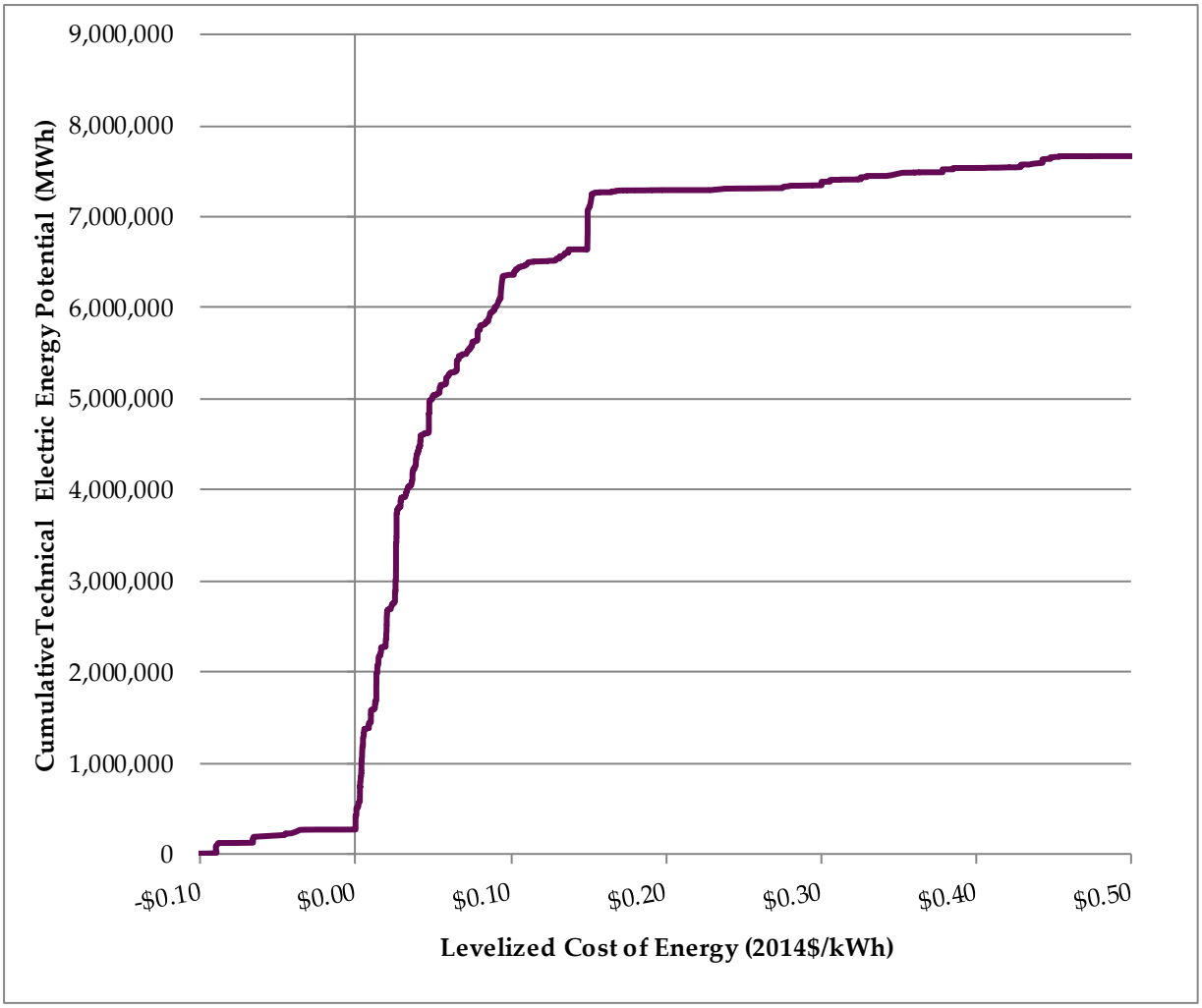
Source: Navigant analysis, 2014

Supply Curves

Figure ES-7 and Figure ES-8 show traditional efficiency supply curves for all sectors in 2033. The supply curves plot levelized cost of energy saved as a function of cumulative technical potential, for electric and gas savings measures respectively. These supply curves are constructed using individual efficiency measures that are sorted on a least-cost basis,[6] and savings that are calculated on an incremental or tiered basis relative to the measures that precede them. Figure ES-7 shows the supply curve for cumulative energy potential in 2033. Approximately 266,000 MWh are available with levelized cost of energy less than zero. This potential is derived from light-emitting diode (LED) street lights, efficient showerheads, and faucet aerators whose present value of non-energy benefits exceed the upfront equipment costs, resulting in a negative levelized cost. There is an additional 160,936 MWh of potential from LEDs, switched reluctance motors, and high efficiency chillers that can be achieved at almost zero cost. Nearly 5,756,952 MWh of cumulative electric energy potential are available at levelized costs below $0.08 per kWh levelized (in 2014 dollars), which is the lowest forecast of avoided energy costs in 2033.

[6] Levelized measure costs were used as the cost basis for sorting the supply curves. To account for competing measures in this process, Navigant estimated an incremental levelized cost relative to the next highest rank within a competition group. Section 2.2.2 offers additional detail on the calculation of levelized costs.

Figure ES-7. Electricity Savings Supply Curve (2033)[7]



Source: Navigant analysis, 2014

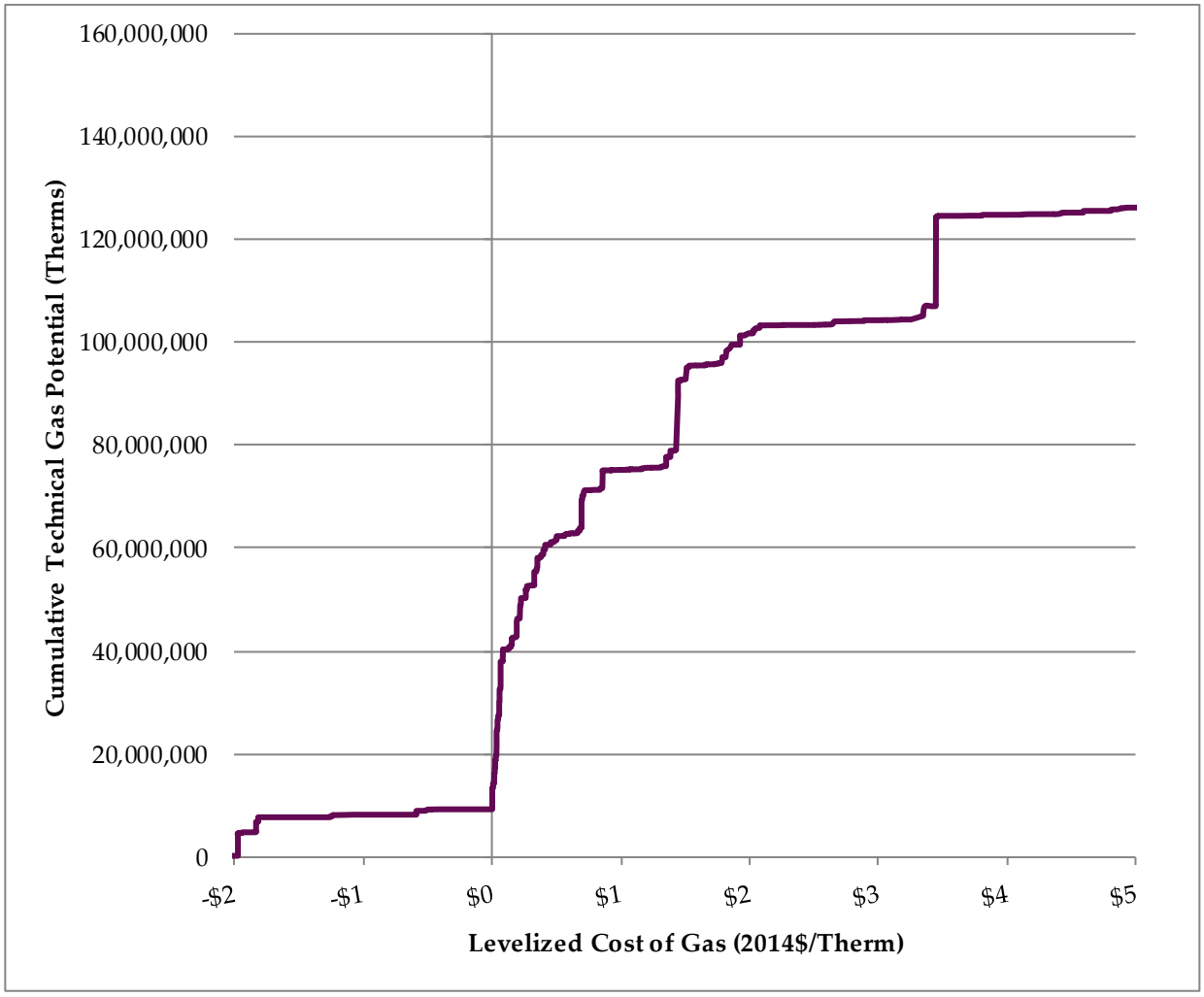
The levelized cost supply curve for cumulative gas saving potential in 2033 is shown in Figure ES-8. Negative-cost measures account for 9.2 MMtherms and are associated with efficient showerheads. Roughly 59 MMtherms of cumulative gas savings can be achieved at costs below $0.40 per therm levelized, which is the lower bound of avoided cost forecasts in 2033. Approximately 147 MMtherms of cumulative gas savings can be achieved at costs below $30 per therm levelized. Beyond 147 MMtherms of potential, costs begin to increase quickly.

It is important to recognize that customers may not view these as zero or negative-cost measures – most have upfront costs that are balanced by savings in replacement equipment costs or operation and

[7] Graph has been scaled to show the area of interest, but additional potential above a levelized cost of of $0.50 per kWh is not shown.

maintenance (O&M) cost, or in non-energy costs such as water, waste treatment, and so on. The supply curve considers all these values together, taking a long-term view.

Figure ES-8. Gas Savings Supply Curve (2033)[8]



Source: Navigant analysis, 2014

Caveats and Limitations

There are several caveats and limitations associated with the results of this study. The forecasted potential in this study is based on the best estimates of data available today. An important caveat to consider, however, is that uncertainty in the input data used can affect estimates of overall potential. The estimates of achievable potential assume an 85% achievability factor. This sets an upper limit of market penetration in the region over a 20-year period. While this is consistent with regional assumptions and is supported by retrospective research conducted by the NW Power and Conservation Council, there

[8] Graph has been scaled to show the area of interest, but additional potential above a levelized cost of $5 per therm is not shown.

remains uncertainty as to how much of the technical potential is achievable over the modeling period. Furthermore, cost-effective achievable potential in this study is not limited by actual program rollout rates or market acceptance dynamics; rather, it reflects the bucket from which program achievements can draw, at a rate that is to be defined by Energy Trust. The issue of rollout rate is addressed in later stages of Energy Trust's planning process. Finally, the risk associated with future cost and performance of emerging technologies introduces uncertainty into the estimates of future potential. For a full explanation of the limitations of this study, please see section 2.3, "Caveats and Limitations."

NAVIGANT

1 Introduction

1.1 Background and Study Goals

Energy Trust of Oregon (Energy Trust) selected Navigant Consulting, Inc. (Navigant) to prepare an energy efficiency resource assessment of its service territory in August 2013. The primary purpose of this resource assessment is to enable Energy Trust to support the Integrated Resource Planning (IRP) planning process of its four funding utilities by providing a 20-year forecast of efficiency resource potential of each utility, as well as informing Energy Trust's strategic and program planning, as well as program design.

An additional focus of this assessment has been to include an "emerging technology" overlay capable of quantifying costs, potential, and risks associated with uncertain, but high-potential energy savings measures. Finally, a key component of this resource assessment is the Energy Trust Resource Assessment Model, which provides a flexible platform in which to estimate the technical and achievable potential for demand-side resources in Energy Trust's service territory. This report does not include utility-specific results. However, the companion model does offer the ability to look at individual results for all four funding utilities (Portland General Electric (PGE), Pacific Power (PAC), Northwest Natural (NWN), and Cascade Natural Gas (CNG).[9]

1.2 Organization of Report

This report is organized as follows: Section 2 describes the study approach to estimating potential for energy efficiency savings, including a discussion of measure identification and characterization and the approach to simulating technical, achievable, and cost-effective achievable potential. Section 3 offers the results of the potential study analysis for energy efficiency measures, including a summary of aggregate savings potential. Sections 4, 5 and 6 offer disaggregated savings results by sector, customer segment, end use, and program, as well as a discussion of emerging technologies and the top measures contributing toward potential. Section 7 offers details on energy efficiency potential supply curves.

[9] Utility-specific results will be developed as part of the IRP process at each utility, using the most current utility-specific load forecasts.

2 Approach to Electric Energy, Demand, and Gas Savings

This section provides an overview of Navigant's approach to estimating electric energy, demand, and gas savings. Section 2.1 describes the sources of the key inputs to the analysis, including the framework used for the measure identification and characterization process, details on how emerging technologies and code adjustments were treated. Section 2.2 discusses the methodological approach to estimating technical, achievable, and cost-effective achievable potential including details on the calculation of cost-effectiveness and tiered potential savings. Data developed as part of the measure characterization process was imported into the resource assessment model, which employs a combined "bottom-up/top-down" approach to identify and quantify the savings of all energy efficiency measures depending on the sector.

2.1 Measure Identification and Characterization

2.1.1 Measure Lists Development

Navigant developed comprehensive measure lists of conventional technologies as the first step in the measure characterization process. Conventional measures are commercialized technologies with noticeable market penetration and relatively stable price trajectories. In developing the conventional measure lists, Navigant reviewed the Energy Trust 2011 potential model and screened electric and gas technologies that contributed approximately 90% of the potential energy savings in the 2011 model. The measure lists were supplemented by additional measures in which Navigant reviewed measures from the Regional Technical Forum (RTF) and measure lists from other potential models that Navigant had developed in the past. Navigant then modified the measure lists to incorporate feedback from Energy Trust, including adding, consolidating, and deleting measures.

Navigant considered over 200 residential measures, 190 commercial measures, and 140 industrial measures. The measures included devices, structured approaches to modifying behavior that save energy, and approaches with both hardware and behavioral components. Ultimately, Navigant characterized 68 residential measures, 49 commercial measures, and 42 industrial measures in the final model. The final selection of measures was driven by the estimated energy savings potential, as well as Energy Trust and regional data availability. The final measure lists can be found in Appendix A.

Navigant characterized each of the residential measures on the final list for three customer segments: single family (SF), multi-family (MF), and manufactured homes (MH). Weather dependent measures were characterized for each of the climate zones. Some examples of weather dependent measures include heat pumps, solar water heaters, insulation and windows, and ENERGY STAR® new homes.

The commercial measures were characterized for all applicable commercial customer segments: office, restaurant, retail, grocery, warehouse, school, college, hospital, other health, lodging, other, data center, and street lighting.

Similarly, Navigant characterized the industrial measures for all applicable industrial customer segments: agriculture, chemicals, cold storage, metal foundries, food products, high technology, pulp & paper, metal fabrication, transportation and equipment, wood products, and other industrial sectors.

2.1.2 Measure Characterization Inputs

The measure characterization consisted of estimating or defining 33 measure inputs across customer segments and two climate zones. These parameters are listed and defined[10] as follows:

1. **Measure ID**- Unique identifier of the measure in the model
2. **Measure Char Owner**- Initials of analyst completing the measure characterization
3. **Unique Measure Name**- Name specifying the efficient measure
4. **Zone Applicability**- Specification of the weather zone to which the measure is applicable. Most measures are applicable to both zone 1 and zone 2.
5. **Measure Description**- Detailed description of the efficient measure, including efficacy level
6. **Baseline Assumption**- Specification of the base measure being replaced, including efficacy level
7. **Conventional or Emerging Technology**- Identifier to distinguish if a measure is a conventional technology or an emerging technology
8. **End-Use Category**- Input to map a measure to an end-use category such as space heating and cooling, water heating, lighting, appliance, refrigeration, weatherization, behavioral, and other.
9. **Customer Segment**- Designation of customer segment
10. **Replacement Type**- Characterization of the measure as a retrofit (RET), replace-on-burnout (ROB), or a new construction (NEW) application.[11]
11. **Scaling Basis** – Input to identify the unit basis for density values. For most of the residential measures, the scaling basis is the number of residential homes.
12. **Unit Basis**- Unit basis for cost and savings characterization (e.g., per unit or per square foot)
13. **Base Measure Lifetime**- The effective useful life of the baseline measure in years.
14. **Efficient Measure Lifetime**- The effective useful life of the efficient measure in years.
15. **Base Measure Cost**- Cost of installing the baseline technology in Real 2014 $ per unit basis
16. **Efficient Measure Cost**- Cost of installing the efficient measure in Real 2014 $ per unit basis
17. **Cost Source(s)**- Documentation of the data source(s) for the cost assumptions
18. **Base Energy Consumption**- Annual electricity consumption of the baseline technology in kWh per unit basis
19. **Efficient Energy Consumption**- Annual electricity consumption of the efficient measure in kWh per unit basis
20. **Energy Savings Loadshape**- The relevant electricity savings loadshape of the efficient measure. The loadshape is used to allocate energy savings across time.

[10] The measure characterization template includes detailed descriptions of each of the measure characterization inputs.

[11] ROB is applied to measures where the primary economically feasible opportunity to substitute more efficient equipment occurs at or near the time of equipment failure. Retrofit is applied where it may be economically feasible to replace equipment for efficiency reasons earlier in its life. Some measures have more than one replacement type, for example, if a measure has both new application and replace-on-burn out applications, the replacement type is defined as "NEW and ROB."

21. **Base Gas Consumption**- Annual gas consumption of the baseline technology in therms per unit basis
22. **Efficient Gas Savings**- Annual gas consumption of the efficient measure in therms per unit basis
23. **Gas Savings Loadshape**- The relevant gas savings loadshape
24. **Operation and Maintenance (O&M) Savings**- Indication of non-energy benefits such as water savings and operation and maintenance savings resulting from the installation of the efficient measure in $ per year per unit basis
25. **Savings Source(s)**- Documentation of the data source(s) for savings assumptions
26. **Total Measure Density (Base+EE)**- The measure density (e.g., quantity of measures per home), as the sum of the base and efficient technology densities
27. **Technical Suitability**- The fraction of the total baseline measure which could be replaced with the efficient measure
28. **Baseline Initial Saturation**- The initial saturation of the baseline measure as defined by the fraction of the end-use stock that has the baseline measure installed
29. **Heating Fuel Type Applicability Multiplier**- Designation of the appropriate space heating fuel type to electric or gas-specific measures
30. **Domestic Hot Water (DHW) Fuel Type Applicability Multiplier**- Designation of the appropriate DHW fuel type for electric- or gas-specific measures
31. **Competition Group**- Identifier of measures that are competing for the same installation. Measures in the same competition group share the same baseline technology; therefore, the baseline initial saturation and total measure density are the same for measures in the same competition group.
32. **Density/Applicability Source(s)**- Documentation of the data source(s) for density and applicability factors
33. **Emerging Technology Risk Factor**- Multiplier to account for emerging technology risk

Navigant gave priority to Energy Trust program data and prescriptive costs and savings resources when characterizing the measures.[12] Other regional data sources used in this analysis include the Residential Building Stock Assessment (2011), Commercial Building Stock Assessment (2009), RTF unit energy savings (UES) measure workbooks, the Northwest Power Council 6th Power Plan, and the Energy Trust 2011 residential, commercial, and industrial resource potential models. Navigant used national data sources where regional data were unavailable. Navigant documented the data sources for inputs in the measure characterization input files. The following table summarizes the data sources for key measure characterization inputs.

[12] Energy Trust measure analyses provide a synthesis of data from the other sources. In many cases, the Energy Trust uses RTF analyses directly. Navigant went to other sources for measure characterization where Energy Trust did not have an analysis or new data, or when an updated analysis had become available since Energy Trust's last update.

Table 2-1. Summary of Measure Characterization Input Data Sources

Measure Input	Data Sources
Measure Costs, Measure Savings, Measure life, Energy and Gas Savings Loadshapes	» Energy Trust Blessing Memos[13] » Energy Trust 2011 Potential Model » Energy Trust Program Data » Impact Evaluation of Energy Trust's 2009-2011 Production Efficiency Program » RTF measure workbooks » Database for Energy Efficient Resources (DEER) » Engineering Analyses » DOE Appliance Standards Rulemaking Supporting Documents » Northwest Power Conservation Council (NWPCC) » Industrial Assessment Center (IAC) Database
Fuel Type Applicability Multiplier, Density, Baseline Initial Saturation, Technical Suitability, End-use Consumption Breakdown	» RBSA 2011 » CBSA 2009 » Northwest Non-Residential Lighting Market Study » Energy Trust 2011 Potential Model » ENERGY STAR shipment reports » California Potential, Goals, and Target Model » Engineering Assumptions » Manufacturing Energy Consumption Survey (MECS)
Codes and Standards Multiplier, Baseline Consumption Multiplier	» Department of Energy Code of Federal Regulations (DOE CFR) » Engineering Analyses

Source: Navigant analysis, 2014

2.1.3 Measure Characterization Approaches

Navigant reviewed Energy Trust internal data, regional resources, and Navigant internal resources to determine the appropriate measure characterization approach for each of the measures.

2.1.3.1 Energy Savings and Costs Approaches

RBSA and CBSA provided building stock measure counts or density proxies enabling Navigant to characterize residential and commercial measures with a bottom-up approach. The bottom-up approach estimates the unit energy savings and costs of each measure and scales the savings potential using measure densities.

Stock assessment data were not available for the industrial sector; therefore, Navigant characterized industrial measures using a top-down approach. Measure savings were calculated as percentages of the customer segment consumption.[14]

[13] "Blessing memos" are cost-benefit analysis and approval memos for Energy Trust prescriptive efficiency measures.

[14] This is common practice for industrial resource assessments.

Residential and Commercial Energy Savings and Costs Approaches
Navigant took three general approaches to analyzing residential and commercial measure energy savings and costs:

1. **Energy Trust Primary Data Review and Analysis**- The majority of measures used Energy Trust primary data. Navigant reviewed Energy Trust blessing memos and program data. Some Energy Trust analyses included multiple efficiency tiers; for those instances, the measure characterization team weighted the measure costs and savings by program uptake or measure market share sourced from RBSA or CBSA.
2. **Regional Secondary Resources**- RTF Unit Energy Savings workbooks contained comprehensive regional engineering analyses for several measures such as clothes washers, dishwashers, refrigeration, and window measures. Upon reviewing both Energy Trust and RTF analyses, the RTF input might be chosen if the data vintage was more recent.
3. **Engineering Analysis**- Measures without Energy Trust data or regional analysis were characterized using engineering algorithms.

Industrial Energy Savings and Costs Approaches
The savings and costs estimations vary depending on measure data availability. The Industrial Assessment Center (IAC) database, Energy Trust Production Efficiency Program impact evaluation data, and the existing Energy Trusts industrial resource assessment tool were the three main data sources:

1. **IAC Database**[15]: The IAC database collected nationwide industrial facility assessment data including facility energy consumption, efficiency improvements recommendation, savings, and costs of implementation. Navigant extracted relevant measure data from the IAC database by searching for applicable recommendation codes.[16] The percentage energy savings from all relevant entries were averaged to represent the overall measure savings as a percentage of facility consumption and scaled to customer segment consumption. Navigant calculated the measure cost by averaging the $/energy saved of all relevant IAC entries.

2. **Energy Trust Production Efficiency Program Verification and Program Data**: Navigant utilized Energy Trust Production Efficiency Program's verification data to develop measure savings as a percentage of the whole facility consumption. From the same dataset, Navigant calculated the average measure cost in $/energy saved. The savings percentages and measure costs were applied to each of the customer segments.

3. **Energy Trust Industrial Resource Assessment Tools:** The IAC database and Energy Trust's program data do not cover a subset of industrial measures on the measure list; for those measures Navigant relied on secondary sources and the existing industrial tool to populate savings percentages and the measure costs. Using Manufacturing Energy Consumption Survey data, Navigant developed an end-use consumption map disaggregating the percentage end use of the total energy consumption for each of the industrial customer segments for both electricity

[15] The IAC database is available at http://iac.rutgers.edu/database/
[16] The IAC recommendation code mapping is available in the measure input template.

and gas fuel types.[17] Measure savings were estimated as a percentage of end-use consumption and extrapolated to the customer segment level.

2.1.3.2 Density and Initial Saturation

The RBSA and CBSA served as the primary resource for developing residential and commercial measure total densities and initial saturation factors. Navigant extracted primary data from the RBSA and CBSA and calculated the densities and initial saturation factors by customer segments. For instances where data was not available, Navigant reviewed the existing model and conducted secondary research to estimate the density and initial saturation. One of the goals of the measure characterization task was to best customize measure input data to Energy Trust's resource assessment needs. Therefore, Energy Trust specific data had the highest priority followed by Oregon and region specific data.

Navigant estimated density per home for each residential measure. Density data for most residential measures were available through RBSA. Navigant filled data gaps using applicable regional studies, primary data collected for potential studies completed in other regions, or secondary research.[18]

For commercial measures without unit density data, the efficient measure savings were calculated as a percentage reduction of the baseline measures. Navigant then scaled the energy savings by applying the savings percentages to the end-use energy use intensities (EUI).

Navigant established the baseline EUI for each end use and building type using CBSA whole building EUI estimates and the end-use energy consumption distribution using the NWPCC 6th Power Plan and Commercial Buildings Energy Consumption Survey (CBECS). The EUI approach was applicable to commercial lighting, data center, heating, ventilation, and air-conditioning (HVAC), and water heating measures.

Since Navigant analyzed the industrial measures with a top-down approach, savings were represented by a percentage reduction of the total customer segment consumption; therefore, the default industrial measure density value is 1.

[17] The energy use map by customer segment is included in the measure input template.
[18] Specific data sources are documented in the measure input templates.

2.1.3.3 *Treatment of Bundled Measures vs. Individual Measures in New Construction Applications*

The ENERGY STAR Builder Option Package (BOP) Home measure was a new construction bundle measure, which included multiple individual measures.[19] To avoid double counting technical savings potential, Navigant adjusted the baseline of the individual measures included in the ENERGY STAR BOP measure to reflect minimum ENERGY STAR BOP efficacy levels. In other words, savings and costs of these individual measures under the new replacement type were incremental to the ENERGY STAR BOP measure. The following individual measures were affected:

- Screw-In Compact Fluorescent Lamp (CFL)
- Screw-In Light-Emitting Diode (LED)
- Gas Storage Water Heater
- Solar DHW- Electric
- Solar DHW- Gas
- Tankless Gas Hot Water Heater
- Tier 1 and Tier 2 Heat Pump Water Heater
- Specialty Lights
- Windows (U=0.25)

2.1.3.4 *Tax Credits*

Navigant subtracted Oregon Department of Energy tax credits from the incremental cost of eligible residential measures listed in Table 2-2.[20]

Table 2-2. Oregon Department of Energy Residential Energy Efficiency Tax Credits[21]

Measure	Tax Credit
Electric Heat Pump Water Heater Tier 1	$600
Electric Heat Pump Water Heater Tier 2	$837
Gas Water Heater .85 Efficiency	$246
Gas Furnace AFUE 95-96.9%	$352
Heat Recovery Ventilation	$225
Air-source heat pump 9.0	$759
Ductless heat pump (mini-split)	$1040

Source: Navigant analysis, 2014

[19] A bundle was modeled in this case because it simplified the model and reflected the primary savings opportunity in the market – ENERGY STAR is an important driver in program participation, so the "package" is viewed by much of the market as a discrete choice.

[20] This is consistent with guidance from the Oregon PUC on determining incremental costs for purposes of the Total Resource Cost test. Oregon Department of Energy 2014 Residential energy Tax Credit Rates: http://www.oregon.gov/energy/CONS/docs/2014RETCRates.pdf

[21] Energy Trust has included the Solar Domestic Hot Water Heater Federal and State tax credits in their cost assumptions, therefore the Solar DHW credits are not included in this list.

Navigant completed the tax credit review for all commercial measures. Commercial federal tax credits expired in 2013, and the state tax credits are greatly diminished in value and not as widely available as the previous Business Energy Tax Credit (BETC) program. Therefore, there is no adjustment to commercial incremental cost due to tax credits.

2.1.3.5 Non-Energy Benefits (NEB)

Clothes washers, dishwashers, showerheads, and faucet aerators yield water savings in addition to energy savings. Navigant included the NEB of these measures under O&M savings. Navigant sourced the values from Energy Trust program resources and RTF measure analysis workbooks.

2.1.4 Emerging Technologies

The goal of the Emerging Technologies Overlay is to establish a range of possible savings from emerging technologies. Emerging technology is defined as any technology with *at least one* of the following criteria:

- » Is currently not commercially available but expected to become so during the time span of the analysis
- » Is expected to achieve significant efficiency or cost improvements over the forecast time horizon

2.1.4.1 Selecting Emerging Technologies

To select the emerging technologies analyzed, Navigant first identified the end uses within the residential and commercial sectors that account for the largest energy use in the Energy Trust territory. To assess the various energy end uses, we primarily relied on data provided by the previous resource assessment model, utility load forecast, Northwest Conservation and Electric Power Plan, supplemented by national level data from the Energy Information Administration. In the residential sector, end uses considered for emerging technology analysis included the following:

- » Domestic Water Heating – Electric
- » Domestic Water Heating – Gas
- » Space Heating – Gas
- » Space Heating – Electric
- » Space Cooling – Electric
- » Lighting
- » Envelope
- » Behavioral

In the commercial sector, end uses considered for emerging technology analysis included the following:

- » Lighting
- » Envelope
- » Space Cooling
- » Space Heating
- » Ventilation
- » Refrigeration
- » Water Heating

Next, Navigant used the following sources to identify emerging technologies with the highest potential savings in each end use:

- Other resource assessments conducted by Navigant
- NEEA/BPA list of emerging technologies
- Emerging technology scans done by Navigant for other utilities and governments
- Research and development (R&D) and commercialization reports from national research labs, and federal and state governments
- Navigant emerging technology experts

2.1.4.2 Characterizing Emerging Technologies

Navigant then characterized emerging technologies using similar criteria and resources as conventional technologies, with additional data gathered from the following:

- U.S. Department of Energy (DOE) Building Technologies Prioritization Tool
- DOE R&D reports
- DOE appliance standards analyses
- Historic data of price trends of appliances
- Interviews with Navigant experts

In addition, for each emerging technology, Navigant estimated time-series profiles for several inputs. Navigant developed the following multipliers (where appropriate) to characterize assumed changes in measure characteristics over time:

- Market Availability Profile
  - This value is used to identify whether a product is commercially available (a value of 0 indicates not commercially available; a value of 1 indicates that it is commercially available).
- Energy Consumption Multiplier
  - This value adjusts the efficient technology energy consumption over time to reflect changes due to technology improvement.
- Cost Multiplier
  - This value adjusts the efficient technology cost over time due to predicted declines in technology cost.

Table 2-3 provides an example of an energy consumption time-series profile for solar thermal water heaters. The profile suggests that by 2019 the energy consumption of this measure will be 20% less than its current consumption in 2014. Navigant used similar profiles for all emerging technology measures to capture significant efficiency and cost improvements over the forecast horizon.

Table 2-3. Illustration of Time-series Profile

Emerging Technology Measure	2014	2015	2016	2017	2018	2019
Solar Thermal Water Heating	1.00	0.95	0.91	0.87	0.84	0.80

Source: Navigant analysis, 2014

2.1.4.3 Developing a Range of Savings

The performance and cost characterizations discussed above represent the "Maximum Potential" for emerging technology measures; however, it is important to characterize the likelihood of whether these technologies will meet those targets or even come to market. Instead of trying to produce multiple cost and performance projections for each emerging technology measure, Navigant developed a risk factor for each emerging technology to characterize the inherent uncertainty in the ability for ETs to produce reliable future savings. This risk factor was determined based on qualitative metrics of the following:

- Market risk
- Technical risk
- Data source risk

The framework for assigning the risk factor is shown in Table 2-4. Each ET was assessed within each risk category; a total weighted score was then calculated. Well-established and well-studied technologies (such as LEDs) have lower risk factors while nascent, unevaluated technologies (e.g., Advanced CO2 Heat Pump Water Heater or Supermarket Max Tech Refrigeration) have higher risk factors. This risk factor was then used as a multiplier of the incremental savings potential of the measure.

Table 2-4. Emerging Technology Risk Factor Score Card

	ET Risk Factor				
Risk Category	**10%**	**30%**	**50%**	**70%**	**90%**
Market Risk (25% weighting)	**High Risk:** » Requires new/changed business model » Start-up, or small manufacturer » Significant changes to infrastructure » Requires training of contractors; consumer acceptance barriers exist			**Low Risk:** » Trained contractors » Established business models » Already in U.S. Market » Manufacturer committed to commercialization	
Technical Risk (25% weighting)	**High Risk:** Prototype in first field tests A single or unknown approach	Low volume manufacturer Limited experience	New product with broad commercial appeal	Proven technology in different application or different region	**Low Risk:** Proven technology in target application Multiple potentially viable approaches
Data Source Risk (50% weighting)	**High Risk:** Based only on manufacturer claims	Manufacturer case studies	Engineering assessment or lab test	Third party case study (real world installation)	**Low Risk:** Evaluation results or multiple third party case studies

Source: Navigant analysis, 2014

2.1.4.4 Residential Emerging Technologies Characterized

The following is a list of the emerging technologies included in the residential sector:

- Solar hot water heater (gas and electric)
- CO2 Heat Pump Water Heater
- Absorption Gas Water Heater
- R-10 Windows
- R-30 Wall Insulation
- R-75 Attic Insulation
- High Efficiency Condensing Furnace
- Advanced Heat Pumps
- LED lighting
- Home Automation/Smart Devices

2.1.4.5 Commercial Emerging Technologies Characterized

The following is a list of the emerging technologies included in the commercial sector:

- Advanced Package A/C RTU
- Hybrid Indirect-Direct Evaporative Cooler
- Energy Recovery Ventilator
- Advanced Refrigeration Controls
- Supermarket Max Tech Refrigeration
- Advanced Ventilation Controls
- Absorption Heat Pump
- LED Lighting (multiple applications)
- Wall insulation R-35, Vacuum insulated panels
- Highly Insulated Windows
- Smart/Dynamic Windows
- Absorption Heat Pump Water Heater
- A/C Heat Recovery for Water Heating

2.1.4.6 Industrial Emerging Technologies Characterized

The following is a list of the emerging technologies included in the industrial sector.

- Advanced LED Lighting Retrofits
- Wall Insulation – VIP, R0-R35
- Gas-Fired Heat Pump Water Heater
- Switched Reluctance Motors
- Advanced Refrigeration Controls – Industrial

2.1.5 Code Adjustments

Measure characterization values are aligned with national and local codes and standards assumptions. As future codes and standards become effective, the energy savings from existing measures subjected to

the codes and standards will diminish. Navigant accounted for the impact of codes and standards (C&S) by the C&S multiplier, which reduced the baseline equipment consumption starting from the year when particular codes and standards begin to take effect.

The DOE Technical Support Documents (TSDs)[22] contain information on energy and cost impact of each appliance standard. Typically, the engineering analysis is available in Chapter 5 of the TSDs, energy use analysis is available in Chapter 7, and cost impact is available in Chapter 8. Navigant sourced the C&S multipliers from DOE's analysis and/or assumptions.

In general, Navigant compares the new standard requirements with the current baseline to determine the energy reduction and refer to the relative energy efficiency mark up to determine the cost increase due to codes and standards. Navigant identified the following measures as affected by future codes and standards:

- Tier 1 and Tier 2 Heat Pump Water Heaters
- Gas Storage Water Heater
- Tankless Gas Hot Water Heater
- Advanced CO2 Heat Pump Water Heater
- Absorption Gas Heat Pump Water Heater
- Solar DHW – Electric
- Solar DHW – Gas
- Screw-In Bulbs (CFL and LED)
- High Efficiency Clothes Washers
- Furnace
- Heat Pump
- Gas Hearth
- Advanced Package A/C RTU
- Hybrid Indirect-Direct Evaporative Cooler

[22] Appliance standards rulemaking notices and Technical Support Documents can be found at: http://energy.gov/eere/buildings/current-rulemakings-and-notices

The analysis reduced the baseline technology consumption to align with codes and standards at the effective year of implementation. Due to this approach, savings from the implementation of codes and standards are not included as part of the potential. Table 2-5 summarizes the measures impacted by upcoming codes and standards.

Table 2-5. Measures Impacted by Upcoming Codes and Standards

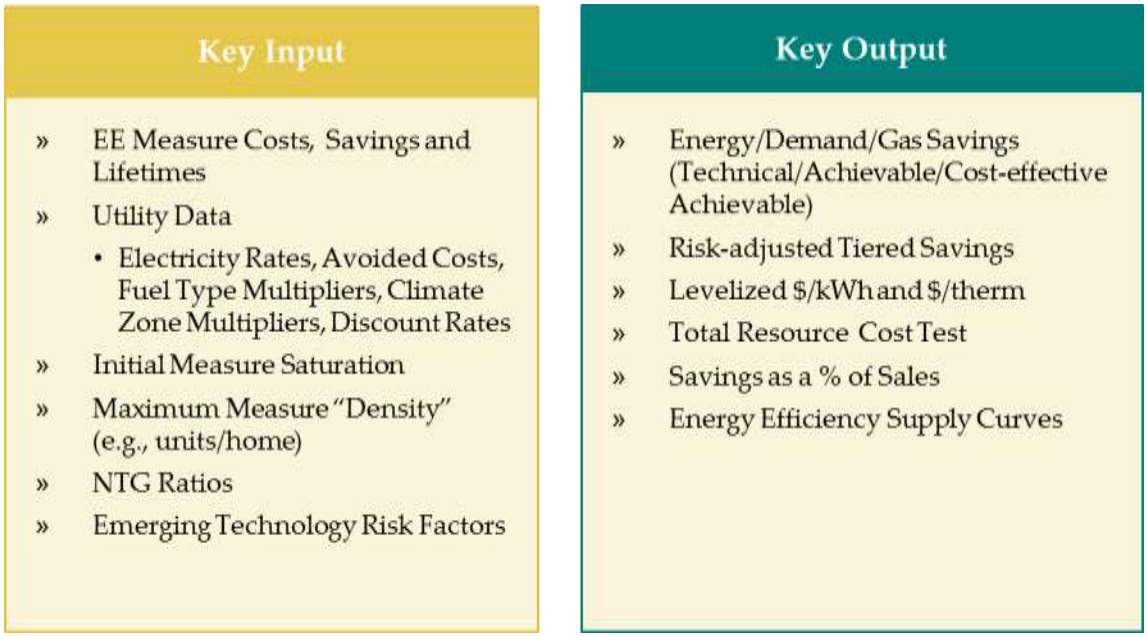
Affected Measures	Initial Federal Legislation	Effective Date of Last Standard	Issued By
Tier 1 and Tier 2 Heat Pump Water Heaters, Advanced CO2 Heat Pump Water Heater, Solar DHW-Electric	EPACT 1992	2014	DOE
Gas Storage Water Heater, Tankless Gas Hot Water Heater, Absorption Gas Heat Pump Water Heater, Solar DHW- Gas	EPACT 1992	2014	DOE
High Efficiency Clothes Washers	NAECA 1987	2015	DOE
Screw-In Bulbs (CFL and LED)	EISA 2007	2020	U.S. Congress
Heat Pump, Advanced Packaged A/C RTU, Hybrid Indirect-Direct Evaporative Cooler	EPACT 1992	2015	DOE
HP T8, LED (Troffer)	EPACT 1992	2014	DOE

Source: Navigant analysis, 2014

2.2 *Approach to Estimating Technical, Achievable, and Cost-Effective Achievable Potential*

Navigant estimated the technical, achievable, and cost-effective achievable potential using the resource assessment model, which employs a combined "bottom-up/top-down" approach to identify and quantify the savings of all energy efficiency measures depending on the sector. This modeling approach assumes an energy efficiency measure to be any possible change that can be made to building, equipment or process that could save energy. The residential and commercial sector savings potential were estimated using a bottom-up approach, which considers the potential technical impacts of various demand-side technologies that are aggregated in the model to produce estimates of resource potential at the end use, customer segment, and service territory level. The industrial sector modeling approach is best described as a top-down methodology that begins with the most current utility load forecasts before decomposing them into their constituent end-use components. The model calculates energy savings above a baseline that is determined by a regulatory (i.e., code or standard) or market driver. Figure 1 provides a summary of the key input and output of the model.

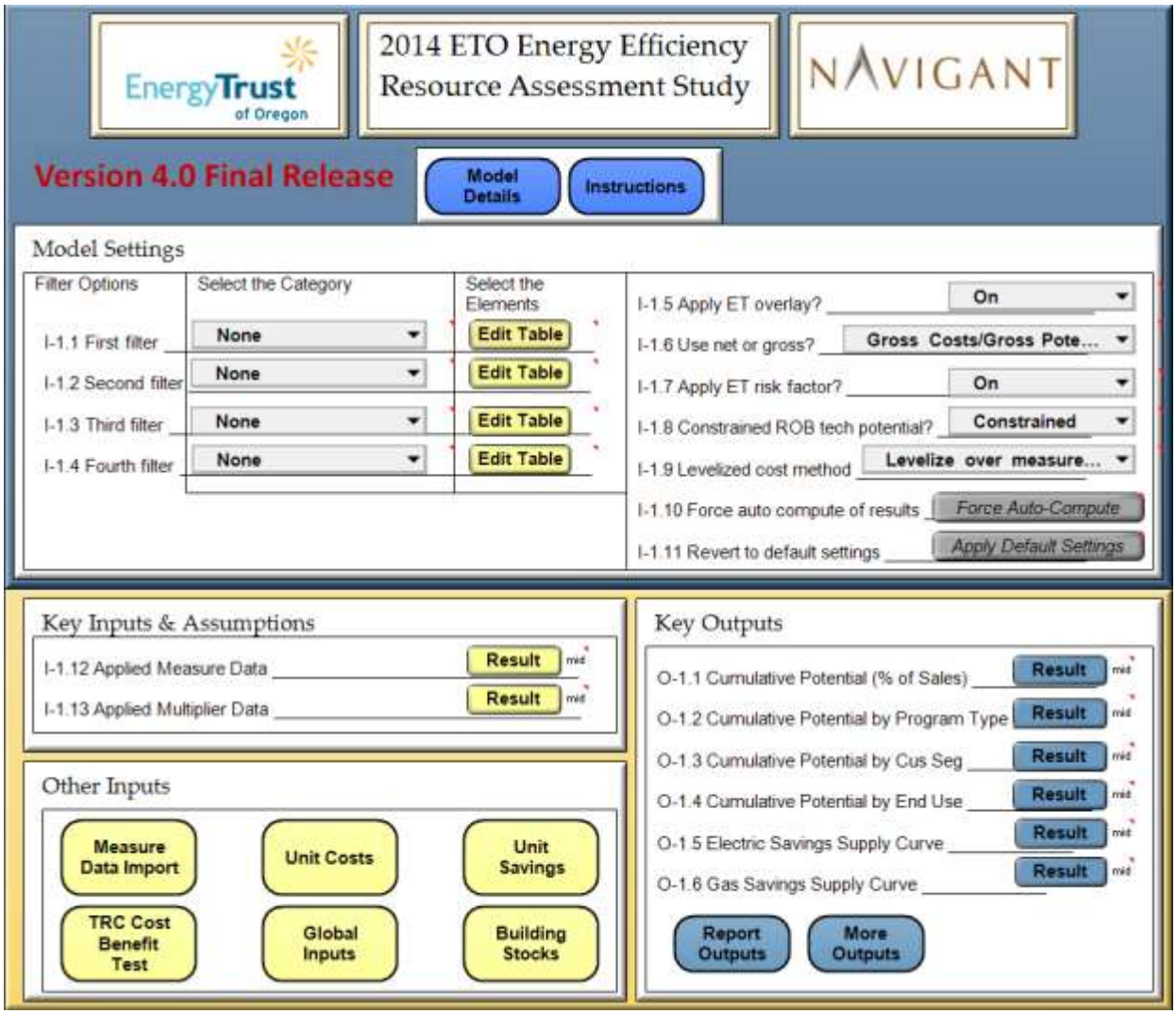
Figure 1. Resource Assessment Model Input and Output



Source: Navigant analysis, 2014

Navigant imported input data, developed as part of the measure characterization process, into the model using the graphical user interface displayed in Figure 2. The model interface enables detailed exploration (graphical or tabular) and quality control of all model output at the measure level, across customer segments, utilities, end-use categories, and program types. The model interface also offers the ability to easily turn on or off the ET overlay and risk factor options.

Figure 2. Base Resource Assessment Model Graphical User Interface



Source: Navigant analysis, 2014

2.2.1 Types of Potential

The study calculates three types of energy efficiency potential.

2.2.1.1 Technical Potential

The calculation of technical potential in this study differs depending on the assumed measure replacement type. Technical potential is calculated on a per-measure basis and includes estimates of savings per unit, measure density (e.g., quantity of measures per home), and total building stock in each service territory. The study accounts for three replacement types, each of which has a specific definition of technical potential as described below.

1. New Construction (NEW) Measures
New Construction technical potential is driven by new measures coming into the market each year due to new building stock. New building stock determines the incremental annual addition to technical potential, which would then be added (cumulated) to calculate the cumulative potential in any given year. The equations used to calculate technical potential for new construction measures are provided below.

Annual Incremental Technical Potential (AITP):

$$AITP_{YEAR} = \text{New Buildings}_{YEAR} \text{ (e.g., buildings/year*) X Measure Density (e.g., widgets/building*) X Savings}_{YEAR} \text{ (e.g., kWh/widget) X Technical Suitability (dimensionless)}$$

Cumulative Technical Potential:

$$CTP_Y = \sum_{YEAR=2014}^{YEAR=Y} AITP_{YEAR}$$

* Note: Units for new building stock and measure densities may vary by measure and customer segment (e.g., 1000 square feet of building space, # of residential homes, etc.)

2. Replace-on-Burnout Measures
Technical potential for ROB measures is driven by turnover of existing measure stock (1/lifetime of the stock is assumed to burn out each year). This definition of technical potential for ROB measures is considered to be "constrained" in the sense that potential is limited by the turnover rate of inefficient measure stock due to burnout. The model also incorporates the ability to calculate and view "unconstrained technical potential," which assumes immediate replacement of inefficient measures with efficient measures, regardless of stock turnover constraints. However, the results presented in this study only show a view of constrained technical potential for consistency with Energy Trust's usage of potential for program planning purposes. The equations used to calculate constrained technical potential for ROB measures are provided below.

Annual Incremental Technical Potential (AITP):

$AITP_{YEAR}$ = Retired Measures $_{YEAR}$ (e.g., measures/year) X Unit Savings $_{YEAR}$ (e.g., kWh/measure) X Technical Suitability (dimensionless)

Where:

Retired Measures $_{YEAR}$ = Remaining Measures $_{YEAR-1}$ X (1/Base Measure Lifetime)

Cumulative Technical Potential:

$$CTP_Y = \sum_{YEAR=2014}^{YEAR=Y} AITP_{YEAR}$$

3. Retrofit (RET) Measures

Retrofit measures have a different meaning for technical potential compared with ROB and NEW measures. In any given year, the *entire* building stock is used for the calculation of technical potential and is consistent with Energy Trust's desire not to constrain the calculated technical potential to any pre-assumed rate of adoption of retrofit measures. Code/standard changes from year-to-year could result in potential for a given measure being lower in later years. For retrofit measures, annual potential is equal to cumulative potential thus offering an *instantaneous* view of technical potential. The equation used to calculate technical potential for retrofit measures is provided below.

Annual Potential:

Cumulative Potential = Existing Building Stock $_{YEAR}$ (e.g., buildings*) X Measure Density (e.g., widgets/building*) X Savings $_{YEAR}$ (e.g., kWh/widget) X Technical Suitability (dimensionless)

* Note: Units for new building stock and measure densities may vary by measure and customer segment (e.g., 1000 square feet of building space, # of residential homes, etc.).

2.2.1.2 Achievable Potential

Achievable potential is specified as a percentage of the technical potential. The percentage of technical potential that is deemed "achievable" is by default 85% based on the Northwest Power and Conservation Council (Council) planning assumptions.[23] The Council has adopted the 85% value based on the assumptions that the region has 20 years to achieve the 85% goal, that utilities can offer to pay up to the full incremental cost of all cost-effective measures, and that utilities are able to implement state and federal codes and standards over the planning horizon. This definition of achievable potential represents the cumulative upper limit of market penetration over the planning horizon and is not impacted by program rollout rates or market acceptance dynamics. Rather, it represents a bucket of savings from which program achievements can draw, at a rate set by Energy Trust. Although the achievable potential results presented in this study assume a default value of 85%, this is a user-input value in the model, editable at the measure level.

[23] Achievable Savings – A Retrospective Look at the Northwest Power and Conservation Council's Conservation Planning Assumptions - http://www.nwcouncil.org/media/29388/2007_13.pdf

2.2.1.3 Cost-Effective Achievable Potential

Cost-effective achievable potential is estimated as a subset of achievable energy efficiency that only includes savings from measures that pass the Total Resource Cost (TRC) test. The TRC for each measure is calculated each year and compared against the measure-level TRC screen threshold (default value of 1.0). If a measure's TRC exceeds the threshold, it is included in the cost-effective achievable potential. For end uses with multiple tiers of efficient measures that could replace the same inefficient base measure, the model uses an incremental or "tiered" approach to calculating cost-effectiveness, which is further described in the next section. The Oregon TRC in particular is determined through the fairly nuanced provisions of Rule UM-551, which includes provisions for exceptions as well as incorporation of quantifiable non-energy benefits. Navigant's analysis took a relatively straightforward approach to the TRC. Cost-effectiveness of many measures may be determined through the rulings in three cost-effectiveness dockets currently underway in Oregon. To the extent that there are exceptions provided in those dockets, or cost-effectiveness is dependent on more detailed analysis of non-energy benefits than are provided in this report, the cost-effectiveness assessments provided in this report are not the "last word" on the subject. Energy Trust will continue to make final cost-effectiveness determinations through its "blessing memos" for prescriptive measures and prescribed calculations, and through site-specific analysis for custom measures. However, we believe that this assessment is at the appropriate detail for estimating the overall conservation resource with one caveat. The potential for savings from gas shell measures in existing single family homes may change significantly based on the Oregon Public Utilities Commission's (PUC's) determinations.

It is also important to note that Washington's Utilities and Transportation Commission's guidance currently relies on a combination of the TRC and the utility cost test. For this reason, adjustments to these results based on program-specific analysis may be warranted for use in Washington.

2.2.2 Approach to Calculating Cost-Effectiveness

Cost-effectiveness of energy efficiency measures in this study is defined by the results of the TRC test. The TRC test is a cost-benefit analysis that measures the net benefits of energy efficiency measures from the viewpoint of an entire service territory. The TRC benefit-cost ratio is calculated in the model using the following equation:

$$TRC = \frac{Benefits\ of\ Avoided\ Cost + O\&M\ Savings}{Technology\ Cost + O\&M\ Cost}$$

where:

Benefits of Avoided Cost is the monetary benefit of energy and gas savings (e.g., avoided costs of generation, and transmission and distribution investments, as well as avoided fuel costs due to energy conserved by energy efficiency programs).

Technology Cost is the incremental equipment cost to the customer.

O&M Savings are non-energy benefits including incremental operation and maintenance cost savings and water savings that can be attributed to energy efficiency measures.

O&M Cost is the incremental operation and maintenance cost to the customer due to energy efficiency measures.

Navigant calculated TRC benefit-cost ratios for each measure based on the present value of benefits and costs (as defined above) over its useful life. Rebates and bill payments are considered "transfer" payments that stay within the scope of the TRC—the utility system and the customer—and are therefore do not change costs for the TRC calculation. Depending on whether a measure is tiered or not, the model uses different definitions for calculating cost-effectiveness. For individual measures that are not tiered (i.e., they are non-competing measures), a TRC is calculated relative to the measure's baseline equipment and compared against the measure-level TRC screen threshold (default benefit-cost value of 1). If a measure's TRC exceeds the threshold, the measure is considered cost-effective. However, for competing technologies used to define competition groups an incremental or "tiered" approach is used, as discussed below.

2.2.2.1 Competition Groups

Navigant's modeling approach considers that some efficient technologies will compete against each other in the calculation of potential. The study defines "competition" as efficient measures competing for the same installation as opposed to competing for the same savings (e.g., windows vs. furnaces) or for the same budget (e.g., lighting vs. water heating). For instance, a consumer may install an AFUE 95, AFUE 96, or AFUE 98 furnace, all of which belong to the same competition group, as only one of these would be installed. General characteristics of competing technologies used to define competition groups in this study include the following:

- Competing technologies share the same or similar baseline technology.
- The baseline technology densities, costs, and consumption of competing efficient technologies are the same.
- The total maximum densities of competing efficient technologies are the same.
- Installation of competing technologies is mutually exclusive (i.e., installing one precludes installation of the others for that application).
- Competing technologies share the same replacement type.

2.2.2.2 Tiered TRC

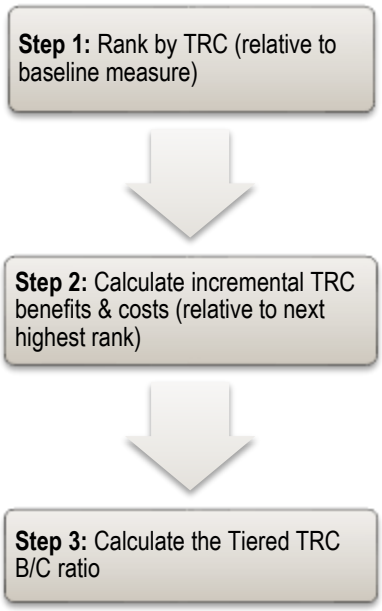
Many energy efficiency potential studies explicitly account for market share among multiple efficient technologies that are competing for the same service. This market share can be a direct user input, or it can be calculated by various methods. Energy Trust's guidance to Navigant was to not assume a given market share and instead to determine cost-effectiveness based on the marginal costs and benefits provided by each measure. Navigant has used "tiered" TRC ratios and tiered levelized cost of energy to capture the marginal cost-effectiveness of each measure.

This method has the advantage that market share, which is a highly uncertain parameter, need not be specified. In addition, the tiered TRC provides insight into the cost-effectiveness of achieving an additional or marginal unit of energy savings. A standard TRC ratio based on full benefits and costs will only provide information about the average cost-effectiveness of a measure relative to an inefficient baseline. In some situations, a measure's standard TRC (relative to the inefficient baseline) will be greater than 1.0; while it is tiered TRC (relative to the next efficient technology) will be less than 1.0. In such a situation, the tiered TRC is a more informative metric because it suggests the incremental energy

provided from that technology (relative to another efficient technology that provides a similar service) may not justify its additional costs. Lastly, the tiered approach ensures that the potential from competing technologies is not double-counted because each technology is only credited with its incremental potential.

For competing measures with multiple tiers of efficiency, a "tiered" approach is employed to evaluate cost-effectiveness. In other words, if several measures could possibly be used to replace a common base measure, the savings (and incremental costs) of a given measure will be compared with the measure just below it in ranking from a TRC perspective.

Figure 3. Overview of Approach to Calculating Tiered TRC



Source: Navigant analysis, 2014

The following steps describe Navigant's approach to calculating a tiered TRC for measures within a competition group, as summarized in Figure 3.

Step 1. Rank by TRC
Competing measures within a competition group are ranked based on each measure's TRC relative to that measure's baseline equipment. These measures are then sorted based on their TRC rank such that the measure with the highest TRC within a competition group is stacked first.

Step 2. Calculate Incremental TRC Benefits and Costs
The incremental benefits and costs of the TRC are then calculated relative to the measure with the next highest rank within a competition group. This incremental approach of calculating benefits and costs is only used for measures that belong to a competition group and whose rank is greater than 1. Benefits and costs of measures that are ranked first will be estimated relative to their baseline equipment.

Step 3. Calculate the Tiered TRC B/C Ratio

The incremental or tiered TRC for competing measures is then calculated by dividing the incremental benefits by the incremental costs. Figure 4 defines how the TRC is calculated for all combinations of positive and negative incremental costs and benefits. If the incremental benefits and costs are both negative, then the TRC is found by dividing the reduction in costs by the reduction in benefits. In other words, if the reduction in costs for a measure exceeds the reduction in benefits, the measure is still considered to be cost-effective. Also, ranking by the non-tiered TRC ensures that we never have a situation where a measure has positive incremental benefits but negative incremental costs as measures with higher incremental benefits but lower costs would always have a higher non-tiered TRC. Finally, if the incremental benefits of a measure are negative and the incremental costs are positive, then a TRC of zero is assigned to that measure. If both the incremental benefits and costs are negative, the reduction in costs is divided by the reduction in benefits. An incremental measure where the reduction in costs is greater than the reduction in benefits is considered cost effective.

Figure 4. Rules for Calculating TRC

		PV of Incremental Benefits (B)	
		Positive (+)	Negative (-)
PV of Incremental Costs (C)	Positive (+)	TRC = B/C	TRC = 0
	Negative (-)	Ranking by non-tiered TRC ensures this never occurs, as a measure with incremental benefits but fewer costs would have a higher non-tiered TRC	TRC = C/B

Source: Navigant analysis, 2014

2.2.2.3 Levelized Cost

Navigant's modeling approach also considers the levelized cost ($/kWh or $/therms) of each measure as an additional cost-effectiveness metric, which is graphed against cumulative potential in the supply curves. The default method calculates levelized cost as the discounted present value cost of the measure annuitized over its life divided by the annual energy savings. The costs included in this calculation are the incremental cost of each measure less any operation and maintenance cost savings. All figures in this report use the default levelization method based on measure lives. Another levelization method is made available within the model that computes costs and savings over a consistent planning horizon for all

measures[24]. To account for competition among efficient technologies, Navigant estimated an incremental levelized cost relative to the next highest rank within a competition group, using the same "tiered" approach described above. While the model calculates both levelized cost and TRC as outputs, only the TRC is used to screen for cost-effectiveness.

Similar to the TRC, the value of the levelized cost is determined based on the sign of the costs and the energy savings. Anytime the incremental energy savings are negative, the levelized cost is assigned a value of infinity. Figure 5 defines how levelized cost is calculated for all combinations of positive and negative incremental costs and energy savings.

Figure 5. Rules for Calculating Levelized Cost

		PV of Incremental Costs (C)	
		Positive (+)	Negative (-)
PV of Incremental Savings (S)	Positive (+)	Levelized Cost = C/S	Levelized Cost = C/S
	Negative (-)	Levelized Cost = INF	Levelized Cost = INF

Source: Navigant analysis, 2014

2.2.3 Approach to Simulating Tiered Potential Savings

The approach to calculating savings potential follows a methodology consistent with cost-effectiveness. Similar to cost-effectiveness, measures are treated differently depending on whether or not they belong to a competition group. The savings potential for non-competing measures is determined relative to a baseline measure. Potential for competing technologies is determined relative to the measure with the next highest rank within a competition group, following the "tiered" approach.

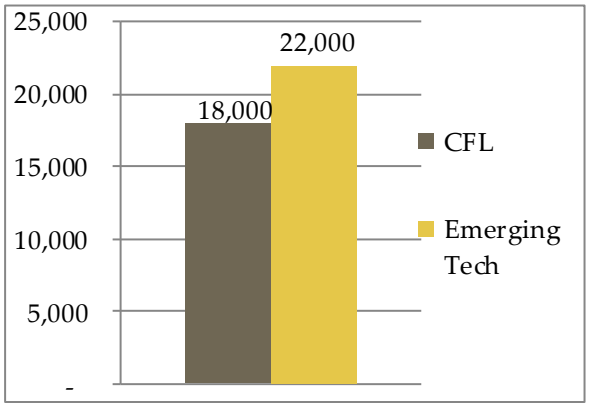
[24] The levelization approach based on the same planning horizon, say 20 years, for all measures uses a combination of a true cash flow approach and an annuity approach. For example, a measure having a 5-year lifetime can be installed four times over a 20-year horizon. This means that the cash and energy flows can be repeated exactly four times during that horizon. A measure with an 8-year lifetime is slightly more nuanced. The 8-year measure can be installed twice during the horizon and receive credit for the full 8 years of savings each time. To account for the remaining 4 years in the horizon, the costs over the full measure life are annuitized and assigned to each of the last 4 years. This ensures that the 8-year measure is not penalized with the full incremental costs while only being credited with the 4 years of savings. Once cash streams are determined for all 20 years in the planning horizon, the present value can be annuitized and divided by the annual energy savings to determine the levelized cost of energy.

Savings potential for emerging technologies is also subject to a risk adjustment, which requires a two-stage approach to finding risk-adjusted tiered potential. Risk adjustments are applied to emerging technologies to reflect uncertainty in the ability of those technologies to deliver the assumed savings. The risk adjustments are only applicable to the tiered potential, which for competing measures is incremental to the measure with the next highest rank within a competition group. Calculating risk-adjusted tiered savings potential requires a multi-step process that includes the following steps.

Step 1. Find Tiered Potential

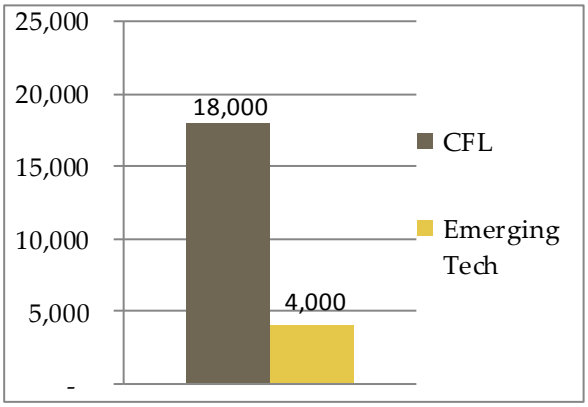
For non-competing measures, the savings potential relative to a baseline measure were used. Competing measures are ranked by the TRC (similar to Step 1 of the tiered TRC calculation above) before the incremental potential for each measure in the competition group is calculated (similar to Step 2 of the tiered TRC calculation). Figure 6 shows the potential relative to baseline for a hypothetical competition group that includes a CFL measure and a generic lighting emerging technology. If the CFL has a higher TRC than the ET, then tiered potential for the ET will be incremental to the CFL as is shown in Figure 7.

Figure 6. Hypothetical Potential Relative to Baseline (kWh/yr)



Source: Navigant analysis, 2014

Figure 7. Hypothetical Tiered Potential (kWh/yr)



Source: Navigant analysis, 2014

Step 2. Apply Risk Factors and Determine Reduction in Potential

The tiered potential for all emerging technologies are multiplied by (1 - *risk factor*) to determine the reduction in potential. The *risk factor* is a value between 0 and 1.0 that reduces the effective savings potential. If the ET in Figure 7 has a risk factor of 0.5, then we would expect a risk reduction of 2,000 kWh/yr, as is shown in Figure 8. No adjustment is made to the CFL, since it is not an emerging technology.

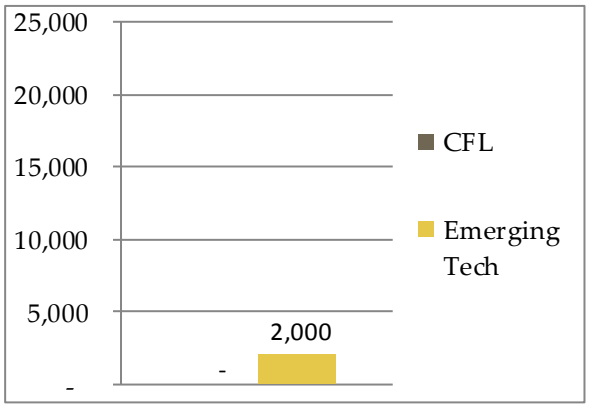
Step 3. Calculate the Risk-Adjusted Potential Relative to Baseline

The reduction in potential is then subtracted from the savings potential relative to baseline. Figure 9 shows the resulting difference from subtracting the emerging technology's risk reduction of 2,000 kWh/yr from its potential relative to baseline of 22,000 kWh/yr.

Step 4. Find the Tiered Risk-Adjusted Potential

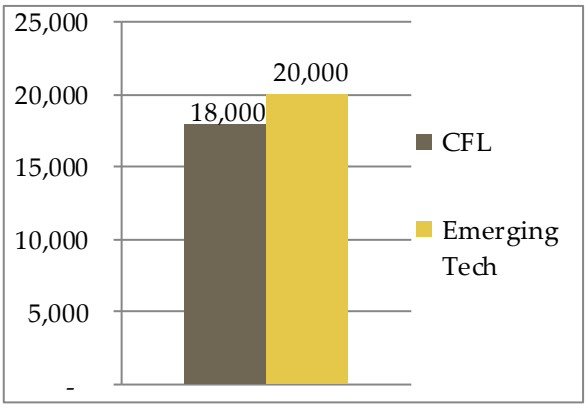
Using the risk-adjusted potential relative to a baseline measure, Step 1 ("Find Tiered Potential") is repeated to find the risk-adjusted tiered potential. When the emerging technology's risk-adjusted potential is tiered relative to the CFL, the resulting risk-adjusted tiered potential is illustrated in Figure 10.

Figure 8. Hypothetical Reduction in Potential due to Risk (kWh/yr)



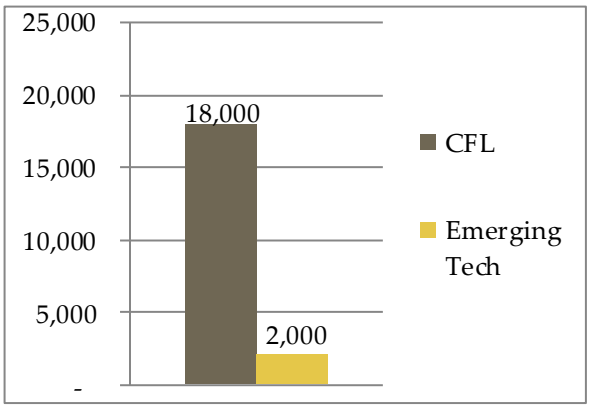
Source: Navigant analysis, 2014

Figure 9. Hypothetical Risk-Adjusted Potential Relative to Baseline (kWh/yr)



Source: Navigant analysis, 2014

Figure 10. Hypothetical Risk-Adjusted Tiered Potential (kWh/yr)



Source: Navigant analysis, 2014

After the risk-adjusted tiered potential has been computed on an annual basis for every measure, it is then cumulated in accordance with the definitions of NEW, ROB, and RET specified in section 2.2.1.1.

2.3 Caveats and Limitations

There are a number of important caveats and limitations associated with the results of these forecast and modeling efforts.

2.3.1 Data Uncertainties

The Navigant team drew upon many different secondary data sources for estimation of measure energy consumption, incremental cost, market saturation, and emerging technology risk factors. However, inevitable uncertainty in these estimates exists, which can affect estimates of potential. In some cases, national data was used in lieu of regional data. Navigant did not conduct sensitivity or uncertainty analysis on these estimates as part of this study.

2.3.2 Market Uncertainties

Several key uncertainties exist regarding the cost-effectiveness of energy efficiency measures. For instance, gas prices are highly uncertain, which in turn drive uncertainty in avoided cost benefits that are a key determinant of cost-effective achievable potential in the model. Additionally, while the study includes risk factors for each ET to characterize natural uncertainty in their ability to produce reliable future savings, there is still uncertainty in the estimation of risk factors for these technologies. While the study accounts for on-the-books and expected codes and standards, it is expected that new standards could significantly reduce the potential savings that may be available for utility programs. However, there are countervailing considerations that provide some assurance.

- The risk factors applied across many emerging technologies can each be wrong individually, and the aggregate estimates of savings reasonably useful if the overall approach taken to risk is balanced in aggregate.
- Codes are not a "competing force" with Energy Trust programs but an integral part of Energy Trust's plans to achieve market transformation wherever this is feasible. The purpose of the study is to estimate overall available savings- if savings come in through new codes and standards, they will still be achieved, but at lower cost to the utility system, and in all likelihood to the consumer also. Therefore, the main hazard is that by not incorporating future codes and standards Energy Trust may be overestimating the long-term cost of some measures, and possibly excluding them from the cost-effective resource potential. Since measures that are not estimated to be cost-effective are rarely incorporated into standards, any exclusion would likely be small and limited in nature.

2.3.3 Forecasting under Uncertainty

Cost-effective achievable potential in this study is not limited by actual program rollout or market adoption rates; rather, it reflects the bucket of savings from which program achievements can draw, at a rate that is to be defined by Energy Trust. Forecasts are inherently uncertain. The estimates of future energy efficiency potential included in this study are not a reflection of what *will* happen. Instead, these forecasts are intended as possible futures and provide a view of what *could* be achieved. . The estimates of achievable potential assume an 85% achievability factor. This sets an upper limit of market penetration in the region over a 20-year period. However, there is uncertainty as to how much of the technical potential is truly achievable over the modeling period.

3 Energy Trust Energy Efficiency Potential Results

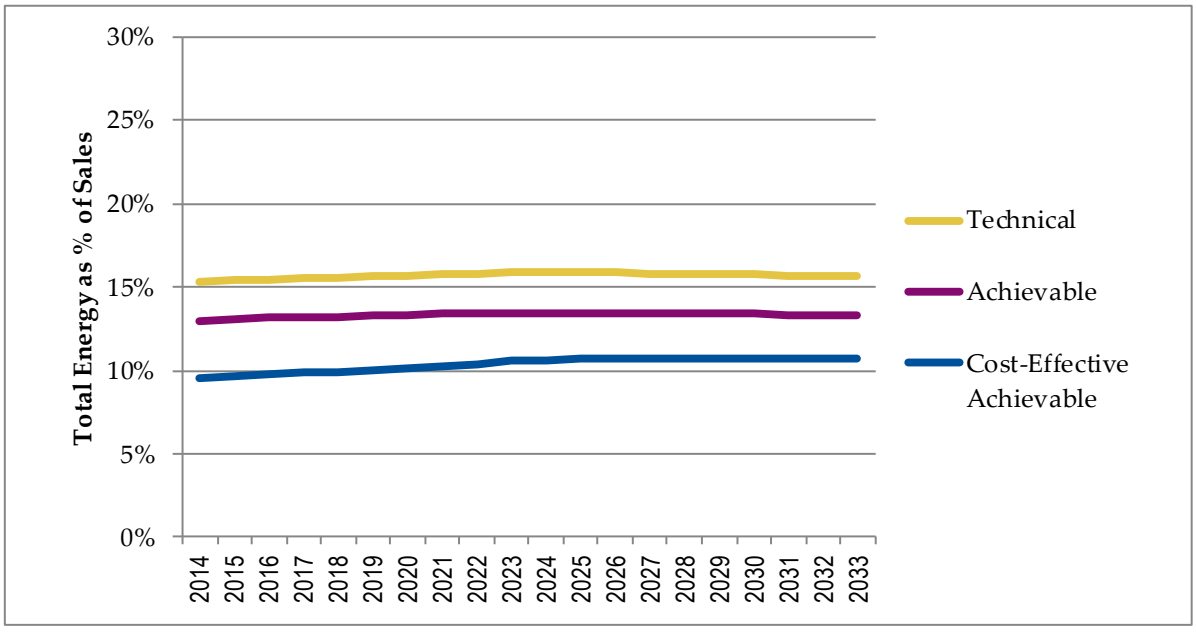
This section provides electric, demand and gas savings potential estimates at an aggregate level. These are estimates of total technical, achievable, and cost-effective achievable potential for all sectors and utilities within the Energy Trust service territory as a percentage of baseline forecast sales. All graphs in this section report a risk-adjusted tiered potential as described in section 2.2.3. These comparisons offer a useful way to compare potential estimates with other studies and past program achievements, while serving as a quality control tool during the study. A more disaggregated view of potential by sector, customer segment, end use, and program are provided in sections 4, 5, and 6, which also include emerging technology results and a discuss of the top saving measures within each sector.

3.1 Aggregate Savings Potential

3.1.1 Energy Trust Electric Energy Potential

The cumulative technical, achievable, and cost-effective achievable potential as a percentage of baseline forecast energy sales for all conventional measures (i.e., without emerging technologies) is provided in Figure 11. As seen in this figure, technical potential represents about 15% of baseline energy sales over the 20-year forecast horizon, while achievable potential represents about 13% over the same horizon. Technical potential as a percentage of sales stays relatively flat as it is largely driven by retrofit measures that do not increase over time. Cost-effective achievable potential is about 9%-10% over the forecast horizon. Achievable potential represents an upper bound that is not affected by market adoption rates and program priorities.

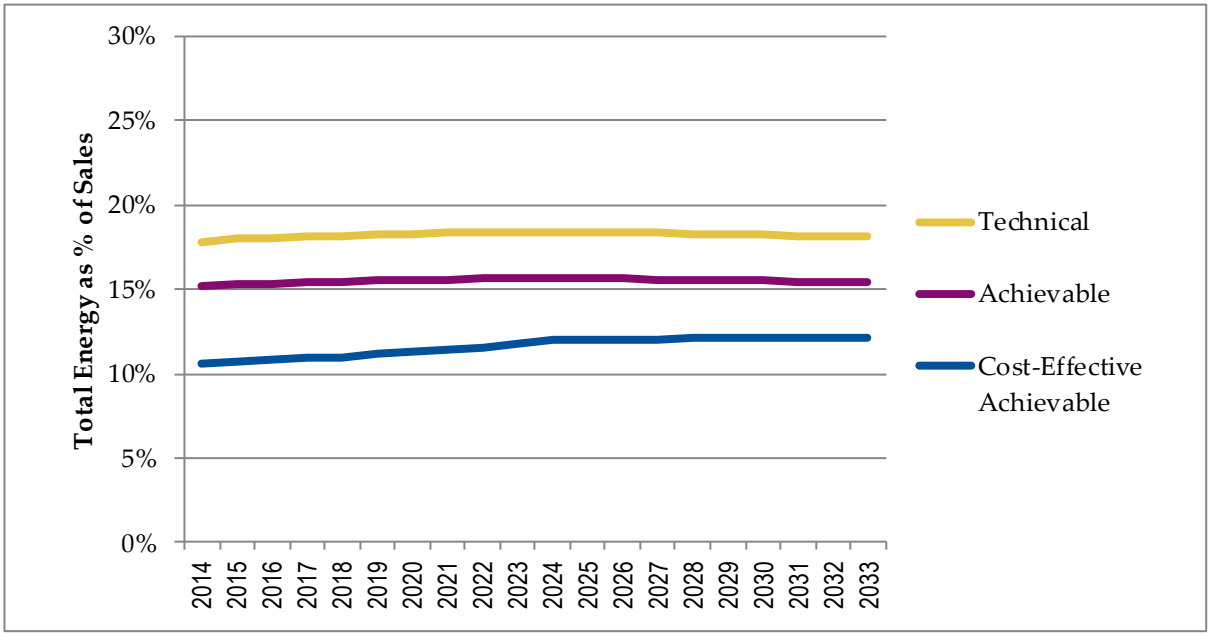
Figure 11. Cumulative Electric Energy Savings (% of Sales) – without ETs



Source: Navigant analysis, 2014

Figure 12 shows technical, achievable, and cost-effective achievable potential as a percentage of baseline forecast energy sales with the addition of emerging technologies. The inclusion of emerging technologies in the study across all three sectors results in technical potential increasing to 18% of baseline energy sales by 2033, while achievable potential represents 15% of sales over the time horizon. Cost-effective achievable potential is now about 12% over the forecast period, which represents a 2% increase by 2033 due to the addition of emerging technologies. Emerging technology savings in future years are tempered by the inclusion of a risk factor in the calculation of tiered potential savings. Advanced ventilation controls and LED troffers are the largest contributors toward emerging technology savings by 2033. Table 3-1 provides the same information as shown in Figure 12, but in tabular format.

Figure 12. Cumulative Electric Energy Savings (% of Sales) – with ETs



Source: Navigant analysis, 2014

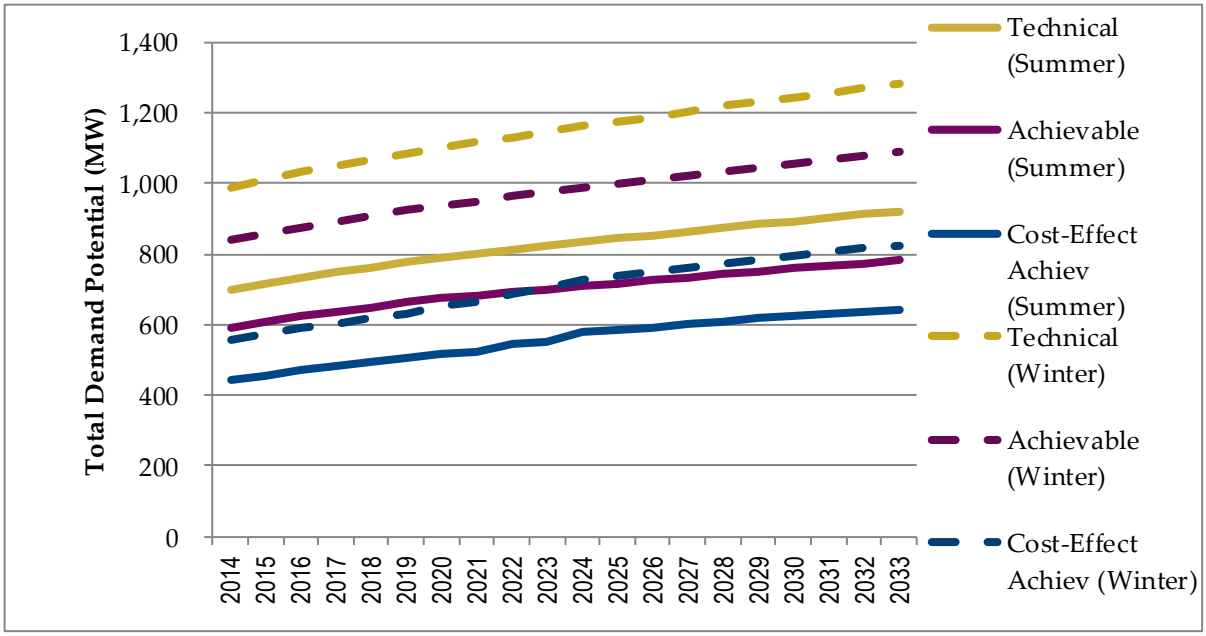
Table 3-1. Cumulative Energy Savings (% of Sales) – with ETs

Year	Technical	Achievable	Cost-Effective Achievable
2014	17.5%	14.9%	10.3%
2015	17.7%	15.1%	10.5%
2016	17.8%	15.1%	10.6%
2017	17.9%	15.2%	10.7%
2018	17.9%	15.2%	10.8%
2019	18.0%	15.3%	10.9%
2020	18.0%	15.3%	11.1%
2021	18.1%	15.4%	11.2%
2022	18.1%	15.4%	11.4%
2023	18.2%	15.4%	11.5%
2024	18.2%	15.4%	11.8%
2025	18.2%	15.4%	11.8%
2026	18.1%	15.4%	11.9%
2027	18.1%	15.4%	11.9%
2028	18.1%	15.4%	11.9%
2029	18.1%	15.4%	11.9%
2030	18.0%	15.3%	11.9%
2031	18.0%	15.3%	11.9%
2032	17.9%	15.2%	11.9%
2033	17.9%	15.2%	11.9%

Source: Navigant analysis, 2014

Figure 13 displays cumulative technical, achievable, and cost-effective achievable demand savings potential for the years 2014 through 2033. This graph shows peak demand savings for both summer and winter peak periods. Although electric and gas savings graphs in this section show potential as a percentage of baseline forecast sales, demand charts include only absolute values for potential. Cost-effective achievable peak demand savings for summer increases steadily from 442 MW in 2014 to 640 MW in 2033, while winter peak demand savings increases from 530 MW in 2014 to 801 MW in 2033. Winter peak demand savings are consistently higher than summer peak demand savings over the study period, which is to be expected since the Northwest region is winter peaking. Table 3-2 presents a tabulated version of the results shown in Figure 13.

Figure 13. Cumulative Demand Savings (Seasonal Peak MW) – with ETs



Source: Navigant analysis, 2014

Table 3-2. Cumulative Seasonal Demand Savings (MW) – with ETs

	Summer			Winter		
Year	Technical	Achievable	Cost-Effective Achievable	Technical	Achievable	Cost-Effective Achievable
2014	693	589	442	956	813	530
2015	711	604	452	976	830	544
2016	730	620	468	999	849	563
2017	745	633	478	1017	865	577
2018	759	645	490	1035	880	591
2019	776	659	501	1055	897	607
2020	788	670	513	1073	912	626
2021	799	679	521	1087	924	637
2022	810	689	541	1102	937	659
2023	821	698	551	1117	949	677
2024	832	707	574	1133	963	702
2025	841	715	582	1145	974	714
2026	851	723	590	1159	985	725
2027	861	731	597	1173	997	736
2028	871	741	606	1189	1010	749
2029	880	748	614	1200	1020	760
2030	889	755	620	1213	1031	770
2031	898	763	627	1226	1042	780
2032	908	772	635	1241	1055	792
2033	916	779	640	1252	1064	801

Source: Navigant analysis, 2014

3.1.2 Energy Trust Natural Gas Potential

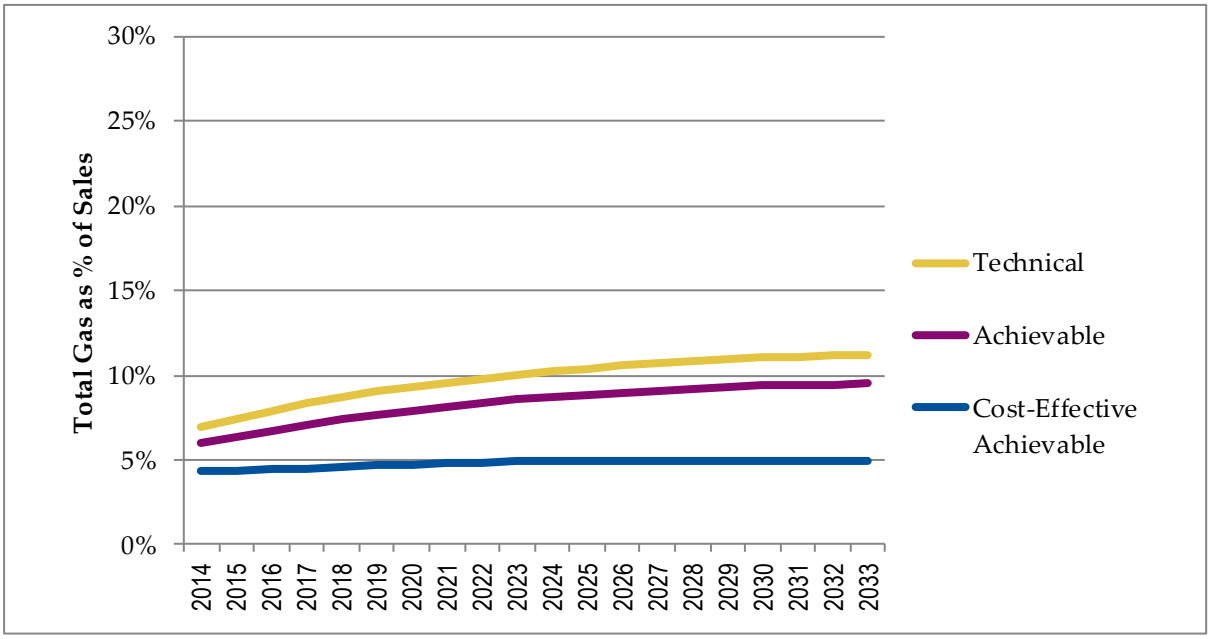
Energy Trust cumulative technical, achievable and cost-effective achievable gas savings potential as a percentage of baseline forecast gas sales for conventional measures (i.e. excluding emerging technologies) is presented in Figure 15. Technical gas potential increases steadily from 7% to 11% over the forecast horizon. This increase in gas technical potential over the 20-year horizon is driven by growth in ROB and NEW gas measures. ROB gas potential increases in the outer years as the baseline stock begins to turn over, creating additional opportunities for savings over time. Cost-effective achievable gas potential rises from about 4.3% in 2014 to 4.9% in 2033. This forecast of cost-effective achievable gas potential is low compared with technical and achievable potential. Currently low natural gas prices result in low gas avoided costs, which result in relatively low benefits in the TRC calculation, making it difficult for gas measures to pass cost-effectiveness. Navigant notes that this phenomenon of low gas prices making it difficult for gas measures to pass cost-effectiveness criteria is a nationwide one[25].

Figure 15 presents the same result as shown in Figure 15, except that it also includes savings from emerging technology gas measures. Technical potential represents 13.7% of gas sales, while cost-effective

[25] See Hoffman I., Borgeson M., and Zimring M., (2013). Implications of Cost Effectiveness Screening Practices in a Low Natural Gas Price Environment: Case Study of a Midwestern Residential Energy Upgrade Program. Clean Energy Program Policy Brief. http://eetd.lbl.gov

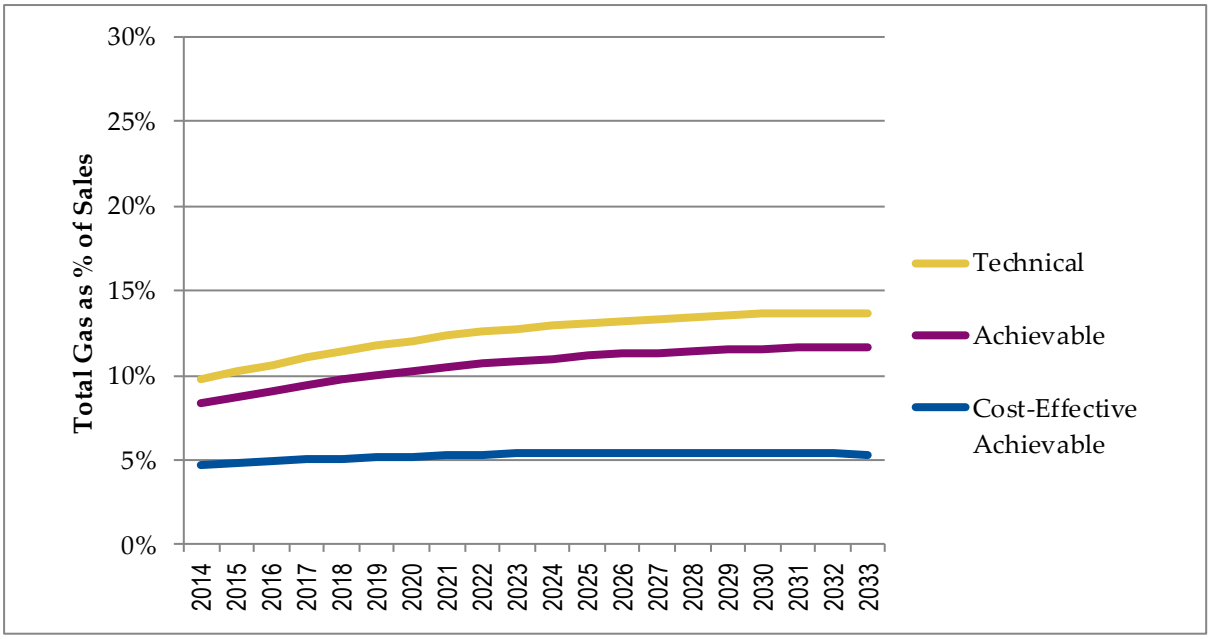
achievable potential represents 5.3% by 2033. Window replacement (U<0.2), gas-fired heat pump water heaters, and smart devices home automation account for the bulk of cost-effective emerging technology gas savings over the study period. Table 3-3 presents a tabulated version of the results shown in Figure 15.

Figure 14. Cumulative Gas Savings Potential (% of Sales) – without ETs



Source: Navigant analysis, 2014

Figure 15. Cumulative Gas Savings Potential (% of Sales) – with ETs



Source: Navigant analysis, 2014

Table 3-3. Cumulative Gas Savings (% of Sales) – with ETs

Year	Technical	Achievable	Cost-Effective Achievable
2014	9.8%	8.3%	4.7%
2015	10.2%	8.7%	4.8%
2016	10.6%	9.0%	4.9%
2017	11.1%	9.4%	5.0%
2018	11.4%	9.7%	5.1%
2019	11.8%	10.0%	5.2%
2020	12.0%	10.2%	5.2%
2021	12.3%	10.5%	5.2%
2022	12.6%	10.7%	5.3%
2023	12.8%	10.8%	5.4%
2024	12.9%	11.0%	5.4%
2025	13.1%	11.1%	5.4%
2026	13.2%	11.2%	5.4%
2027	13.3%	11.3%	5.4%
2028	13.4%	11.4%	5.4%
2029	13.5%	11.5%	5.4%
2030	13.6%	11.6%	5.4%
2031	13.7%	11.6%	5.4%
2032	13.7%	11.6%	5.4%
2033	13.7%	11.6%	5.3%

Source: Navigant analysis, 2014

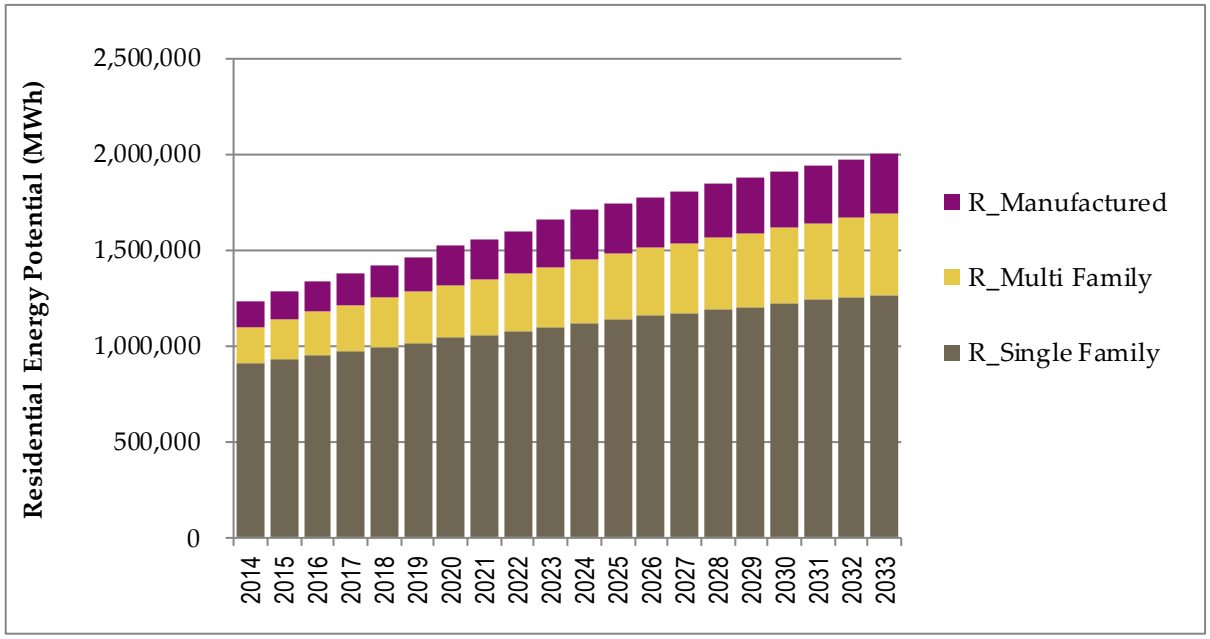
4 Energy Efficiency Potential in Energy Trust's Residential Sector

This section provides estimates of energy and gas savings for residential buildings, including SF homes, MF structures, and MH. All the results shown in this section are estimates of risk-adjusted tiered cost-effective achievable potential for the various impact types (i.e., energy, demand, and gas), and include savings potential for both conventional and emerging technology measures.

4.1 Residential Cost-effective Achievable Potential – Customer Segment

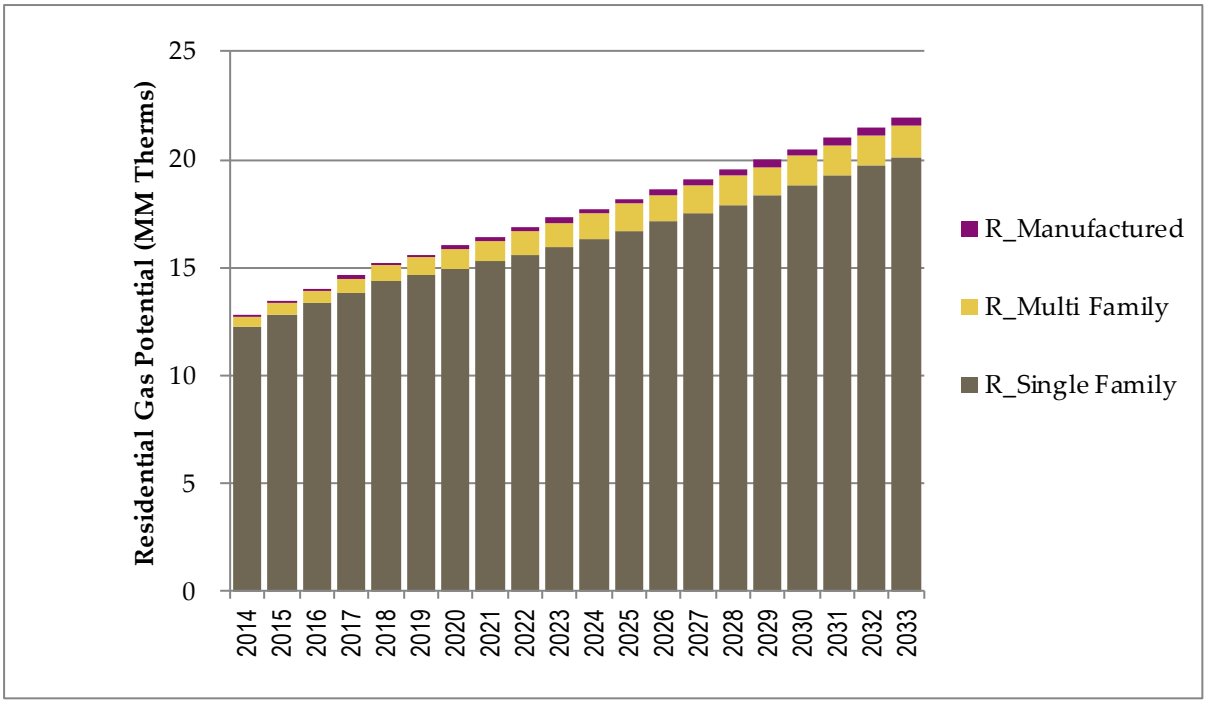
Navigant modeled the savings potential for each measure in each of three different customer segments. Cumulative cost-effective achievable potential for each impact type (i.e., energy, demand and gas savings) is provided in Figure 16 through Figure 17. The majority of residential energy efficiency potential comes from single family homes. For electric energy savings, single family homes account for 63% of cumulative cost-effective achievable potential by 2033, while for gas savings, they account for about 92% of cumulative cost-effective achievable potential. A key reason for this difference is that while the distribution of electric measures between the three segments is more even, the number of gas measures applicable to single family homes is much higher compared with the other two segments.

Figure 16. Cumulative Residential Cost-effective Energy Savings (MWh) by Customer Segment



Source: Navigant analysis, 2014

Figure 17. Cumulative Residential Cost-effective Gas Savings (MMtherms) by Customer Segment



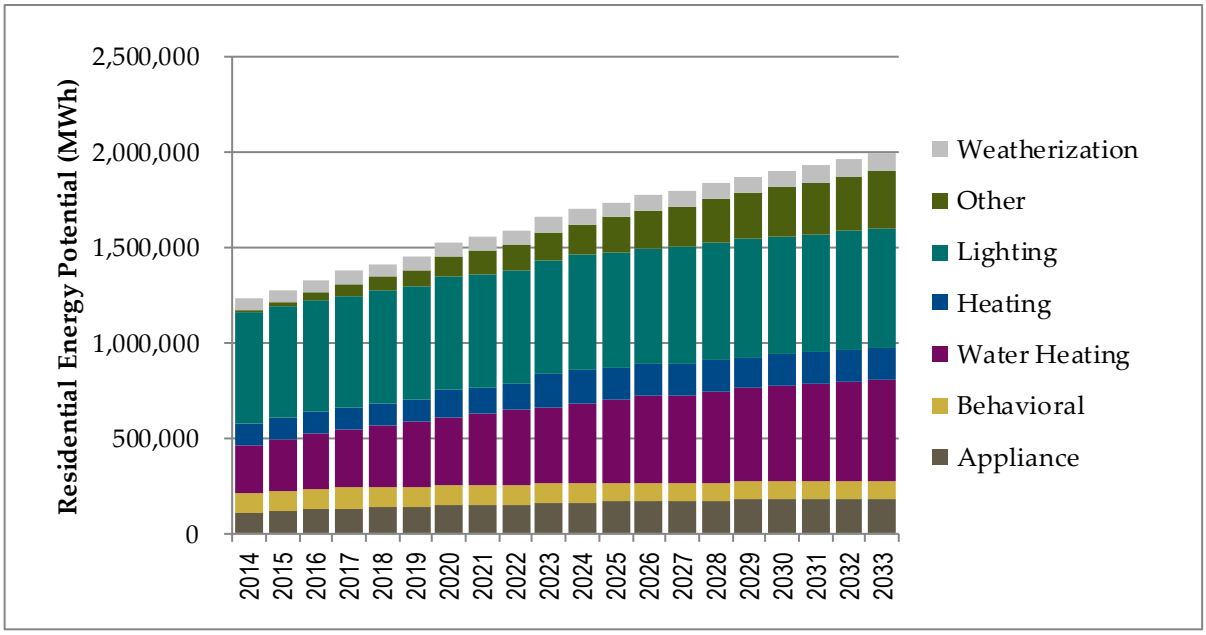
Source: Navigant analysis, 2014

4.2 Residential Cost-Effective Achievable Potential – End Use

Navigant calculated savings potential at the measure level and customer segment level before aggregating these results into six residential end-use categories. End-use categories provide a useful way to categorize and roll-up measure-level savings while also providing a high-level perspective of the measures in that category. As can be seen in Figure 18 through Figure 19, lighting and water heating measures account for a bulk of the residential energy and demand savings potential. By 2033, it is estimated that lighting and water heating measures will contribute up to 58% of cost-effective achievable electric energy potential, with heating and appliance measures contributing about 8% and 9% respectively.

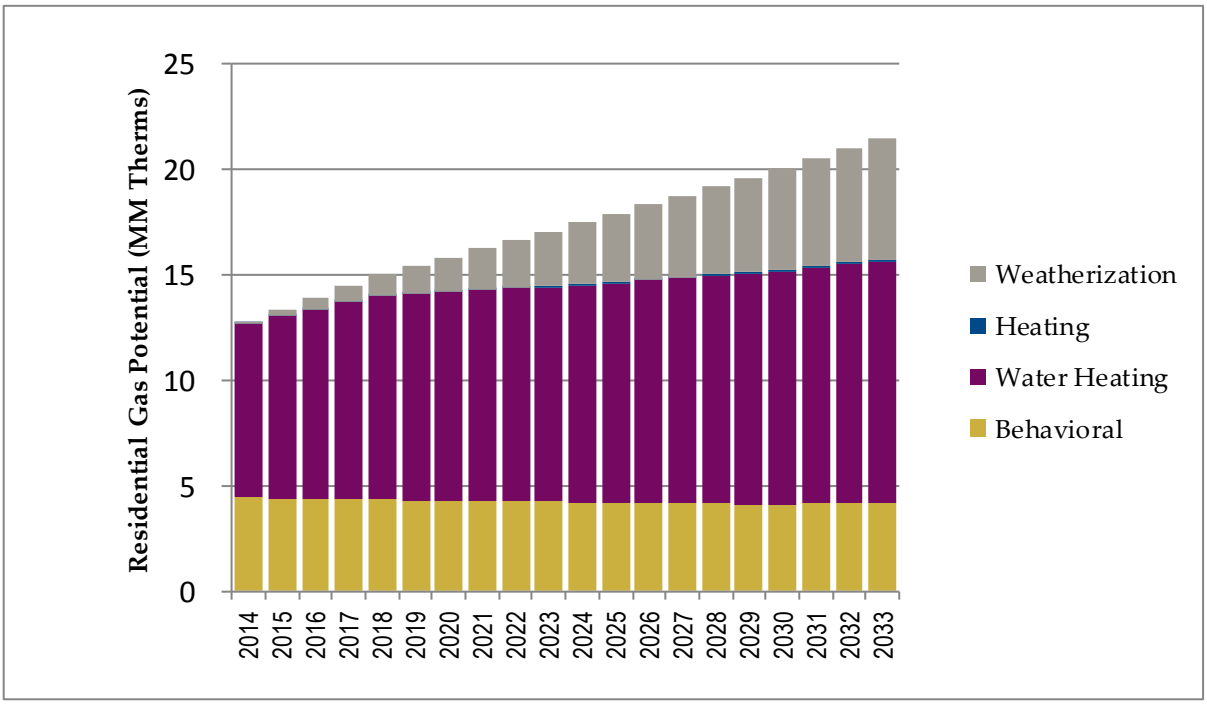
Figure 19 shows the cumulative cost-effective achievable potential for gas energy savings by end-use category for the residential sector. The main drivers of gas savings potential over the forecast horizon are water heating and weatherization measures. In particular, showerheads and window replacement savings contribute significantly toward cost-effective gas potential. Additional detail about the measures that drive overall energy and gas savings results can be found in section 4.4.

Figure 18. Cumulative Residential Cost-effective Energy Savings (MWh) by End Use



Source: Navigant analysis, 2014

Figure 19. Cumulative Residential Cost-effective Gas Savings (MMtherms) by End Use

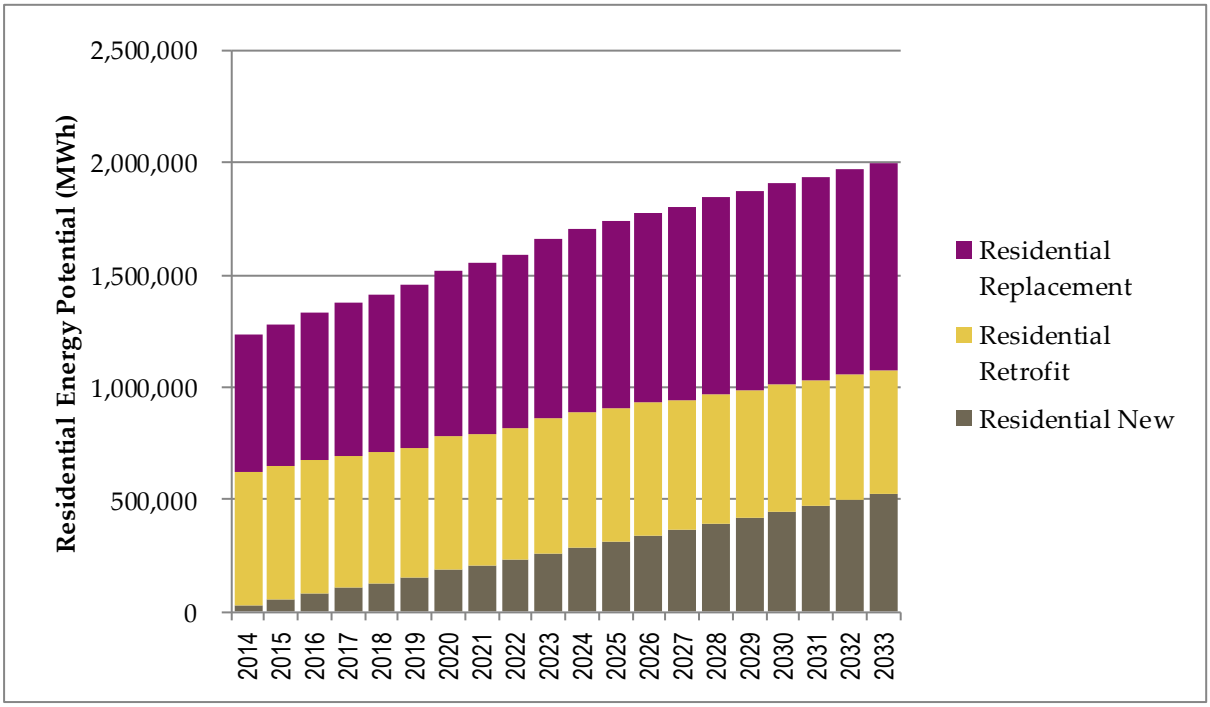


Source: Navigant analysis, 2014

4.3 *Residential Cost-effective Achievable Potential – Program*

Navigant mapped measure-level output of the model to program types, which are defined by Energy Trust as the combination of sector (e.g., Residential, Commercial, Industrial) and replacement type (e.g., New Construction, Retrofit, Replacement). For example, "Residential Replacement" in Figure 20 shows the cumulative cost-effective achievable potential for ROB measures over the 20-year forecast horizon. Figure 20 shows that the majority of electric energy savings comes from ROB measures. In particular, CFLs and heat pump water heaters dominate ROB electric energy savings potential, while retrofit electric energy savings are driven primarily by showerheads and faucet aerators.

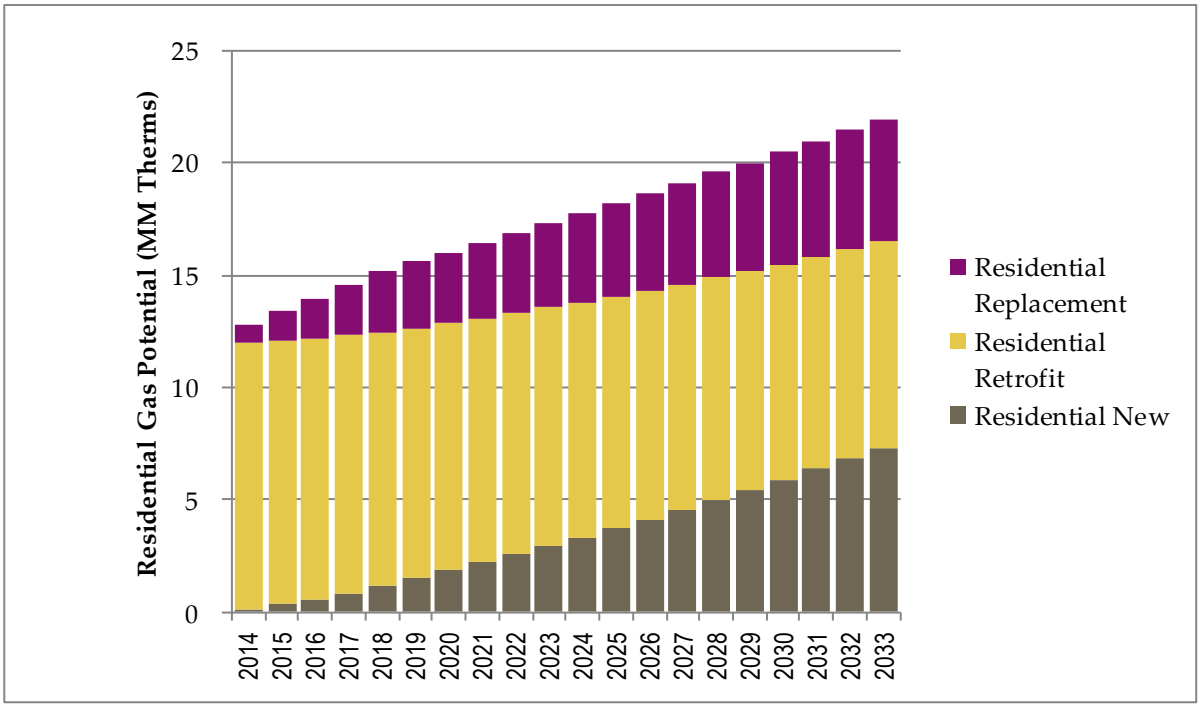
Figure 20. Cumulative Residential Cost-effective Energy Savings (MWh) by Program Type



Source: Navigant analysis, 2014

Figure 21 shows cost-effective achievable gas potential by program type. This graph shows that while potential in the early years is dominated by retrofit measures (e.g., showerheads, faucet aerators and behavior savings), future potential in outer years is also driven by ROB and NEW measures, especially windows replacements and absorption gas heat pump water heaters. See Appendix B for more measure-level detail of potential by program type.

Figure 21. Cumulative Residential Cost-effective Gas Savings (MMtherms) by Program Type

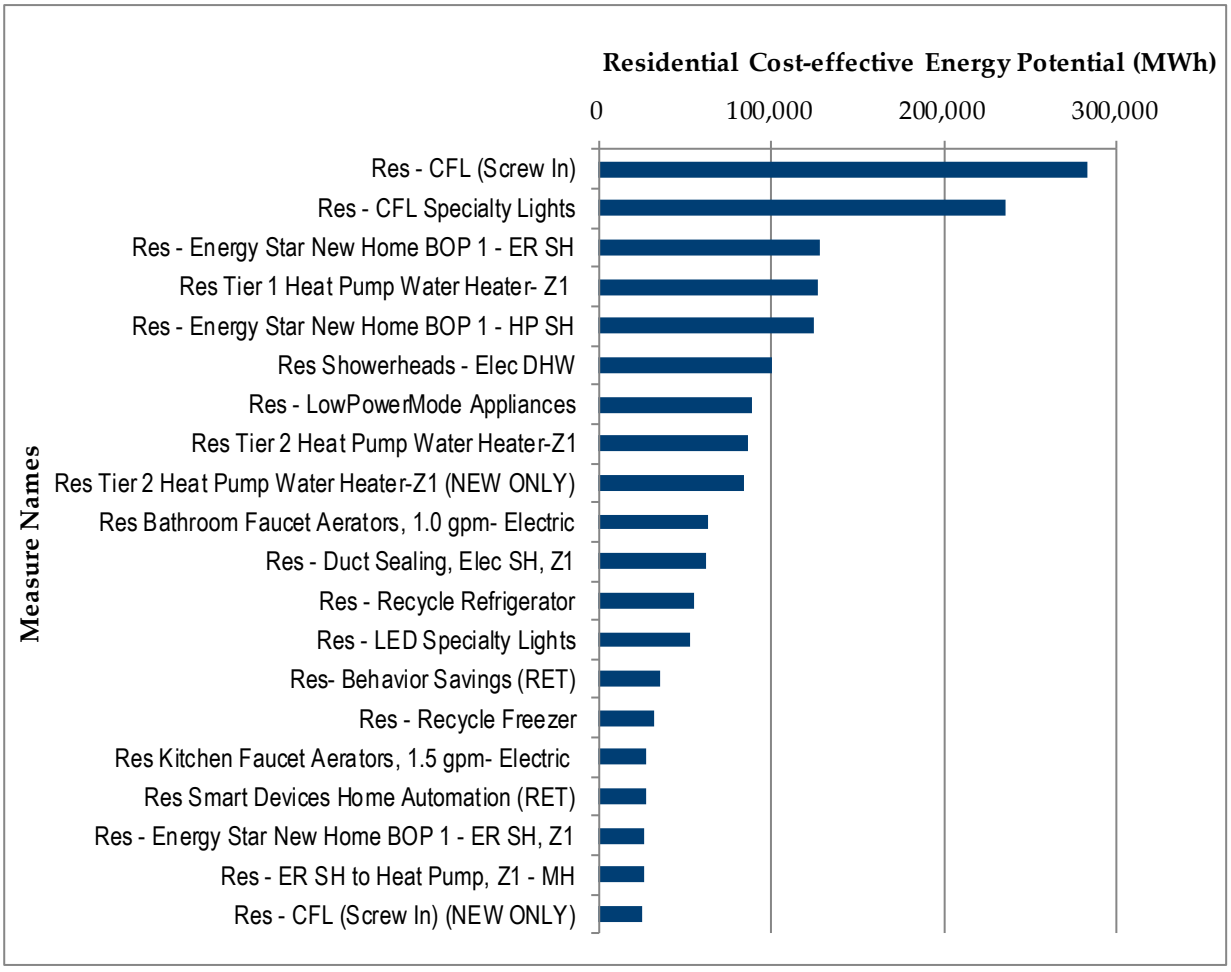


Source: Navigant analysis, 2014

4.4 *Histograms of Top 20 Residential Measures*

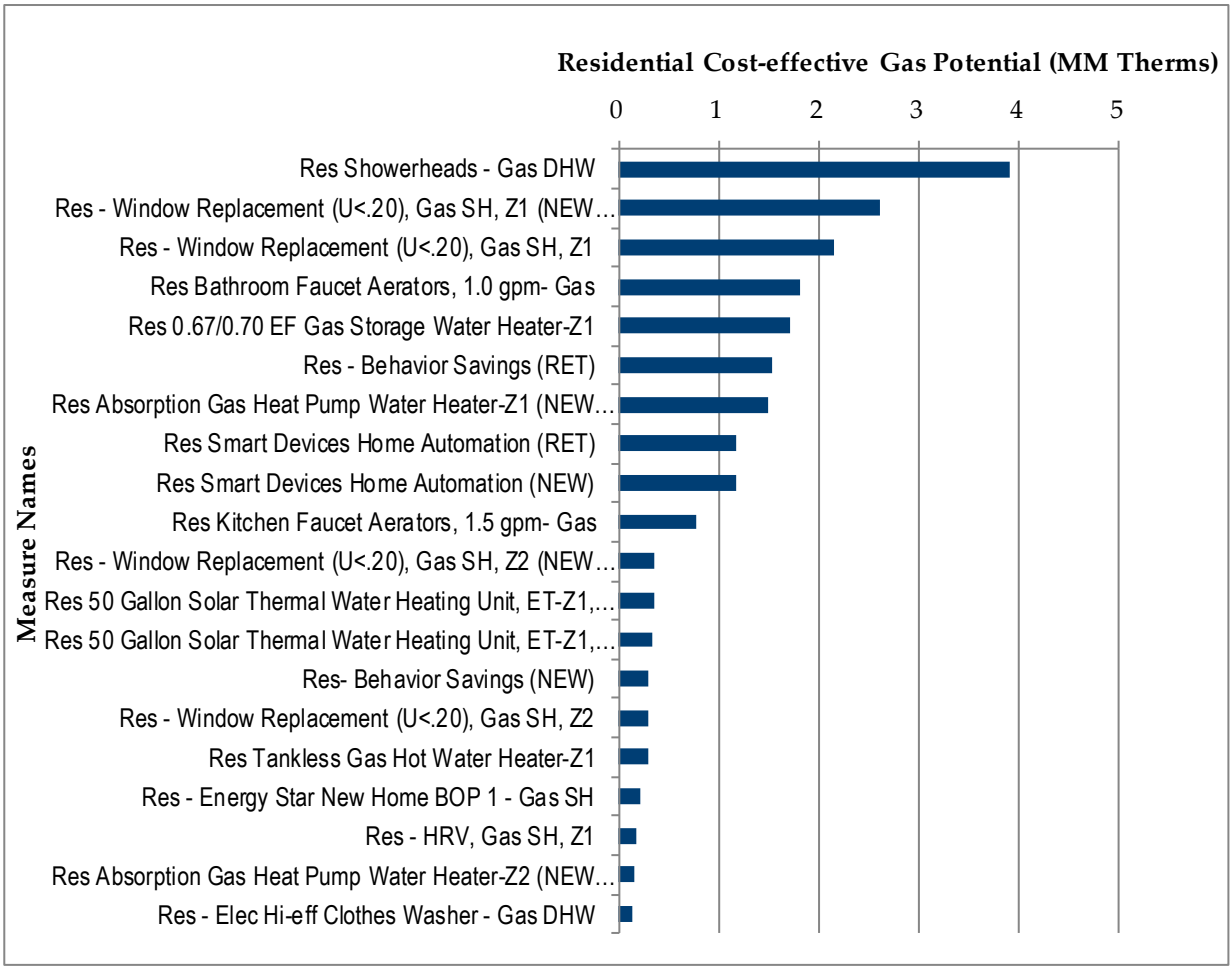
It is common in potential studies for a small number of measures to account for a majority of the savings. Figure 22 and Figure 23 provide a set of histograms showing the cumulative achievable potential by 2033 of the top 20 electric and gas measures in Energy Trust's residential sector. These measures represent over 90% of the total cost-effective achievable potential for both electric and gas measures. For electric potential, the top three measures are residential screw-in CFLs, specialty CFLs and ENERGY STAR New Home BOP – Space Heat. For gas potential, the top three measures are showerheads, window replacement measures, and faucet aerators. For more details on measure-level savings, refer to Appendix B.

Figure 22. Top 20 Residential Electric Measures by 2033



Source: Navigant analysis, 2014

Figure 23. Top 20 Residential Gas Measures by 2033



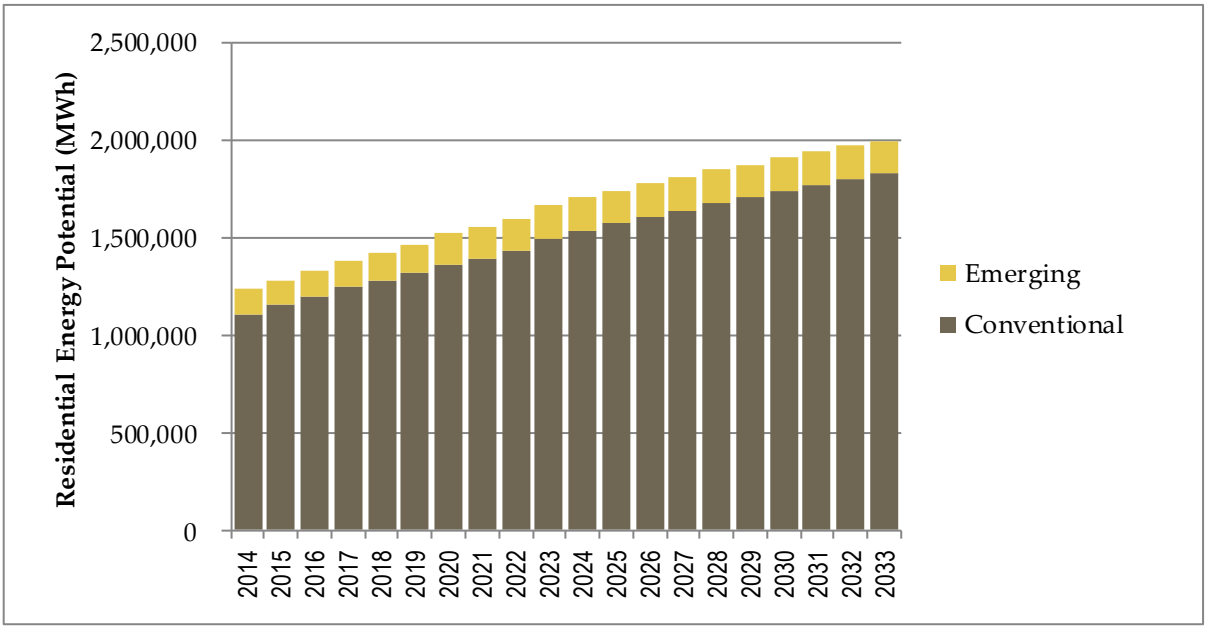
Source: Navigant analysis, 2014

4.5 Residential Emerging Technology Results

Navigant's modeling approach includes an emerging technology (ET) overlay that enables the model to capture the range of possible savings from ETs due to cost and efficiency improvements over time. Additionally, the model also accounts for an ET risk factor (see section 2.1 for details on ET measure characterization) to capture the inherent uncertainty in future market development of ETs. As described in section 2.2.3, a tiered approach was used to estimate savings among efficient measures that compete for the same installation. Therefore, ET measures compete with conventional measures within a competition group, and their cost-effectiveness is assessed on an incremental basis relative to the next highest rank within the competition group. Figure 24 and Figure 25 show the contribution of emerging and conventional measures toward cumulative risk-adjusted cost-effective achievable (electric and gas) potential for the residential sector. For electric potential, emerging technology savings over the 20-year forecast horizon are small compared with conventional measure savings; by 2033, ETs contribute about 8% of total cost-effective achievable electric energy potential. There are two reasons for this:

1. Energy saving ETs are incrementally less cost-effective compared with competing conventional technologies. In other words, there is not a lot of incremental (relative to the next most cost-effective measure) cost-effective achievable ET savings in the calculation of tiered potential (since the measure against which it is compared is already more efficient than the baseline measure).
2. The application of ET risk factors (to account for uncertainty in ET savings) reduces the total tiered potential of ETs. The inclusion of a risk factor reduces cumulative cost-effective achievable potential of ETs by 60% in 2033.

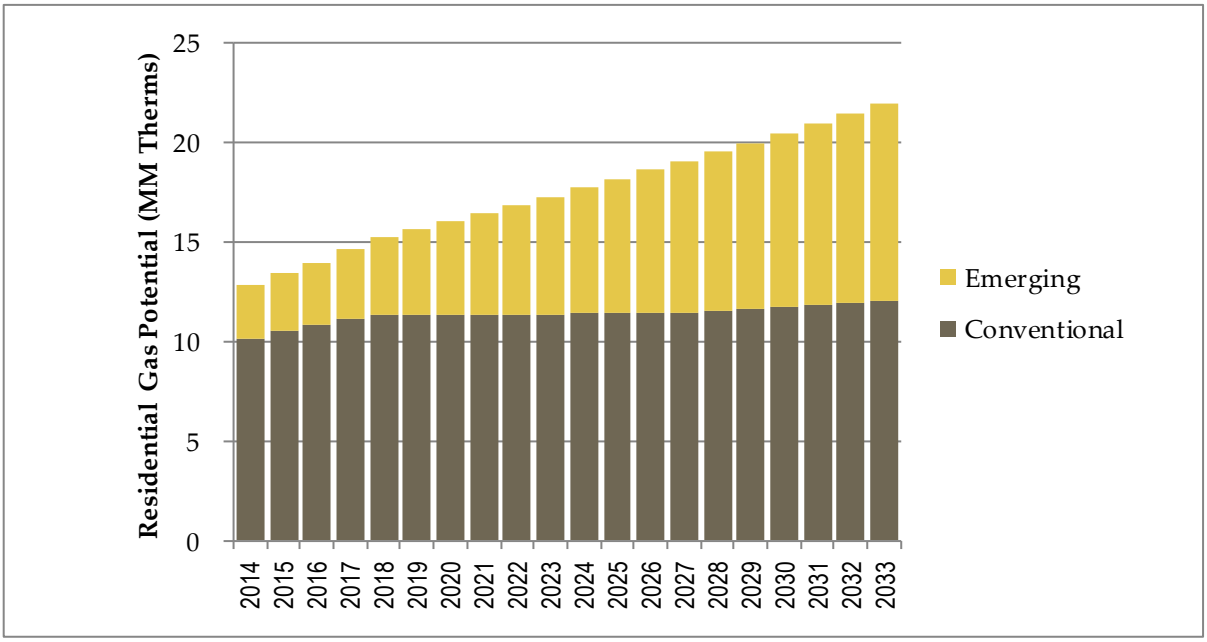
Figure 24. Cumulative Residential Cost-effective Energy Savings (MWh)-Emerging vs. Conventional



Source: Navigant analysis, 2014

Figure 25 shows that gas ETs have a more significant impact on future gas savings. Smart devices home automation, absorption gas heat pump water heater, and windows replacement measures contribute a bulk of the future gas potential.

Figure 25. Cumulative Residential Cost-effective Gas Savings (MMtherms)-Emerging vs. Conventional



Source: Navigant analysis, 2014

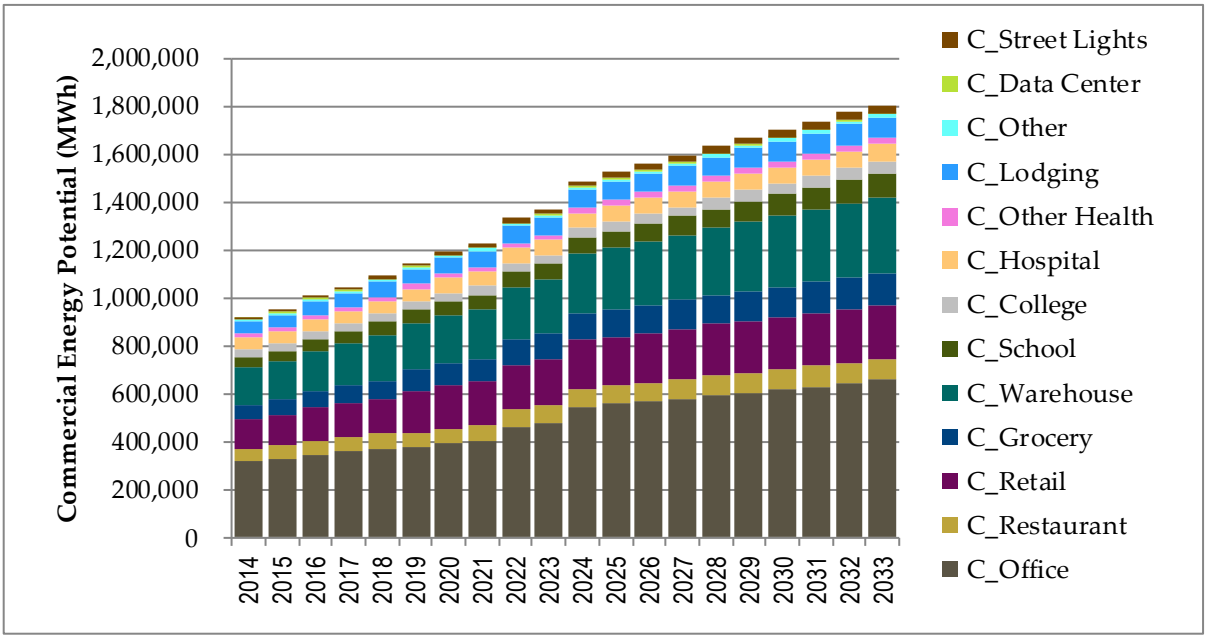
5 Energy Efficiency Potential in Energy Trust's Commercial Sector

This section provides estimates of electric energy and gas savings for all commercial buildings, including existing and new construction buildings. All the results shown in this section are estimates of risk-adjusted tiered cost-effective achievable potential for the electric energy and gas impact types, and include savings potential for both conventional and emerging technology measures.

5.1 Commercial Cost-Effective Achievable Potential – Customer Segment

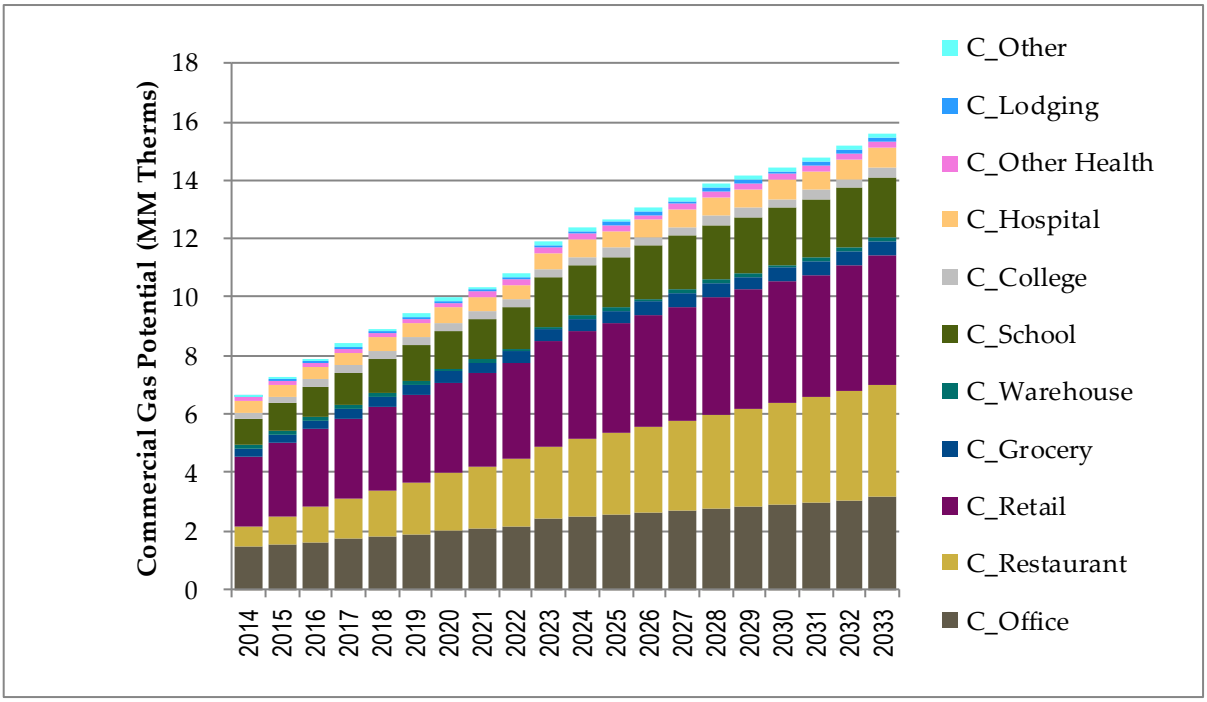
Navigant estimated the savings potential in thirteen different commercial customer segments as shown in Figure 26 and Figure 27. For electric energy savings, commercial offices offer the largest potential for savings accounting for 36% of cumulative cost-effective achievable potential by 2033. Commercial retail and warehouse segments also contribute significantly toward overall potential, accounting for a combined 29% of cost-effective achievable potential by 2033. For commercial gas savings, the retail and restaurant segments show the largest potential for savings contributing 53% of total cost-effective achievable potential by 2033. The bump in gas savings in 2023 is attributable to the commercial wall insulation (R-11) measure becoming cost-effective starting in that year.

Figure 26. Cumulative Commercial Cost-effective Energy Savings (MWh) by Customer Segment



Source: Navigant analysis, 2014

Figure 27. Cumulative Commercial Cost-effective Gas Savings (MMtherms) by Customer Segment

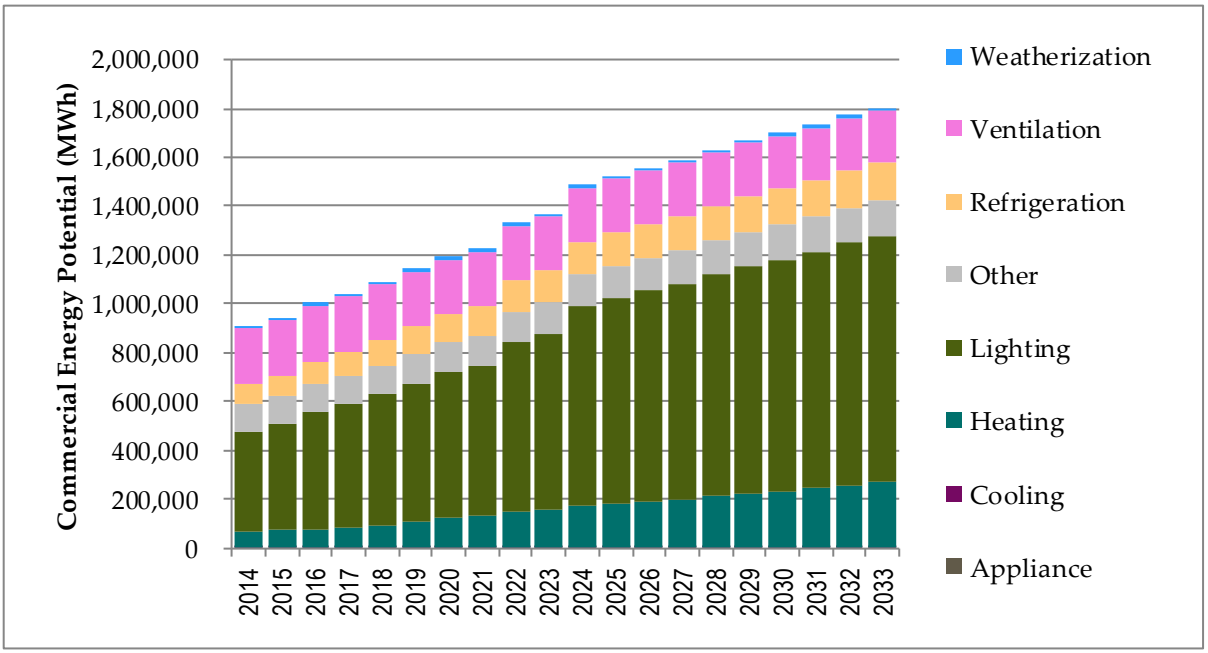


Source: Navigant analysis, 2014

5.2 *Commercial Cost-Effective Achievable Potential – End Use*

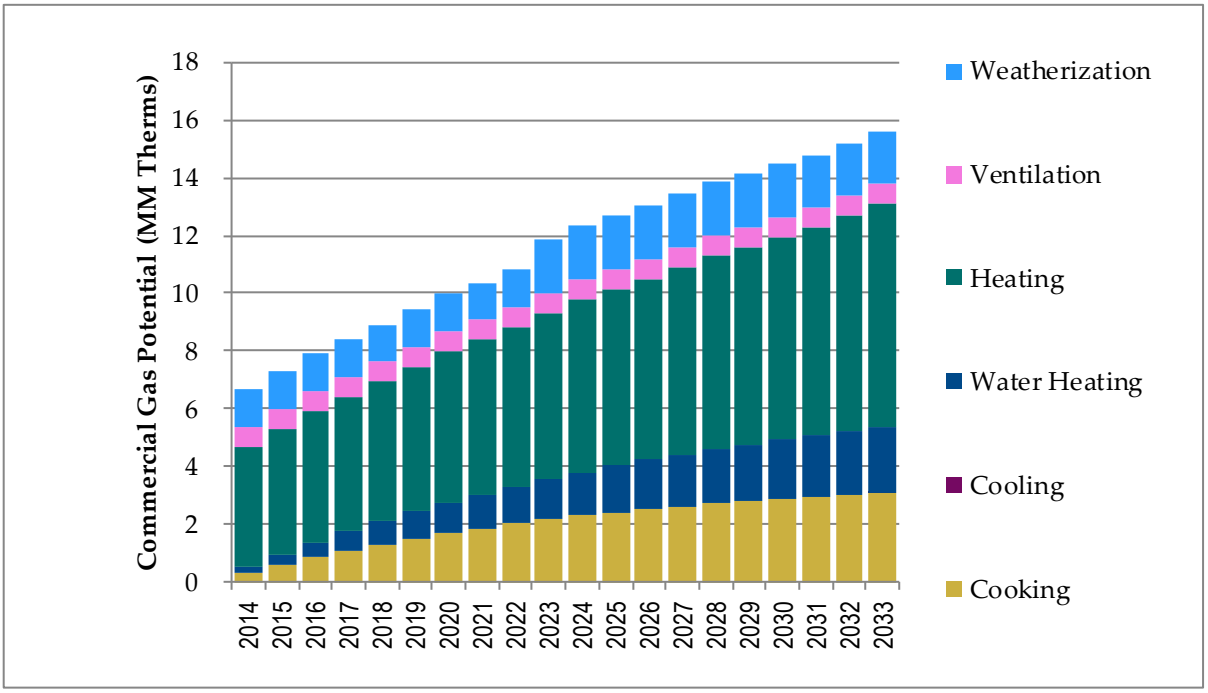
Navigant calculated cost-effective achievable potential at the measure level and customer segment level before aggregating results for the commercial sector into seven different end-use categories. Figure 28 and Figure 29 show the cumulative cost-effective achievable potential for electric and gas savings respectively, disaggregated by end-use category. For electric energy savings, commercial lighting contributes up to 54% of total cost-effective achievable potential by 2033. In particular, commercial lighting savings are driven by CFLs, LED troffers, and exterior LEDs. Ventilation and refrigeration contribute about 20% toward total cost-effective achievable electric energy potential by 2033. For gas savings, heating and cooking measures provide the largest savings opportunity by 2033, driven largely by demand control ventilation, Direct Digital Control (DDC) HVAC controls, and condensing tankless water heaters. Additional detail regarding high impact commercial measures can be found in section 5.4.

Figure 28. Cumulative Commercial Cost-effective Energy Savings (MWh) by End Use



Source: Navigant analysis, 2014

Figure 29. Cumulative Commercial Cost-effective Gas Savings (MMtherms) by End Use

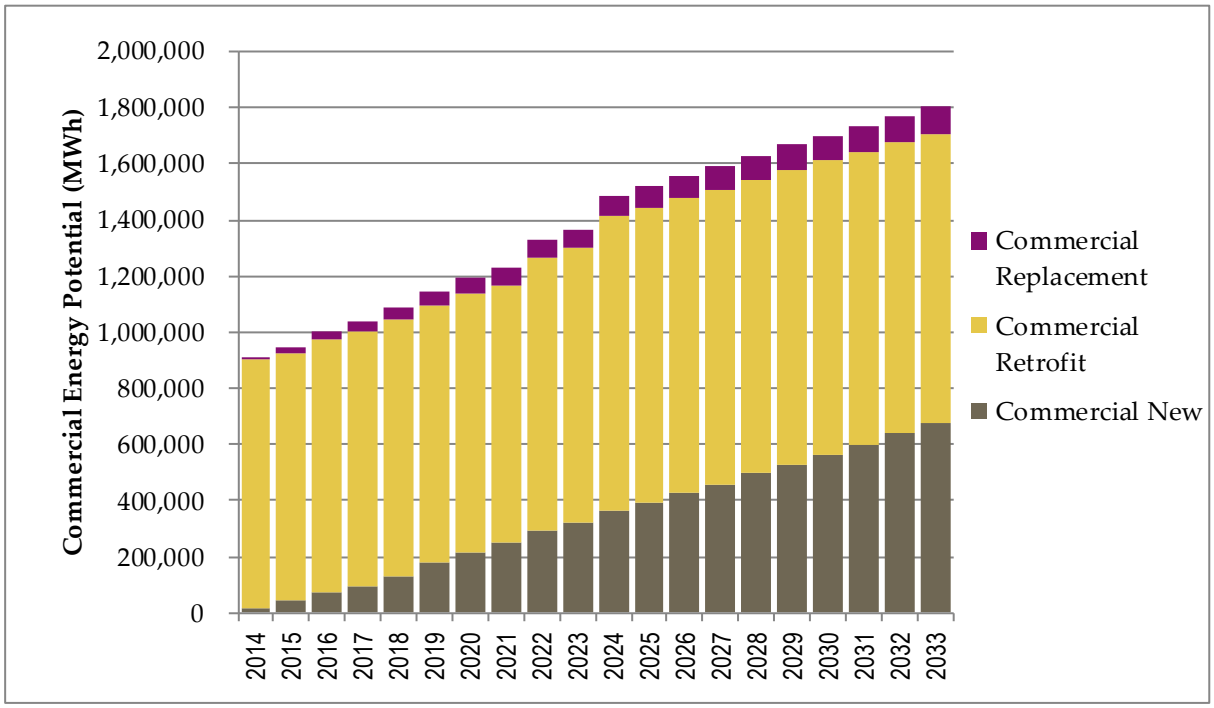


Source: Navigant analysis, 2014

5.3 *Commercial Cost-Effective Achievable Potential – Program*

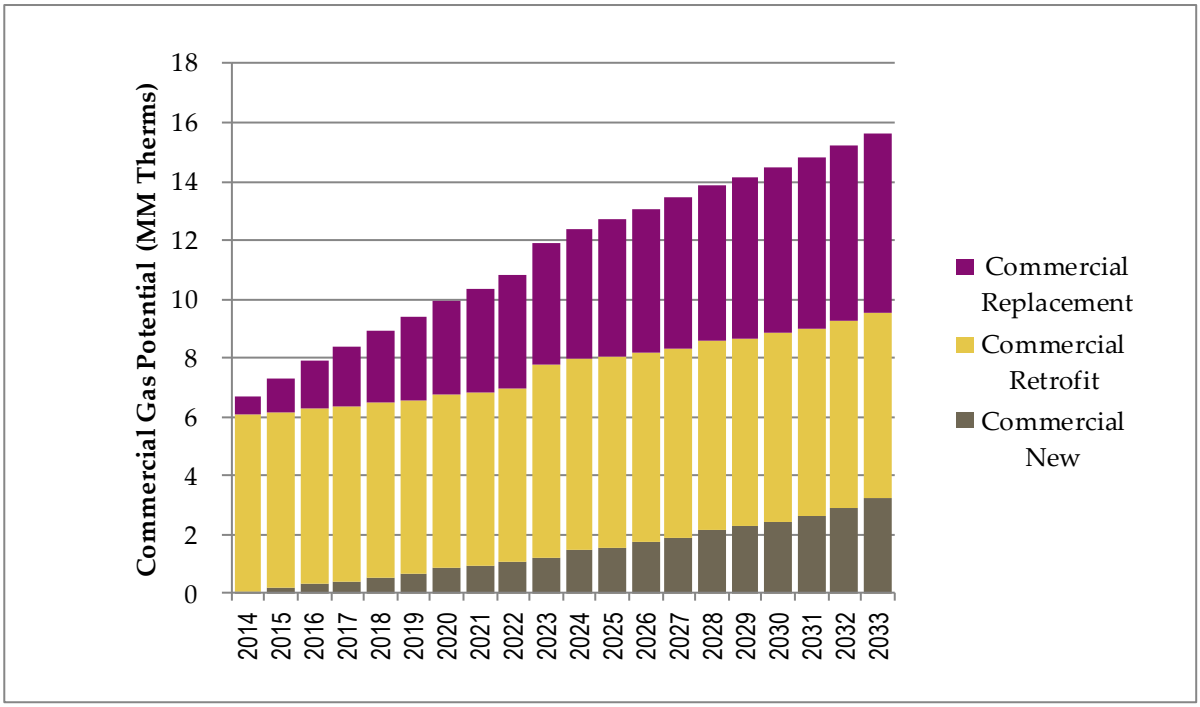
This subsection presents details about commercial electric energy and gas savings disaggregated by program type (e.g., New Construction, Retrofit, and Replacement). Figure 30 and Figure 31 show cumulative cost-effective achievable potential for electric and gas savings measures by program type. Commercial retrofit and new construction measures account for 90% of total cost-effective achievable electric energy savings potential by 2033. In particular, commercial lighting measures, which are characterized as retrofit, account for a bulk of these savings along with demand control ventilation and advanced ventilation controls. The modeling of lighting measures as retrofit implies that, unlike in the residential sector, commercial lighting savings are not constrained by the rate at which the base measure stock turns over. For gas savings, Figure 31 shows that commercial replacement measures contribute significantly toward cost-effective achievable potential by 2033, in addition to retrofit measures. In particular, cooking (e.g., ENERGY STAR fryer) and water heating (e.g., condensing tankless DHW) measures are key drivers of ROB gas savings by 2033, while heating measures (e.g., demand control ventilation) drive retrofit gas savings by 2033. See Appendix B for more measure-level detail of potential by program type.

Figure 30. Cumulative Commercial Cost-effective Energy Savings (MWh) by Program Type



Source: Navigant analysis, 2014

Figure 31. Cumulative Commercial Cost-effective Gas Savings (MMtherms) by Program Type

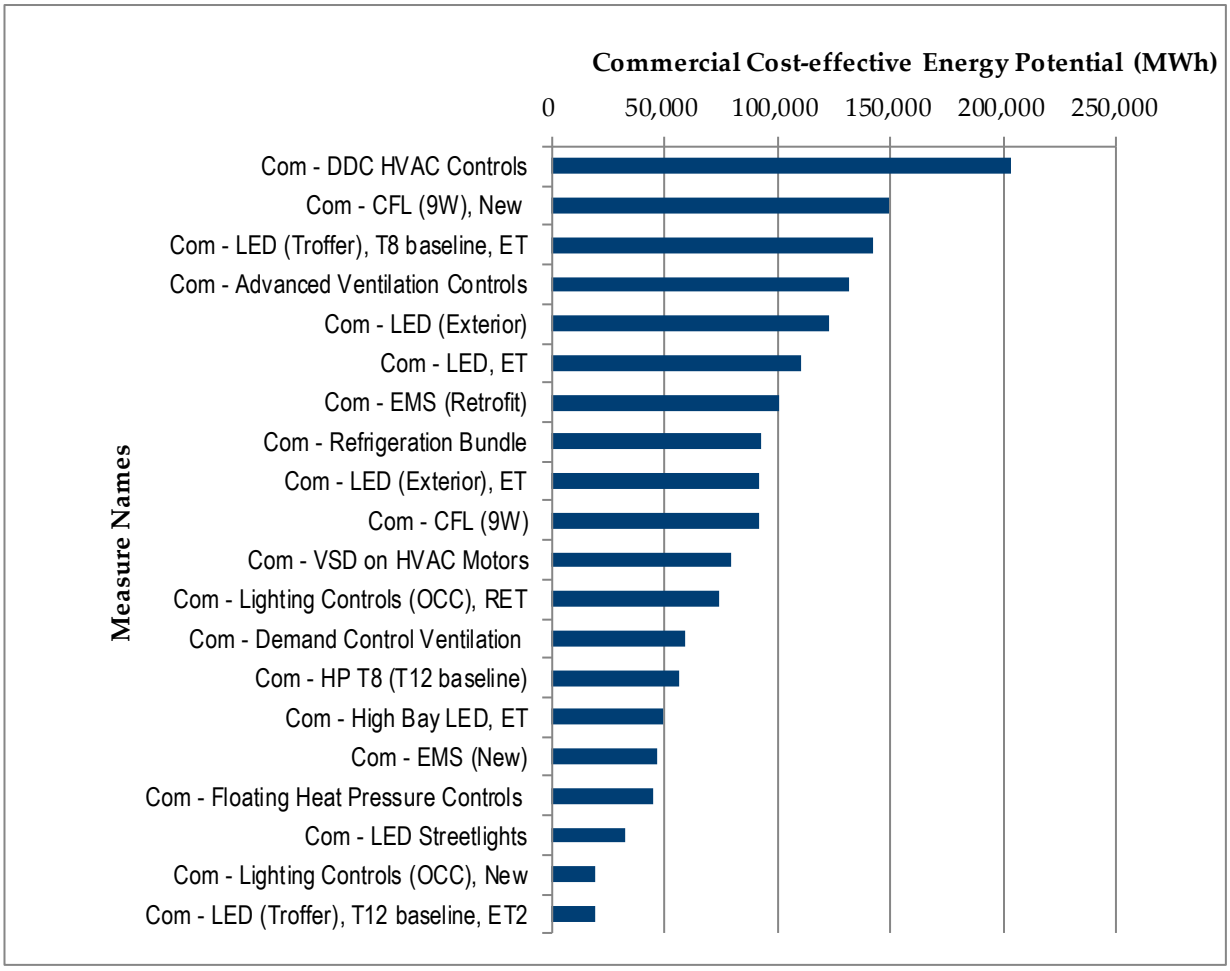


Source: Navigant analysis, 2014

5.4 Histograms of Top 20 Commercial Measures

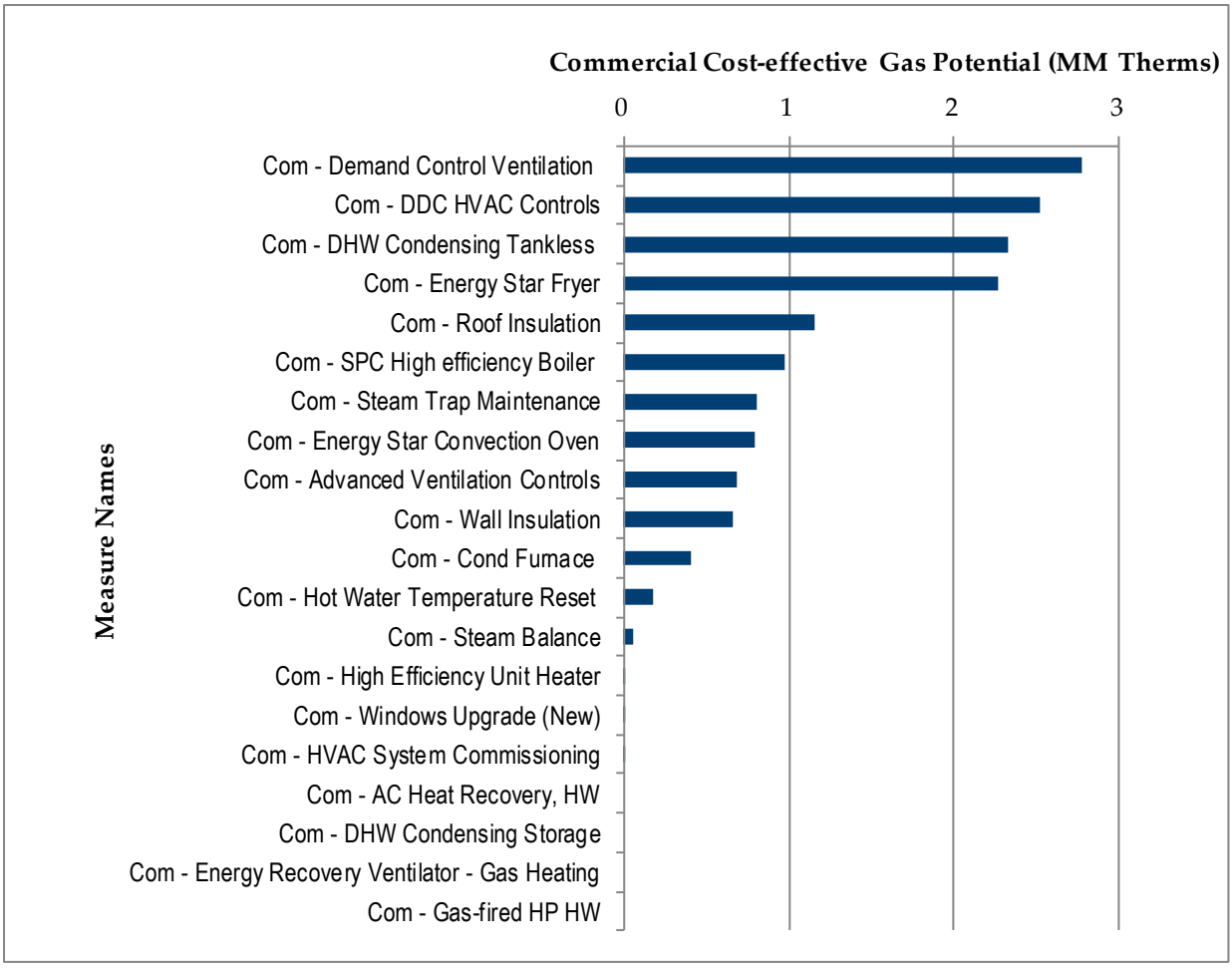
Figure 32 and Figure 33 provide a set of histograms showing the cumulative cost-effective achievable potential by 2033 of the top 20 high impact (electric and gas) measures in Energy Trust's commercial sector. These measures represent over 90% of the total cost-effective achievable potential within the commercial sector. For electric measures, the top three measures are DDC HVAC Controls, CFLs (9W), and LED troffers. Lighting measures have historically been high impact measures in the commercial sector and will continue to do so as LEDs become increasingly cost-effective over the study period. For gas measures, the top three measures are demand control ventilation, DDC HVAC Controls, and DHW condensing tankless water heaters. For more details on measure-level savings, refer to Appendix B.

Figure 32. Top 20 Commercial Electric Measures by 2033



Source: Navigant analysis, 2014

Figure 33. Top 20 Commercial Gas Measures by 2033

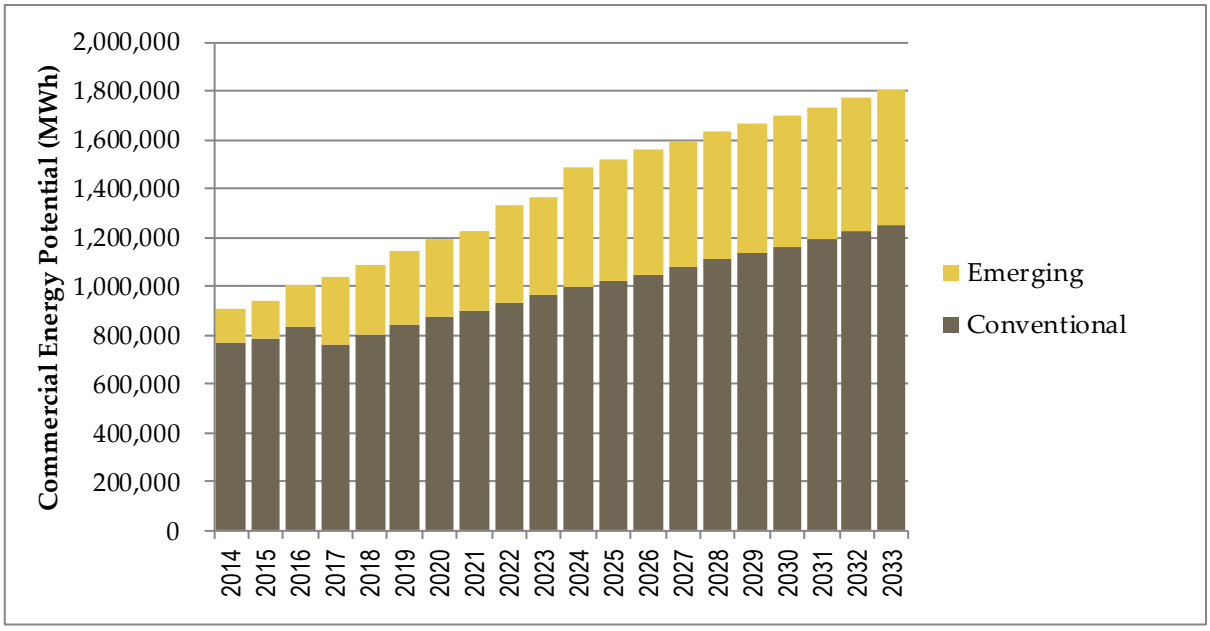


Source: Navigant analysis, 2014

5.5 Commercial Emerging Technology Results

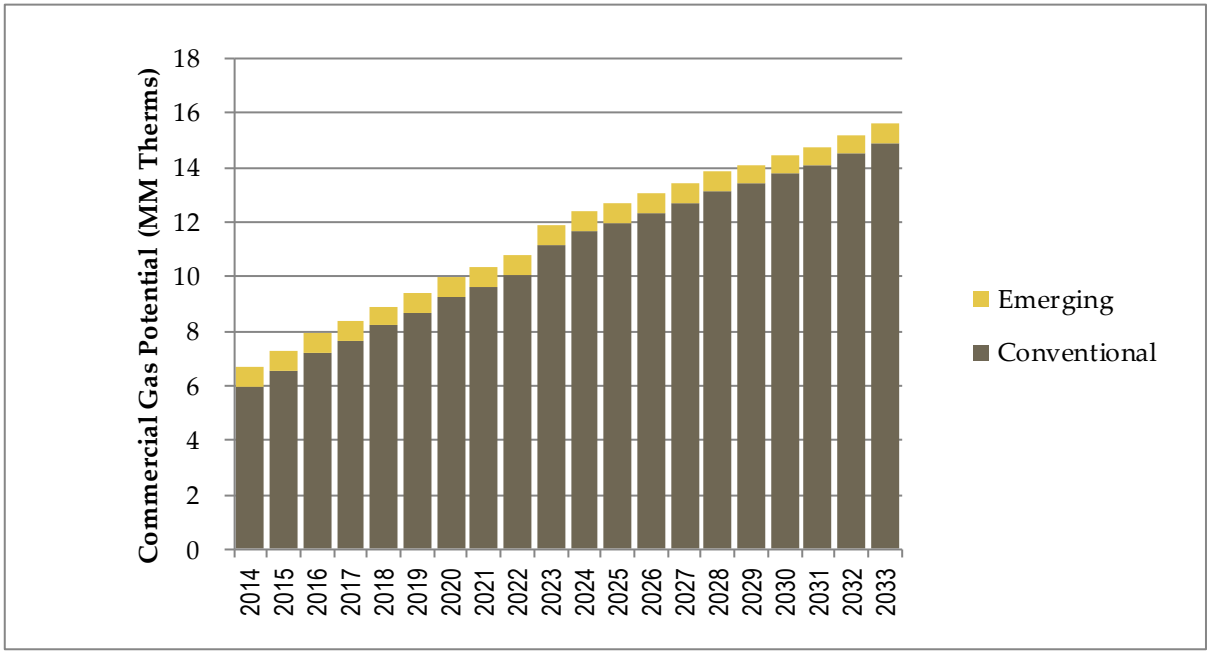
Figure 34 and Figure 35 show the contribution of emerging and conventional measures toward cumulative risk-adjusted cost-effective achievable (electric and gas) potential for the commercial sector. For electric energy potential, emerging technology measure savings are a key contributor toward overall cost-effective achievable potential. By 2033, ETs contribute about 30% of total cost-effective achievable potential, driven primarily by LEDs and advanced ventilation controls. For gas potential, apart from advanced ventilation controls, the emerging technology gas measures characterized by Navigant offer no cost-effective potential over the modeling period. The combination of high incremental costs for gas ETs and low avoided gas costs result in most of the commercial gas ET measures not screening the TRC test. While the costs for gas ETs might decrease over time, Navigant was unable to find any credible data sources that forecast a decrease over the study period.

Figure 34. Cumulative Commercial Cost-effective Energy Savings (MWh)-Emerging vs. Conventional



Source: Navigant analysis, 2014

Figure 35. Cumulative Commercial Cost-effective Gas Savings (MMtherms)-Emerging vs. Conventional



Source: Navigant analysis, 2014

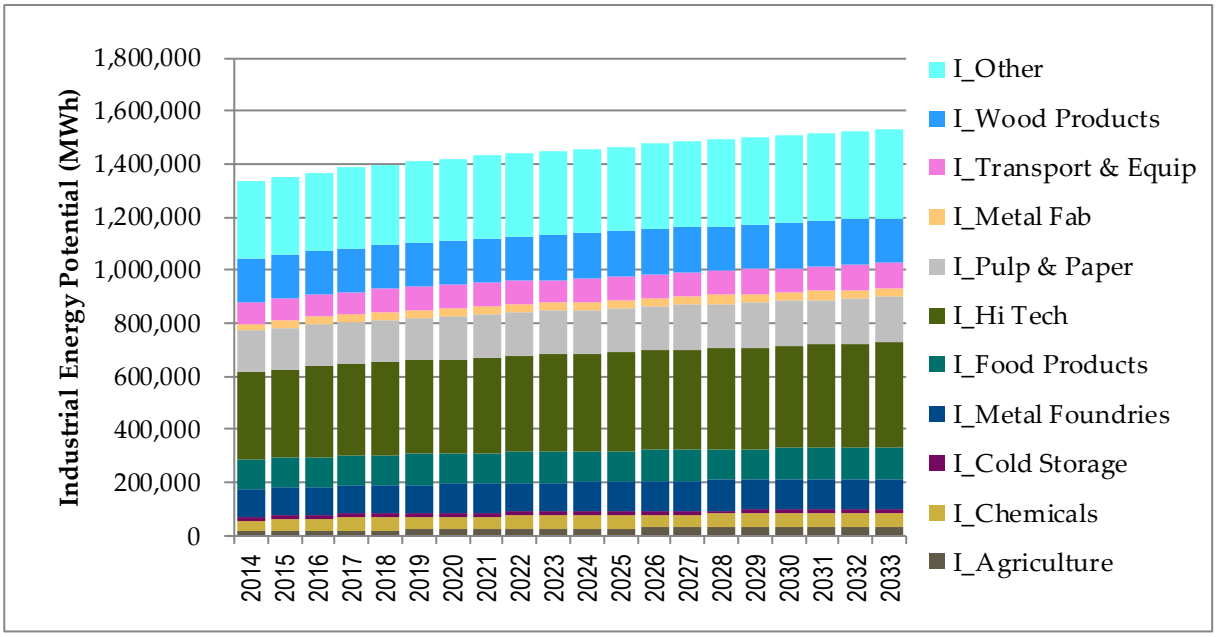
6 Energy Efficiency Potential in Energy Trust's Industrial Sector

This section provides estimates of electric energy and gas savings for the industrial sector. All the results shown in this section are estimates of risk-adjusted tiered cost-effective achievable potential for the electric energy and gas impact types, and include savings potential for both conventional and emerging technology measures. Navigant used a top-down approach to estimate potential for the industrial sector because of the diversity of end uses and custom nature of projects in the sector. Whereas total potential for the residential and commercial sectors are estimated based on the number of residential homes or square footage of building space, industrial potential is calculated using the load consumption forecast. While the companion Analytica model offers the ability to view disaggregated potential for different industrial customer classes (<1aMW,>1aMW, self-direct etc.), the results in this section show an aggregated view of industrial savings potential.

6.1 Industrial Cost-Effective Achievable Potential – Customer Segment

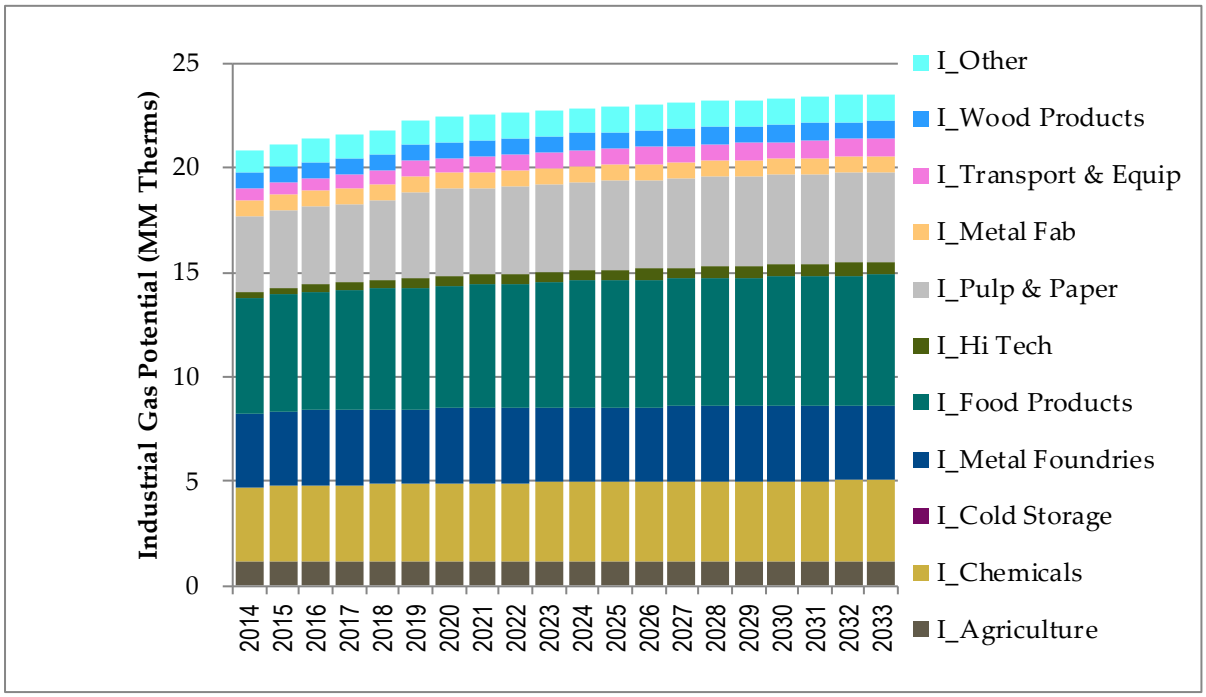
Navigant calculated the savings potential in eleven different industrial customer segments as shown in Figure 36 and Figure 37. For industrial electric potential, the hi-tech customer segment offers the largest savings accounting for 25% of the cost-effective achievable potential by 2033. This is because the hi-tech customer segment has the largest load consumption forecast over the modeling period across combined electric utilities in the Energy Trust service territory. Similarly, for industrial gas savings, the food products, pulp & paper, and chemicals segments show the largest savings over the study period accounting for 61% of total cost-effective achievable gas potential by 2033. Additional details regarding measures that drive overall electric and gas savings within these segments can be found in section 6.4.

Figure 36. Cumulative Industrial Cost-effective Energy Savings (MWh) by Customer Segment



Source: Navigant analysis, 2014

Figure 37. Cumulative Industrial Cost-effective Gas Savings (MMtherms) by Customer Segment

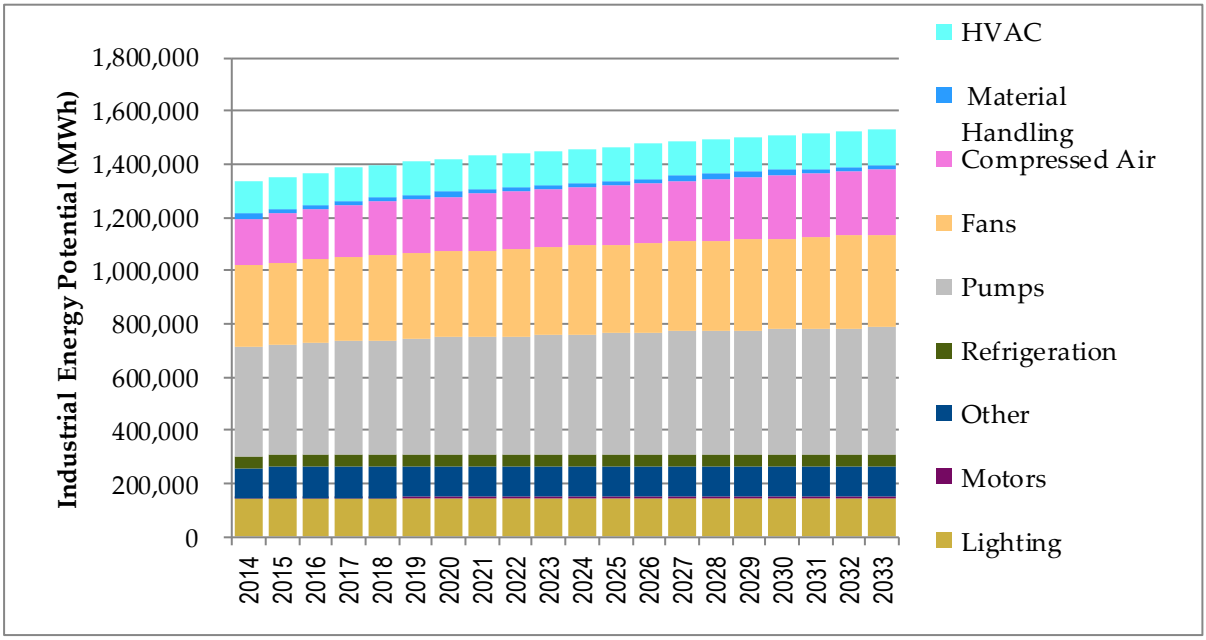


Source: Navigant analysis, 2014

6.2 *Industrial Cost-Effective Achievable Potential – End Use*

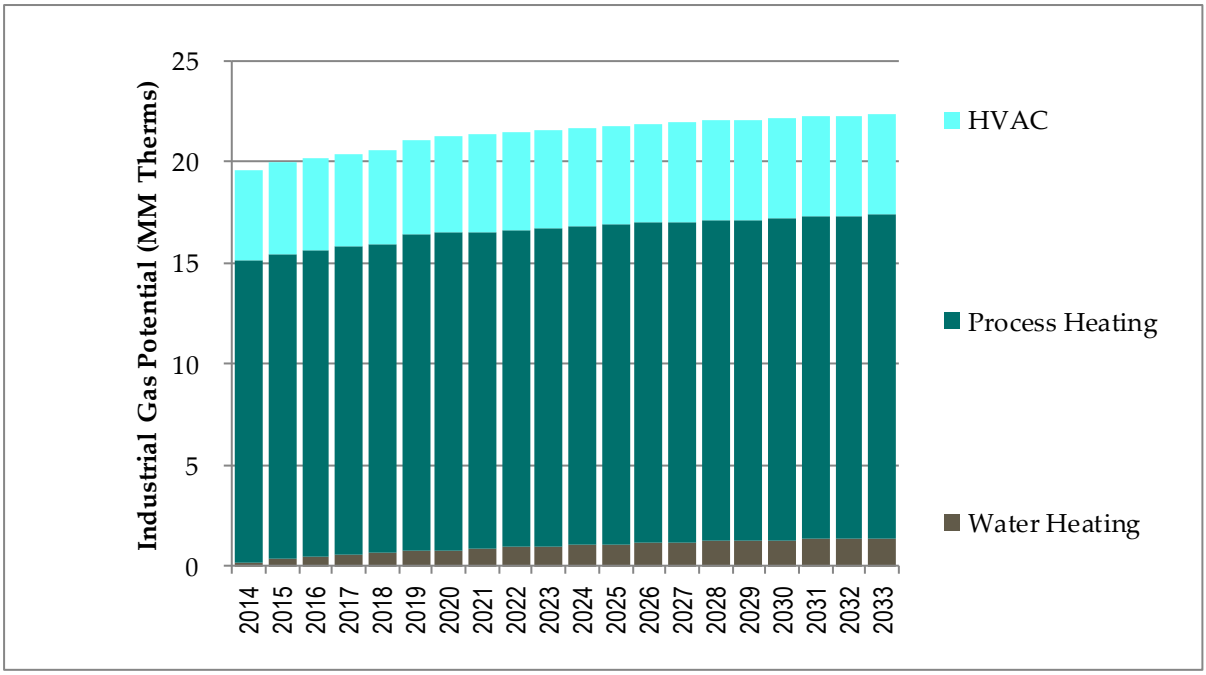
Navigant calculated industrial cost-effective achievable potential at the measure level and customer segment level, which was then aggregated into eleven end-use categories. Figure 38 and Figure 39 show the cumulative industrial cost-effective achievable potential for electric energy and gas savings at the end-use category level. Pumps and fans account for a bulk of the electric energy savings potential, accounting for 54% of total cost-effective achievable potential by 2033. In particular, industrial pump and fan savings are driven by pump and fan variable frequency drives (VFDs), and pump sequencing controls. For industrial gas savings, HVAC and process heating account for over 90% of the cost-effective achievable potential by 2033. Industrial burner upgrades, boiler tune-ups, and roof and wall insulation measures are the biggest contributors toward industrial gas savings over the study period. Further details on measures that drive overall savings can be found in section 6.4.

Figure 38. Cumulative Industrial Cost-effective Energy Savings (MWh) by End Use



Source: Navigant analysis, 2014

Figure 39. Cumulative Industrial Cost-effective Gas Savings (MMtherms) by End Use

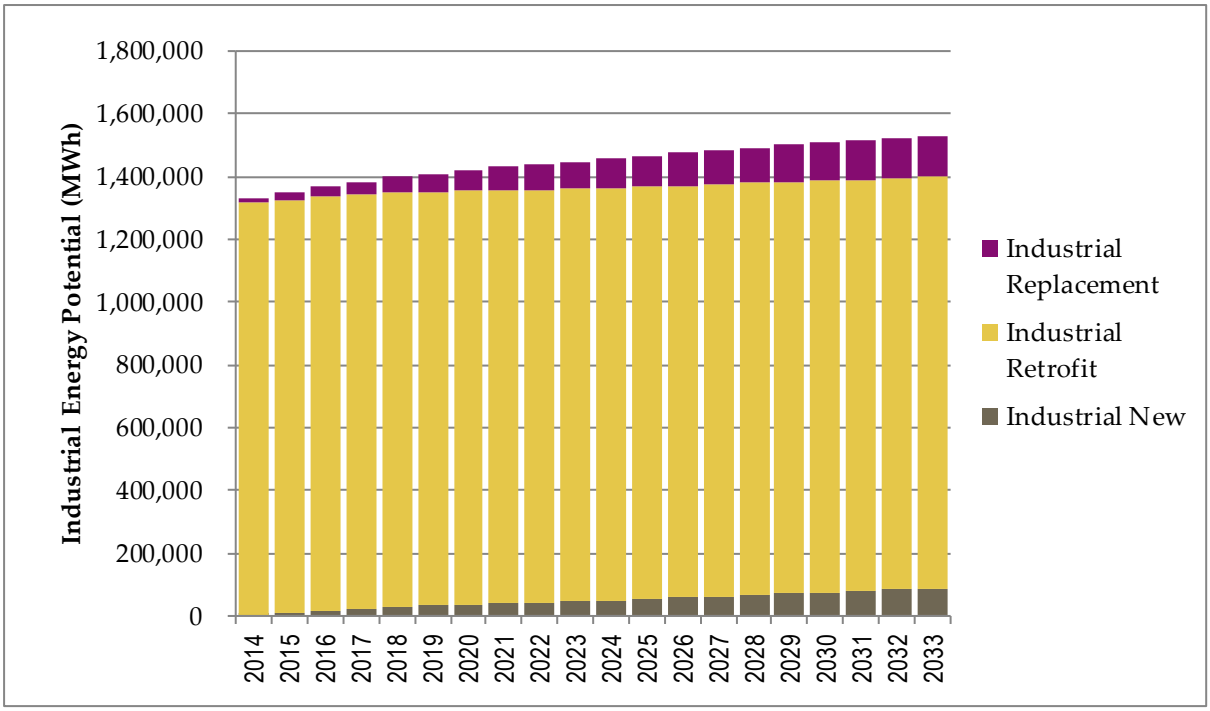


Source: Navigant analysis, 2014

6.3 *Industrial Cost-Effective Achievable Potential – Program*

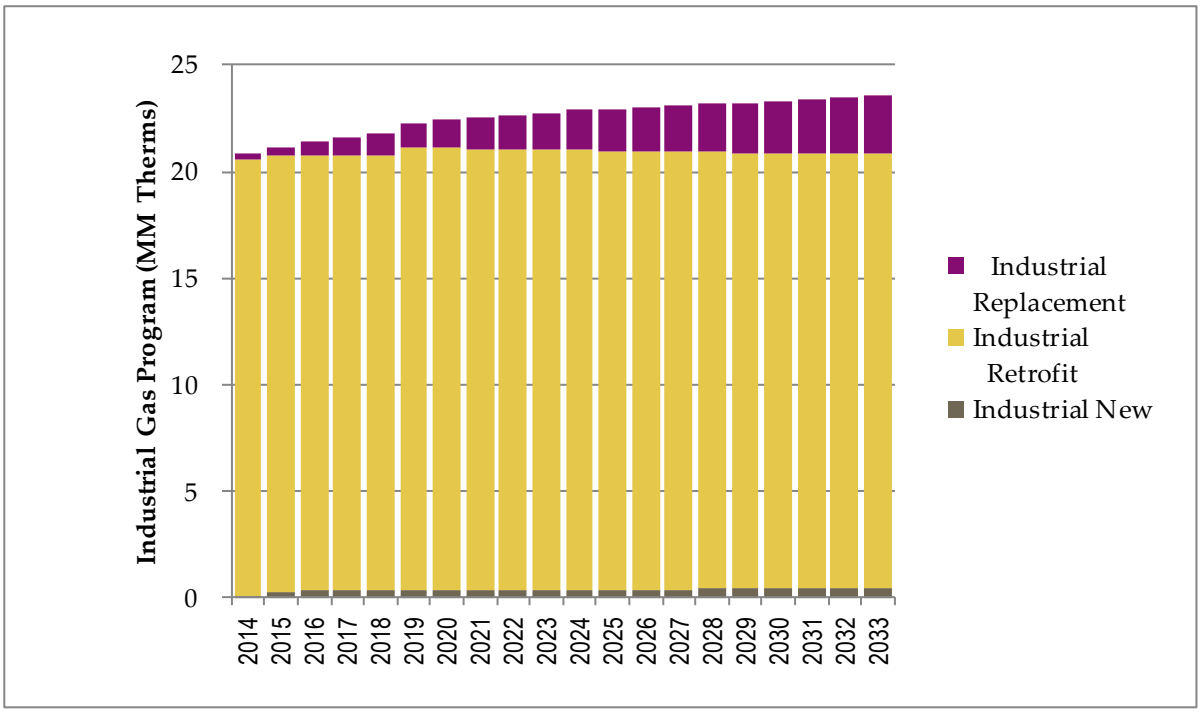
Navigant disaggregated industrial cost-effective achievable potential by program type (e.g., New Construction, Retrofit, Replacement) for electric and gas savings, as shown in Figure 40 and Figure 41. For both electric and gas savings, industrial retrofit measures account for close to 90% of cost-effective achievable potential by 2033. This assumes that most industrial energy efficiency measures (e.g., lighting retrofits or variable frequency drives) are implemented as part of retrofit programs. For ROB and new construction measures, electric savings potential is attributable to equipment (e.g., pump and fan) upgrades while gas savings potential comes from gas-fired heat pump water heaters and high efficiency boilers.

Figure 40. Cumulative Industrial Cost-effective Energy Savings (MWh) by Program Type



Source: Navigant analysis, 2014

Figure 41. Cumulative Industrial Cost-effective Gas Savings (MMtherms) by Program Type

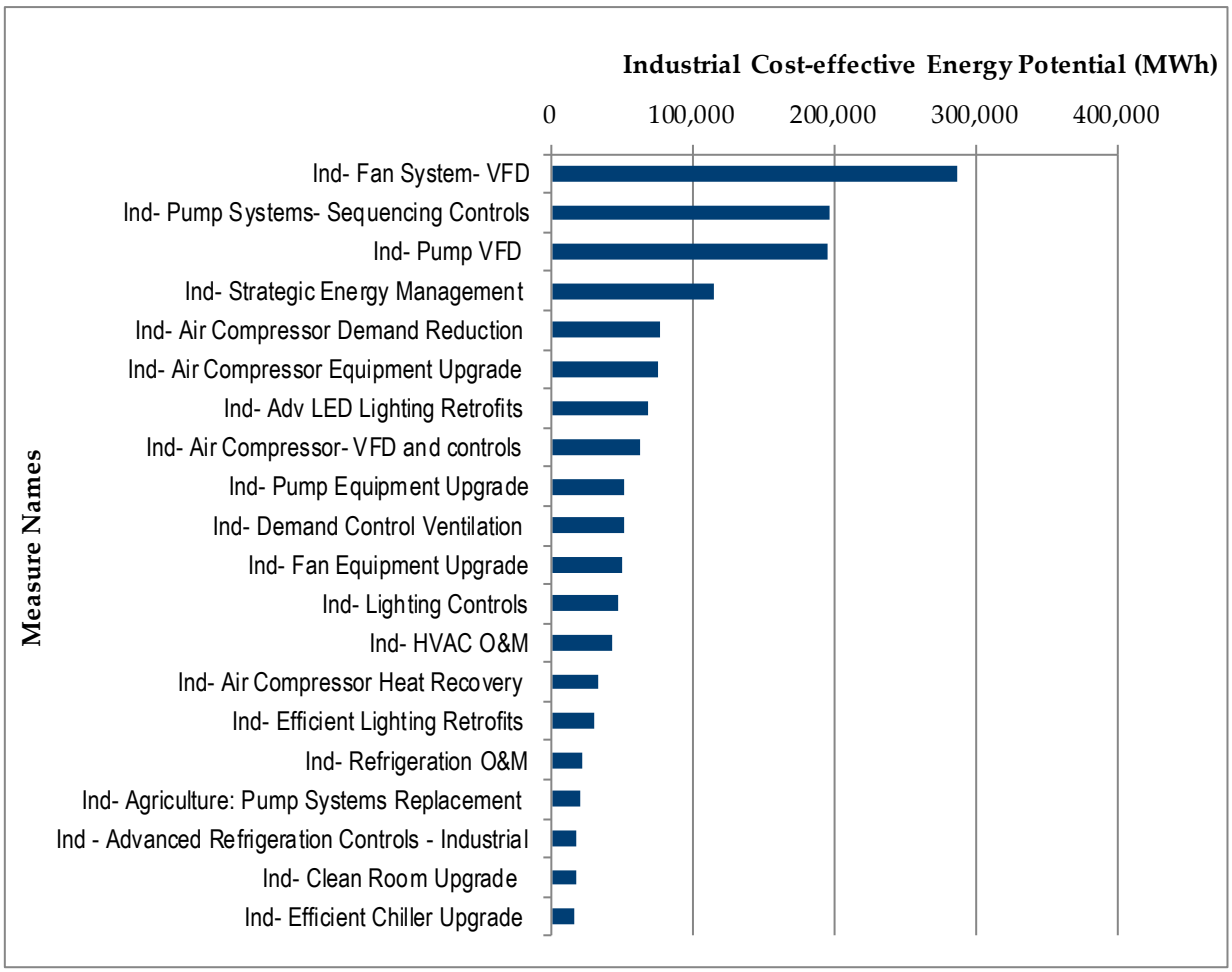


Source: Navigant analysis, 2014

6.4 *Histograms of Top 20 Industrial Measures*

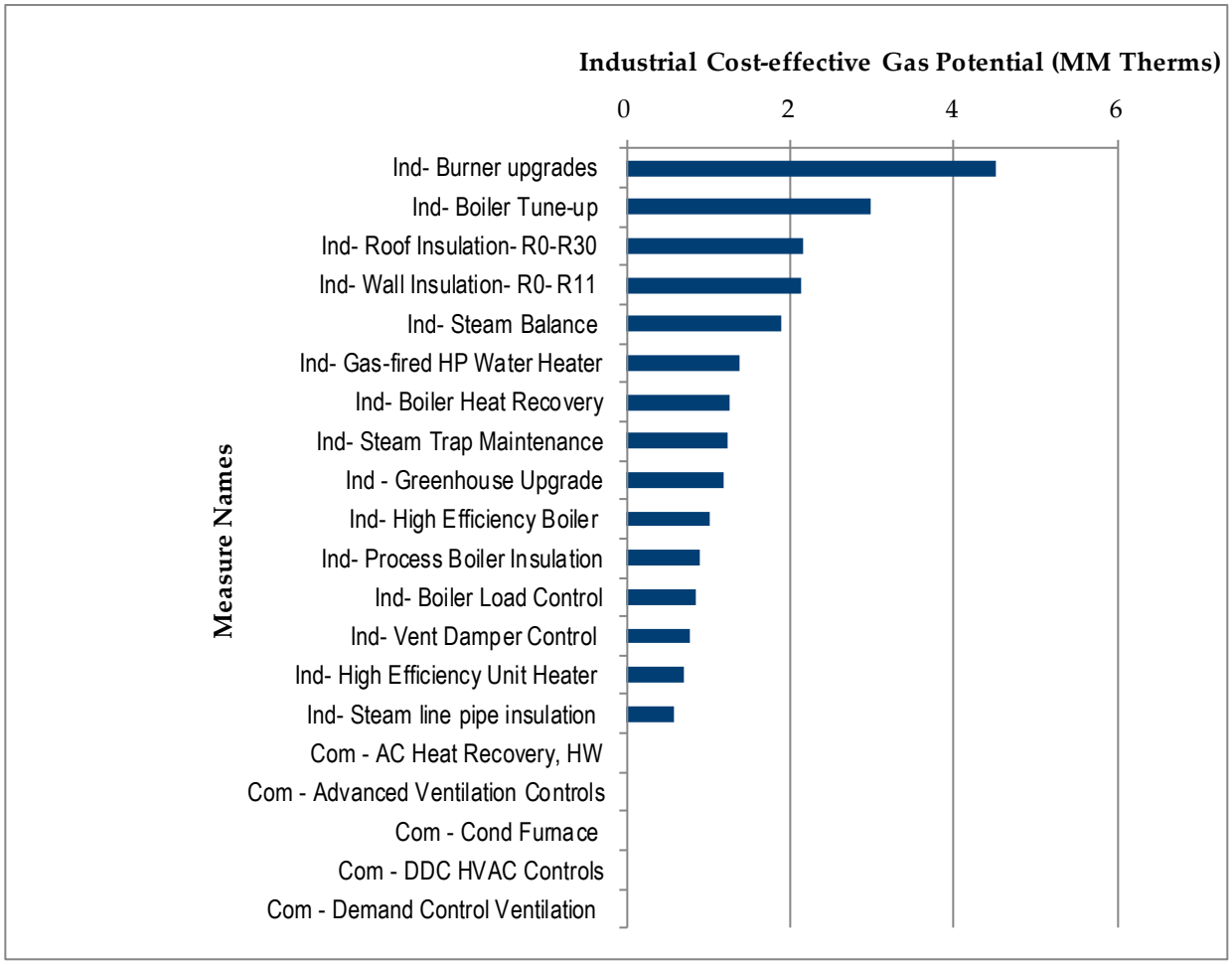
Figure 42 and Figure 43 present histograms showing the cumulative cost-effective achievable potential by 2033 of the top 20 (electric and gas) measures in Energy Trust's industrial sector, which account for over 90% of the savings potential. For electric measures, the top three high impact measures are pump and fan variable frequency drives as well as pump system sequencing controls. The top three high impact gas measures in the industrial sector are burner upgrades, boiler tune-ups, and roof insulation measures. For more details on measure-level savings in the industrial sector, refer to Appendix B.

Figure 42. Top 20 Industrial Electric Measures by 2033



Source: Navigant analysis, 2014

Figure 43. Top 20 Industrial Gas Measures by 2033

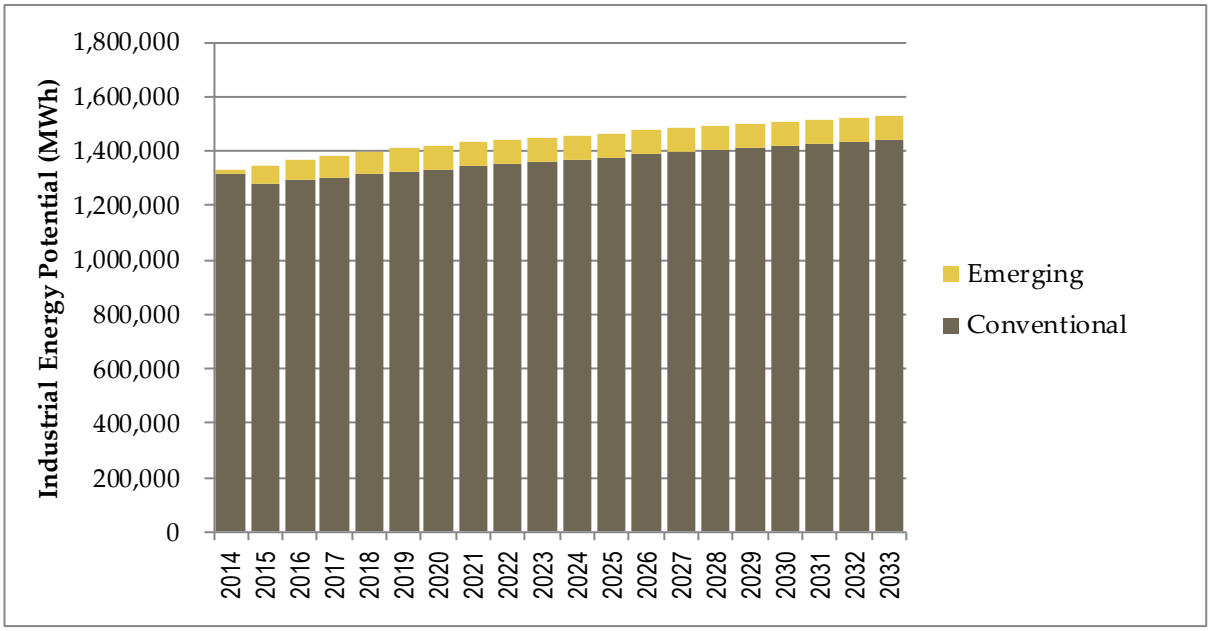


Source: Navigant analysis, 2014

6.5 Industrial Emerging Technology Results

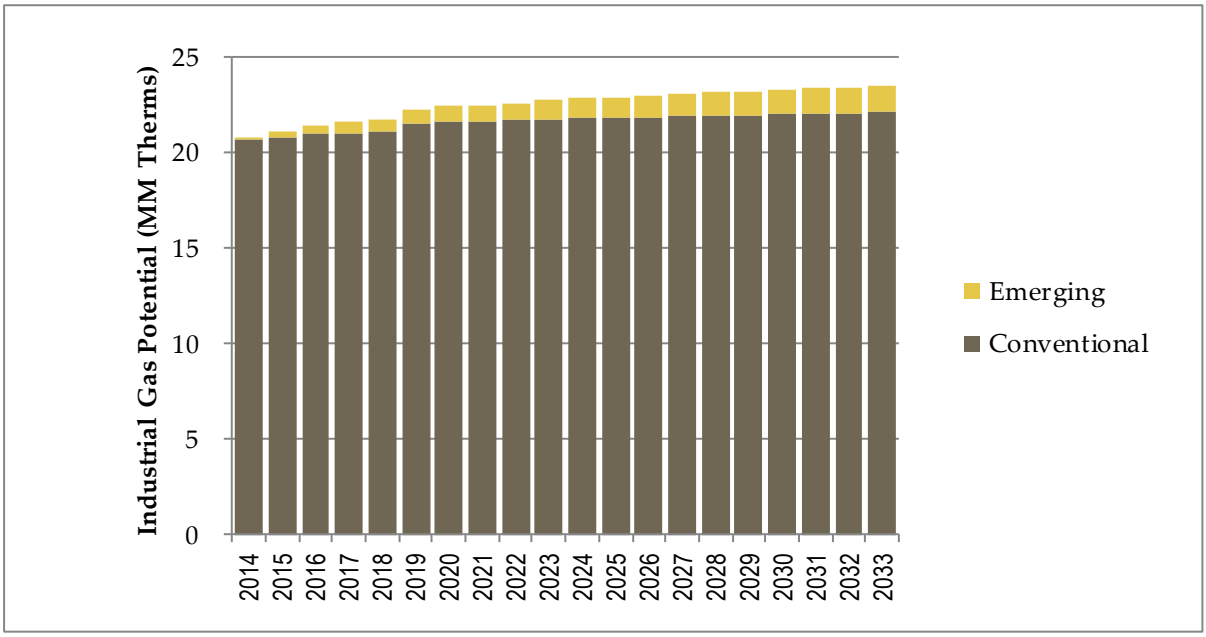
This subsection presents details about the contribution of emerging and conventional technologies toward total cumulative cost-effective achievable potential in the industrial sector. Figure 44 and Figure 45 show the contribution of ETs and conventional technologies toward total cost-effective achievable potential for electric and gas measures respectively. For electric energy savings, ETs contribute about 6% of total cost-effective achievable potential by 2033. Most of the ET energy savings in the industrial sector are attributable to advanced LED lighting retrofits and advanced refrigeration controls. For gas savings, ETs account for about 6% of cost-effective achievable potential by 2033. The main contributors of ET gas savings for the industrial sector are gas-fired heat pump water heaters and wall insulation (vacuum insulated panels).

Figure 44. Cumulative Industrial Cost-effective Energy Savings (MWh) - Emerging vs. Conventional



Source: Navigant analysis, 2014

Figure 45. Cumulative Industrial Cost-effective Gas Savings (MMtherms) - Emerging vs. Conventional



Source: Navigant analysis, 2014

7 Energy Efficiency Potential Supply Curves

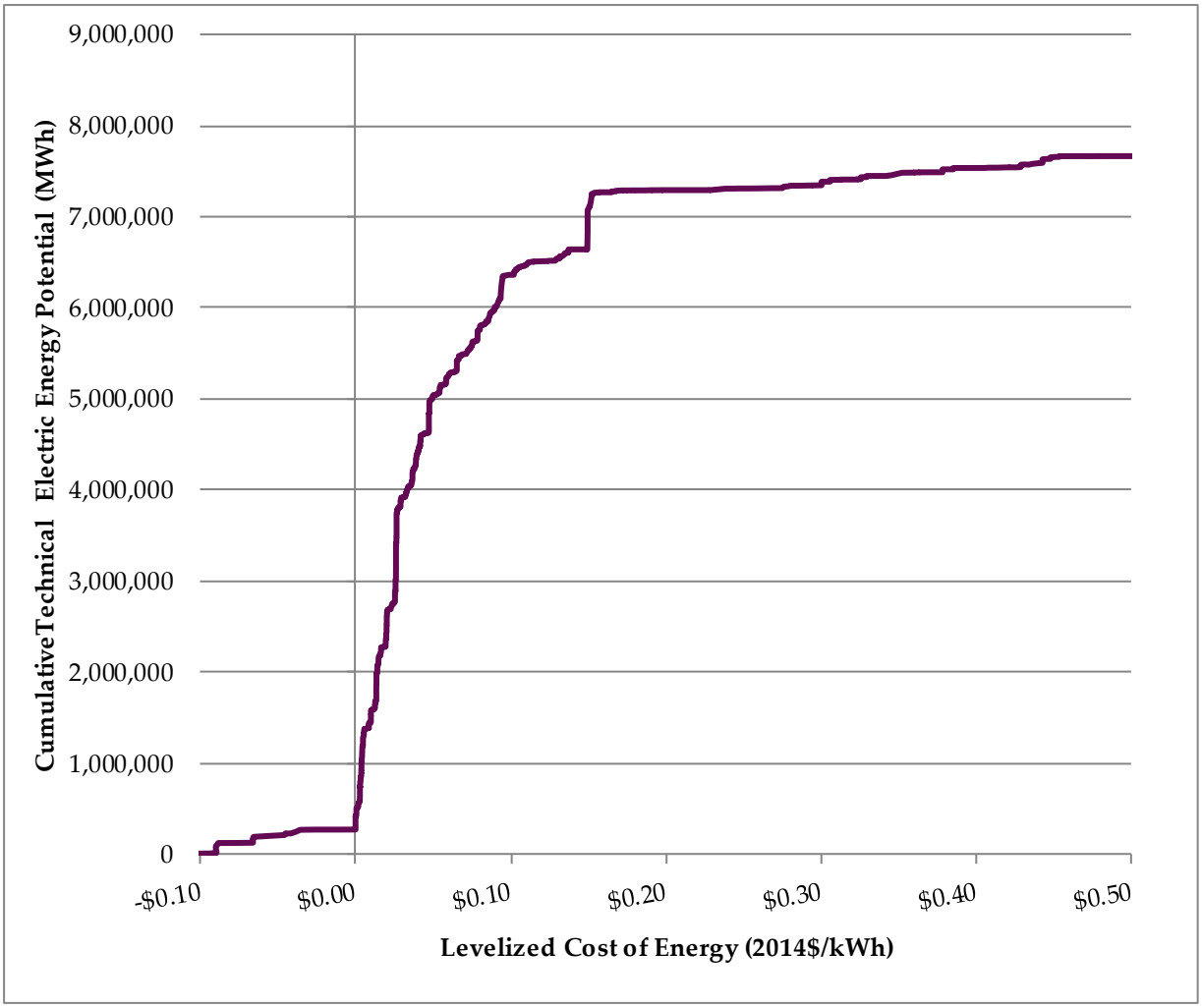
Energy efficiency supply curves offer a useful way to illustrate the amount of energy savings per dollar spent. A supply curve typically consists of two axes – one that shows the cost per unit of savings (e.g., levelized cost per kWh saved) and one that captures the energy savings at each cost level. The curve is constructed using individual efficiency measures differentiated by customer segment, replacement type, and utility, and those measures are sorted on a least-cost basis. Savings are calculated on an incremental basis relative to the measures that precede them.

The levelized cost is the ratio of the present value of equipment and O&M costs (or possibly O&M savings) divided by the present value of energy savings. For this report and under Energy Trust's guidance, all present values are calculated over the lifetime specific to each measure. However, within the potential model, the user can decide whether present values are based on measure-specific lifetimes or a common planning horizon of 20 years.

Lastly, a levelized cost-based supply curve has the potential to show negative levelized cost values. Negative levelized cost values occur when the present value of costs are negative, while the incremental savings are still positive. This can occur when O&M savings or non-energy benefits exceed the upfront equipment costs.

Figure 46 depicts the supply curve for cumulative electric energy potential in 2033. Roughly, 266,000 MWh are available with levelized costs less than zero. This potential is derived from LED street lights, efficient showerheads, and faucet aerators whose present value of non-energy benefits exceed the upfront equipment costs, resulting in a negative levelized cost. Examples of non-energy benefits include avoided water and sewage costs and O&M savings. In effect, these measures are able to provide energy savings *and* cost savings. There is an additional 160,936 MWh of potential from LEDs, switched reluctance motors, and high efficiency chillers that can be achieved at almost zero cost. Nearly 5,756,952 MWh of cumulative electric energy potential are accessible at a levelized cost of energy below $0.08 per kWh (in 2014 dollars), which is the lowest forecast of avoided energy costs in 2033. Costs steeply increase for potential beyond 7,300,000 MWh.

Figure 46. Electric Savings Supply Curve (2033)[26]

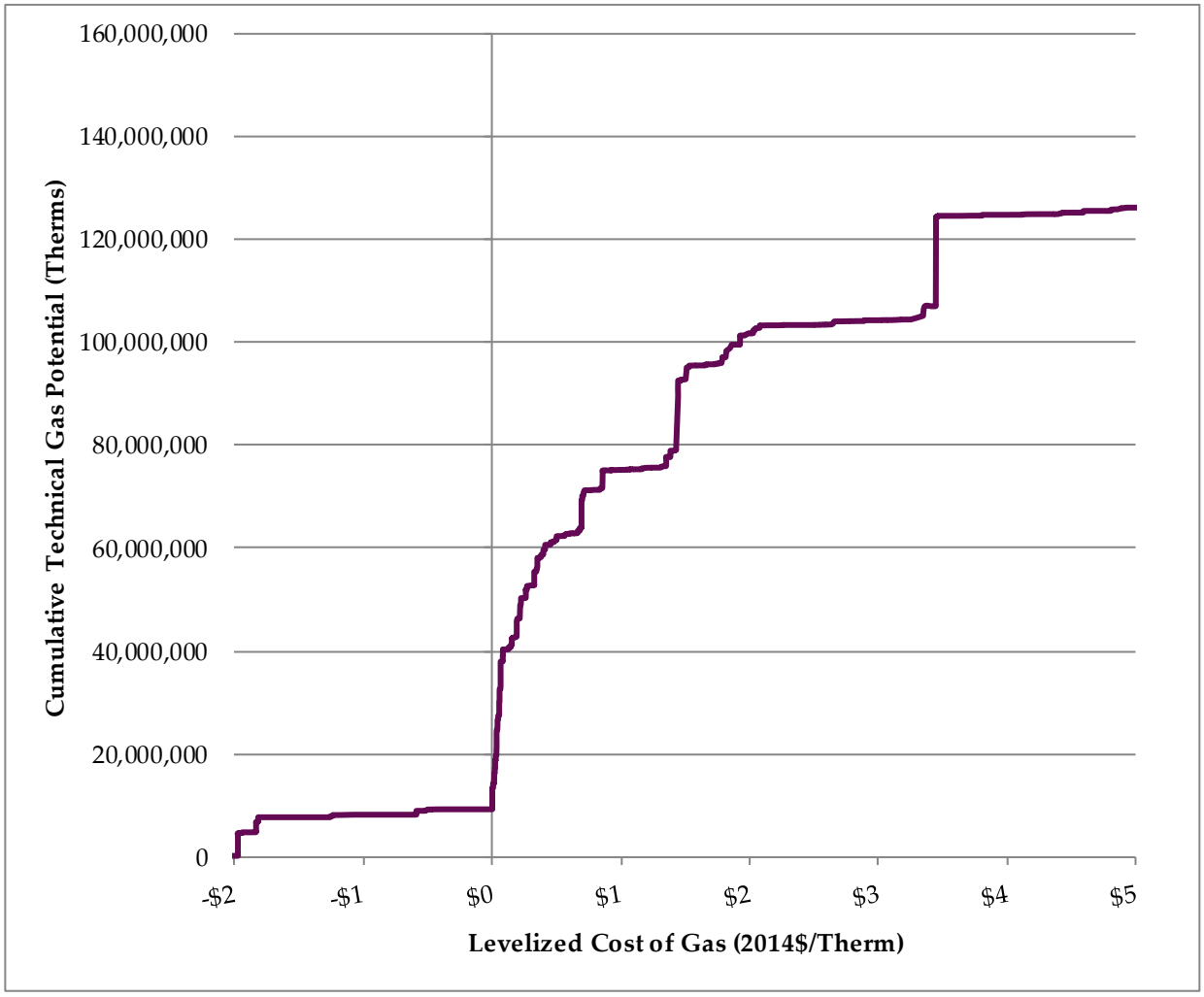


Source: Navigant analysis, 2014

[26] Graph has been scaled to show the area of interest, but additional potential above a levelized cost of of $0.50 per kWh is not shown.

The levelized cost of energy supply curve for cumulative gas saving potential in 2033 is shown in Figure 47. Negative-cost measures account for 9.2 MMtherms and are associated with efficient showerheads. These showerheads have negative levelized cost of energy because their non-energy benefits exceed their costs. An additional 31 MMtherms of potential from condensing furnaces and absorption gas heat pump water heaters can be achieved at almost zero cost. Nearly 59 MMtherms of gas potential are available at costs below $0.40 per therm, which is the lower bound of avoided cost forecasts in 2033. Approximately 147 MMtherms of cumulative gas savings can be achieved at costs below $30 per therm. Beyond 147 MMtherms of potential, costs begin to increase quickly.

Figure 47. Gas Savings Supply Curve (2033)[27]

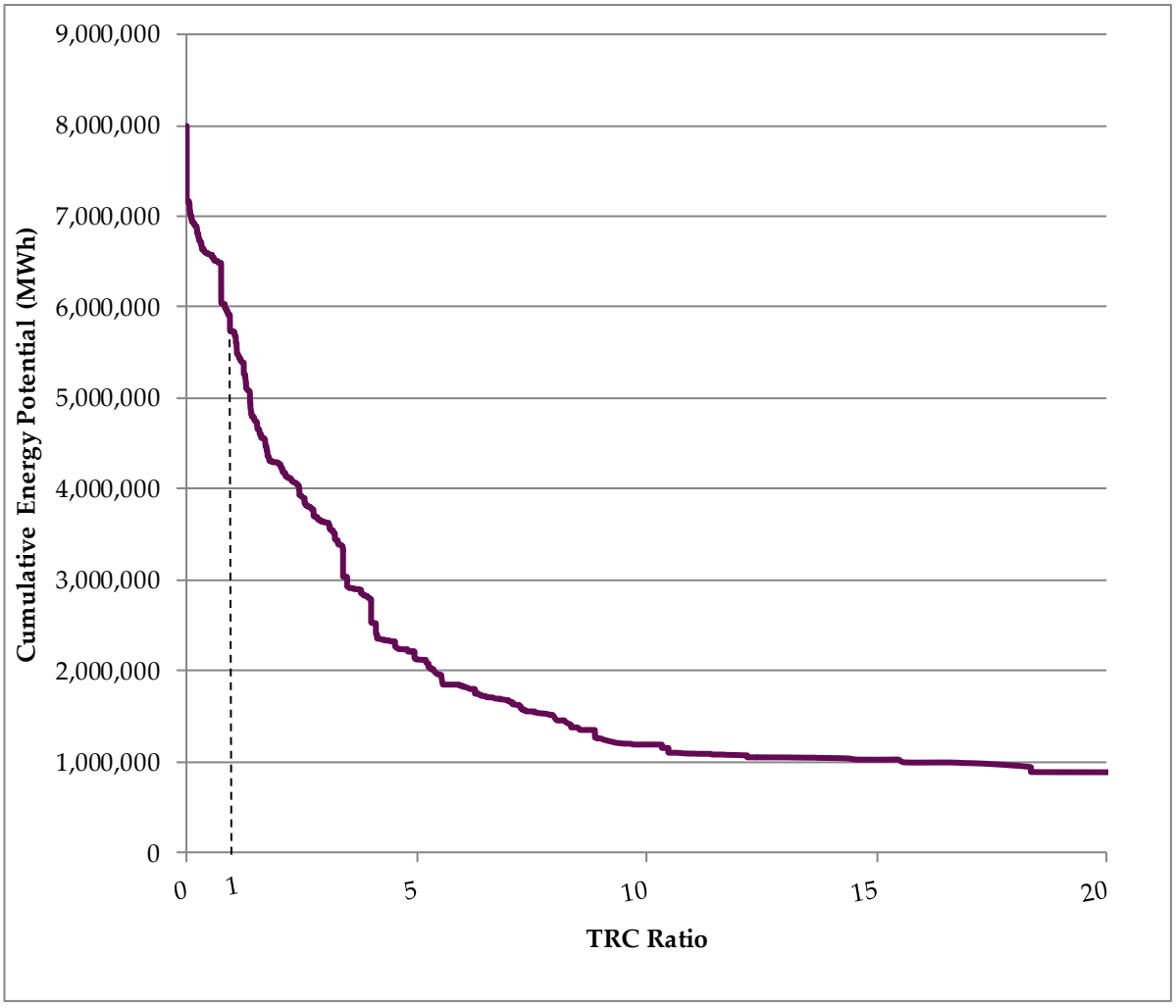


Source: Navigant analysis, 2014

[27] Graph has been scaled to show the area of interest, but additional potential above a levelized cost of $5 per therm is not shown.

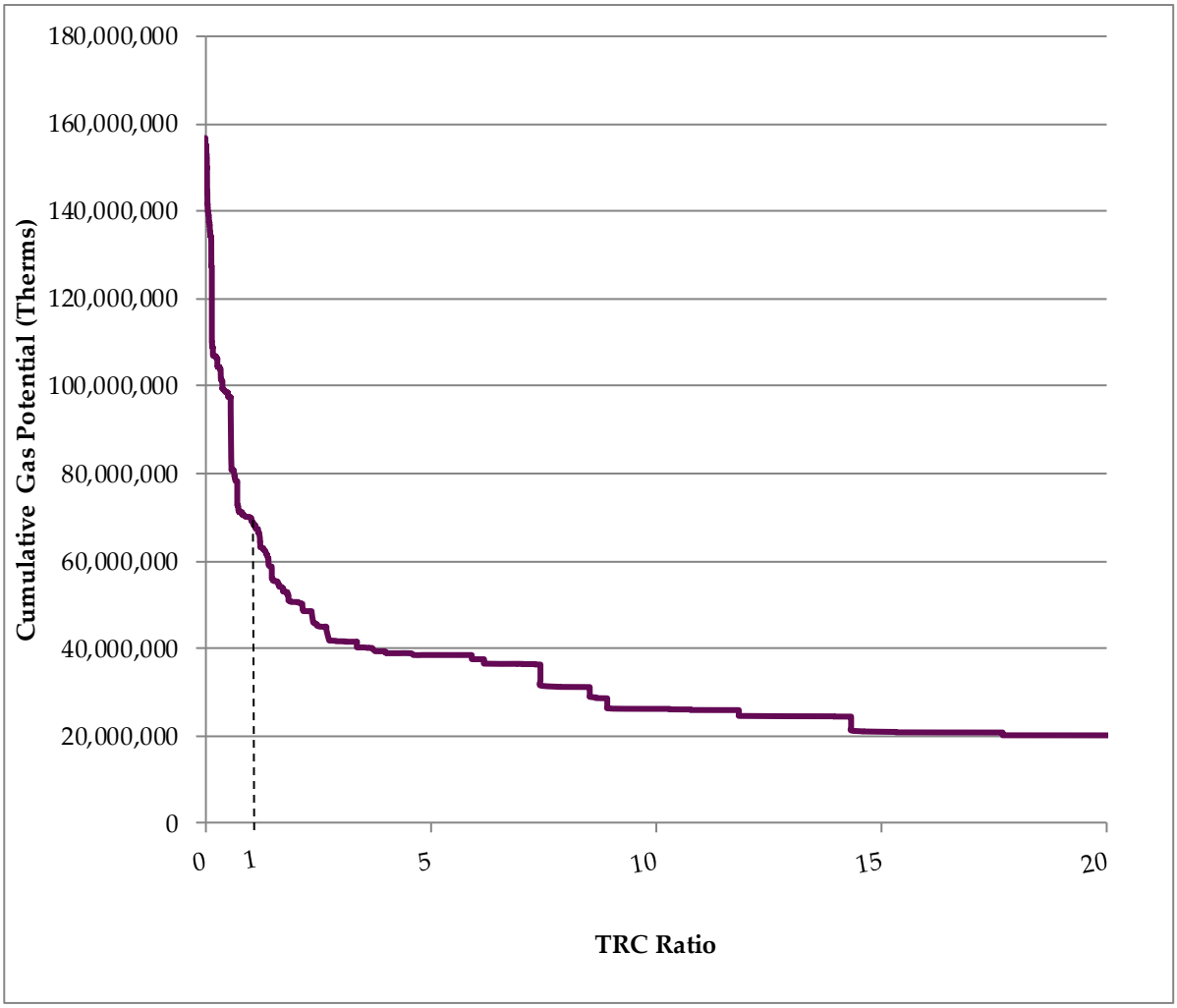
Figure 48 and Figure 49 plot TRC ratio as a function of cumulative technical potential in 2033, for electric and gas savings measures respectively. The curves shown are constructed using individual efficiency measures that are sorted based on their TRC ratio, and savings that are calculated on an incremental basis relative to the measures that precede them. These graphically provide a sense of how much potential is available at different levels of cost-effectiveness. Overall, Figure 48 shows that up to 5,734,340 MWh of cumulative technical potential can be realized as cost-effective potential with a TRC ratio of 1 or above. This reflects the cost-effective part of the curve, while just over 2,260,307 MWh of technical potential is shown to be not cost-effective. In particular, fan variable frequency drives, screw-in CFLs, and specialty CFLs represent the measures, across all sectors with a TRC greater than 1, that offer the largest electric savings. Regarding the gas supply curve, Figure 49 shows that 70 MMtherms, which equates to about 44% of technical potential, is considered to be cost-effective by 2033, and a slight majority of the technical potential lies below the TRC threshold of 1. The gas measures with a TRC greater than 1 that constitute a large portion of the savings across all sectors include burner upgrades, showerheads, and boiler tune-ups. Finally, these curves also offer the ability to gauge the sensitivity of cumulative potential to avoided cost assumptions, a key driver of cost-effectiveness, by way of a first order of approximation.

Figure 48. Tiered TRC versus Cumulative Electric Savings Potential (2033)



Source: Navigant analysis, 2014

Figure 49. Tiered TRC versus Cumulative Gas Savings Potential (2033)



Source: Navigant analysis, 2014

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Appendix A Measure Characterization Data

This appendix provides a list of all the conventional and emerging technology measures characterized in this study. Additionally, this appendix is also provided as a set of separate Excel spreadsheets that contain all characterization data (i.e., consumption, costs, and measure lifetimes) for every measure at the customer segment and replacement type level.

A.1 Residential Measures

	Conventional Measures	Implementation Type	End Use
1	AFUE 95 Furnace, Z1	ROB/NEW	Heating
2	AFUE 95 Furnace, Z2	ROB/NEW	Heating
3	CFL (Screw-In)	ROB/NEW	Lighting
4	Heat Pump Controls, Z1	ROB/NEW	Heating
5	Heat Pump Controls, Z2	ROB/NEW	Heating
6	Duct Sealing, Elec SH, Z1	RET	Heating
7	Duct Sealing, Elec SH, Z2	RET	Heating
8	Duct Sealing, Gas SH, Z1	RET	Heating
9	Duct Sealing, Gas SH, Z2	RET	Heating
10	Elec Hi-eff Clothes Washer - Elec DHW	ROB/NEW	Appliance
11	Elec Hi-eff Clothes Washer - Gas DHW	ROB/NEW	Appliance
12	Elec Hi-eff Dishwasher - Elec DHW	ROB/NEW	Appliance
13	Elec Hi-eff Dishwasher - Gas DHW	ROB/NEW	Appliance
14	ENERGY STAR (0.67 EF) Storage - Gas DHW	ROB/NEW	DHW
15	ENERGY STAR Manufactured Home	NEW	Heating
16	ENERGY STAR New Home BOP 1 - ER SH	NEW	Heating
17	ENERGY STAR New Home BOP 1 - HP SH	NEW	Heating
18	ENERGY STAR New Home BOP 1 - Gas SH	NEW	Heating
19	LowPowerMode Appliances	ROB/NEW	Appliance
20	ER SH to Heat Pump, Z1	RET	Heating
21	ER SH to Heat Pump, Z2	RET	Heating
22	ER SH to Mini-split ductless heat pump, Z1	RET	Heating
23	ER SH to Mini-split ductless heat pump, Z2	RET	Heating
24	Faucet Aerators, Bath, Elec DHW	RET	DHW
25	Faucet Aerators, Kitchen, Elec DHW	RET	DHW

	Conventional Measures	Implementation Type	End Use
26	Faucet Aerators, Bath, Gas DHW	RET	DHW
27	Faucet Aerators, Kitchen, Gas DHW	RET	DHW
28	Heat Recovery Ventilation, ER SH, Z1	NEW	Weatherization
29	Heat Recovery Ventilation, ER SH, Z2	NEW	Weatherization
30	Heat Recovery Ventilation, Gas SH, Z1	NEW	Weatherization
31	Heat Recovery Ventilation, Gas SH, Z2	NEW	Weatherization
32	LED (Screw-In)	ROB/NEW	Lighting
33	Lighting Controls	RET	Lighting
34	Linear Fluorescent - T8 (Premium Reduced Wattage and 800 Series)	RET	Lighting
35	OPower/Behavior Savings	RET	Behavioral
36	Recycle Freezer	RET	Appliance
37	Recycle Refrigerator	RET	Appliance
38	Showerheads - Elec DHW	ROB/NEW	DHW
39	Showerheads - Gas DHW	ROB/NEW	DHW
40	Solar DHW (50 gal) - Elec DHW	ROB/NEW	DHW
41	Solar DHW (50 gal) - Gas DHW	ROB/NEW	DHW
42	Specialty Lights	ROB/NEW	Lighting
43	Tankless Gas DHW	ROB/NEW	DHW
44	Tier I Heat pump water heater- Elec DHW	ROB/NEW	DHW
45	Tier II Heat pump water heater - Elec DHW	ROB/NEW	DHW
46	Windows, Replacement, (U=.30), Elec SH, Z1	ROB/NEW	Weatherization
47	Windows, Replacement, (U=.30), Elec SH, Z2	ROB/NEW	Weatherization
48	Windows, Replacement, (U=.30), Gas SH, Z1	ROB/NEW	Weatherization
49	Windows, Replacement, (U=.30), Gas SH, Z2	ROB/NEW	Weatherization
50	Windows, Replacement, (U=.25), Elec SH, Z1	ROB/NEW	Weatherization
51	Windows, Replacement, (U=.25), Elec SH, Z2	ROB/NEW	Weatherization
52	Windows, Replacement, (U=.25), Gas SH, Z1	ROB/NEW	Weatherization
53	Windows, Replacement, (U=.25), Gas SH, Z2	ROB/NEW	Weatherization
54	Wx insulation (ceiling), Elec SH, Z1	RET	Weatherization
55	Wx insulation (ceiling), Elec SH, Z2	RET	Weatherization
56	Wx insulation (ceiling), Gas SH, Z1	RET	Weatherization
57	Wx insulation (ceiling), Gas SH, Z2	RET	Weatherization
58	Wx insulation (floor), Elec SH, Z1	RET	Weatherization
59	Wx insulation (floor), Elec SH, Z2	RET	Weatherization

	Conventional Measures	Implementation Type	End Use
60	Wx insulation (floor), Gas SH, Z1	RET	Weatherization
61	Wx insulation (floor), Gas SH, Z2	RET	Weatherization
62	Wx insulation (walls), Elec SH, Z1	RET	Weatherization
63	Wx insulation (walls), Elec SH, Z2	RET	Weatherization
64	Wx insulation (walls), Gas SH, Z1	RET	Weatherization
65	Wx insulation (walls), Gas SH, Z2	RET	Weatherization
66	Gas Hearth	ROB/NEW	Heating
67	Heat Pump (HP Upgrade), Z1	RET	Heating
68	Heat Pump (HP Upgrade), Z2	RET	Heating

Source: Navigant analysis, 2014

	Emerging Technology Measures	Implementation Type	End Use
1	Solar hot water heater (gas and electric)	ROB/NEW	Water Heating
2	CO2 Heat Pump Water Heater	ROB/NEW	Water Heating
3	Absorption Gas Water Heater	ROB/NEW	Water Heating
4	R-10 Windows	RET	Weatherization
5	R-30 Wall Insulation	RET	Weatherization
6	R-75 Attic Insulation	RET	Weatherization
7	High Efficiency Condensing Furnace	ROB/NEW	Heating
8	Advanced Heat Pumps	RET	Heating
9	LED Lighting	ROB/NEW	Lighting
10	Home Automation/Smart Devices	RET	Behavioral

Source:

A.2 Commercial Measures

	Conventional Measures	Implementation Type	End Use
1	Hot Water Temperature Reset	RET	Heating
2	Steam Balance	RET	Heating
3	Steam Trap Maintenance	RET	Heating
4	SPC High Efficiency Boiler	NEW/ROB	Heating
5	ENERGY STAR Fryer	ROB	Cooking
6	ENERGY STAR Convection Oven	ROB	Cooking

	Conventional Measures	Implementation Type	End Use
7	DHW High Efficiency Tankless	NEW/ROB	DHW
8	DHW High Efficiency Tank	NEW/ROB	DHW
9	DDC HVAC Controls	NEW	Heating
10	Demand Control Ventilation	RET	Heating
11	VSD on HVAC Motors	ROB	Ventilation
12	High Efficiency Chiller	NEW/ROB	Cooling
13	Condensing Furnace	ROB	Heating
14	High Efficiency Heat Pump	ROB	Heating
15	High Efficiency Unit Heater	NEW/ROB	Heating
16	Economizer Diagnostic, Damper Repair & Reset	RET	Cooling
17	HVAC System Commissioning	NEW	Heating
18	Halogen/CFL to 9W CFL	RET	Lighting
19	Halogen/CFL to LED	RET	Lighting
20	Ceramic Metal Halide	NEW/ROB	Lighting
21	Troffer LEDs	RET	Lighting
22	Exterior LED Lighting	NEW	Lighting
23	Exit Signs	RET	Lighting
24	T12 to HP T8	RET	Lighting
25	T8 to HP T8	RET	Lighting
26	High Bay HID to T8	RET	Lighting
27	High Bay HID to T5	RET	Lighting
28	High Bay HID to LED	RET	Lighting
29	LED Street Lights	RET	Street Lighting
30	Lighting Scheduling/Controls/Occupancy Sensor	ROB/NEW	Lighting
31	Daylight Control	NEW	Lighting
32	Efficient Standalone Refrigeration Cases	ROB	Refrigeration
33	Refrigeration Bundle (ASHC, FHPC, Eff Light, Eff Motor)	ROB/NEW	Refrigeration
34	Refrigeration Auto Closers (Walk-ins)	RET	Refrigeration
35	Refrigeration Auto Closers (Reach-ins)	RET	Refrigeration
36	Floating Head Control	RET	Refrigeration
37	Roof Insulation - Rigid R0-11	ROB	Heating
38	Wall Insulation - Blown R11	RET	Heating
39	Windows Upgrade (RET)	RET	Heating
40	Windows Upgrade (NEW)	NEW only	Heating

	Conventional Measures	Implementation Type	End Use
41	Window Films	RET	Heating
42	EMS (RET)	RET	Total
43	EMS (NEW)	NEW only	Total
44	Transformers	RET	Total
45	Desktop/Laptop Power Management	RET	Misc.
46	Work Station Plug Load Occupancy Sensor	RET	Misc.
47	Smart Plug Power Strips	RET	Misc.
48	Server Virtualization	RET	Misc.
49	Efficient Datacenter	RET	Misc.

Source: Navigant analysis, 2014

	Emerging Technology Measures	Implementation Type	End Use
1	Advanced Package A/C RTU	ROB/NEW	Cooling
2	Hybrid Indirect-Direct Evaporative Cooler	ROB/NEW, RET	Cooling
4	Energy Recovery Ventilator	RET	Cooling & Heating
5	Advanced Refrigeration Controls	RET	Refrigeration
6	Supermarket Max Tech Refrigeration	ROB/NEW	Refrigeration
7	Advanced Ventilation Controls	RET	Ventilation
8	Absorption Heat Pump	ROB/NEW	Heating
9	ET, Halogen/CFL to LED	RET	Lighting
10	ET, Troffer LEDs	RET	Lighting
11	ET, Exterior LED Lighting	NEW	Lighting
12	ET, High Bay HID to LED	RET	Lighting
13	Wall insulation R-35, Vacuum insulated panels	RET, NEW	Weatherization
14	Highly Insulated Windows	RET, NEW	Weatherization
15	Smart/Dynamic Windows	RET, NEW	Weatherization
16	Absorption Heat Pump Water Heater	ROB/NEW	Water Heating
17	A/C Heat Recovery for Water Heating	RET	Water Heating

Source: Navigant analysis, 2014

A.3 Industrial Measures

	Conventional Measures	Implementation Type	End Use
1	Air Compressor- VFD and controls	RET	Compressed Air
2	Air Compressor Equipment Upgrade	ROB and NEW	Compressed Air
3	Air Compressor Heat Recovery	RET	Compressed Air
4	Strategic Energy Management	RET	Other
5	Green Motor Rewind	ROB	Motors
6	Fan System- VFD	RET	Fans
7	Air Abatement	RET	Fans
8	Fan Equipment Upgrade	ROB and NEW	Fans
9	Efficient Chiller Upgrade	ROB and NEW	HVAC
10	Chiller Heat Recovery	RET	HVAC
11	Clean Room Upgrade	RET	HVAC
12	HVAC O&M	RET	HVAC
13	Demand Control Ventilation	RET	HVAC
14	Efficient Lighting Retrofits	RET	Lighting
15	Lighting Controls	RET	Lighting
16	Pneumatic Conveyor	RET	Material Handling
17	Mechanical Conveyor	RET	Material Handling
18	Steam Line Pipe Insulation	RET	Process Heating
19	Process Boiler Insulation	RET	Process Heating
20	Steam Trap Maintenance	RET	Process Heating
21	Steam Balance	RET	Process Heating
22	Boiler Load Control	RET	Process Heating
23	Pump Equipment Upgrade	ROB and NEW	Pumps
24	Pump VFD	RET	Pumps
25	Pump Systems - Sequencing Controls	RET	Pumps
26	Agriculture: Impact Sprinkler Nozzles	ROB and NEW	Pumps
27	Agriculture: Pump Systems Replacement	ROB and NEW	Pumps
28	Agriculture: Replace Ditch with Pipes	RET	Pumps
29	Agriculture: Gasket Replacement	ROB and NEW	Pumps
30	Agriculture: Pipe Repair	RET	Pumps
31	Refrigeration System Upgrade	RET	Refrigeration
32	Refrigeration O&M	RET	Refrigeration
33	Roof Insulation - R0-R30	RET	HVAC

	Conventional Measures	Implementation Type	End Use
34	Wall Insulation - R0- R11	RET	HVAC
35	Burner Upgrades	RET	Process Heating
36	Boiler Tune-up	RET	Process Heating
37	Boiler Heat Recovery	RET	Process Heating
38	Vent Damper Control	RET	Process Heating
39	High Efficiency Boiler	ROB and NEW	Process Heating
40	High Efficiency Unit Heater	ROB and NEW	HVAC
41	Greenhouse Upgrade	ROB and NEW	Other

Source: Navigant analysis, 2014

	Emerging Technology Measures	Implementation Type	End Use
1	Adv LED Lighting Retrofits	RET	Lighting
2	Wall Insulation - VIP, R0-R35	RET	HVAC
3	Gas-fired HP Water Heater	ROB and NEW	Water Heating
4	Switched reluctance motors	ROB and NEW	Motors
5	Advanced Refrigeration Controls - Industrial	RET	Refrigeration

Source: Navigant analysis, 2014

Appendix B Detailed Potential Output

This appendix is provided in a separate Excel file entitled "Appendix B – Detailed Potential Output.xlsm," as well the standalone Analytica model entitled "ETO Resource Assessment Model.ana."

Appendix E

Supply Resources

MODEL NAME	CONTRACT LOCATION TYPE	PIPELINE	PRICE TYPE	XPIRY DATE	OTHER COMMENTS	PRICE OR INDEX BASIS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SAT LNG 30-S	Satellite LNG Zone 30-S	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
SAT LNG OR	Satellite LNG Zone Oregon	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG 10	Bio-natural gas Zone 10	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG 20	Bio-natural gas Zone 20	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000
BNG ME-OR	Bio-natural gas Zone Meacham-Oregon	CNG	NYMEX		RUN AT VARIABLE VOLUMES UP TO THE AMOUNT		1,000	1,000	1,000								1,000	1,000

Supply Inputs

MODEL NAME	CATEGORY	RECEIPT PT(S)	DELIVERY PT(S)	PRICE INDEX	INDEX DIFFERENTIAL/EST PRICE	DEMAND CHARGE	DEAL START DATE	DEAL END DATE	MDQ IN DTHS
FIRM SPT SUM	SEASONAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
FIRM SPT NIT	SEASONAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
FIRM SPT RM	SEASONAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR SUM A	ANNUAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR RM A	ANNUAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT A	ANNUAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
INCR SUM S	SEASONAL	SUMAS	NWP, GTN	IFERC SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR RM S	SEASONAL	ROCKIES	NWP, GTN	IFERC ROCKIES			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT S	SEASONAL	AECO	GTN	AECO (CGPR)			11/1/2015	INCREMENTAL	VARIABLE
INCR ST2	SEASONAL	STATION 2	NWP, GTN	GD SUMAS			11/1/2015	INCREMENTAL	VARIABLE
INCR STRU SU	ANNUAL	SUMAS	NWP, GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR STRU RM	ANNUAL	ROCKIES	NWP, GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR STRU AE	ANNUAL	AECO	GTN	STRUCTURED	Index Ls $0.25 if Index >4		11/1/2015	INCREMENTAL	VARIABLE
INCR SUM FX	ANNUAL	SUMAS	NWP, GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR RM FX	ANNUAL	ROCKIES	NWP, GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR NIT FX	ANNUAL	AECO	GTN	FIXED			11/1/2015	INCREMENTAL	VARIABLE
INCR MAL	SEASONAL	MALIN	BACKHAULS NWP, GTN	MALIN			11/1/2015	INCREMENTAL	VARIABLE
SAT LNG	SEASONAL	ZONAL	ZONAL	NYMEX HH			11/1/2015	INCREMENTAL	VARIABLE
IMP LNG NOR	SEASONAL	PALOMAR	BACKHAULS NWP, GTN	NYMEX HH			11/1/2018	INCREMENTAL	VARIABLE
IMP LNG SOR	SEASONAL	PACIFIC CONNECTOR	BACKHAULS NWP, GTN	NYMEX HH			11/1/2018	INCREMENTAL	VARIABLE
SAT PROP	SEASONAL	ZONAL	ZONAL	NYMEX HH			11/1/2016	INCREMENTAL	VARIABLE
INCR CG NWP	SEASONAL	CITYGATE	NWP	NYMEX HH		0.05	11/1/2016	INCREMENTAL	VARIABLE
INCR CG GTN	SEASONAL	CITYGATE	GTN	NYMEX HH		0.05	11/1/2016	INCREMENTAL	VARIABLE
SUPPLY MDQS ARE CAPPED AT 20,000 DTHS/DAY									

Storage Account	MSQ (Maximum Storage Quantity) or Working Inventory	Estimated Annual MSQ Demand Costs	Est Per Unit Rate for MSQ related	Est Daily Charges	Avg Daily MSQ Unit Rate of Services	Transport		Total Transport Needed to cycle storage once			Est Per Unit Rate for Upstream Pipe Transport	Storage Associated MSQ Charges
Jackson Prairie 1 (original, vintage account acquired in 1994)	604,351	$ 263,773	$ 0.43646	$ 723	$ 0.00120	16,587	NWP	$ 343,503	$ 607,276	$ 1.0048	$ 0.56838	$ 0.43646
Jackson Prairie 2 (expansion contract acquired in 2007 with full rights in 2012)	350,000	$ 529,313	$ 1.51232	$ 1,450	$ 0.00414	30,000	NWP	$ 587,632	$ 1,116,945	$ 3.19127	$ 1.67895	$ 1.51232
Jackson Prairie 3 and 4 (acquired from PSE in 2012 as part of the JP/Wenatchee exchange	218,242	$ 127,759	$ 0.58540	$ 350	$ 0.00160	9,077	NWP	$ 169,911	$ 297,669	$ 1.36394	$ 0.77854	$ 0.58540
Plymouth LNG	562,200	$ 1,205,032	$ 2.14342	$ 3,301	$ 0.00587	60,000	NWP	$ 19,036	$ 1,224,069	$ 2.17728	$ 0.03386	$ 2.14342
Proposed Ryckman Creek Storage	-	$ -	#DIV/0!	$ -	#DIV/0!	15,000	Ruby, GTN	$ 693,500	$ 693,500	#DIV/0!	#DIV/0!	#DIV/0!
Proposed Gill Ranch Storage	0	$ -	$ -	$ -	$ -	15,000	PG&E, GTN	$ 693,500	$ 693,500	$ 7,885,592	$ 7,885,592	$ -
Proposed Wild Goose Storage	-	$ -	#DIV/0!	$ -	#DIV/0!	15,000	PG&E GTN	$ 693,500	$ 693,500	#DIV/0!	#DIV/0!	#DIV/0!
Proposed Incremental Plymouth LNG	350,000	$ -	$ -	$ -	$ -	15,000	NWP, GTN	$ -	$ -	$ -	$ -	$ -

TRANSPORT RATES

Ln #	Pipeline		Rate		Rate Change
	Westcoast - T-South Service				
1	Huntington Delivery Rate (5yr Service term)	$	0.50950		Every three years
2	Motor Fuel Tax (Average 2010)	$	0.41632	$7175 per month	
3	Carbon Tax (Average 2010)	$	0.75935	$13087per month	
	Foothills - BC				
	FT Firm Service (A/BC to Kingsgate)				
4	FT Rate	$	0.10430		Every three years
5	Fuel		1.100%		
	Nova Gas Transmission				
6	Firm Transportation Rate	$	0.22920		Every three years
	TransCanada GTN				
	FTS-1 Rate				
7	Daily Mileage	$	0.000498	(Dth-Mile)	Every five years
8	Daily Non-Mileage	$	0.003922	(Dth)	$0.21 for backhaul
9	Delivery	$	0.000016	(Dth-Mile)	
10	Fuel %		0.2500%	(Dth)	
	Charge to Delivery locations				
11	Starr Road		108.29	$ 0.053928	
12	Stanfield		277.37	$ 0.138130	
13	Bend		454.51	$ 0.226346	
14	Malin		612.46	$ 0.305005	

TRANSPORT RATES

Ln #	Pipeline		Rate		Rate Change
	Northwest Pipeline				
	TF-1 Rate				
15	Reservation (System-Wide)	$	0.37883	($/Dth)	Every five years
16	Volumetric (System-Wide)	$	0.03000	($/Dth)	
17	Fuel		1.85%		
	TF-2 Rate (Storage)				
18	Reservation	$	0.37883	($/Dth)	
19	Volumetric	$	0.03000	($/Dth)	
	SGS-2F				
20	Capacity Demand Charge (Pre-Exp Shipper)	$	0.00056	($/Dth)	
21	Capacity Demand Charge (Exp Shipper)	$	0.00232	($/Dth)	
22	Demand Charge (Pre-Exp Shipper)	$	0.01547	($/Dth)	
23	Demand Charge (Exp Shipper)	$	0.08453	($/Dth)	
	LS-2F				
24	Capacity Demand Charge	$	0.00390	($/Dth)	
25	Demand Charge	$	0.03054	($/Dth)	
26	Liquefaction	$	0.64110	($/Dth)	
27	Vaporization	$	0.04184	($/Dth)	
	Ruby				
28	Reservation Rate (seasonal)	$	0.75	($/Dth)	Every five years
30	Reservation Rate (max rate)	$	0.95	($/Dth)	
31	Commodity Rate	$	0.01	($/Dth)	
32	Fuel		0.44%	(Dth)	

We use standard escalation factor in SENDOUT: 3% first year, 4% each subsequent renewal period

Transport Inputs

CONTRACT DESCRIPTION	RECEIPT	DELIVERY	PIPELINE	TERMINATION DATE	RATE PER DAY	Contract Demand
TF-1 Contract #100002 April 31, 1991	all rec	all del	NWP	10/31/2032	0.41	205123
Contract #135384 (JP/Bremerton), March 26, 2007	jackson prairie	bremerton/mt vernon	NWP	10/31/2029	0.246	30420
Contract #135558 (Sumas/Prtld), 4/1/2007)	sumas	stanfield/portland west	NWP	4/30/2020	0.41	25400
Contract 139382 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	6191
Contract 139383 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	1050
Contract 139384 Sumas/Sedro Wooley	sumas	sedro wooley	NWP	10/31/2050	0.41	3259
Contract #100134 January 15,1993	sumas/ignacio	burbank/yakima/aberdeen	NWP	11/30/2019	0.41	330
Contract #100149 February 15,1996	sumas/ignacio	walla walla	NWP	11/30/2019	0.41	75
Contract #100150 May 15, 1996	sumas/ignacio	menan starch	NWP	11/30/2019	0.41	160
Contract #100064 May 8, 1995	sumas	hermiston/pasco	NWP	3/31/2020	0.41	1078
Weyer Release Contract #132329 July 1, 2004	sumas	kern river	NWP	1/31/2021	0.41	5000
Contract #139090 June 2, 2011	sumas	plymouth/umatilla/bellingh	NWP	3/31/2052	0.41	27063
Contract #139637 Jan 1, 2013	sumas	hermiston/oak harbor/selal	NWP	10/31/2050	0.41	7241
Contract #139630 Sep 1, 2012	stanfield	durkee/pendelton/mission	NWP	10/31/2050	0.41	7450
Contract #140047	sumas	bellingham/ferndale	NWP	10/31/2034	0.41	15000
TF-2						
Contract #100302 TF-2 January 12, 1994	jackson prairie	Stanfield, Wenatchee, Lon	NWP	10/31/2019	0.41	16789
Contract #100304 TF-2 January 12, 1994	plymouth		NWP	10/31/2019	0.41	60000
Jackson Prairie Expansion Precident Agreement # 135365 SGS-2F	jackson prairie	jackson prairie	NWP	10/31/2060	0.04056	30000
Contract # 100401 SGS-2F	jackson prairie	jackson prairie	NWP	10/31/2019	0.03562	16789
Contract #100501 LS-2F	plymouth	plymouth	NWP	10/31/2019	0.02587	60000
Contract #139627 TF-2	jackson prairie	bellingham	NWP	3/31/2020	0.41	489
Contract #139624 TF-2	jackson prairie	bellingham	NWP	3/31/2020	0.41	282
Contract #139622 SGS-2F	jackson prairie	jackson prairie	NWP	3/31/2026	0.03562	3500
Contract #139626 SGS-2F	jackson prairie	jackson prairie	NWP	3/31/2020	0.03562	6077
					0.16381	
2003 Expansion, #08488	kingsgate	malin	GTN	10/31/2028	0.34422	20380
Firm Transportation #02812 (November 4, 1994)	kingsgate	malin	GTN	4/30/2016	0.34422	3600
Firm Transportation #00179 (October 7, 1993)	kingsgate	system	GTN	10/31/2023	0.19811	31335
Firm Transportation #00152 (December 1, 1997)	kingsgate	system	GTN	10/31/2023	0.25432	7445
Firm South-to-North Transportation #12094 11/1/12 - 3/31/18	turquoise flats	stanfield	GTN	3/31/2018	0.16381	10000
Firm South-to-North Transportation #13687 4/1/18 - 10/31/39	turquoise flats	stanfield	GTN	10/31/2039	0.20477	10000
Firm South-to-North Transportation #13688 11/1/14 - 10/31/39	turquoise flats	stanfield	GTN	10/31/2039	0.20477	5000
Service Agreement (NOVA) September 4, 2001 (#2003039348-1)	AECO	AB/C border	NOVA	10/31/2028	0.1591	21973
2002 Service Agreement (CNG FS-2)	AB/C border	kingsgate	Foothills	11/1/2017	0.076	3126
Service Agreement (ANG) September 11, 2001 (#CNG FS-3)	AB/C border	kingsgate	Foothills	10/31/2028	0.076	21583
FS-1 Transportation (ANG) June 12, 1991 (CNG FS-1)	AB/C border	kingsgate	Foothills	10/31/2023	0.076	7602
Westcoast Service Agreement January 3, 2002 (#FI-2583-B-00)	station 2	huntingdon	Westcoast	10/31/2019	0.4833	20000
Firm Service Agreement #61036000B January 9, 2012	pearl creek	turquoise flats	Ruby	10/31/2039	0.75	15000

	POTENTIAL ADDITIONAL PIPELINE TRANSPORT RESOURCES									
	Model Name	Start Date	End Date	Daily MDQ	Description	Cost Dths	Lead Time	Pipeline	VARIABLE < $.10	FUEL < 3%
3	Incremental NOVA-Foothills-GTN	2017	OPEN	Approx 16,000 dths/day ea pipeline	AECO NIT, Foothills to Kingsgate	NOVA, Foothills, GTN (approx $0.41)	2017	NOVA, Foothills, GTN	YES	YES
4	INCR-NWP	2017	OPEN	Appoximately 10,000 dhts/day	Sumas to WA and OR citygates	NWP Rate X 3 (min approx $1.14)	2018	NWP	YES	YES

GAS SUPPLY 20 YEAR PRICE FORECAST IN BOLD

PERIOD	YEAR	NYMEX CURRENT MARKET	CASCADE NYMEX LO PROJECTED PRICE	NYMEX CASCADE PROJECTED PRICE	CASCADE NYMEX HI PROJECTED PRICE	CASCADE SUMAS LO FORECAST PRICE	SUMAS CASCADE FORECAST PRICE
Jan-15	2015	3.354	3.401291194	3.618394887	3.799314631	3.534156416	3.759740868
Feb-15	2015	3.226	3.289992599	3.499992127	3.674991733	3.543531491	3.769714352
Mar-15	2015	3.427	3.409318801	3.626934895	3.80828164	3.484646961	3.707071235
Apr-15	2015	3.976	3.758808291	3.998732225	4.198668836	3.762957328	4.003146094
May-15	2015	2.517	2.646297055	2.815209633	2.955970115	2.427292707	2.582226284
Jun-15	2015	2.537	2.843452974	3.024949972	3.176197471	2.617063536	2.784110144
Jul-15	2015	2.591	2.880940586	3.064830411	3.218071931	2.652982291	2.822321586
Aug-15	2015	2.617	2.90142406	3.086621341	3.240952408	2.673158308	2.843785434
Sep-15	2015	2.634	2.920896623	3.107336833	3.262703674	2.642407022	2.8110713
Oct-15	2015	2.679	2.951858203	3.140274684	3.297288418	2.828755987	3.00931488
Nov-15	2015	2.804	3.049698511	3.244360119	3.406578125	3.083167991	3.279965948
Dec-15	2015	2.994	3.1914819	3.39519351	3.564953186	3.050333036	3.245035144
Jan-16	2016	3.099	3.659367741	3.892944405	4.087591625	3.436594742	3.655951853
Feb-16	2016	3.092	3.617043065	3.847918155	4.040314062	3.422814665	3.641292197
Mar-16	2016	3.047	3.449201645	3.669363452	3.852831624	3.168246898	3.370475424
Apr-16	2016	2.921	3.357516305	3.571825857	3.750417149	2.895954923	3.08080311
May-16	2016	2.934	3.431141623	3.650150662	3.832658195	2.957304696	3.146068826
Jun-16	2016	2.967	3.458873497	3.679652657	3.86363529	3.042033584	3.236205941
Jul-16	2016	3.004	3.48009654	3.702230361	3.887341879	3.091516902	3.288847768
Aug-16	2016	3.018	3.482912587	3.705226156	3.890487464	3.125538885	3.325041367
Sep-16	2016	3.012	3.473599264	3.695318366	3.880084284	3.035018386	3.228742964
Oct-16	2016	3.041	3.507246506	3.731113304	3.91766897	3.288952405	3.498885538
Nov-16	2016	3.123	3.582058996	3.810701059	4.001236112	3.514387127	3.73870971
Dec-16	2016	3.308	3.71804864	3.955370894	4.153139438	3.479110826	3.70118173
Jan-17	2017	3.445	3.952244444	4.204515366	4.414741134	3.610883231	3.84136514
Feb-17	2017	3.433	3.879389513	4.12701012	4.333360626	3.66014684	3.893773235
Mar-17	2017	3.379	3.791217364	4.033209961	4.234870459	3.4473947	3.66744117
Apr-17	2017	3.154	3.645592341	3.878289724	4.07220421	3.209406351	3.414262075
May-17	2017	3.159	3.779293755	4.020525271	4.221551535	3.297547243	3.508028982
Jun-17	2017	3.197	3.813126421	4.056517469	4.259343343	3.396686758	3.613496551
Jul-17	2017	3.238	3.827980041	4.072319192	4.275935152	3.421735137	3.640143763
Aug-17	2017	3.25	3.822000344	4.065957813	4.269255704	3.415651558	3.633671871
Sep-17	2017	3.239	3.813908222	4.057349173	4.260216631	3.308177059	3.519337297
Oct-17	2017	3.262	3.843781341	4.089129086	4.29358554	3.728693142	3.966694832
Nov-17	2017	3.337	3.93136078	4.182298702	4.391413637	4.025556606	4.282507028
Dec-17	2017	3.509	4.069749327	4.329520561	4.545996589	4.024440464	4.281319642
Jan-18	2018	3.644	4.317914046	4.593525581	4.82320186	4.161176905	4.426783942
Feb-18	2018	3.624	4.102874356	4.364759953	4.582997951	4.012903444	4.269046217
Mar-18	2018	3.564	4.01827026	4.274755596	4.488493376	4.135933306	4.399929049

GAS SUPPLY 20 YEAR PRICE FORECAST IN BOLD

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Apr-18	2018	3.259	3.814121923	4.057576514	4.26045534	3.351191126	3.565096943
May-18	2018	3.261	3.942003451	4.193620692	4.403301727	3.453203248	3.673620477
Jun-18	2018	3.293	3.975381662	4.229129428	4.440585899	3.565166636	3.792730464
Jul-18	2018	3.329	4.004461721	4.260065661	4.473068944	3.598448348	3.82813654
Aug-18	2018	3.34	4.012566548	4.268687817	4.482122208	3.620831697	3.851948614
Sep-18	2018	3.333	4.003160026	4.258680879	4.471614923	3.538040184	3.763872536
Oct-18	2018	3.356	4.046081921	4.304342469	4.519559593	3.968307902	4.221604151
Nov-18	2018	3.431	4.179422789	4.446194457	4.66850418	4.238876003	4.509442557
Dec-18	2018	3.603	4.339263687	4.616237965	4.847049863	4.257263924	4.529004175
Jan-19	2019	3.738	4.67586737	4.974326989	5.223043339	4.483973655	4.77018474
Feb-19	2019	3.718	4.601662958	4.895386125	5.140155432	4.489249214	4.775797036
Mar-19	2019	3.658	4.458422044	4.743002174	4.980152283	4.533587903	4.822965855
Apr-19	2019	3.356	4.244730708	4.515670966	4.741454514	3.701109058	3.937350062
May-19	2019	3.356	4.416234965	4.698122303	4.933028418	3.83195641	4.076549372
Jun-19	2019	3.389	4.453966852	4.738262609	4.975175739	3.920197768	4.170423158
Jul-19	2019	3.423	4.480497365	4.766486558	5.004810886	4.000592654	4.255949632
Aug-19	2019	3.44	4.486168679	4.772519871	5.011145865	4.020253495	4.27686542
Sep-19	2019	3.432	4.468507246	4.753731112	4.991417668	3.919899883	4.170106258
Oct-19	2019	3.456	4.50417064	4.791670894	5.031254438	4.351570621	4.629330448
Nov-19	2019	3.538	4.613327483	4.907795194	5.153184954	4.605438303	4.899402451
Dec-19	2019	3.72	4.794535241	5.100569405	5.355597876	4.620053055	4.914950059
Jan-20	2020	3.858	5.188987731	5.520199714	5.7962097	4.914562913	5.228258418
Feb-20	2020	3.838	5.084650242	5.409202385	5.679662504	4.820837504	5.128550536
Mar-20	2020	3.778	4.905481486	5.218597326	5.479527192	4.921576548	5.235719732
Apr-20	2020	3.48	4.683440778	4.982383806	5.231502997	3.988921179	4.243533169
May-20	2020	3.48	4.898520202	5.211191704	5.47175129	4.129943293	4.393556694
Jun-20	2020	3.51	4.939505777	5.25479338	5.517533049	4.238749343	4.509307812
Jul-20	2020	3.542	4.963263961	5.280068044	5.544071446	4.351391877	4.629140295
Aug-20	2020	3.566	4.971896017	5.289251082	5.553713636	4.297115111	4.571399054
Sep-20	2020	3.56	4.950004564	5.265962302	5.529260417	4.209136537	4.477804827
Oct-20	2020	3.59	4.991185979	5.309772319	5.575260935	4.705207076	5.005539442
Nov-20	2020	3.676	5.09663679	5.421954032	5.693051734	4.971716766	5.289060389
Dec-20	2020	3.865	5.264306756	5.600326336	5.880342653	4.957641143	5.274086323
Jan-21	2021	4.004	5.587200538	5.94383036	6.241021878	5.065734506	5.389079262
Feb-21	2021	3.982	5.464520153	5.813319312	6.103985278	4.940082474	5.255406887
Mar-21	2021	3.919	5.101645743	5.427282705	5.69864684	4.974308213	5.291817248
Apr-21	2021	3.629	4.911796002	5.225314896	5.48658064	4.152989029	4.418073435
May-21	2021	3.629	5.128649449	5.456010052	5.728810554	4.230050743	4.500053982
Jun-21	2021	3.659	5.180287531	5.510944182	5.786491391	4.354803906	4.632770113

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Jul-21	2021	3.696	5.220413031	5.553630884	5.831312428	4.596869325	4.890286516
Aug-21	2021	3.726	5.229263829	5.563046627	5.841198958	4.501258518	4.788572891
Sep-21	2021	3.723	5.18276498	5.513579766	5.789258754	4.369795488	4.648718604
Oct-21	2021	3.759	5.227973798	5.561674253	5.839757965	4.746559121	5.04953098
Nov-21	2021	3.844	5.385930531	5.729713331	6.016198997	5.027022042	5.34789579
Dec-21	2021	4.032	5.55061165	5.90490601	6.200151311	5.047085639	5.369240041
Jan-22	2022	4.168	5.657676445	6.018804728	6.319744965	5.076446774	5.400475291
Feb-22	2022	4.145	5.538355083	5.891867109	6.186460465	5.06079794	5.383827596
Mar-22	2022	4.08	5.230456063	5.56431496	5.842530708	5.091294673	5.416270929
Apr-22	2022	3.775	5.028354954	5.349313781	5.61677947	4.280792601	4.554034682
May-22	2022	3.767	5.249757817	5.584848742	5.864091179	4.342382445	4.619555792
Jun-22	2022	3.797	5.328402943	5.668513769	5.951939458	4.466342234	4.751427909
Jul-22	2022	3.835	5.360231946	5.702374411	5.987493131	4.752029042	5.055350044
Aug-22	2022	3.873	5.375281322	5.718384385	6.004303604	4.662855397	4.960484465
Sep-22	2022	3.879	5.314096	5.653293617	5.935958297	4.501987311	4.789348203
Oct-22	2022	3.924	5.356111829	5.697991308	5.982890873	4.932378074	5.247210717
Nov-22	2022	4.014	5.57690997	5.932882947	6.229527094	5.27997869	5.616998607
Dec-22	2022	4.205	5.791912671	6.161609224	6.469689686	5.33674085	5.677383883
Jan-23	2023	4.31	5.931510983	6.310118067	6.62562397	5.410937096	5.75631606
Feb-23	2023	4.287	5.852322147	6.225874624	6.537168356	5.313867839	5.653050892
Mar-23	2023	4.219	5.625745908	5.984836073	6.284077876	5.471463834	5.820706207
Apr-23	2023	3.919	5.411947494	5.757390951	6.045260499	4.571445775	4.863240186
May-23	2023	3.907	5.630703079	5.990109659	6.289615142	4.714569893	5.015499886
Jun-23	2023	3.937	5.712901928	6.077555243	6.381433005	4.862144774	5.172494441
Jul-23	2023	3.978	5.744881817	6.111576401	6.417155221	4.866094612	5.176696396
Aug-23	2023	4.017	5.758328532	6.125881417	6.432175488	4.902426852	5.215347715
Sep-23	2023	4.027	5.705216375	6.069379122	6.372848078	4.841204359	5.150217403
Oct-23	2023	4.079	5.749472919	6.116460552	6.42228358	5.211953163	5.544631025
Nov-23	2023	4.169	5.988153768	6.370376349	6.688895166	5.615136259	5.973549212
Dec-23	2023	4.359	6.19604935	6.591541862	6.921118955	5.663980122	6.025510768
Jan-24	2024	4.457	6.314451729	6.71750184	7.053376932	5.708620317	6.073000337
Feb-24	2024	4.432	6.23222641	6.630028096	6.961529501	5.625795393	5.984888715
Mar-24	2024	4.362	5.877895442	6.253080257	6.56573427	5.54846633	5.902623756
Apr-24	2024	4.042	5.672850459	6.034947297	6.336694662	4.870152906	5.18101373
May-24	2024	4.027	5.903841309	6.280682244	6.594716356	4.988979045	5.307424516
Jun-24	2024	4.059	5.98885673	6.371124181	6.68968039	5.030503129	5.351599074
Jul-24	2024	4.104	6.041886415	6.427538739	6.748915676	5.148608294	5.477242866
Aug-24	2024	4.146	6.057093683	6.443716684	6.765902518	5.135992328	5.463821625
Sep-24	2024	4.159	6.008990096	6.392542656	6.712169788	5.009269474	5.329010079

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Oct-24	2024	4.219	6.0623011	6.44925649	6.771719314	5.208355183	5.540803386
Nov-24	2024	4.309	6.260763107	6.660386284	6.993405598	5.553341838	5.907810466
Dec-24	2024	4.504	6.441563227	6.852726837	7.195363179	5.572087815	5.927752995
Jan-25	2025	4.599	6.570886342	6.990304619	7.33981985	5.612474991	5.970718075
Feb-25	2025	4.568	6.458619164	6.870871451	7.214415023	5.471418646	5.820658134
Mar-25	2025	4.487	6.090449104	6.479201175	6.803161233	5.451922855	5.799917931
Apr-25	2025	4.142	5.876187899	6.251263722	6.563826908	5.031290996	5.35243723
May-25	2025	4.127	6.12826677	6.519432734	6.84540437	5.158921963	5.488214854
Jun-25	2025	4.165	6.22050949	6.617563287	6.948441451	5.136766961	5.464645703
Jul-25	2025	4.213	6.257516581	6.656932533	6.989779159	5.265785938	5.601899934
Aug-25	2025	4.257	6.274700379	6.675213169	7.008973828	5.272632635	5.609183655
Sep-25	2025	4.272	6.223527026	6.620773432	6.951812104	5.216701786	5.549682751
Oct-25	2025	4.334	6.273294671	6.673717735	7.007403622	5.592334368	5.949291881
Nov-25	2025	4.439	6.458899308	6.871169476	7.21472795	5.93513164	6.31396983
Dec-25	2025	4.649	6.672116088	7.097995838	7.45289563	5.985869343	6.367946109
Jan-26	2026	4.759	6.85346426	7.290919425	7.655465396	6.090157692	6.478891162
Feb-26	2026	4.722	6.713705803	7.142240216	7.499352226	5.924766379	6.302942956
Mar-26	2026	4.634	6.424061117	6.834107572	7.17581295	5.97957391	6.361248841
Apr-26	2026	4.244	6.169214134	6.56299376	6.891143448	5.291449587	5.629201689
May-26	2026	4.229	6.460055344	6.872399302	7.216019268	5.527618438	5.880445147
Jun-26	2026	4.267	6.552209416	6.970435549	7.318957327	5.783209163	6.152350173
Jul-26	2026	4.315	6.588508815	7.00905193	7.359504527	6.036371841	6.421672171
Aug-26	2026	4.359	6.606309597	7.027988933	7.37938838	5.966395376	6.347229124
Sep-26	2026	4.374	6.555893982	6.9743553	7.323073065	5.881227152	6.25662463
Oct-26	2026	4.436	6.607454746	7.029207177	7.380667536	6.29533858	6.697168702
Nov-26	2026	4.556	6.729136344	7.158655686	7.51658847	6.565892378	6.984991891
Dec-26	2026	4.786	6.921546688	7.36334754	7.731514917	6.613468197	7.035604465
Jan-27	2027	4.911	6.975620988	7.420873391	7.791917061	6.592611831	7.013416842
Feb-27	2027	4.874	6.834738923	7.270998855	7.634548797	6.461052109	6.873459691
Mar-27	2027	4.786	6.378264052	6.78538729	7.124656654	6.315460897	6.718575422
Apr-27	2027	4.396	6.123887545	6.514773984	6.840512683	5.417522233	5.763321524
May-27	2027	4.381	6.414838342	6.824296109	7.165510914	5.617170073	5.975712844
Jun-27	2027	4.419	6.515658873	6.931551993	7.278129592	5.727180692	6.092745417
Jul-27	2027	4.467	6.544361437	6.962086635	7.310190967	5.941847821	6.321114703
Aug-27	2027	4.511	6.561602533	6.980428227	7.329449638	5.876826895	6.251943505
Sep-27	2027	4.526	6.507039041	6.922381959	7.268501057	5.791451217	6.161118316
Oct-27	2027	4.588	6.559184091	6.977855416	7.326748187	6.215191369	6.611905711
Nov-27	2027	4.708	6.734945406	7.164835539	7.523077316	6.562881537	6.981788869
Dec-27	2027	4.938	6.926021714	7.368108206	7.736513616	6.590534884	7.011207323

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Jan-28	2028	4.96011	6.90144392	7.341961617	7.709059698	6.486526261	6.900559852
Feb-28	2028	4.92274	6.826438502	7.262168619	7.62527705	6.44540824	6.856817277
Mar-28	2028	4.83386	6.429580745	6.839979516	7.181978492	6.312591427	6.715522795
Apr-28	2028	4.43996	6.175234596	6.569398507	6.897868432	5.394205754	5.738516759
May-28	2028	4.42481	6.466140457	6.878872826	7.222816468	5.644947758	6.005263572
Jun-28	2028	4.46319	6.569864305	6.989217345	7.338678213	5.755690484	6.123074983
Jul-28	2028	4.51167	6.600564972	7.02187763	7.372971511	5.918290648	6.296053881
Aug-28	2028	4.55611	6.616751802	7.039097662	7.391052545	5.848685477	6.222005826
Sep-28	2028	4.57126	6.556449705	6.974946494	7.323693819	5.795398331	6.165317373
Oct-28	2028	4.63388	6.607437334	7.029188653	7.380648086	6.212772305	6.60933224
Nov-28	2028	4.75508	6.880286595	7.319453824	7.685426515	6.651585629	7.076154924
Dec-28	2028	4.98738	7.077537111	7.529294799	7.905759539	6.685117849	7.111827498
Jan-29	2029	5.0097111	7.091991114	7.544671398	7.921904967	6.63688331	7.06051416
Feb-29	2029	4.9719674	7.00863838	7.455998277	7.828798191	6.634560473	7.058043057
Mar-29	2029	4.8821986	6.671124834	7.096941312	7.451788378	6.522238085	6.938551154
Apr-29	2029	4.4843596	6.408755778	6.817825296	7.158716561	5.58561119	5.942139564
May-29	2029	4.4690581	6.707822686	7.135981581	7.49278066	5.815558066	6.1867639
Jun-29	2029	4.5078219	6.806608357	7.241072721	7.603126357	5.969115207	6.35012256
Jul-29	2029	4.5567867	6.86799554	7.306378234	7.671697145	6.224707028	6.622028754
Aug-29	2029	4.6016711	6.888472892	7.328162651	7.694570784	6.11997621	6.51061299
Sep-29	2029	4.6169726	6.832977418	7.269124913	7.632581159	6.055738586	6.442275092
Oct-29	2029	4.6802188	6.8884196	7.328105958	7.694511256	6.481197124	6.894890558
Nov-29	2029	4.8026308	7.059550719	7.510160339	7.885668356	6.783615659	7.216612404
Dec-29	2029	5.0372538	7.261039203	7.72450979	8.11073528	6.834823819	7.271089169
Jan-30	2030	5.059808211	7.240979543	7.703169726	8.088328212	6.742570959	7.172947828
Feb-30	2030	5.021687074	7.163030451	7.620245161	8.001257419	6.766763294	7.198684355
Mar-30	2030	4.931020586	6.859921338	7.297788657	7.66267809	6.751725066	7.18268624
Apr-30	2030	4.529203196	6.604557775	7.026125292	7.377431557	5.799432791	6.169609352
May-30	2030	4.513748681	6.909024164	7.350025706	7.717526992	6.057611865	6.444267942
Jun-30	2030	4.552900119	7.023949408	7.472286605	7.845900935	6.261756717	6.661443316
Jul-30	2030	4.602354567	7.085251028	7.537501093	7.914376148	6.536282627	6.953492156
Aug-30	2030	4.647687811	7.107982758	7.561683785	7.939767974	6.420644362	6.830472726
Sep-30	2030	4.663142326	7.045257897	7.494955209	7.86970297	6.373021256	6.779809847
Oct-30	2030	4.727020988	7.104378162	7.557849109	7.935741564	6.800296125	7.23435758
Nov-30	2030	4.850657108	7.322159774	7.789531674	8.179008258	7.167216626	7.624698538
Dec-30	2030	5.087626338	7.52716993	8.007627585	8.408008965	7.200863664	7.660493259
Jan-31	2031	5.110406293	7.649646547	8.137921858	8.544817951	7.256361643	7.719533663
Feb-31	2031	5.071903945	7.552721861	8.034810491	8.436551015	7.21107466	7.671356021
Mar-31	2031	4.980330792	7.198736515	7.658230335	8.041141851	7.116122303	7.570342875

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Apr-31	2031	4.574495228	6.932117207	7.374592774	7.743322412	6.127669322	6.518797151
May-31	2031	4.558886168	7.250738355	7.713551441	8.099229013	6.408345191	6.817388502
Jun-31	2031	4.59842912	7.343703059	7.812450062	8.203072566	6.533098405	6.950104686
Jul-31	2031	4.648378113	7.377002962	7.847875492	8.240269266	6.820233607	7.255567667
Aug-31	2031	4.694164689	7.403432919	7.875992467	8.269792091	6.701286562	7.129028258
Sep-31	2031	4.709773749	7.382522286	7.853747113	8.246434469	6.692553814	7.1197381
Oct-31	2031	4.774291198	7.44604129	7.921320521	8.317386547	7.172696548	7.630528243
Nov-31	2031	4.899163679	7.854816417	8.356187678	8.773997062	7.770774826	8.26678173
Dec-31	2031	5.138502601	8.078048291	8.593668395	9.023351815	7.814799669	8.313616669
Jan-32	2032	5.161510356	7.912738108	8.417806498	8.838696823	7.90507297	8.409652096
Feb-32	2032	5.122622984	5.161865558	5.491346338	5.765913655	5.122566793	5.449539141
Mar-32	2032	5.0301341	5.107145934	5.433133972	5.704790671	5.312238573	5.651317631
Apr-32	2032	4.62024018	4.777229306	5.082158836	5.336266778	4.122720875	4.385873271
May-32	2032	4.604475029	5.183303843	5.514153025	5.789860676	4.467352248	4.752502391
Jun-32	2032	4.644413411	5.246163804	5.581025324	5.86007659	4.697195531	4.997016523
Jul-32	2032	4.694861894	5.257545614	5.593133632	5.872790313	4.707698791	5.008190203
Aug-32	2032	4.741106336	5.252281241	5.587533235	5.866909897	4.747116396	5.050123826
Sep-32	2032	4.756871487	5.218345393	5.551431269	5.829002832	4.756503315	5.060109909
Oct-32	2032	4.82203411	5.272298104	5.60882777	5.889269158	5.460358838	5.80889238
Nov-32	2032	4.948155316	5.337085291	5.67775031	5.961637826	5.749110875	6.116075399
Dec-32	2032	5.189887627	5.455137852	5.803338141	6.093505048	5.630673064	5.990077727
Jan-33	2033	5.21312546	8.391762083	8.927406472	9.373776795	8.383713397	8.91884404
Feb-33	2033	5.173849214	8.291412673	8.820651779	9.261684368	8.228912766	8.754162517
Mar-33	2033	5.080435441	8.203517515	8.727146293	9.163503608	8.529692419	9.074140871
Apr-33	2033	4.666442582	7.673578314	8.163381185	8.571550244	6.632662244	7.056023664
May-33	2033	4.65051978	8.325848608	8.857285753	9.300150041	7.187214656	7.645973039
Jun-33	2033	4.690857546	8.426819444	8.964701536	9.412936613	7.553752161	8.035906554
Jul-33	2033	4.741810513	8.445101841	8.984150895	9.43335844	7.570637332	8.053869502
Aug-33	2033	4.788517399	8.436645773	8.975155078	9.423912832	7.633242517	8.120470762
Sep-33	2033	4.804440202	8.382135224	8.917165132	9.363023389	7.647631561	8.135778256
Oct-33	2033	4.870254451	8.468798503	9.00936011	9.459828115	8.767886232	9.327538545
Nov-33	2033	4.997636869	8.572865008	9.120069158	9.576072616	9.228141596	9.81717191
Dec-33	2033	5.241786504	8.762490733	9.321798653	9.787888585	9.041658142	9.618785257
Jan-34	2034	5.265256714	8.791297457	9.352444103	9.820066309	8.782949054	9.343562823
Feb-34	2034	5.225587706	8.686170368	9.240606775	9.702637113	8.621343087	9.171641582
Mar-34	2034	5.131239795	8.594090485	9.142649452	9.599781925	8.932411504	9.50256543
Apr-34	2034	4.713107008	8.038920652	8.552043247	8.979645409	6.959242902	7.403449895
May-34	2034	4.697024978	8.722245813	9.278984908	9.742934153	7.541211358	8.022565274
Jun-34	2034	4.737766121	8.828023913	9.391514801	9.861090541	7.922445311	8.42813331

GAS SUPPLY 20 YEAR PRICE FORECAST IN BOLD

PERIOD	YEAR	NYMEX CURRENT MARKET	CASCADE NYMEX LO PROJECTED PRICE	NYMEX CASCADE PROJECTED PRICE	CASCADE NYMEX HI PROJECTED PRICE	CASCADE SUMAS LO FORECAST PRICE	SUMAS CASCADE FORECAST PRICE
Jul-34	2034	4.789228618	8.847176744	9.411890153	9.88248466	7.940148884	8.446966898
Aug-34	2034	4.836402573	8.838318079	9.402466041	9.872589343	8.004997654	8.515954951
Sep-34	2034	4.852484604	8.781212259	9.34171517	9.808800928	8.019357114	8.531230973
Oct-34	2034	4.918956995	8.872001614	9.438299589	9.910214568	9.182226785	9.768326367
Nov-34	2034	5.047613238	8.98102277	9.554279542	10.03199352	9.660700577	10.27734104
Dec-34	2034	5.294204369	9.179676656	9.765613464	10.25389414	9.469239714	10.07365927
Jan-35	2035	5.317909281	9.159651277	9.74430987	10.23152536	9.151039198	9.735148083
Feb-35	2035	5.277843583	9.050119382	9.627786576	10.10917591	8.983244596	9.556643188
Mar-35	2035	5.182552193	8.954181368	9.525724859	10.0020111	9.303187913	9.897008418
Apr-35	2035	4.760238078	8.375750016	8.910372358	9.355890976	7.26197174	7.725501851
May-35	2035	4.743995227	9.087706382	9.667772747	10.15116138	7.869370152	8.371670375
Jun-35	2035	4.785143782	9.197916566	9.785017623	10.2742685	8.263736183	8.791208705
Jul-35	2035	4.837120904	9.217871896	9.806246698	10.29655903	8.282196483	8.810847322
Aug-35	2035	4.884766599	9.208642054	9.796427717	10.2862491	8.349002051	8.881917075
Sep-35	2035	4.90100945	9.149143512	9.733131395	10.21978797	8.363225945	8.897048878
Oct-35	2035	4.968146565	9.243736924	9.833762685	10.32545082	9.563760242	10.17421302
Nov-35	2035	5.09808937	9.357326047	9.954602178	10.45233229	10.05847079	10.70050084
Dec-35	2035	5.347146412	9.564303497	10.17479095	10.6835305	9.863012109	10.49256607

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Jan-15	2015	3.947727911	3.327668015	3.540072356	3.717075974	3.176875765	3.379655069
Feb-15	2015	3.958200069	3.313858291	3.525381161	3.701650219	3.07241479	3.268526372
Mar-15	2015	3.892424796	3.270175869	3.478910499	3.652856024	3.027011785	3.220225304
Apr-15	2015	4.203303398	3.639496377	3.871804657	4.065394889	3.25688946	3.464776021
May-15	2015	2.711337598	2.466703391	2.624152543	2.755360171	2.208756816	2.349741294
Jun-15	2015	2.923315651	2.656690271	2.826266245	2.967579558	2.365423052	2.516407502
Jul-15	2015	2.963437665	2.699702497	2.872023933	3.015625129	2.427657072	2.582613906
Aug-15	2015	2.985974706	2.723945581	2.897814448	3.04270517	2.431131367	2.586309965
Sep-15	2015	2.951624865	2.736045401	2.910686597	3.056220927	2.446923556	2.603110166
Oct-15	2015	3.159780624	2.753531851	2.929289203	3.075753663	2.460572734	2.617630568
Nov-15	2015	3.443964246	2.875945764	3.05951677	3.212492609	2.464141159	2.621426765
Dec-15	2015	3.407286902	3.052699953	3.247553141	3.409930798	2.60867602	2.775187255
Jan-16	2016	3.838749446	3.513056617	3.737294273	3.924158987	3.054457746	3.249423134
Feb-16	2016	3.823356807	3.474543587	3.696322965	3.881139113	3.03087473	3.224334819
Mar-16	2016	3.538999195	3.303498933	3.514360567	3.690078595	2.851819694	3.033850738
Apr-16	2016	3.234843265	3.082241114	3.278979909	3.442928904	2.670306729	2.840751839
May-16	2016	3.303372267	3.150618614	3.35172193	3.519308027	2.743137762	2.918231662
Jun-16	2016	3.398016238	3.152792033	3.354034077	3.521735781	2.737643676	2.912386889
Jul-16	2016	3.453290157	3.254617177	3.462358699	3.635476634	2.813009025	2.992562792
Aug-16	2016	3.491293435	3.240340589	3.44717084	3.619529382	2.811558598	2.991019785
Sep-16	2016	3.390180112	3.201227224	3.405560877	3.575838921	2.799539577	2.978233593
Oct-16	2016	3.673829814	3.239176622	3.445932577	3.618229205	2.818682554	2.998598461
Nov-16	2016	3.925645196	3.387795466	3.60403773	3.784239616	2.886065911	3.070282884
Dec-16	2016	3.886240816	3.541410377	3.767457848	3.95583074	3.025534315	3.218653526
Jan-17	2017	4.033433397	3.782136335	4.023549293	4.224726758	3.248534007	3.455887242
Feb-17	2017	4.088461896	3.713260846	3.950277496	4.14779137	3.200916071	3.405229863
Mar-17	2017	3.850813228	3.629517565	3.861188899	4.054248344	3.118395201	3.317441703
Apr-17	2017	3.584975179	3.372395753	3.587655056	3.767037809	2.908922155	3.094598037
May-17	2017	3.683430431	3.457217287	3.677890731	3.861785268	3.029399491	3.222765416
Jun-17	2017	3.794171378	3.48113178	3.703331681	3.888498265	3.056905875	3.252027527
Jul-17	2017	3.822150951	3.552762062	3.779534109	3.968510814	3.099601313	3.297448205
Aug-17	2017	3.815355464	3.53156168	3.756980511	3.944829536	3.088713539	3.285865467
Sep-17	2017	3.695304162	3.504794656	3.728504954	3.914930201	3.079022369	3.275555711
Oct-17	2017	4.165029574	3.542080967	3.768171241	3.956579803	3.104814975	3.302994654
Nov-17	2017	4.496632379	3.77764482	4.018771085	4.219709639	3.193444066	3.397280921
Dec-17	2017	4.495385624	3.947056814	4.19899661	4.408946441	3.338487058	3.551581977
Jan-18	2018	4.648123139	4.192852885	4.460481793	4.683505882	3.59122437	3.820451458
Feb-18	2018	4.482498528	3.9809649	4.235069042	4.446822494	3.417531022	3.6356713
Mar-18	2018	4.619925502	3.904677419	4.153912147	4.361607755	3.343507441	3.556922809

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Apr-18	2018	3.74335179	3.568613967	3.796397837	3.986217729	3.059234934	3.254505249
May-18	2018	3.857301501	3.652343964	3.885472302	4.079745917	3.154482673	3.355832631
Jun-18	2018	3.982366987	3.661419449	3.895127073	4.089883427	3.186201489	3.389576052
Jul-18	2018	4.019543368	3.777020204	4.018106601	4.219011931	3.26269158	3.470948489
Aug-18	2018	4.044546045	3.762670509	4.002840967	4.202983015	3.262803127	3.471067157
Sep-18	2018	3.952066163	3.726560275	3.964425824	4.162647115	3.245367507	3.452518624
Oct-18	2018	4.432684359	3.767625014	4.008111717	4.208517303	3.281742066	3.491214964
Nov-18	2018	4.734914685	4.011413403	4.267461067	4.48083412	3.410063884	3.627727537
Dec-18	2018	4.755454384	4.200609009	4.468732988	4.692169637	3.570179883	3.798063705
Jan-19	2019	5.008693977	4.535267637	4.824752806	5.065990446	3.89826668	4.147092213
Feb-19	2019	5.014586888	4.468444471	4.75366433	4.991347547	3.851714855	4.097568995
Mar-19	2019	5.064114147	4.332237493	4.60876329	4.839201455	3.669665223	3.903899173
Apr-19	2019	4.134217565	4.012976939	4.269124404	4.482580624	3.35936061	3.573787883
May-19	2019	4.280376841	4.116034147	4.378759731	4.597697718	3.481632008	3.703863838
Jun-19	2019	4.378944316	4.126882965	4.390301026	4.609816078	3.517352005	3.741863835
Jul-19	2019	4.468747113	4.27276431	4.545493947	4.772768644	3.640007553	3.872348461
Aug-19	2019	4.490708691	4.267264718	4.539643317	4.766625483	3.63852664	3.870773022
Sep-19	2019	4.378611571	4.193374039	4.461036212	4.684088022	3.603446781	3.833454023
Oct-19	2019	4.860796971	4.2280788	4.497956171	4.722853979	3.606939936	3.837170145
Nov-19	2019	5.144372573	4.378635866	4.658123262	4.891029425	3.706100161	3.942659745
Dec-19	2019	5.160697562	4.592608641	4.885753873	5.130041567	3.890401884	4.138725408
Jan-20	2020	5.489671339	4.994810238	5.313627913	5.579309309	4.278815455	4.551931335
Feb-20	2020	5.384978063	4.896144156	5.208663995	5.469097195	4.223370207	4.492947029
Mar-20	2020	5.497505719	4.702233587	5.002376156	5.252494964	4.017877541	4.274337809
Apr-20	2020	4.455709828	4.370587581	4.649561257	4.88203932	3.681274284	3.916249238
May-20	2020	4.613234529	4.497979762	4.785084853	5.024339096	3.838904055	4.083940484
Jun-20	2020	4.734773202	4.480998398	4.767019572	5.005370551	3.850797106	4.096592666
Jul-20	2020	4.860597309	4.647550455	4.944202612	5.191412742	3.982219204	4.236403409
Aug-20	2020	4.799969007	4.634545611	4.930367672	5.176886055	3.982224666	4.236409219
Sep-20	2020	4.701695068	4.498546318	4.785687572	5.024971951	3.872054614	4.119207036
Oct-20	2020	5.255816414	4.541037114	4.830890546	5.072435074	3.89852406	4.147366021
Nov-20	2020	5.553513408	4.682887584	4.981795302	5.230885067	3.996545896	4.25164457
Dec-20	2020	5.537790639	4.888922517	5.200981401	5.461030471	4.171641092	4.437916056
Jan-21	2021	5.658533225	5.139309504	5.467350536	5.740718063	4.462850398	4.74771319
Feb-21	2021	5.518177231	5.036346002	5.357814895	5.62570564	4.372142148	4.651215051
Mar-21	2021	5.556408111	4.776068676	5.080924123	5.33497033	4.007083223	4.262854493
Apr-21	2021	4.638977107	4.508202784	4.795960409	5.035758429	3.701752407	3.938034476
May-21	2021	4.725056681	4.552249206	4.842818304	5.084959219	3.86091016	4.107351235
Jun-21	2021	4.864408618	4.565689838	4.857116849	5.099972691	3.930768937	4.181669082

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Jul-21	2021	5.134800841	4.843294949	5.152441435	5.410063507	4.182887099	4.449879893
Aug-21	2021	5.028001536	4.835263227	5.14389705	5.401091903	4.182597378	4.449571679
Sep-21	2021	4.881154535	4.656942653	4.954194311	5.201904027	4.039308902	4.297137129
Oct-21	2021	5.302007529	4.699991984	4.999991472	5.249991045	4.064042788	4.323449775
Nov-21	2021	5.615290579	4.871843291	5.182812011	5.441952612	4.197473961	4.465397831
Dec-21	2021	5.637702043	5.069418861	5.392998788	5.662648727	4.368252131	4.647076736
Jan-22	2022	5.670499056	5.209182545	5.541683558	5.818767736	4.539341546	4.829086752
Feb-22	2022	5.653018976	5.098405694	5.423835844	5.695027637	4.433817409	4.716827031
Mar-22	2022	5.687084475	4.894732415	5.207162143	5.467520251	4.082098228	4.34265769
Apr-22	2022	4.781736416	4.601425273	4.895133269	5.139889933	3.768138307	4.008657773
May-22	2022	4.850533582	4.660776591	4.958272969	5.206186618	3.944046605	4.195794261
Jun-22	2022	4.988999304	4.718465436	5.019644081	5.270626285	4.042007836	4.300008336
Jul-22	2022	5.308117546	4.977199359	5.294892935	5.559637581	4.333650629	4.610266627
Aug-22	2022	5.208508689	4.978141168	5.29589486	5.560689603	4.34213892	4.619296723
Sep-22	2022	5.028815613	4.786130853	5.091628567	5.346209995	4.164418188	4.430232115
Oct-22	2022	5.509571252	4.796877497	5.103061167	5.358214226	4.169219815	4.435340229
Nov-22	2022	5.897848537	5.045016769	5.367039116	5.635391072	4.372421505	4.651512239
Dec-22	2022	5.961253077	5.293209306	5.63107373	5.912627416	4.594200836	4.887447698
Jan-23	2023	6.044131863	5.483424748	5.833430583	6.125102112	4.80956566	5.116559212
Feb-23	2023	5.935703437	5.406242828	5.751322157	6.038888265	4.744662872	5.047513694
Mar-23	2023	6.111741517	5.272802357	5.60936421	5.88983242	4.421415637	4.703633656
Apr-23	2023	5.106402195	4.927375748	5.241889094	5.503983548	4.035328841	4.292903023
May-23	2023	5.266274881	5.1006446	5.42621766	5.697528543	4.215787789	4.484880627
Jun-23	2023	5.431119163	5.138226895	5.466198824	5.739508765	4.298939504	4.573339898
Jul-23	2023	5.435531215	5.33561984	5.676191319	5.960000885	4.556255353	4.847080163
Aug-23	2023	5.476115101	5.345424225	5.686621516	5.970952591	4.575040245	4.867064091
Sep-23	2023	5.407728273	5.180115963	5.510761663	5.786299746	4.494238042	4.7811043
Oct-23	2023	5.821862576	5.191566782	5.522943385	5.799090554	4.464207234	4.749156632
Nov-23	2023	6.272226673	5.467059613	5.816020864	6.106821908	4.695849656	4.99558474
Dec-23	2023	6.326786306	5.708769022	6.073158534	6.376816461	4.909902397	5.223300422
Jan-24	2024	6.376650354	5.872866951	6.247730799	6.560117339	5.101233632	5.426844289
Feb-24	2024	6.284133151	5.892396959	6.268507403	6.581932774	5.048613485	5.370865409
Mar-24	2024	6.197754944	5.591111071	5.947990501	6.245390026	4.563022732	4.854279503
Apr-24	2024	5.440064416	5.254626642	5.590028342	5.869529759	4.198949254	4.466967291
May-24	2024	5.572795742	5.375842405	5.718981282	6.004930346	4.35966332	4.637939702
Jun-24	2024	5.619179027	5.365531592	5.708012332	5.993412948	4.454863622	4.73921662
Jul-24	2024	5.751105009	5.621959543	5.980808025	6.279848426	4.83208629	5.14051733
Aug-24	2024	5.737012707	5.602741829	5.960363647	6.25838183	4.803273766	5.109865708
Sep-24	2024	5.595460583	5.433292096	5.780097975	6.069102874	4.659218773	4.956615715

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Oct-24	2024	5.817843555	5.453462334	5.801555675	6.091633459	4.463103381	4.74798232
Nov-24	2024	6.203200989	5.675938114	6.038232036	6.340143638	4.637182791	4.933173182
Dec-24	2024	6.224140645	5.900789798	6.277435955	6.591307753	4.820630101	5.128329895
Jan-25	2025	6.269253979	6.062495539	6.449463339	6.771936506	5.007110871	5.326713692
Feb-25	2025	6.11169104	6.081367474	6.469539866	6.79301686	4.896640453	5.209191971
Mar-25	2025	6.089913828	5.737920306	6.104170538	6.409379065	4.462456828	4.747294498
Apr-25	2025	5.620059091	5.418646532	5.764517588	6.052743467	4.112079055	4.374552186
May-25	2025	5.762625597	5.550027581	5.904284661	6.199498894	4.427883639	4.71051451
Jun-25	2025	5.737877988	5.556978611	5.911679373	6.207263342	4.552915391	4.843527012
Jul-25	2025	5.881994931	5.803166736	6.173581634	6.482260715	4.945628641	5.261307065
Aug-25	2025	5.889642837	5.785904946	6.155218028	6.462978929	4.935462325	5.250491836
Sep-25	2025	5.827166888	5.61660181	5.975108309	6.273863724	4.859705914	5.169899908
Oct-25	2025	6.246756475	5.634506083	5.994155408	6.293863178	4.831605722	5.140006087
Nov-25	2025	6.629668322	5.853450751	6.227075267	6.53842903	5.004399167	5.323828901
Dec-25	2025	6.686343415	6.097061277	6.486235401	6.810547171	5.220623857	5.553855167
Jan-26	2026	6.80283572	6.335657657	6.740061337	7.077064404	5.464916299	5.813740744
Feb-26	2026	6.618090104	6.270562026	6.670810666	7.004351199	5.331745931	5.672070139
Mar-26	2026	6.679311283	6.035926171	6.421198054	6.742257957	4.977973111	5.295716075
Apr-26	2026	5.910661773	5.672935797	6.035038082	6.336789986	4.577294715	4.869462462
May-26	2026	6.174467404	5.889645391	6.265580203	6.578859213	5.1724553	5.502612021
Jun-26	2026	6.459967682	6.00072947	6.383754755	6.702942493	5.310939686	5.649935836
Jul-26	2026	6.74275578	6.208585081	6.604877746	6.935121633	5.612346341	5.970581214
Aug-26	2026	6.66459058	6.167680223	6.56136194	6.889430037	5.589229333	5.945988652
Sep-26	2026	6.569455862	6.054792066	6.441268155	6.763331563	5.486851637	5.83707621
Oct-26	2026	7.032027137	6.06415728	6.451231149	6.773792706	5.484686704	5.834773089
Nov-26	2026	7.334241486	6.239296916	6.637549911	6.969427407	5.598428584	5.955775089
Dec-26	2026	7.387384689	6.469224617	6.882153848	7.22626154	5.79770419	6.167770415
Jan-27	2027	7.364087684	6.561306999	6.980113828	7.32911952	5.938210519	6.317245233
Feb-27	2027	7.217132675	6.430549764	6.841010387	7.183060906	5.837109784	6.20969126
Mar-27	2027	7.054504193	6.009914603	6.393526173	6.713202482	5.393987274	5.738284334
Apr-27	2027	6.051487601	5.661785473	6.023176035	6.324334836	5.010703592	5.330535736
May-27	2027	6.274498486	5.906526563	6.283538897	6.597715842	5.252937986	5.5882319
Jun-27	2027	6.397382688	5.929626685	6.308113495	6.62351917	5.274981274	5.611682207
Jul-27	2027	6.637170438	6.13043514	6.521739511	6.847826487	5.524538179	5.877168275
Aug-27	2027	6.56454068	6.130141873	6.521427524	6.847498901	5.507313192	5.858843821
Sep-27	2027	6.469174232	6.021610444	6.405968557	6.726266985	5.404176044	5.749123451
Oct-27	2027	6.942500997	6.050002566	6.436172943	6.75798159	5.419533071	5.765460714
Nov-27	2027	7.330878313	6.26483821	6.6647215	6.997957576	5.59090783	5.947774287
Dec-27	2027	7.361767689	6.504025667	6.919176241	7.265135053	5.7881271	6.157582021

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Jan-28	2028	7.245587844	6.508247299	6.923667339	7.269850706	5.841763111	6.214641607
Feb-28	2028	7.199658141	6.462506451	6.875006863	7.218757206	5.820619947	6.19214888
Mar-28	2028	7.051298934	6.073739489	6.461424988	6.784496237	5.397581688	5.742108179
Apr-28	2028	6.025442597	5.718228721	6.083222044	6.387383146	5.014046124	5.334091621
May-28	2028	6.305526751	5.9376139	6.316610532	6.632441059	5.278530409	5.615457882
Jun-28	2028	6.429228733	5.962128382	6.342689769	6.659824257	5.300665006	5.639005325
Jul-28	2028	6.610856575	6.128886001	6.52009149	6.846096065	5.500366661	5.851453894
Aug-28	2028	6.533106118	6.131236312	6.522591821	6.848721412	5.479262769	5.829002946
Sep-28	2028	6.473583242	6.030761915	6.415704165	6.736489373	5.406911079	5.752033062
Oct-28	2028	6.939798852	6.055198778	6.441700827	6.763785869	5.41334394	5.758876532
Nov-28	2028	7.42996267	6.352857039	6.758358552	7.096276479	5.674263267	6.036450284
Dec-28	2028	7.467418873	6.591921606	7.012682559	7.363316687	5.878675949	6.253910584
Jan-29	2029	7.413539868	6.662417288	7.087677966	7.442061864	5.986115314	6.368207781
Feb-29	2029	7.410945209	6.612536005	7.034612771	7.38634341	6.002490587	6.385628284
Mar-29	2029	7.285478712	6.275169141	6.675711852	7.009497445	5.592787833	5.94977429
Apr-29	2029	6.239246543	5.906524907	6.283537135	6.597713992	5.19753006	5.529287298
May-29	2029	6.496102095	6.137602449	6.529364307	6.855832523	5.442726927	5.790135029
Jun-29	2029	6.667628689	6.177768114	6.572093738	6.900698425	5.505198806	5.856594474
Jul-29	2029	6.953130191	6.3879787	6.795722022	7.135508123	5.752657778	6.1198487
Aug-29	2029	6.836143639	6.374838471	6.781743054	7.120830207	5.740489872	6.106904119
Sep-29	2029	6.764388846	6.279933203	6.680780003	7.014819003	5.657706053	6.018836227
Oct-29	2029	7.239635086	6.282768343	6.68379611	7.017985916	5.66657706	6.028273468
Nov-29	2029	7.577443024	6.501151934	6.916119079	7.261925033	5.808290657	6.179032614
Dec-29	2029	7.634643627	6.753941149	7.185043775	7.544295964	6.012672248	6.396459838
Jan-30	2030	7.53159522	6.76304252	7.194726085	7.554462389	6.082909648	6.471180477
Feb-30	2030	7.558618573	6.721505781	7.150538065	7.508064969	6.123783516	6.514663315
Mar-30	2030	7.541820552	6.457445398	6.869622763	7.213103902	5.815530316	6.186734378
Apr-30	2030	6.47808982	6.098007536	6.487242059	6.811604162	5.424347497	5.770582444
May-30	2030	6.766481339	6.346935062	6.752058577	7.089661505	5.676266182	6.038581044
Jun-30	2030	6.994515481	6.412046646	6.82132622	7.162392531	5.803137467	6.173550497
Jul-30	2030	7.301166764	6.594579572	7.015510183	7.366285692	6.060839439	6.447701531
Aug-30	2030	7.171996362	6.572188731	6.99169014	7.341274647	6.02968657	6.414560181
Sep-30	2030	7.118800339	6.470928548	6.88396654	7.228164868	5.963019504	6.343637771
Oct-30	2030	7.596075459	6.48696281	6.901024266	7.246075479	5.972368407	6.353583412
Nov-30	2030	8.005933465	6.734178153	7.164019312	7.522220277	6.156540601	6.549511278
Dec-30	2030	8.043517922	7.006598026	7.453827687	7.826519072	6.364221039	6.770447914
Jan-31	2031	8.105510346	7.14667083	7.602841309	7.982983374	6.564229726	6.983223112
Feb-31	2031	8.054923822	7.091434324	7.544079068	7.921283021	6.538073238	6.955397061
Mar-31	2031	7.948860019	6.753677767	7.184763582	7.544001761	6.140776201	6.532740639

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Apr-31	2031	6.844737009	6.400425244	6.808963026	7.149411177	5.738283082	6.10455647
May-31	2031	7.158257927	6.607641756	7.029406124	7.38087643	6.012525475	6.396303697
Jun-31	2031	7.29760992	6.691531041	7.118650043	7.474582545	6.040694868	6.426271136
Jul-31	2031	7.61834605	6.864913661	7.30309964	7.668254622	6.328058281	6.731976894
Aug-31	2031	7.485479671	6.834032065	7.270246877	7.633759221	6.29336778	6.695072107
Sep-31	2031	7.475725005	6.780676529	7.213485669	7.574159953	6.265322718	6.665236934
Oct-31	2031	8.012054655	6.815402839	7.250428552	7.612949979	6.308749385	6.711435516
Nov-31	2031	8.680120816	7.291674645	7.757100686	8.144955721	6.716432663	7.145141131
Dec-31	2031	8.729297502	7.561628482	8.044285619	8.4464999	6.941530391	7.384606799
Jan-32	2032	8.8301347	7.840685808	8.341155115	8.758212871	6.88560958	7.325116575
Feb-32	2032	5.722016099	5.109467205	5.435603409	5.70738358	4.486732929	4.773120137
Mar-32	2032	5.933883513	5.039120158	5.360766125	5.628804431	4.42688817	4.7094555
Apr-32	2032	4.605166935	4.625234457	4.920462188	5.166485298	4.053444311	4.312174799
May-32	2032	4.990127511	4.976173193	5.293801269	5.558491333	4.395306804	4.675858302
Jun-32	2032	5.246867349	5.039453529	5.361120775	5.629176814	4.455468761	4.739860384
Jul-32	2032	5.258599713	5.128762753	5.456130588	5.728937118	4.473649939	4.759202063
Aug-32	2032	5.302630017	5.101618042	5.427253236	5.698615898	4.476808892	4.762562651
Sep-32	2032	5.313115405	5.037338402	5.358870641	5.626814173	4.45043695	4.734507394
Oct-32	2032	6.099336999	5.110478402	5.436679151	5.708513109	4.506934652	4.794611331
Nov-32	2032	6.421879169	5.237853999	5.572185105	5.850794361	4.582064589	4.874536796
Dec-32	2032	6.289581614	5.410991272	5.756373694	6.044192378	4.719361517	5.020597359
Jan-33	2033	9.364786242	8.316104434	8.846919611	9.289265591	7.313238146	7.780040581
Feb-33	2033	9.191870642	8.208079463	8.731999429	9.168599401	7.217696323	7.678400344
Mar-33	2033	9.527847914	8.09533079	8.612054032	9.042656734	7.121650262	7.576223683
Apr-33	2033	7.408824847	7.43184899	7.90622233	8.301533446	6.522486294	6.938815206
May-33	2033	8.028271691	7.996432496	8.506843081	8.932185235	7.072635139	7.524079935
Jun-33	2033	8.437701882	8.098071887	8.614970092	9.045718597	7.169315127	7.626930986
Jul-33	2033	8.456562977	8.240288361	8.766264214	9.204577425	7.198411094	7.657884143
Aug-33	2033	8.5264943	8.197034275	8.720249229	9.156261691	7.2033513	7.663139681
Sep-33	2033	8.542567169	8.094265618	8.61092087	9.041466913	7.160870226	7.617947049
Oct-33	2033	9.793915472	8.211443946	8.735578666	9.172357599	7.251581002	7.714447874
Nov-33	2033	10.30803051	8.415049705	8.952180537	9.399789564	7.372096392	7.842655737
Dec-33	2033	10.09972452	8.692280966	9.247107411	9.709462781	7.592327945	8.076944622
Jan-34	2034	9.810740964	8.712822465	9.268960069	9.732408073	7.672611396	8.162352549
Feb-34	2034	9.630223661	8.599733993	9.148653184	9.606085843	7.57247092	8.055820127
Mar-34	2034	9.977693702	8.481875097	9.02327138	9.474434949	7.471936609	7.948868733
Apr-34	2034	7.77362239	7.7881898	8.285308298	8.699573713	6.844964214	7.281876823
May-34	2034	8.423693538	8.380562889	8.915492435	9.361267057	7.422365123	7.89613311
Jun-34	2034	8.849539975	8.48703444	9.028760042	9.480198044	7.523692593	8.003928291

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE SUMAS HI FORECAST PRICE	CASCADE ROCKIES LO FORECAST PRICE	ROCKIES CASCADE FORECAST PRICE	CASCADE ROCKIES HI FORECAST PRICE	CASCADE AECO LO FORECAST PRICE	AECO CASCADE FORECAST PRICE
Jul-34	2034	8.869315243	8.63473641	9.185889798	9.645184288	7.554061669	8.036235818
Aug-34	2034	8.941752699	8.589783917	9.138067997	9.594971397	7.559098129	8.041593754
Sep-34	2034	8.957792521	8.482622951	9.024066969	9.475270317	7.514469738	7.994116743
Oct-34	2034	10.25674269	8.605063675	9.154323059	9.612039212	7.609457311	8.095167352
Nov-34	2034	10.79120809	8.817330732	9.380139077	9.849146031	7.735539877	8.229297741
Dec-34	2034	10.57734223	9.106852415	9.688140867	10.17254791	7.965939292	8.474403502
Jan-35	2035	10.22190549	9.078697732	9.658189077	10.14109853	8.005632653	8.516630481
Feb-35	2035	10.03447535	8.960953001	9.532928725	10.00957516	7.901244867	8.405579646
Mar-35	2035	10.39185884	8.838421771	9.402576352	9.87270517	7.796585401	8.294239788
Apr-35	2035	8.111776944	8.117100085	8.635212856	9.066973499	7.144083676	7.600089017
May-35	2035	8.790253893	8.735231749	9.292799733	9.75743972	7.74677028	8.241244979
Jun-35	2035	9.23076914	8.846157286	9.410805623	9.881345904	7.852389265	8.353605601
Jul-35	2035	9.251389688	8.99872185	9.573108351	10.05176377	7.883915095	8.387143718
Aug-35	2035	9.326012929	8.952258194	9.523678929	9.999862876	7.889019242	8.392573662
Sep-35	2035	9.341901322	8.841123563	9.405450599	9.875723129	7.842392214	8.34297044
Oct-35	2035	10.68292368	8.968368022	9.540817044	10.0178579	7.941316441	8.44820898
Nov-35	2035	11.23552588	9.188463963	9.774961663	10.26370975	8.072505842	8.587772172
Dec-35	2035	11.01719438	9.489179175	10.09487146	10.59961504	8.31223147	8.842799436

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Jan-15	2015	3.548637822	3.420714156	3.639057612	3.821010493
Feb-15	2015	3.431952691	3.320831353	3.532799312	3.709439277
Mar-15	2015	3.381236569	3.473571483	3.695288812	3.880053252
Apr-15	2015	3.638014822	3.755726422	3.995453641	4.195226323
May-15	2015	2.467228359	2.532454296	2.694100315	2.828805331
Jun-15	2015	2.642227877	2.705563993	2.878259567	3.022172545
Jul-15	2015	2.711744602	2.748284575	2.923706995	3.069892345
Aug-15	2015	2.715625463	2.75323945	2.928978139	3.075427046
Sep-15	2015	2.733265674	2.767230676	2.943862421	3.091055542
Oct-15	2015	2.748512097	2.796135949	2.974612712	3.123343347
Nov-15	2015	2.752498103	2.939445832	3.127070034	3.283423536
Dec-15	2015	2.913946618	3.080668953	3.277307397	3.441172767
Jan-16	2016	3.41189429	3.549532616	3.776098528	3.964903454
Feb-16	2016	3.38555156	3.515598183	3.739998067	3.926997971
Mar-16	2016	3.185543275	3.368149598	3.58313787	3.762294763
Apr-16	2016	2.982789431	3.186058822	3.389424278	3.558895492
May-16	2016	3.064143245	3.254946688	3.462709243	3.635844705
Jun-16	2016	3.058006233	3.248617419	3.455975978	3.628774777
Jul-16	2016	3.142190932	3.297272245	3.507736431	3.683123253
Aug-16	2016	3.140570774	3.303632957	3.514503146	3.690228303
Sep-16	2016	3.127145272	3.282670688	3.49220286	3.666813003
Oct-16	2016	3.148528384	3.316561699	3.528257126	3.704669983
Nov-16	2016	3.223797029	3.448565619	3.668686828	3.85212117
Dec-16	2016	3.379586203	3.57953943	3.808020671	3.998421704
Jan-17	2017	3.628681604	3.822285817	4.066261507	4.269574583
Feb-17	2017	3.575491356	3.757879211	3.997743842	4.197631034
Mar-17	2017	3.483313788	3.684928074	3.920136249	4.116143061
Apr-17	2017	3.249327939	3.462699687	3.683723071	3.867909225
May-17	2017	3.383903687	3.577320893	3.805660525	3.995943551
Jun-17	2017	3.414628903	3.60107831	3.830934373	4.022481092
Jul-17	2017	3.462320615	3.627321327	3.858852476	4.0517951
Aug-17	2017	3.45015874	3.617022065	3.847895814	4.040290604
Sep-17	2017	3.439333497	3.609309547	3.839691007	4.031675558
Oct-17	2017	3.468144387	3.637708148	3.869902286	4.0633974
Nov-17	2017	3.567144967	3.8035532	4.046333191	4.248649851
Dec-17	2017	3.729161075	3.942950879	4.194628595	4.404360025
Jan-18	2018	4.011474031	4.194933932	4.462695673	4.685830456
Feb-18	2018	3.817454865	3.986317819	4.240763638	4.452801819
Mar-18	2018	3.73476895	3.904413115	4.153630974	4.361312523

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Apr-18	2018	3.417230511	3.61249197	3.843076564	4.035230392
May-18	2018	3.523624263	3.722957769	3.960593371	4.15862304
Jun-18	2018	3.559054855	3.731887478	3.970093062	4.168597715
Jul-18	2018	3.644495914	3.801777862	4.044444534	4.24666676
Aug-18	2018	3.644620515	3.799128196	4.04162574	4.243707027
Sep-18	2018	3.625144555	3.784031818	4.025565764	4.226844052
Oct-18	2018	3.665775712	3.822578718	4.066573104	4.269901759
Nov-18	2018	3.809113913	4.024837084	4.281741578	4.495828657
Dec-18	2018	3.98796689	4.193577776	4.461252953	4.684315601
Jan-19	2019	4.354446823	4.532494104	4.821802239	5.062892351
Feb-19	2019	4.302447444	4.476352379	4.762076999	5.000180849
Mar-19	2019	4.099094132	4.318476308	4.594123732	4.823829918
Apr-19	2019	3.752477278	3.991991784	4.24679977	4.459139759
May-19	2019	3.88905703	4.12092012	4.383957574	4.603155453
Jun-19	2019	3.928957026	4.130862689	4.394534776	4.614261515
Jul-19	2019	4.065965884	4.22518853	4.494881415	4.719625485
Aug-19	2019	4.064311673	4.24329371	4.514142244	4.739849357
Sep-19	2019	4.025126724	4.223213837	4.492780677	4.717419711
Oct-19	2019	4.029028652	4.228732715	4.498651824	4.723584415
Nov-19	2019	4.139792733	4.395140259	4.675681126	4.909465182
Dec-19	2019	4.345661679	4.57342542	4.865346191	5.108613501
Jan-20	2020	4.779527902	4.975070691	5.292628395	5.557259814
Feb-20	2020	4.71759438	4.91342599	5.227048926	5.488401372
Mar-20	2020	4.4880547	4.720293037	5.021588337	5.272667754
Apr-20	2020	4.1120617	4.346824978	4.624281892	4.855495986
May-20	2020	4.288137508	4.502322324	4.7897046	5.02918983
Jun-20	2020	4.3014223	4.484047971	4.770263799	5.008776989
Jul-20	2020	4.448223579	4.630559144	4.926126749	5.172433086
Aug-20	2020	4.44822968	4.652680749	4.949660371	5.19714339
Sep-20	2020	4.325167388	4.53479666	4.824251766	5.065464354
Oct-20	2020	4.354734322	4.561881621	4.853065554	5.095718832
Nov-20	2020	4.464226798	4.739968399	5.042519573	5.294645552
Dec-20	2020	4.659811859	4.906894402	5.220100428	5.481105449
Jan-21	2021	4.985098849	5.184760923	5.51570311	5.791488265
Feb-21	2021	4.883775803	5.089248919	5.414094594	5.684799324
Mar-21	2021	4.475997218	4.831524448	5.139919625	5.396915606
Apr-21	2021	4.1349362	4.494343476	4.781216464	5.020277287
May-21	2021	4.312718796	4.562518976	4.853743592	5.096430771
Jun-21	2021	4.390752536	4.574808744	4.866817813	5.110158704

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Jul-21	2021	4.672373887	4.862516243	5.172889621	5.431534102
Aug-21	2021	4.672050263	4.872007082	5.182986257	5.44213557
Sep-21	2021	4.511993986	4.714005983	5.014899982	5.265644981
Oct-21	2021	4.539622263	4.744810354	5.04767059	5.300054119
Nov-21	2021	4.688667723	4.953682343	5.269874833	5.533368575
Dec-21	2021	4.879430572	5.116956749	5.44357101	5.71574956
Jan-22	2022	5.070541089	5.260374688	5.596143285	5.875950449
Feb-22	2022	4.952668383	5.155120974	5.484171249	5.758379812
Mar-22	2022	4.559790574	4.932904887	5.247771156	5.510159714
Apr-22	2022	4.209090662	4.587567181	4.880390619	5.124410149
May-22	2022	4.405583974	4.670731071	4.968862841	5.217305983
Jun-22	2022	4.515008753	4.727382682	5.029130512	5.280587038
Jul-22	2022	4.840779958	5.012959467	5.332935603	5.599582383
Aug-22	2022	4.850261559	5.035614415	5.357036612	5.624888443
Sep-22	2022	4.651743721	4.847459978	5.156872317	5.414715933
Oct-22	2022	4.657107241	4.855412858	5.165332828	5.423599469
Nov-22	2022	4.884087851	5.129237808	5.456635966	5.729467764
Dec-22	2022	5.131820083	5.343770992	5.684862757	5.969105895
Jan-23	2023	5.372387173	5.536611736	5.890012486	6.18451311
Feb-23	2023	5.299889378	5.464563806	5.813365751	6.104034038
Mar-23	2023	4.938815339	5.3315482	5.671859787	5.955452776
Apr-23	2023	4.507548174	4.914136895	5.227805207	5.489195468
May-23	2023	4.709124658	5.112734845	5.439079622	5.711033603
Jun-23	2023	4.802006893	5.149216872	5.477890289	5.751784804
Jul-23	2023	5.089434171	5.295485062	5.633494747	5.915169484
Aug-23	2023	5.110417295	5.317542144	5.656959728	5.939807714
Sep-23	2023	5.020159515	5.200976939	5.532954191	5.8096019
Oct-23	2023	4.986614463	5.305709102	5.644371385	5.926589954
Nov-23	2023	5.245363977	5.60220928	5.959797106	6.257786962
Dec-23	2023	5.484465443	5.800781272	6.171043907	6.479596102
Jan-24	2024	5.698186504	5.847656097	6.220910741	6.531956278
Feb-24	2024	5.63940868	5.940132331	6.319289714	6.6352542
Mar-24	2024	5.096993478	5.638892509	5.998821818	6.298762908
Apr-24	2024	4.690315656	5.244445819	5.57919768	5.858157564
May-24	2024	4.869836687	5.39049666	5.734570915	6.02129946
Jun-24	2024	4.976177451	5.378137406	5.721422772	6.00749391
Jul-24	2024	5.397543197	5.582961754	5.939321015	6.236287065
Aug-24	2024	5.365358993	5.575780264	5.931681132	6.228265189
Sep-24	2024	5.204446501	5.424681756	5.770938038	6.05948494

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Oct-24	2024	4.985381437	5.432936229	5.779719392	6.068705362
Nov-24	2024	5.179831841	5.681537598	6.044188934	6.346398381
Dec-24	2024	5.38474639	5.872951313	6.247820546	6.560211573
Jan-25	2025	5.593049377	6.038259431	6.423680246	6.744864258
Feb-25	2025	5.469651569	6.074881325	6.462639707	6.785771693
Mar-25	2025	4.984659223	5.756443462	6.123876023	6.430069824
Apr-25	2025	4.593279795	5.409199679	5.754467744	6.042191131
May-25	2025	4.946040236	5.565455947	5.920697816	6.216732707
Jun-25	2025	5.085703362	5.570225301	5.925771597	6.222060177
Jul-25	2025	5.524372418	5.764358442	6.132296215	6.438911025
Aug-25	2025	5.513016427	5.7592286	6.126838936	6.433180883
Sep-25	2025	5.428394904	5.608398073	5.966380929	6.264699976
Oct-25	2025	5.397006391	5.614321921	5.972682895	6.27131704
Nov-25	2025	5.590020346	5.859619705	6.233637984	6.545319883
Dec-25	2025	5.831547925	6.06961223	6.457034287	6.779886001
Jan-26	2026	6.104427781	6.311294832	6.714143439	7.049850611
Feb-26	2026	5.955673646	6.305148636	6.707604932	7.042985179
Mar-26	2026	5.560501879	6.074871062	6.46262879	6.785760229
Apr-26	2026	5.112935585	5.663563157	6.025067189	6.326320548
May-26	2026	5.777742622	5.905938692	6.282913502	6.597059177
Jun-26	2026	5.932432628	6.048918211	6.435019373	6.756770342
Jul-26	2026	6.269110275	6.313580649	6.716575158	7.052403916
Aug-26	2026	6.243288085	6.346519079	6.751616041	7.089196843
Sep-26	2026	6.12893002	6.185482072	6.580300077	6.90931508
Oct-26	2026	6.126511744	6.198181468	6.593810073	6.923500576
Nov-26	2026	6.253563843	6.381103833	6.788408333	7.127828749
Dec-26	2026	6.476158935	6.589051589	7.00962935	7.360110817
Jan-27	2027	6.633107495	6.706315597	7.134378295	7.49109721
Feb-27	2027	6.520175823	6.598862395	7.020066377	7.371069696
Mar-27	2027	6.025198551	6.18261355	6.577248457	6.90611088
Apr-27	2027	5.597062523	5.800371358	6.170607827	6.479138219
May-27	2027	5.867643495	5.946967902	6.326561598	6.642889678
Jun-27	2027	5.892266317	5.945431643	6.32492728	6.641173644
Jul-27	2027	6.171026689	6.216793107	6.613609689	6.944290173
Aug-27	2027	6.151786012	6.236012768	6.634056136	6.965758943
Sep-27	2027	6.036579624	6.131816713	6.523209269	6.849369733
Oct-27	2027	6.053733749	6.14757536	6.539973787	6.866972477
Nov-27	2027	6.245163001	6.38293781	6.790359372	7.129877341
Dec-27	2027	6.465461122	6.572389674	6.991903909	7.341499104

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Jan-28	2028	6.525373687	6.60903585	7.030889203	7.382433663
Feb-28	2028	6.501756324	6.590076871	7.010720075	7.361256079
Mar-28	2028	6.029213588	6.173058016	6.567082996	6.895437146
Apr-28	2028	5.600796202	5.757777155	6.125294846	6.431559588
May-28	2028	5.896230776	5.978769933	6.360393546	6.678413224
Jun-28	2028	5.920955592	5.977112203	6.358630004	6.676561504
Jul-28	2028	6.144026589	6.228001611	6.625533628	6.95681031
Aug-28	2028	6.120453093	6.236023865	6.634067942	6.965771339
Sep-28	2028	6.039634716	6.144407484	6.536603706	6.863433892
Oct-28	2028	6.046820358	6.150324131	6.542898012	6.870042913
Nov-28	2028	6.338272798	6.474992004	6.888289366	7.232703834
Dec-28	2028	6.566606113	6.68877793	7.115721202	7.471507262
Jan-29	2029	6.68661817	6.764690997	7.196479784	7.556303773
Feb-29	2029	6.704909699	6.778729764	7.211414642	7.571985374
Mar-29	2029	6.247263004	6.381983331	6.78934397	7.128811168
Apr-29	2029	5.805751663	5.954555051	6.334633033	6.651364685
May-29	2029	6.07964178	6.154884127	6.547749072	6.875136525
Jun-29	2029	6.149424198	6.193370553	6.588692078	6.918126682
Jul-29	2029	6.425841135	6.498556056	6.913357507	7.259025382
Aug-29	2029	6.412249325	6.513398533	6.929147376	7.275604744
Sep-29	2029	6.319778038	6.40892203	6.818002159	7.158902267
Oct-29	2029	6.329687142	6.417243131	6.826854394	7.168197114
Nov-29	2029	6.487984245	6.623765133	7.046558652	7.398886585
Dec-29	2029	6.71628283	6.830867733	7.266880567	7.630224595
Jan-30	2030	6.794739501	6.872216804	7.31086894	7.676412387
Feb-30	2030	6.840396481	6.916440639	7.357915573	7.725811352
Mar-30	2030	6.496071097	6.594586029	7.015517052	7.366292904
Apr-30	2030	6.059111566	6.171039018	6.564935125	6.893181882
May-30	2030	6.340510097	6.398375861	6.80678283	7.147121972
Jun-30	2030	6.482228022	6.485796766	6.899783793	7.244772983
Jul-30	2030	6.770086607	6.763611121	7.19533098	7.555097529
Aug-30	2030	6.73528819	6.779219415	7.211935548	7.572532325
Sep-30	2030	6.660819659	6.677171268	7.10337369	7.458542374
Oct-30	2030	6.671262583	6.688130103	7.115032025	7.470783626
Nov-30	2030	6.876986842	6.948554619	7.392079382	7.761683351
Dec-30	2030	7.108970309	7.16861901	7.626190436	8.007499957
Jan-31	2031	7.332384268	7.382224053	7.853429844	8.246101336
Feb-31	2031	7.303166914	7.358885724	7.828601834	8.220031926
Mar-31	2031	6.859377671	6.951355386	7.395058921	7.764811867

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Apr-31	2031	6.409784294	6.515017473	6.930869652	7.277413134
May-31	2031	6.716118881	6.760840479	7.192383489	7.552002663
Jun-31	2031	6.747584693	6.765932826	7.197800879	7.557690923
Jul-31	2031	7.068575739	7.064884336	7.5158344	7.89162612
Aug-31	2031	7.029825712	7.07714454	7.528877171	7.905321029
Sep-31	2031	6.998498781	7.025434816	7.473866825	7.847560166
Oct-31	2031	7.047007292	7.070596272	7.521910928	7.898006475
Nov-31	2031	7.502398187	7.553584975	8.035728697	8.437515132
Dec-31	2031	7.753837139	7.789667296	8.286880102	8.701224107
Jan-32	2032	7.691372404	7.744105066	8.238409645	8.650330127
Feb-32	2032	5.011776144	5.051022887	5.373428604	5.642100034
Mar-32	2032	4.944928275	4.995461823	5.314321089	5.580037143
Apr-32	2032	4.527783539	4.570433593	4.862163397	5.105271567
May-32	2032	4.909651217	4.958161832	5.274640247	5.538372259
Jun-32	2032	4.976853403	5.020250935	5.340692484	5.607727108
Jul-32	2032	4.997162166	5.033575421	5.354867469	5.622610843
Aug-32	2032	5.000690783	5.030717713	5.351827354	5.619418721
Sep-32	2032	4.971232763	4.99894298	5.318024447	5.58392567
Oct-32	2032	5.034341898	5.053622832	5.376194502	5.645004227
Nov-32	2032	5.118263636	5.218439181	5.551531044	5.829107596
Dec-32	2032	5.271627227	5.339515857	5.680336018	5.964352819
Jan-33	2033	8.16904261	8.214690989	8.739032967	9.175984616
Feb-33	2033	8.062320361	8.115130884	8.633117961	9.06477386
Mar-33	2033	7.955034867	8.025897519	8.53818885	8.965098292
Apr-33	2033	7.285755966	7.34469488	7.813505191	8.204180451
May-33	2033	7.900283932	7.967787617	8.476369805	8.900188296
Jun-33	2033	8.008277536	8.067532496	8.582481379	9.011605448
Jul-33	2033	8.04077835	8.088904485	8.605217537	9.035478414
Aug-33	2033	8.046296665	8.084275924	8.600293536	9.030308213
Sep-33	2033	7.998844401	8.033202368	8.545959966	8.973257964
Oct-33	2033	8.100170268	8.121022074	8.639385185	9.071354445
Nov-33	2033	8.234788524	8.384172797	8.919332763	9.365299401
Dec-33	2033	8.480791853	8.578608009	9.126178733	9.58248767
Jan-34	2034	8.570470176	8.607632582	9.157055938	9.614908735
Feb-34	2034	8.458611134	8.50332419	9.046089564	9.498394042
Mar-34	2034	8.34631217	8.409856267	8.946655603	9.393988383
Apr-34	2034	7.645970664	7.697790241	8.189138554	8.598595482
May-34	2034	8.290939765	8.350851331	8.883884394	9.328078614
Jun-34	2034	8.404124705	8.455357822	8.995061513	9.444814588

GAS SUPPLY 20 YEAR P

PERIOD	YEAR	CASCADE AECO HI FORECAST PRICE	CASCADE MALIN LO FORECAST PRICE	MALIN CASCADE FORECAST PRICE	CASCADE MALIN HI FORECAST PRICE
Jul-34	2034	8.438047609	8.477715294	9.018846057	9.46978836
Aug-34	2034	8.443673442	8.472826664	9.013645388	9.464327657
Sep-34	2034	8.39382258	8.419285825	8.956687048	9.4045214
Oct-34	2034	8.49992572	8.51127467	9.054547521	9.507274897
Nov-34	2034	8.640762628	8.785304029	9.346068116	9.813371522
Dec-34	2034	8.898123677	8.988946499	9.562709042	10.04084449
Jan-35	2035	8.942462006	8.970185533	9.542750567	10.0198881
Feb-35	2035	8.825858628	8.861498193	9.427125737	9.898482024
Mar-35	2035	8.708951778	8.764128299	9.323540743	9.78971778
Apr-35	2035	7.980093468	8.023845348	8.536005689	8.962805973
May-35	2035	8.653307228	8.704581781	9.260193384	9.723203054
Jun-35	2035	8.771285881	8.813480194	9.37604276	9.844844898
Jul-35	2035	8.806500904	8.836741381	9.400788704	9.870828139
Aug-35	2035	8.812202345	8.831606965	9.395326559	9.865092887
Sep-35	2035	8.760118962	8.775785998	9.335942551	9.802739679
Oct-35	2035	8.870619429	8.871616786	9.437890198	9.909784708
Nov-35	2035	9.01716078	9.155425729	9.739814605	10.22680534
Dec-35	2035	9.284939408	9.367549321	9.965478001	10.4637519

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
Jan-15	60.000%	0.000%	25.000%	15.000%
Feb-15	60.000%	0.000%	25.000%	15.000%
Mar-15	60.000%	0.000%	25.000%	15.000%
Apr-15	60.000%	0.000%	25.000%	15.000%
May-15	60.000%	0.000%	25.000%	15.000%
Jun-15	60.000%	0.000%	25.000%	15.000%
Jul-15	60.000%	0.000%	25.000%	15.000%
Aug-15	60.000%	0.000%	25.000%	15.000%
Sep-15	60.000%	0.000%	25.000%	15.000%
Oct-15	60.000%	0.000%	25.000%	15.000%
Nov-15	60.000%	0.000%	25.000%	15.000%
Dec-15	60.000%	0.000%	25.000%	15.000%
Jan-16	30.000%	0.000%	35.000%	35.000%
Feb-16	30.000%	0.000%	35.000%	35.000%
Mar-16	30.000%	0.000%	35.000%	35.000%
Apr-16	30.000%	0.000%	35.000%	35.000%
May-16	30.000%	0.000%	35.000%	35.000%
Jun-16	30.000%	0.000%	35.000%	35.000%
Jul-16	30.000%	0.000%	35.000%	35.000%
Aug-16	30.000%	0.000%	35.000%	35.000%
Sep-16	30.000%	0.000%	35.000%	35.000%
Oct-16	30.000%	0.000%	40.000%	30.000%
Nov-16	30.000%	0.000%	40.000%	30.000%
Dec-16	30.000%	0.000%	40.000%	30.000%
Jan-17	15.000%	0.000%	40.000%	45.000%
Feb-17	15.000%	0.000%	40.000%	45.000%
Mar-17	15.000%	0.000%	40.000%	45.000%
Apr-17	15.000%	0.000%	40.000%	45.000%
May-17	15.000%	0.000%	40.000%	45.000%
Jun-17	15.000%	0.000%	40.000%	45.000%
Jul-17	15.000%	0.000%	40.000%	45.000%
Aug-17	15.000%	0.000%	40.000%	45.000%
Sep-17	15.000%	0.000%	40.000%	45.000%
Oct-17	15.000%	0.000%	40.000%	45.000%
Nov-17	15.000%	0.000%	40.000%	45.000%
Dec-17	15.000%	0.000%	40.000%	45.000%
Jan-18	15.000%	0.000%	40.000%	45.000%
Feb-18	30.000%	0.000%	40.000%	30.000%
Mar-18	30.000%	0.000%	40.000%	30.000%
Apr-18	30.000%	0.000%	40.000%	30.000%
May-18	30.000%	0.000%	40.000%	30.000%
Jun-18	30.000%	0.000%	40.000%	30.000%
Jul-18	30.000%	0.000%	40.000%	30.000%

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
Aug-18	30.000%	0.000%	40.000%	30.000%
Sep-18	30.000%	0.000%	40.000%	30.000%
Oct-18	30.000%	0.000%	40.000%	30.000%
Nov-18	30.000%	0.000%	40.000%	30.000%
Dec-18	30.000%	0.000%	40.000%	30.000%
Jan-19	20.000%	0.000%	40.000%	40.000%
Feb-19	20.000%	0.000%	40.000%	40.000%
Mar-19	20.000%	0.000%	40.000%	40.000%
Apr-19	20.000%	0.000%	40.000%	40.000%
May-19	20.000%	0.000%	40.000%	40.000%
Jun-19	20.000%	0.000%	40.000%	40.000%
Jul-19	20.000%	0.000%	40.000%	40.000%
Aug-19	20.000%	0.000%	40.000%	40.000%
Sep-19	20.000%	0.000%	40.000%	40.000%
Oct-19	20.000%	0.000%	40.000%	40.000%
Nov-19	20.000%	0.000%	40.000%	40.000%
Dec-19	20.000%	0.000%	40.000%	40.000%
Jan-20	10.000%	0.000%	40.000%	50.000%
Feb-20	10.000%	0.000%	40.000%	50.000%
Mar-20	10.000%	0.000%	40.000%	50.000%
Apr-20	10.000%	0.000%	40.000%	50.000%
May-20	10.000%	0.000%	40.000%	50.000%
Jun-20	10.000%	0.000%	40.000%	50.000%
Jul-20	10.000%	0.000%	40.000%	50.000%
Aug-20	10.000%	0.000%	40.000%	50.000%
Sep-20	10.000%	0.000%	40.000%	50.000%
Oct-20	10.000%	0.000%	40.000%	50.000%
Nov-20	10.000%	0.000%	40.000%	50.000%
Dec-20	10.000%	0.000%	40.000%	50.000%
Jan-21	0.000%	0.000%	50.000%	50.000%
Feb-21	0.000%	0.000%	50.000%	50.000%
Mar-21	0.000%	0.000%	50.000%	50.000%
Apr-21	0.000%	0.000%	50.000%	50.000%
May-21	0.000%	0.000%	50.000%	50.000%
Jun-21	0.000%	0.000%	50.000%	50.000%
Jul-21	0.000%	0.000%	50.000%	50.000%
Aug-21	0.000%	0.000%	50.000%	50.000%
Sep-21	0.000%	0.000%	50.000%	50.000%
Oct-21	0.000%	0.000%	50.000%	50.000%
Nov-21	0.000%	0.000%	50.000%	50.000%
Dec-21	0.000%	0.000%	50.000%	50.000%
Jan-22	0.000%	0.000%	50.000%	50.000%
Feb-22	0.000%	0.000%	50.000%	50.000%

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
Mar-22	0.000%	0.000%	50.000%	50.000%
Apr-22	0.000%	0.000%	50.000%	50.000%
May-22	0.000%	0.000%	50.000%	50.000%
Jun-22	0.000%	0.000%	50.000%	50.000%
Jul-22	0.000%	0.000%	50.000%	50.000%
Aug-22	0.000%	0.000%	50.000%	50.000%
Sep-22	0.000%	0.000%	50.000%	50.000%
Oct-22	0.000%	0.000%	50.000%	50.000%
Nov-22	0.000%	0.000%	50.000%	50.000%
Dec-22	0.000%	0.000%	50.000%	50.000%
Jan-23	0.000%	0.000%	50.000%	50.000%
Feb-23	0.000%	0.000%	50.000%	50.000%
Mar-23	0.000%	0.000%	50.000%	50.000%
Apr-23	0.000%	0.000%	50.000%	50.000%
May-23	0.000%	0.000%	50.000%	50.000%
Jun-23	0.000%	0.000%	50.000%	50.000%
Jul-23	0.000%	0.000%	50.000%	50.000%
Aug-23	0.000%	0.000%	50.000%	50.000%
Sep-23	0.000%	0.000%	50.000%	50.000%
Oct-23	0.000%	0.000%	50.000%	50.000%
Nov-23	0.000%	0.000%	50.000%	50.000%
Dec-23	0.000%	0.000%	50.000%	50.000%
Jan-24	0.000%	0.000%	50.000%	50.000%
Feb-24	0.000%	0.000%	50.000%	50.000%
Mar-24	0.000%	0.000%	50.000%	50.000%
Apr-24	0.000%	0.000%	50.000%	50.000%
May-24	0.000%	0.000%	50.000%	50.000%
Jun-24	0.000%	0.000%	50.000%	50.000%
Jul-24	0.000%	0.000%	50.000%	50.000%
Aug-24	0.000%	0.000%	50.000%	50.000%
Sep-24	0.000%	0.000%	50.000%	50.000%
Oct-24	0.000%	0.000%	50.000%	50.000%
Nov-24	0.000%	0.000%	50.000%	50.000%
Dec-24	0.000%	0.000%	50.000%	50.000%
Jan-25	0.000%	0.000%	50.000%	50.000%
Feb-25	0.000%	0.000%	50.000%	50.000%
Mar-25	0.000%	0.000%	50.000%	50.000%
Apr-25	0.000%	0.000%	50.000%	50.000%
May-25	0.000%	0.000%	50.000%	50.000%
Jun-25	0.000%	0.000%	50.000%	50.000%
Jul-25	0.000%	0.000%	50.000%	50.000%
Aug-25	0.000%	0.000%	50.000%	50.000%
Sep-25	0.000%	0.000%	50.000%	50.000%

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
Oct-25	0.000%	0.000%	50.000%	50.000%
Nov-25	0.000%	0.000%	50.000%	50.000%
Dec-25	0.000%	0.000%	50.000%	50.000%
Jan-26	0.000%	0.000%	50.000%	50.000%
Feb-26	0.000%	0.000%	50.000%	50.000%
Mar-26	0.000%	0.000%	50.000%	50.000%
Apr-26	0.000%	0.000%	50.000%	50.000%
May-26	0.000%	0.000%	50.000%	50.000%
Jun-26	0.000%	0.000%	50.000%	50.000%
Jul-26	0.000%	0.000%	50.000%	50.000%
Aug-26	0.000%	0.000%	50.000%	50.000%
Sep-26	0.000%	0.000%	50.000%	50.000%
Oct-26	0.000%	0.000%	50.000%	50.000%
Nov-26	0.000%	0.000%	50.000%	50.000%
Dec-26	0.000%	0.000%	50.000%	50.000%
Jan-27	0.000%	0.000%	50.000%	50.000%
Feb-27	0.000%	0.000%	50.000%	50.000%
Mar-27	0.000%	0.000%	50.000%	50.000%
Apr-27	0.000%	0.000%	50.000%	50.000%
May-27	0.000%	0.000%	50.000%	50.000%
Jun-27	0.000%	0.000%	50.000%	50.000%
Jul-27	0.000%	0.000%	50.000%	50.000%
Aug-27	0.000%	0.000%	50.000%	50.000%
Sep-27	0.000%	0.000%	50.000%	50.000%
Oct-27	0.000%	0.000%	50.000%	50.000%
Nov-27	0.000%	0.000%	50.000%	50.000%
Dec-27	0.000%	0.000%	50.000%	50.000%
Jan-28	0.000%	0.000%	50.000%	50.000%
Feb-28	0.000%	0.000%	50.000%	50.000%
Mar-28	0.000%	0.000%	50.000%	50.000%
Apr-28	0.000%	0.000%	50.000%	50.000%
May-28	0.000%	0.000%	50.000%	50.000%
Jun-28	0.000%	0.000%	50.000%	50.000%
Jul-28	0.000%	0.000%	50.000%	50.000%
Aug-28	0.000%	0.000%	50.000%	50.000%
Sep-28	0.000%	0.000%	50.000%	50.000%
Oct-28	0.000%	0.000%	50.000%	50.000%
Nov-28	0.000%	0.000%	50.000%	50.000%
Dec-28	0.000%	0.000%	50.000%	50.000%
Jan-29	0.000%	0.000%	50.000%	50.000%
Feb-29	0.000%	0.000%	50.000%	50.000%
Mar-29	0.000%	0.000%	50.000%	50.000%
Apr-29	0.000%	0.000%	50.000%	50.000%

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
May-29	0.000%	0.000%	50.000%	50.000%
Jun-29	0.000%	0.000%	50.000%	50.000%
Jul-29	0.000%	0.000%	50.000%	50.000%
Aug-29	0.000%	0.000%	50.000%	50.000%
Sep-29	0.000%	0.000%	50.000%	50.000%
Oct-29	0.000%	0.000%	50.000%	50.000%
Nov-29	0.000%	0.000%	50.000%	50.000%
Dec-29	0.000%	0.000%	50.000%	50.000%
Jan-30	0.000%	0.000%	50.000%	50.000%
Feb-30	0.000%	0.000%	50.000%	50.000%
Mar-30	0.000%	0.000%	50.000%	50.000%
Apr-30	0.000%	0.000%	50.000%	50.000%
May-30	0.000%	0.000%	50.000%	50.000%
Jun-30	0.000%	0.000%	50.000%	50.000%
Jul-30	0.000%	0.000%	50.000%	50.000%
Aug-30	0.000%	0.000%	50.000%	50.000%
Sep-30	0.000%	0.000%	50.000%	50.000%
Oct-30	0.000%	0.000%	50.000%	50.000%
Nov-30	0.000%	0.000%	50.000%	50.000%
Dec-30	0.000%	0.000%	50.000%	50.000%
Jan-31	0.000%	0.000%	50.000%	50.000%
Feb-31	0.000%	0.000%	50.000%	50.000%
Mar-31	0.000%	0.000%	50.000%	50.000%
Apr-31	0.000%	0.000%	50.000%	50.000%
May-31	0.000%	0.000%	50.000%	50.000%
Jun-31	0.000%	0.000%	50.000%	50.000%
Jul-31	0.000%	0.000%	50.000%	50.000%
Aug-31	0.000%	0.000%	50.000%	50.000%
Sep-31	0.000%	0.000%	50.000%	50.000%
Oct-31	0.000%	0.000%	50.000%	50.000%
Nov-31	0.000%	0.000%	50.000%	50.000%
Dec-31	0.000%	0.000%	50.000%	50.000%
Jan-32	0.000%	0.000%	0.000%	100.000%
Feb-32	0.000%	0.000%	0.000%	100.000%
Mar-32	0.000%	0.000%	0.000%	100.000%
Apr-32	0.000%	0.000%	0.000%	100.000%
May-32	0.000%	0.000%	0.000%	100.000%
Jun-32	0.000%	0.000%	0.000%	100.000%
Jul-32	0.000%	0.000%	0.000%	100.000%
Aug-32	0.000%	0.000%	0.000%	100.000%
Sep-32	0.000%	0.000%	0.000%	100.000%
Oct-32	0.000%	0.000%	0.000%	100.000%
Nov-32	0.000%	0.000%	0.000%	100.000%

Forecast Source Weights

Period	Current NYMEX	NWPCC	WOOD MAC	EIA
Dec-32	0.000%	0.000%	0.000%	100.000%
Jan-33	0.000%	0.000%	0.000%	100.000%
Feb-33	0.000%	0.000%	0.000%	100.000%
Mar-33	0.000%	0.000%	0.000%	100.000%
Apr-33	0.000%	0.000%	0.000%	100.000%
May-33	0.000%	0.000%	0.000%	100.000%
Jun-33	0.000%	0.000%	0.000%	100.000%
Jul-33	0.000%	0.000%	0.000%	100.000%
Aug-33	0.000%	0.000%	0.000%	100.000%
Sep-33	0.000%	0.000%	0.000%	100.000%
Oct-33	0.000%	0.000%	0.000%	100.000%
Nov-33	0.000%	0.000%	0.000%	100.000%
Dec-33	0.000%	0.000%	0.000%	100.000%
Jan-34	0.000%	0.000%	0.000%	100.000%
Feb-34	0.000%	0.000%	0.000%	100.000%
Mar-34	0.000%	0.000%	0.000%	100.000%
Apr-34	0.000%	0.000%	0.000%	100.000%
May-34	0.000%	0.000%	0.000%	100.000%
Jun-34	0.000%	0.000%	0.000%	100.000%
Jul-34	0.000%	0.000%	0.000%	100.000%
Aug-34	0.000%	0.000%	0.000%	100.000%
Sep-34	0.000%	0.000%	0.000%	100.000%
Oct-34	0.000%	0.000%	0.000%	100.000%
Nov-34	0.000%	0.000%	0.000%	100.000%
Dec-34	0.000%	0.000%	0.000%	100.000%
Jan-35	0.000%	0.000%	0.000%	100.000%
Feb-35	0.000%	0.000%	0.000%	100.000%
Mar-35	0.000%	0.000%	0.000%	100.000%
Apr-35	0.000%	0.000%	0.000%	100.000%
May-35	0.000%	0.000%	0.000%	100.000%
Jun-35	0.000%	0.000%	0.000%	100.000%
Jul-35	0.000%	0.000%	0.000%	100.000%
Aug-35	0.000%	0.000%	0.000%	100.000%
Sep-35	0.000%	0.000%	0.000%	100.000%
Oct-35	0.000%	0.000%	0.000%	100.000%
Nov-35	0.000%	0.000%	0.000%	100.000%
Dec-35	0.000%	0.000%	0.000%	100.000%



In the Community to Serve®

2014
Integrated Resource Plan

Appendix Volume 4 (Sec F-I)

Appendix F

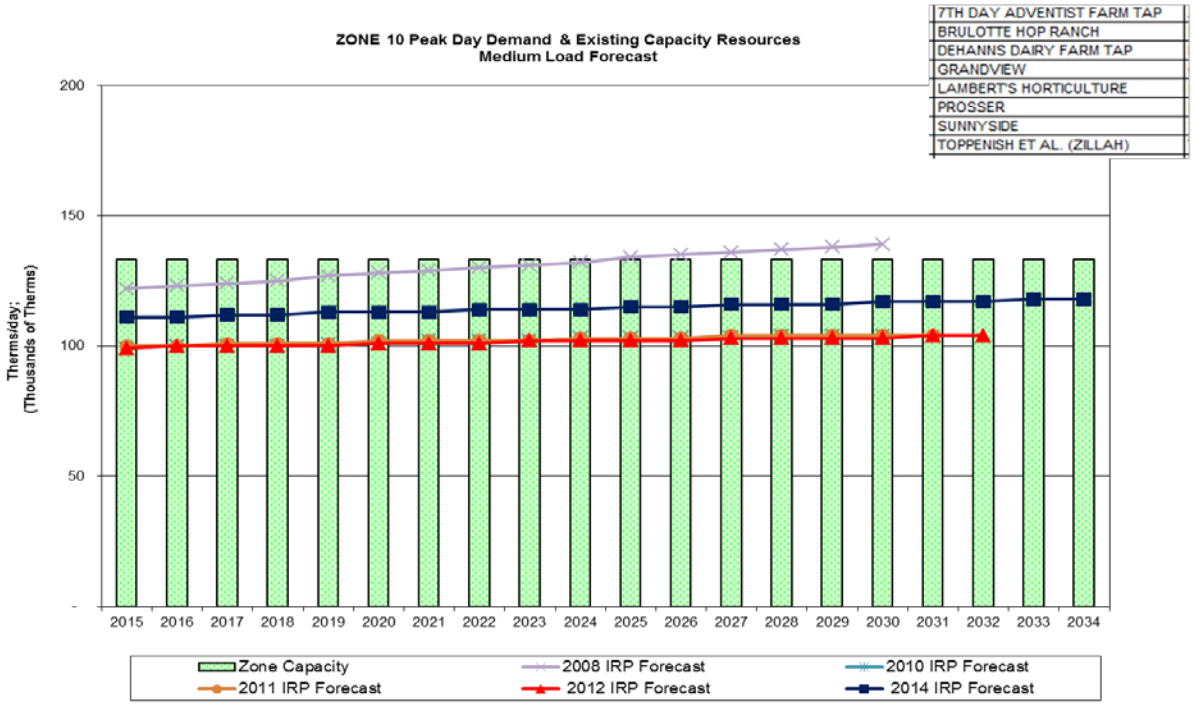
Capacity Requirements & Peak Day Planning

Existing Upstream Pipeline Capacity vs Zonal Peak Demand
(000's of Therms)

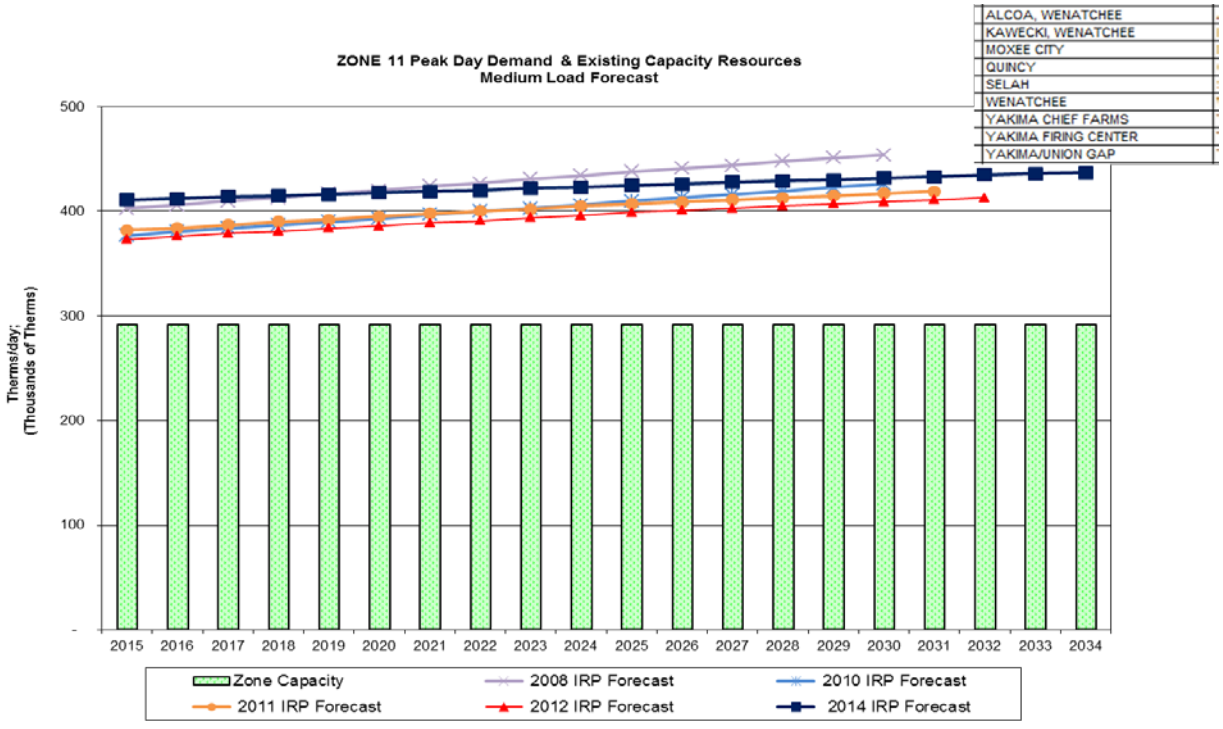
	YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Zone 10	Zone Capacity	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
	2008 IRP Forecast	122	123	124	125	127	128	129	130	131	132	134	135	136	137	138	139				
	2010 IRP Forecast	99	100	100	100	101	101	102	102	102	103	103	103	103	104	104	104				
	2011 IRP Forecast	100	100	101	101	101	102	102	102	102	103	103	103	104	104	104	104	104			
	2012 IRP Forecast	99	100	100	100	100	101	101	101	102	102	102	102	103	103	103	103	104	104		
	2014 IRP Forecast	111	111	112	112	113	113	113	114	114	114	115	115	116	116	116	117	117	117	118	118
	Excess/(Shortfall)	22	22	21	21	20	20	20	19	19	19	18	18	17	17	17	16	16	16	15	15
Zone 11	Zone Capacity	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292	292
	2008 IRP Forecast	403	406	410	413	417	420	424	427	431	434	438	441	444	448	451	454				
	2010 IRP Forecast	377	381	384	387	390	393	397	400	403	406	410	413	416	419	423	426				
	2011 IRP Forecast	382	384	387	390	392	395	398	400	402	405	407	409	411	413	415	417	419			
	2012 IRP Forecast	373	376	379	381	384	386	389	391	394	396	399	401	403	405	407	409	411	413		
	2014 IRP Forecast	411	412	414	415	416	418	419	420	422	423	425	426	428	429	430	432	433	435	436	437
	Excess/(Shortfall)	(119)	(120)	(122)	(123)	(124)	(126)	(127)	(128)	(130)	(131)	(133)	(134)	(136)	(137)	(138)	(140)	(141)	(143)	(144)	(145)
Zone 20	Zone Capacity	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570
	2008 IRP Forecast	476	490	505	520	535	550	566	581	595	610	624	639	653	668	684	698				
	2010 IRP Forecast	513	532	552	572	593	615	637	659	682	706	730	755	780	806	832	859				
	2011 IRP Forecast	519	537	556	574	593	613	633	654	674	696	717	740	762	785	808	829	853			
	2012 IRP Forecast	497	515	533	551	570	589	608	628	648	669	690	712	734	756	779	802	823	847		
	2014 IRP Forecast	471	477	483	489	495	501	507	513	519	526	532	538	544	550	556	562	569	575	581	587
	Excess/(Shortfall)	99	93	87	81	75	69	63	57	51	44	38	32	26	20	14	8	1	(5)	(11)	(17)
Zone 24	Zone Capacity	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	2008 IRP Forecast	64	65	66	66	67	68	69	70	71	72	73	74	75	76	77	79				
	2010 IRP Forecast	58	58	59	59	59	59	60	60	60	61	61	62	62	62	63	63				
	2011 IRP Forecast	57	57	57	57	57	57	57	57	58	58	58	58	59	59	59	59	60			
	2012 IRP Forecast	57	57	57	57	57	57	57	57	57	58	58	58	58	59	59	59	59	60		
	2014 IRP Forecast	112	112	112	112	113	113	113	114	114	114	114	115	115	115	115	116	116	116	116	117
	Excess/(Shortfall)	8	8	8	8	7	7	7	6	6	6	6	5	5	5	5	4	4	4	4	3
Zone 26	Zone Capacity	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228
	2008 IRP Forecast	95	96	99	101	103	106	109	110	112	114	115	116	118	120	122	123				
	2010 IRP Forecast	85	87	88	89	91	92	93	94	96	97	98	99	101	102	103	104				
	2011 IRP Forecast	81	82	82	83	84	85	85	86	87	88	89	90	91	92	92	93	94			
	2012 IRP Forecast	78	79	80	80	81	82	82	83	84	85	86	87	87	88	89	90	91	92		
	2014 IRP Forecast	66	67	68	68	69	70	70	71	72	72	73	74	74	75	76	77	77	78	79	79
	Excess/(Shortfall)	162	161	160	160	159	158	158	157	156	156	155	154	154	153	152	151	151	150	149	149

Existing Upstream Pipeline Capacity vs Zonal Peak Demand
(000's of Therms)

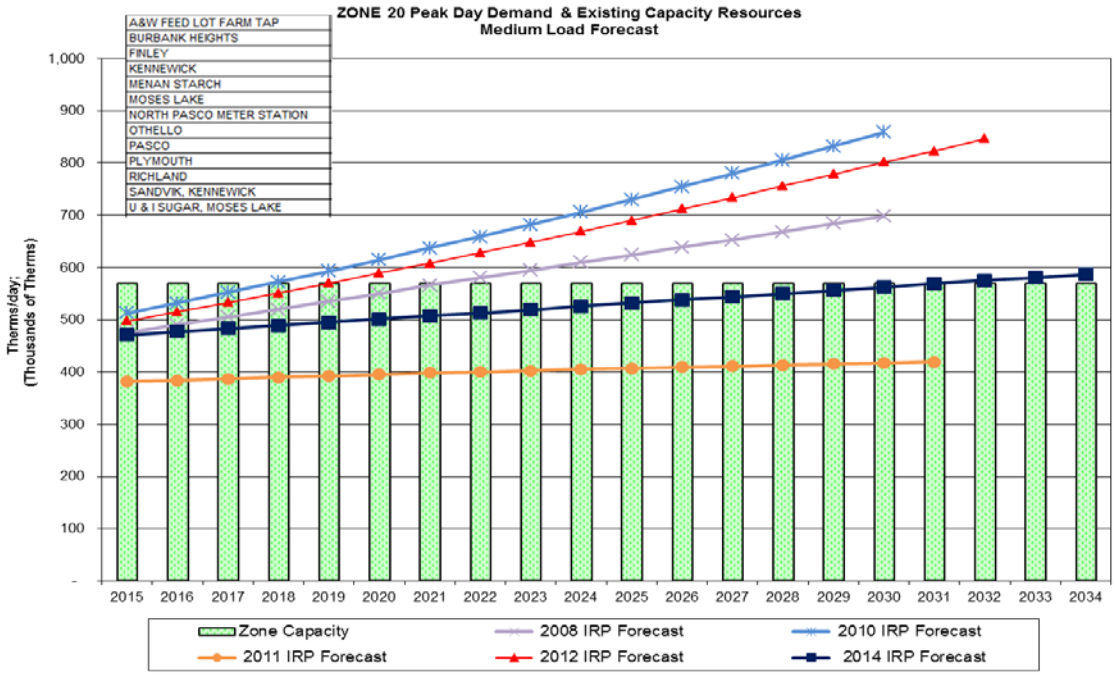
	YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Zone 30-S	Zone Capacity	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368
	2008 IRP Forecast	507	515	523	532	540	549	558	566	575	584	593	602	611	620	629	639				
	2010 IRP Forecast	464	474	485	496	507	518	529	540	552	563	575	587	599	611	623	636				
	2011 IRP Forecast	449	457	465	473	481	489	497	506	514	523	531	540	549	557	566	574	583			
	2012 IRP Forecast	442	449	457	465	473	481	490	498	506	515	523	532	541	549	558	567	575	584		
	2014 IRP Forecast	383	386	390	394	398	402	406	410	413	417	421	425	429	433	437	440	444	448	452	456
	Excess/(Shortfall)	(15)	(18)	(22)	(26)	(30)	(34)	(38)	(42)	(45)	(49)	(53)	(57)	(61)	(65)	(69)	(72)	(76)	(80)	(84)	(88)
Zone 30-W	Zone Capacity	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023
	2008 IRP Forecast	1,418	1,449	1,481	1,514	1,546	1,579	1,613	1,646	1,679	1,712	1,745	1,778	1,812	1,846	1,880	1,914				
	2010 IRP Forecast	1,292	1,320	1,349	1,378	1,408	1,439	1,469	1,501	1,532	1,565	1,597	1,631	1,665	1,699	1,734	1,771				
	2011 IRP Forecast	1,306	1,337	1,369	1,400	1,432	1,464	1,497	1,529	1,562	1,595	1,628	1,662	1,695	1,729	1,763	1,794	1,828			
	2012 IRP Forecast	1,253	1,283	1,314	1,345	1,376	1,407	1,439	1,471	1,503	1,535	1,568	1,600	1,633	1,666	1,699	1,732	1,763	1,797		
	2014 IRP Forecast	1,022	1,039	1,056	1,073	1,091	1,108	1,126	1,143	1,161	1,178	1,196	1,213	1,231	1,249	1,266	1,284	1,301	1,319	1,336	1,354
	Excess/(Shortfall)	1	(16)	(33)	(50)	(68)	(85)	(103)	(120)	(138)	(155)	(173)	(190)	(208)	(226)	(243)	(261)	(278)	(296)	(313)	(331)
Zone GTN	Zone Capacity	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778	778
	2008 IRP Forecast	705	730	754	779	803	827	852	877	901	926	951	976	1,001	1,026	1,050	1,073				
	2010 IRP Forecast	634	648	663	678	693	708	723	738	753	768	783	798	813	829	844	860				
	2011 IRP Forecast	610	622	634	646	658	670	683	696	709	722	735	749	763	777	791	803	818			
	2012 IRP Forecast	596	607	619	630	642	654	667	679	692	705	718	731	745	759	773	787	799	813		
	2014 IRP Forecast	619	631	644	656	669	681	694	706	719	731	744	756	769	781	794	806	819	831	843	856
	Excess/(Shortfall)	159	147	134	122	109	97	84	72	59	47	34	22	9	(3)	(16)	(28)	(41)	(53)	(65)	(78)
Zone ME-OR	Zone Capacity	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512	512
	2008 IRP Forecast	207	209	210	212	213	215	216	217	219	220	222	224	226	227	229	231				
	2010 IRP Forecast	205	208	210	213	216	219	221	224	227	230	232	235	237	240	242	245				
	2011 IRP Forecast	218	222	227	231	235	239	243	247	251	255	258	262	265	268	271	273	276			
	2012 IRP Forecast	213	218	222	227	231	235	239	243	247	251	255	258	262	265	268	271	273	276		
	2014 IRP Forecast	170	171	172	173	174	175	176	177	178	179	180	182	183	184	185	186	187	188	189	190
	Excess/(Shortfall)	342	341	340	339	338	337	336	335	334	333	332	330	329	328	327	326	325	324	323	322
Zone ME-WA	Zone Capacity	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202
	2008 IRP Forecast	170	172	175	177	179	181	184	186	188	191	193	195	197	200	202	204				
	2010 IRP Forecast	168	170	172	174	176	177	179	181	183	185	187	188	190	192	194	195				
	2011 IRP Forecast	171	173	175	177	178	180	182	184	185	187	189	190	191	193	194	195	196			
	2012 IRP Forecast	164	166	168	170	172	174	176	177	179	181	182	184	185	187	188	189	190	191		
	2014 IRP Forecast	189	189	189	189	189	189	189	189	189	189	189	189	189	190	190	190	190	190	190	190
	Excess/(Shortfall)	13	13	13	13	13	13	13	13	13	13	13	13	13	12	12	12	12	12	12	12
Zone 30 Combined	Zone Capacity	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391	1,391
	2014 IRP Forecast	1,405	1,425	1,446	1,467	1,489	1,510	1,532	1,553	1,574	1,595	1,617	1,638	1,660	1,682	1,703	1,724	1,745	1,767	1,788	1,810
	Excess/(Shortfall)	(14)	(34)	(55)	(76)	(98)	(119)	(141)	(162)	(183)	(204)	(226)	(247)	(269)	(291)	(312)	(333)	(354)	(376)	(397)	(419)



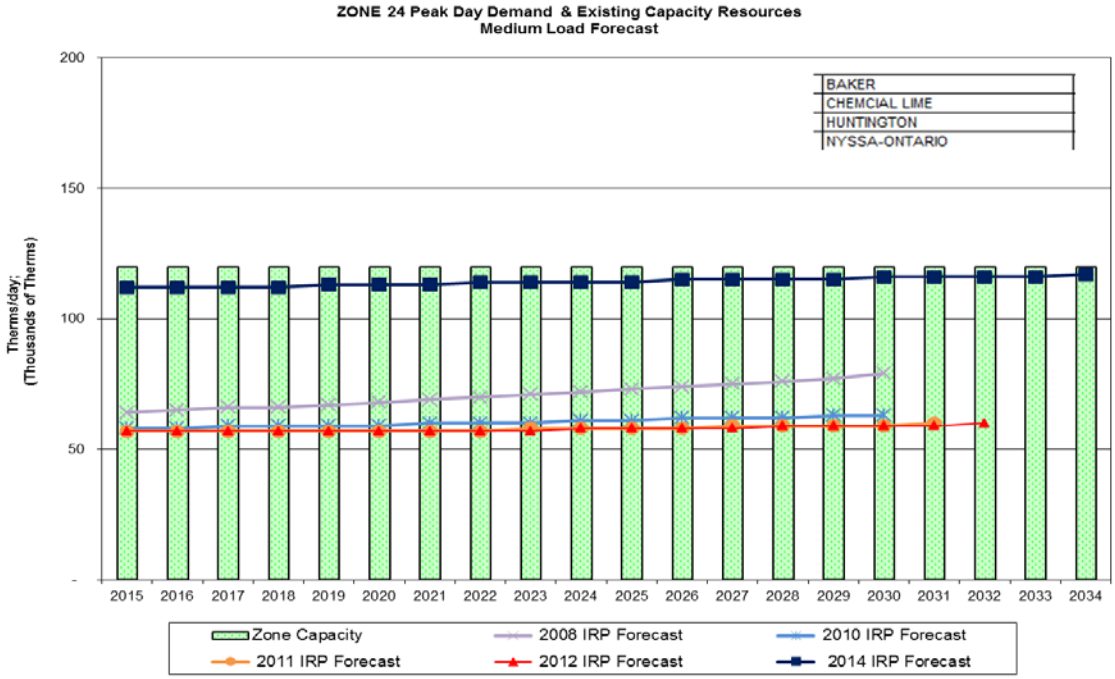
Note: NWP Capacity is net of Non-Core primary term capacity requirements



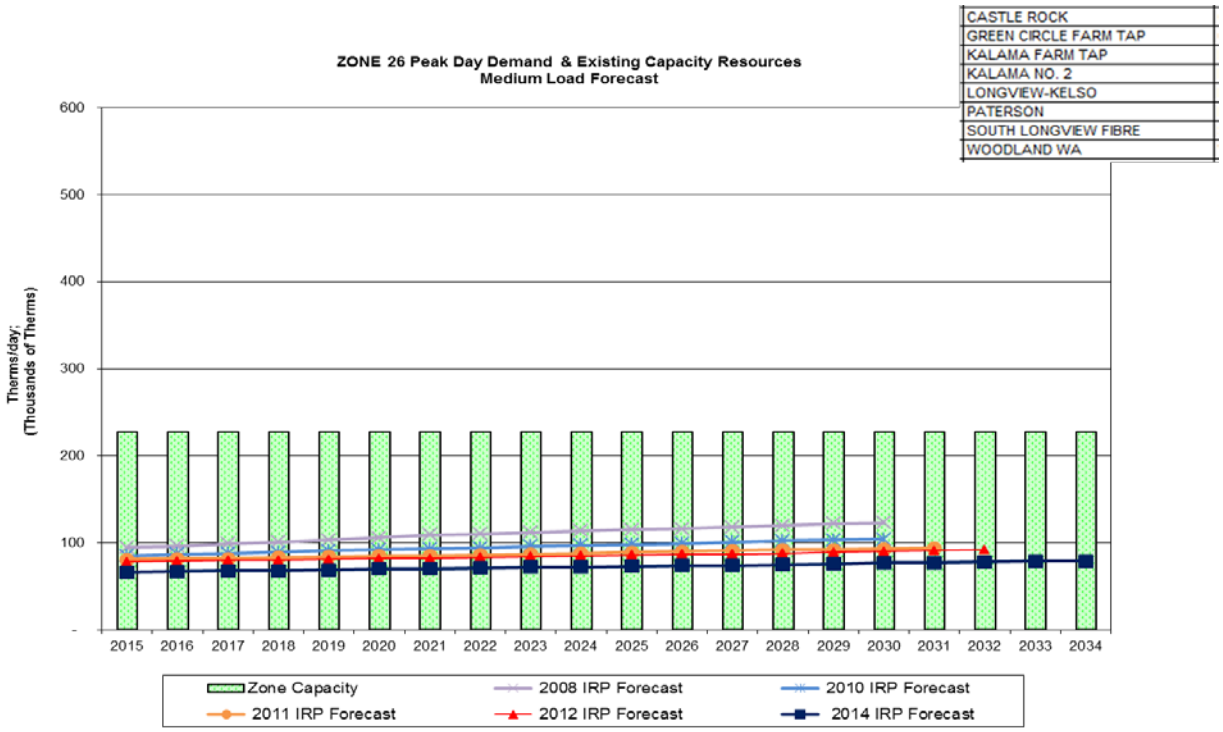
Note: NWP Capacity is net of Non-Core primary term capacity requirements



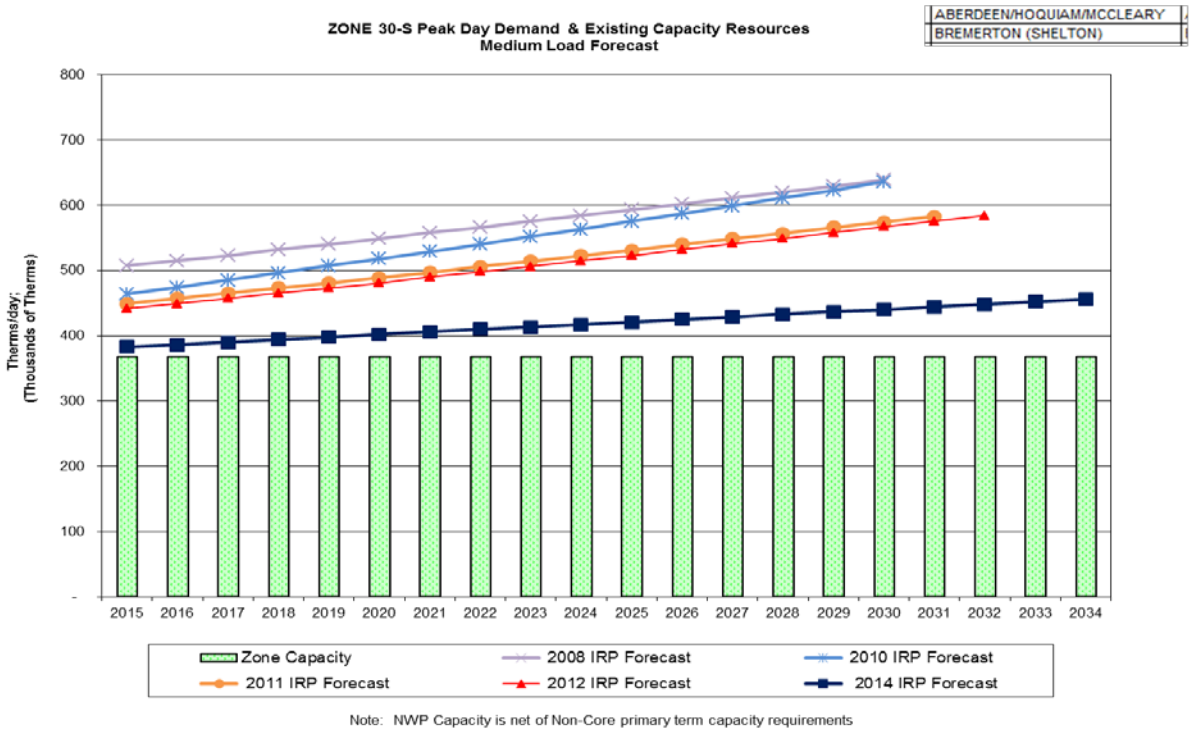
Note: NWP Capacity is net of Non-Core primary term capacity requirements



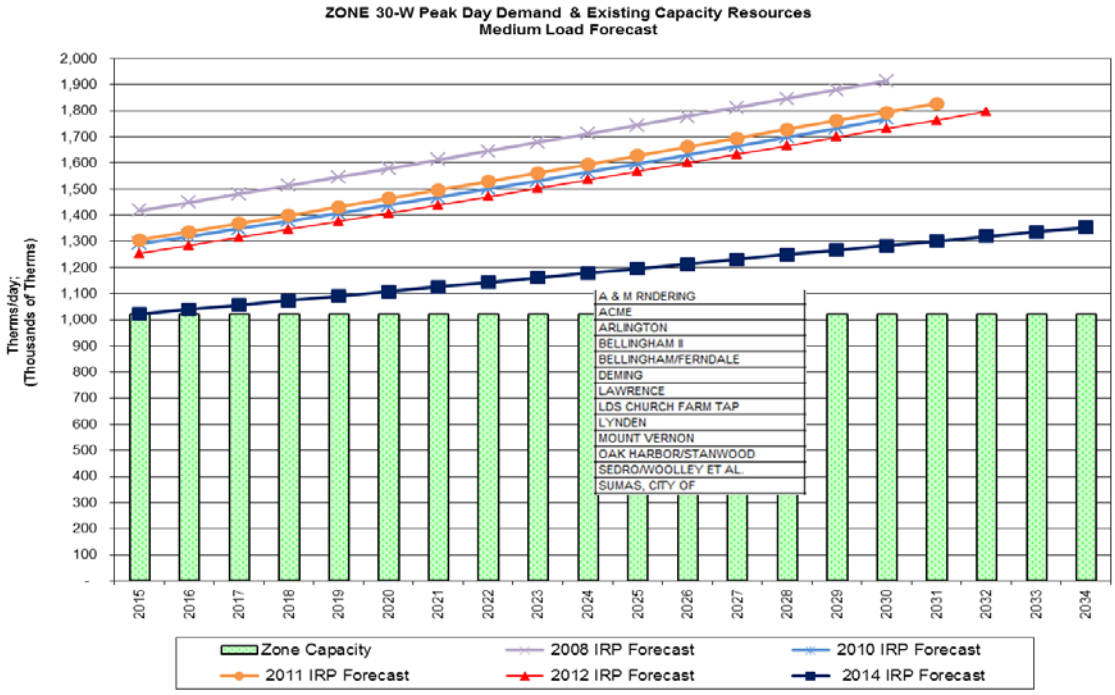
Note: NWP Capacity is net of Non-Core primary term capacity requirements



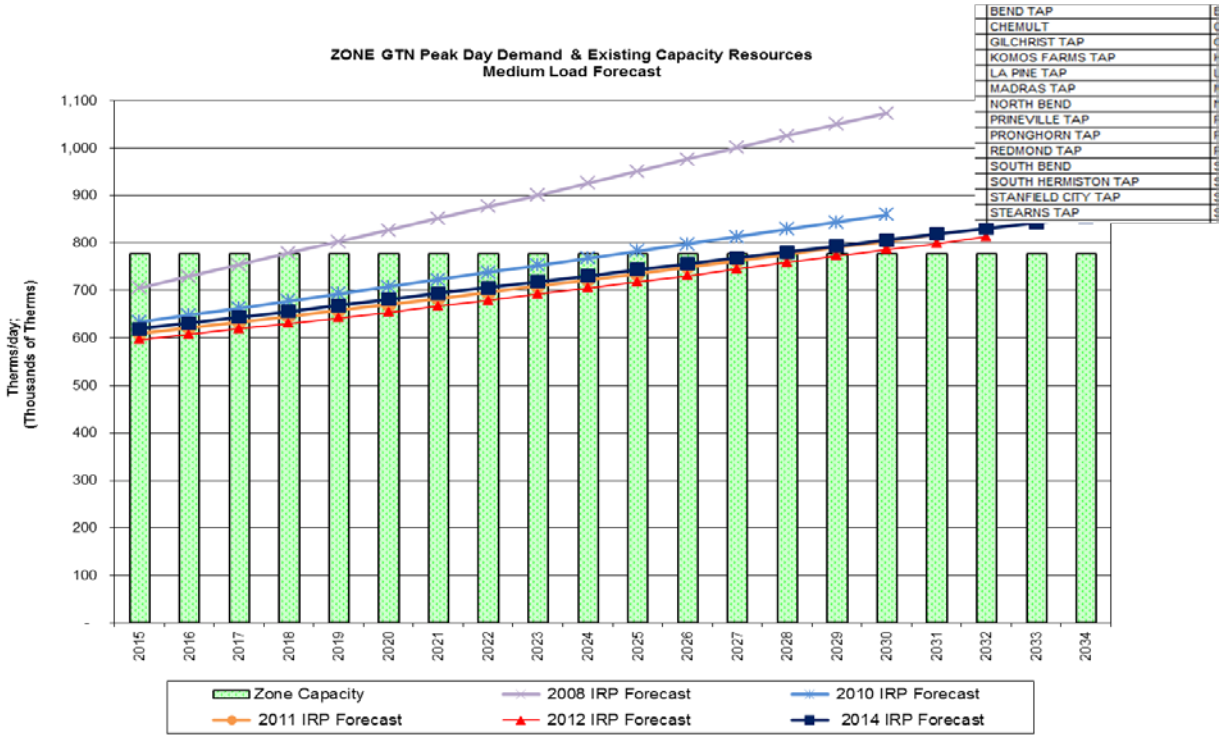
Note: NWP Capacity is net of Non-Core primary term capacity requirements

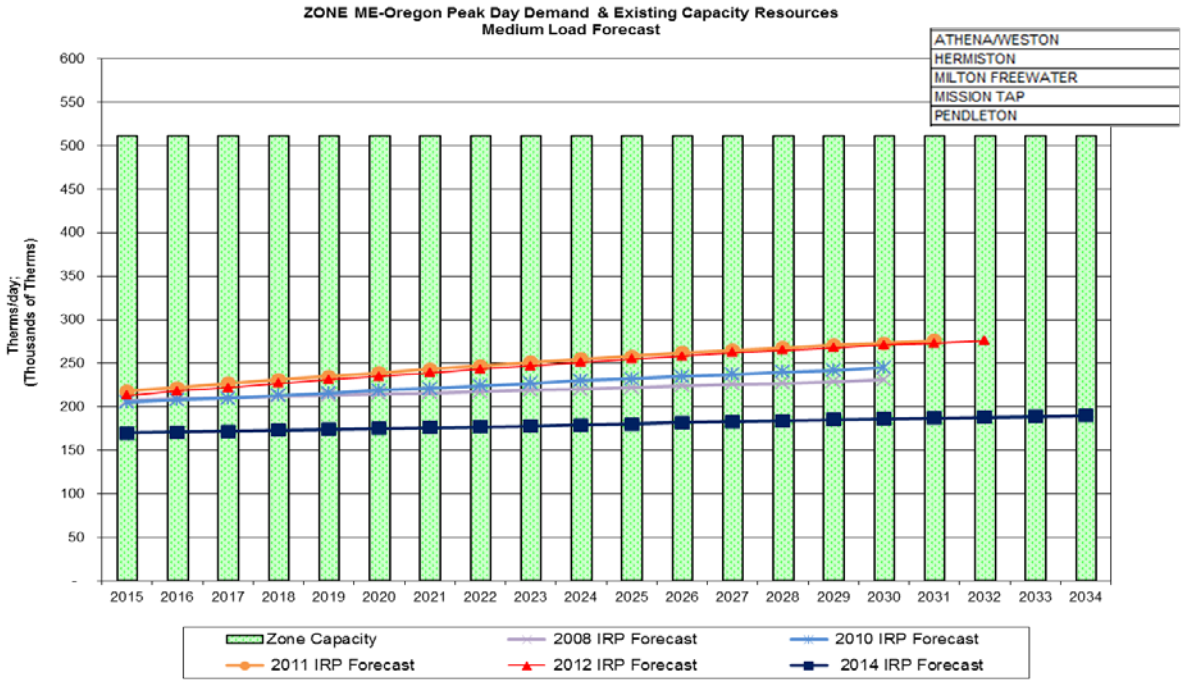


Note: NWP Capacity is net of Non-Core primary term capacity requirements

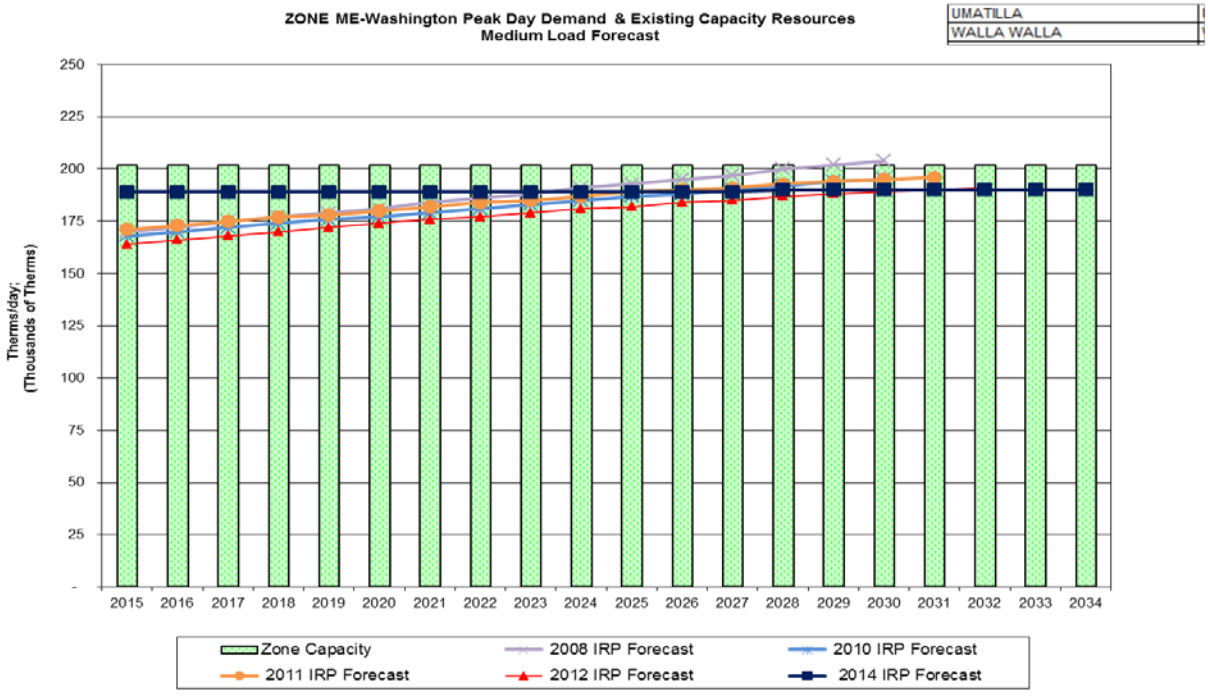


Note: NWP Capacity is net of Non-Core primary term capacity requirements

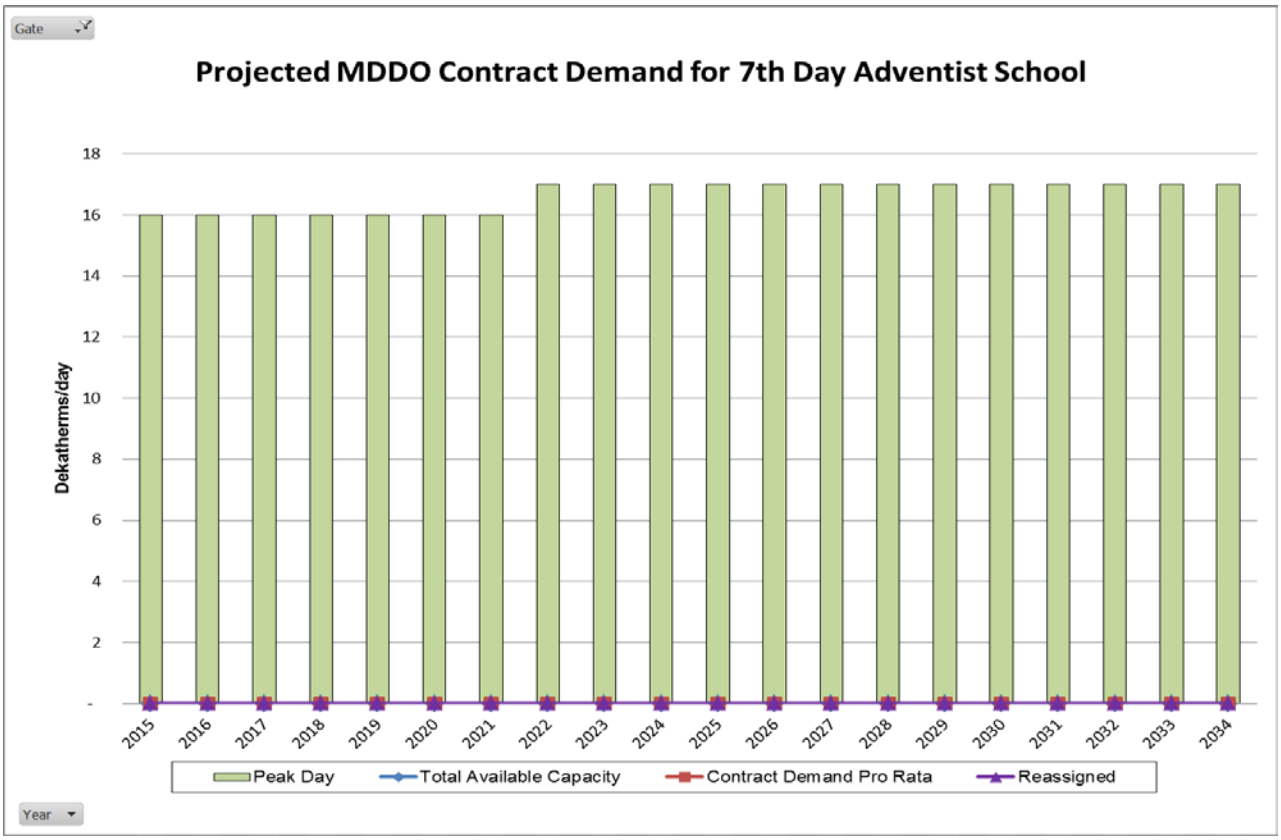


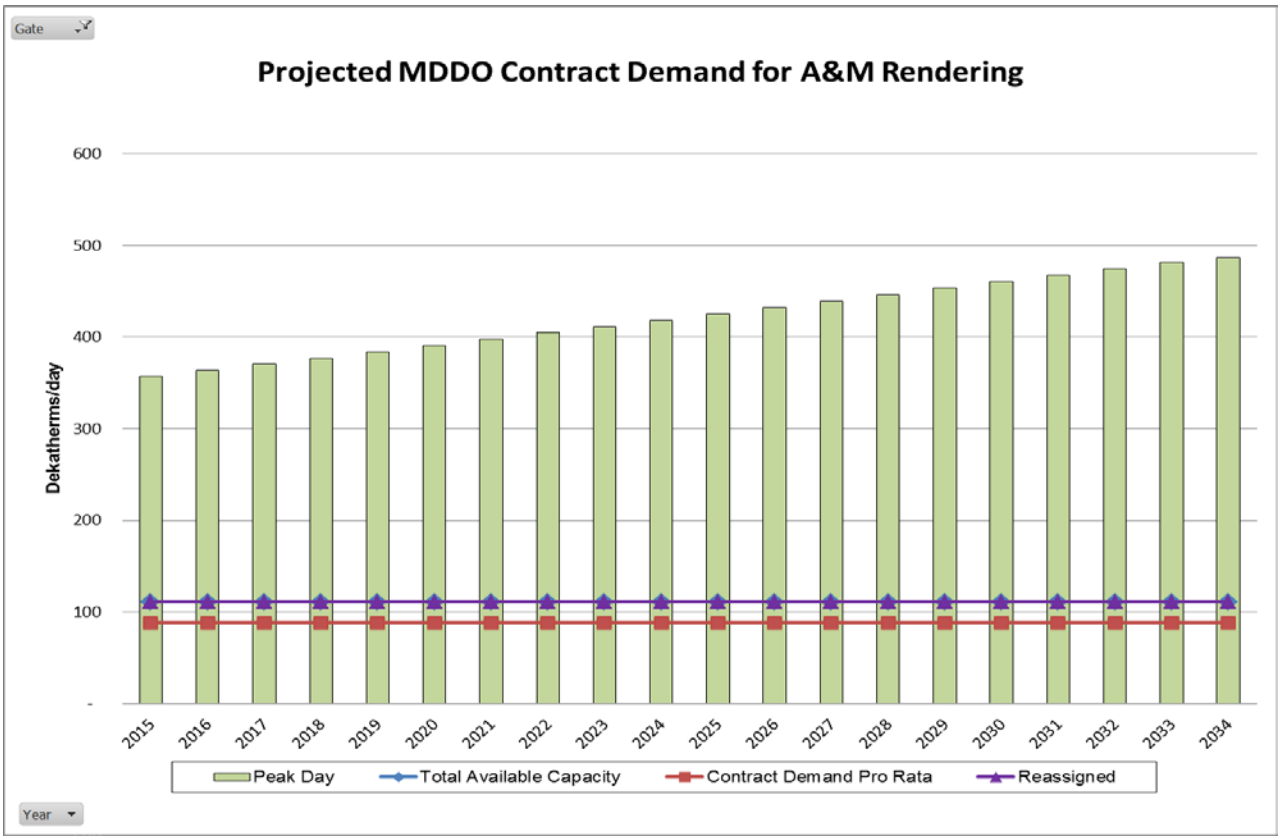


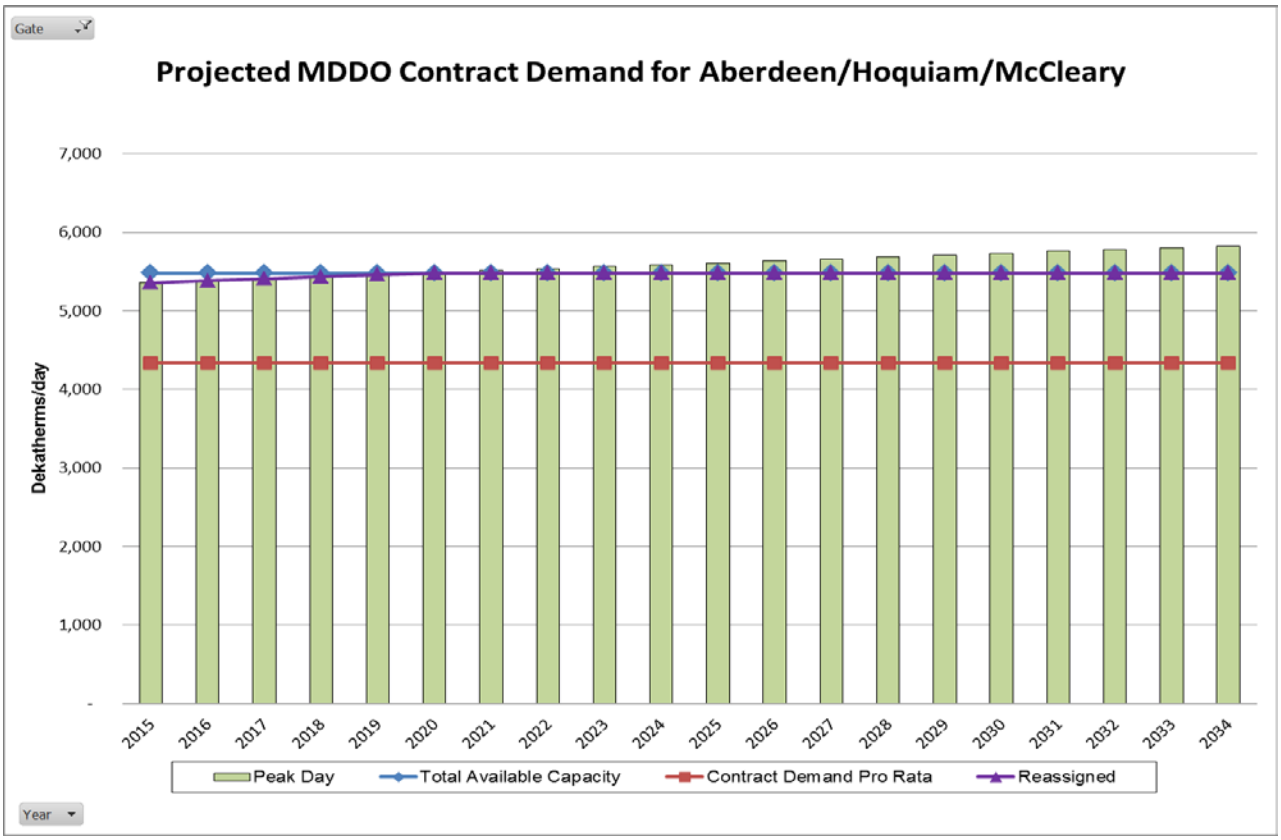
Note: NWP Capacity is net of Non-Core primary term capacity requirements

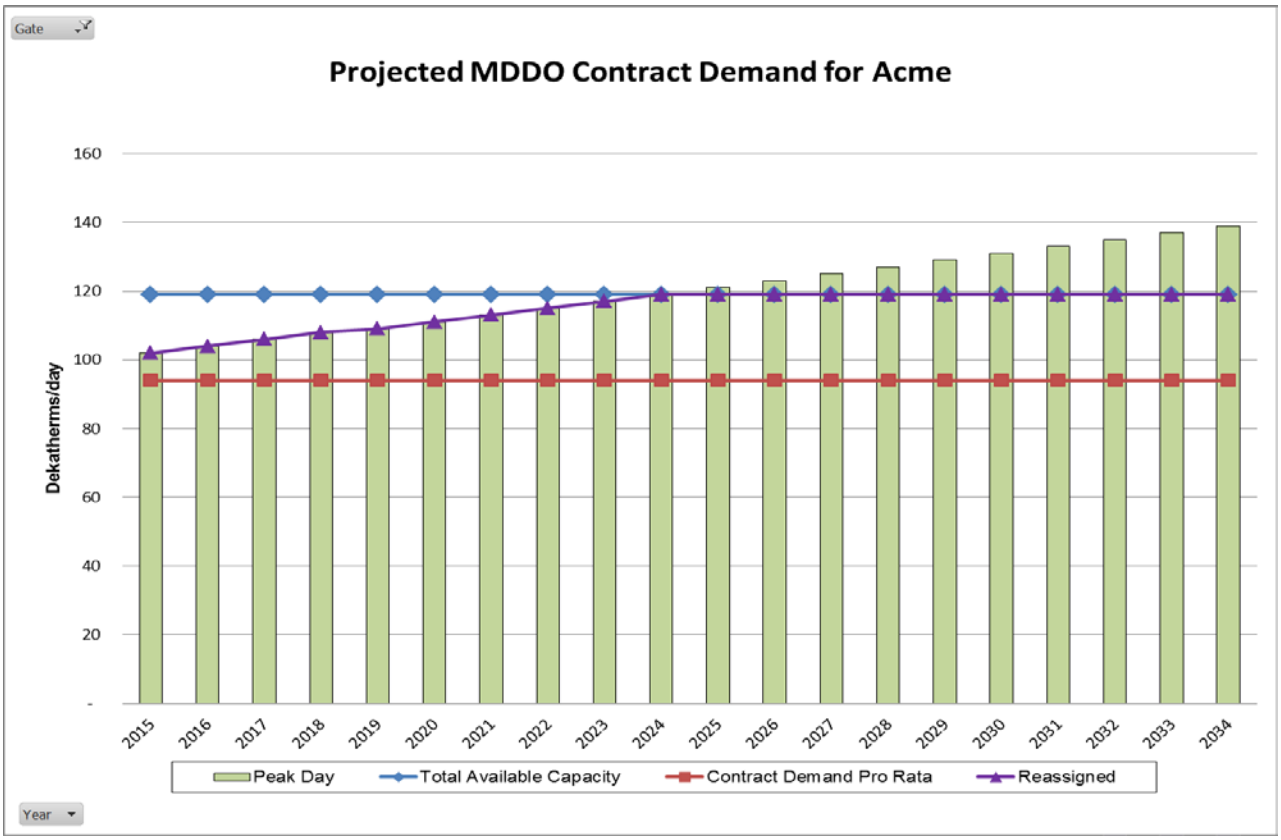


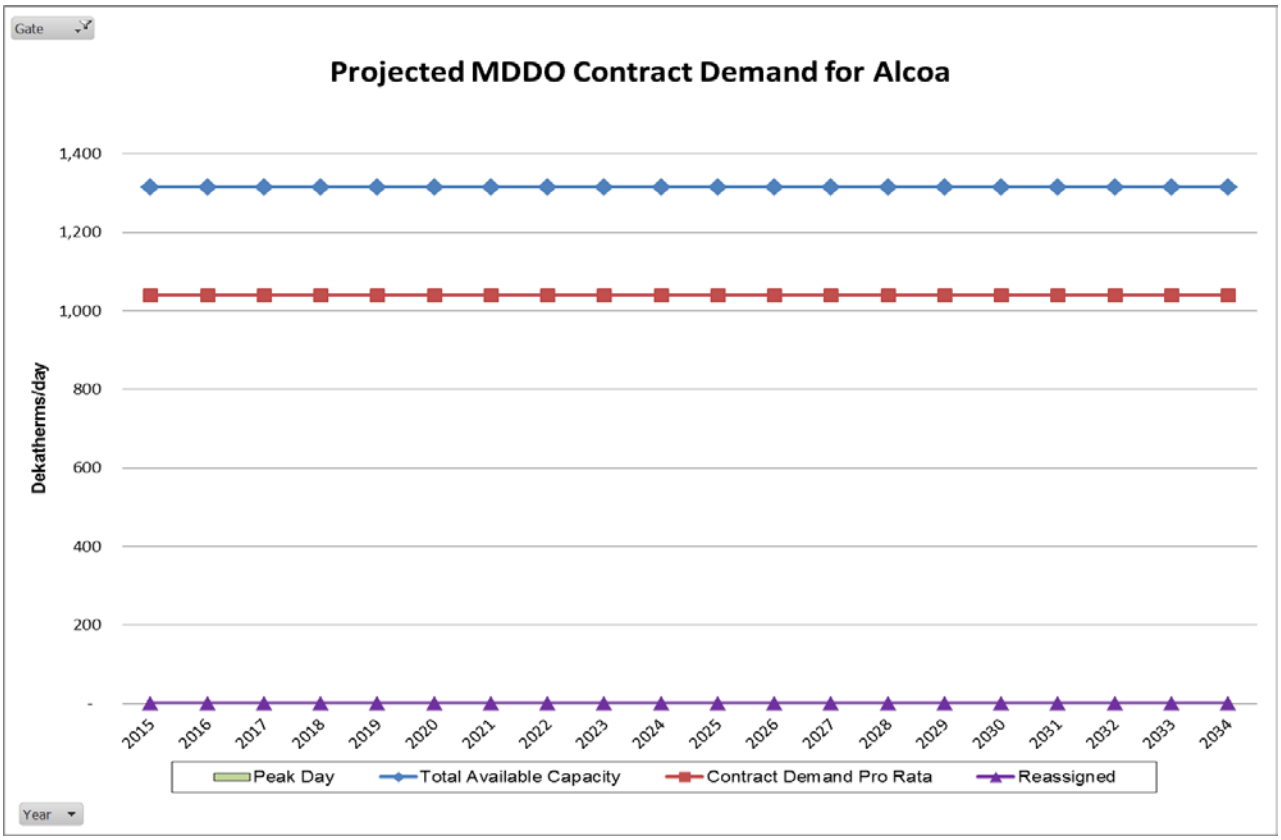
Note: NWP Capacity is net of Non-Core primary term capacity requirements

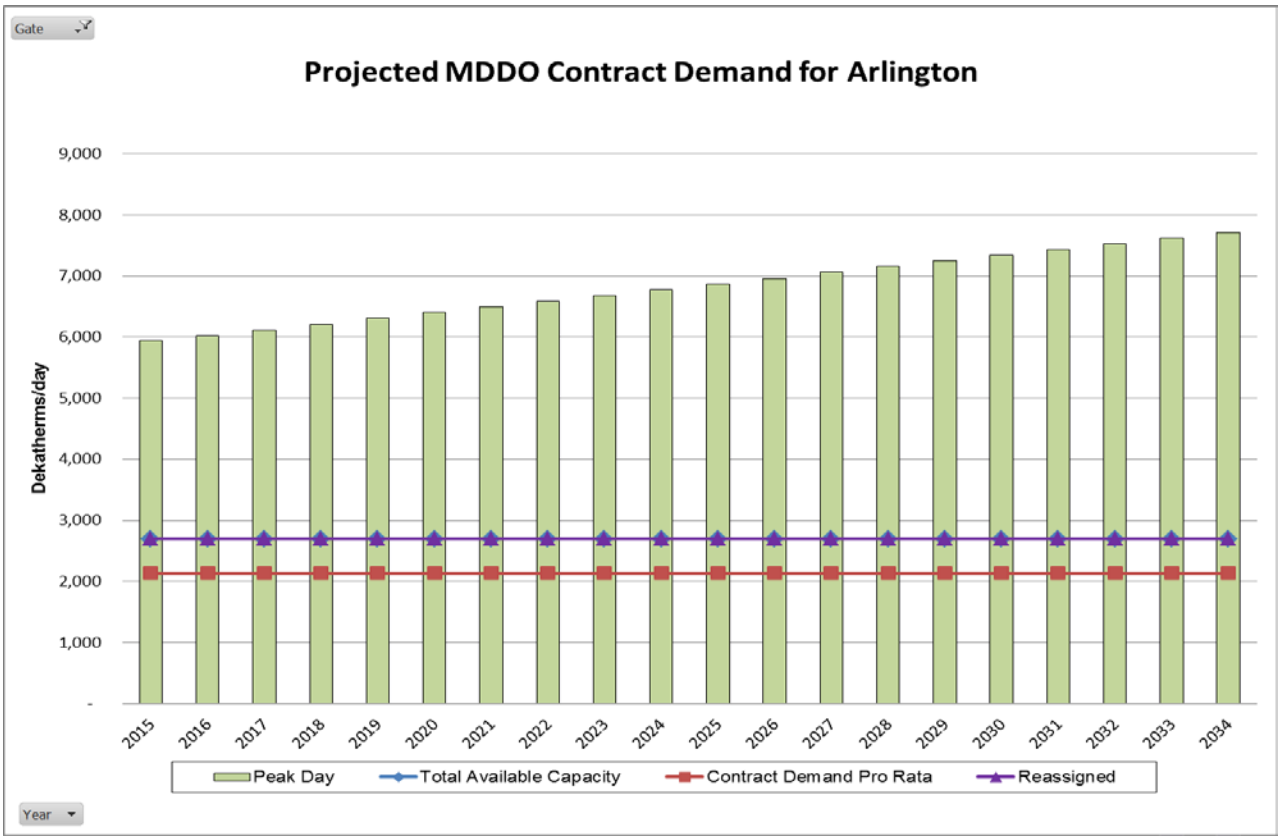

Gate
Projected MDDO Contract Demand for 7th Day Adventist School
Dekatherms/day
18
16
14
12
10
8
6
4
2
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

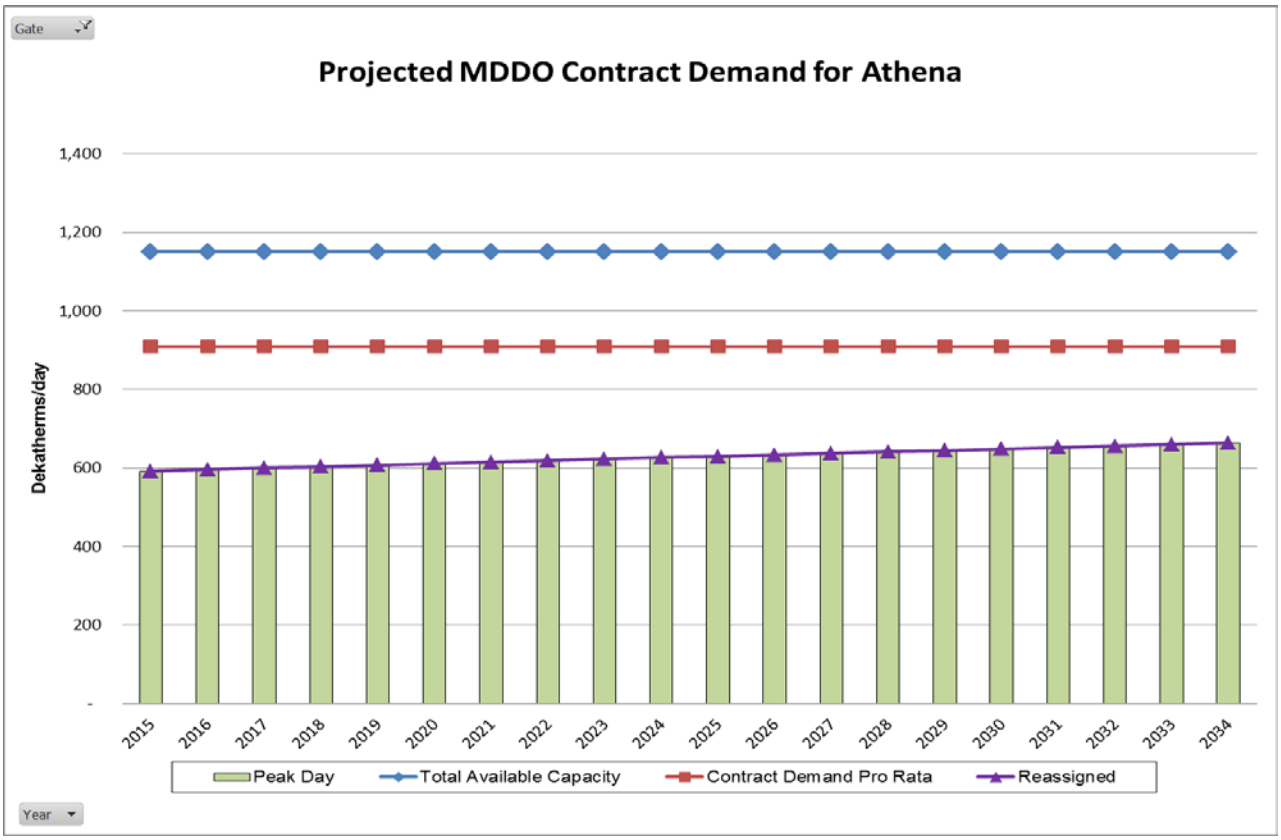

Gate
Projected MDDO Contract Demand for A&M Rendering
Dekatherms/day
600
500
400
300
200
100
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

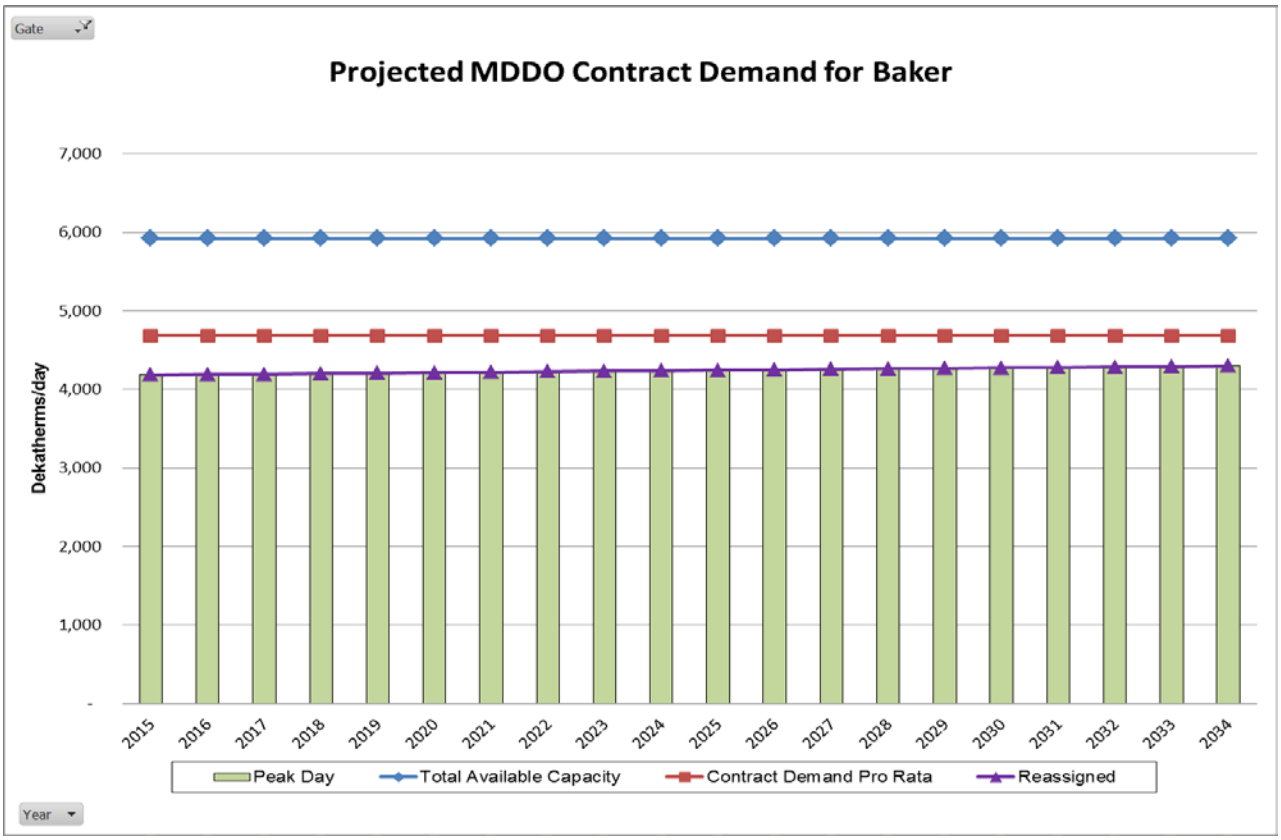

Gate
Projected MDDO Contract Demand for Aberdeen/Hoquiam/McCleary
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

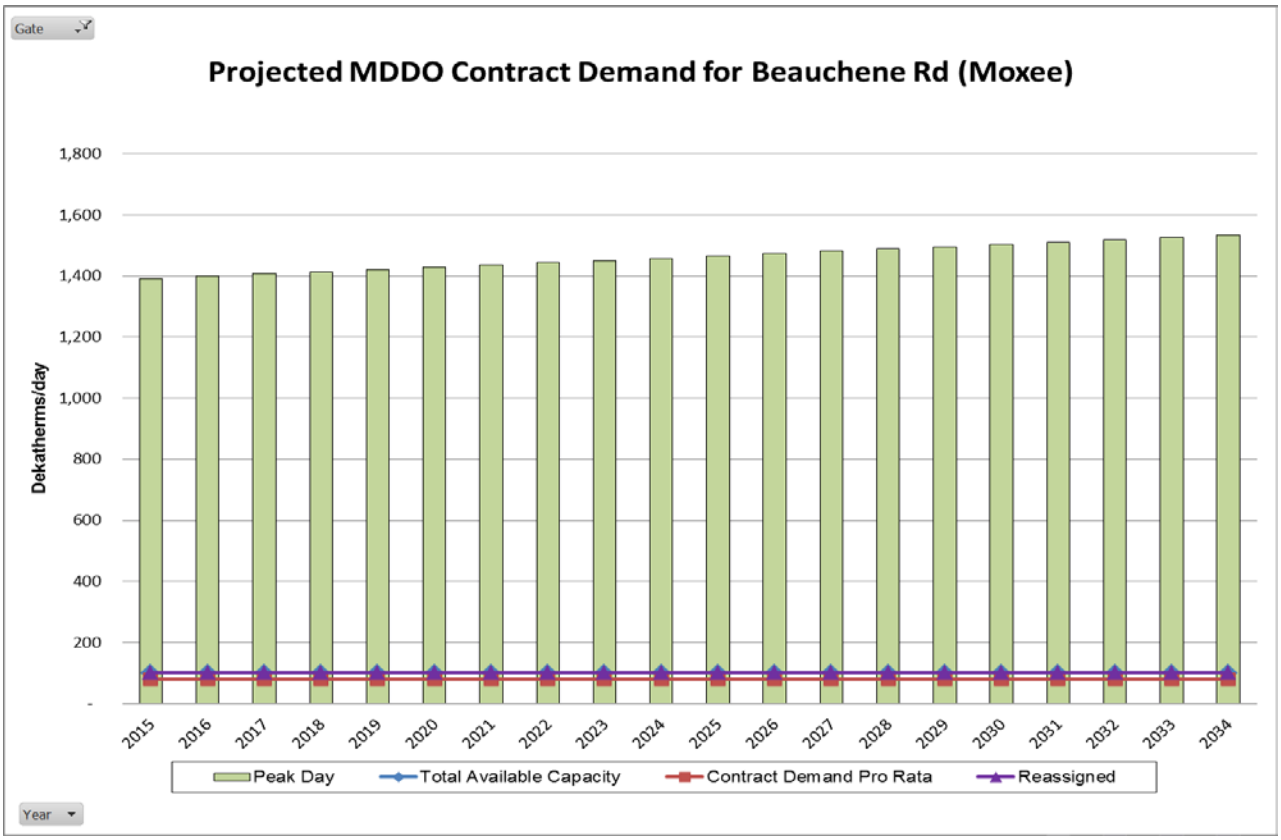

Gate
Projected MDDO Contract Demand for Acme
160
140
120
100
80
60
40
20
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

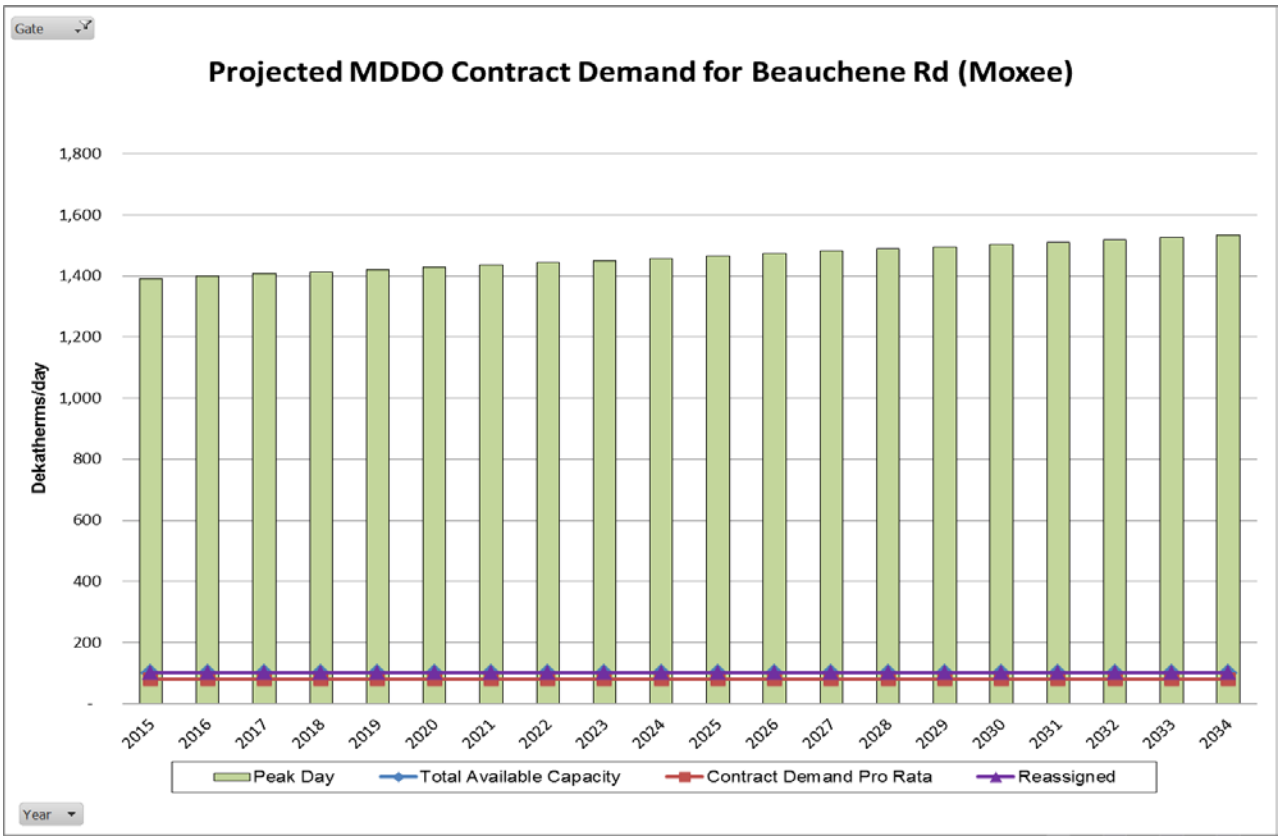

Gate
Projected MDDO Contract Demand for Alcoa
1,400
1,200
1,000
800
600
400
200
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

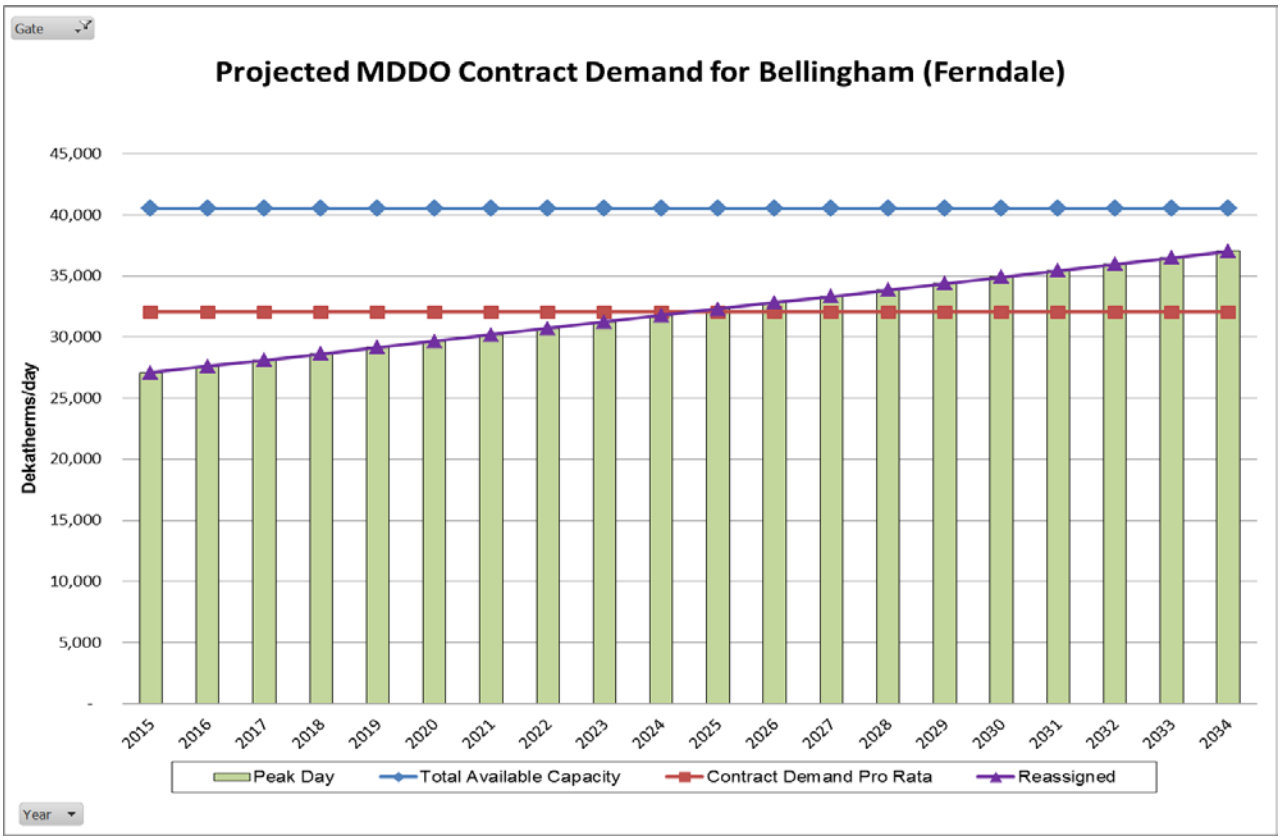

Gate
Projected MDDO Contract Demand for Arlington
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

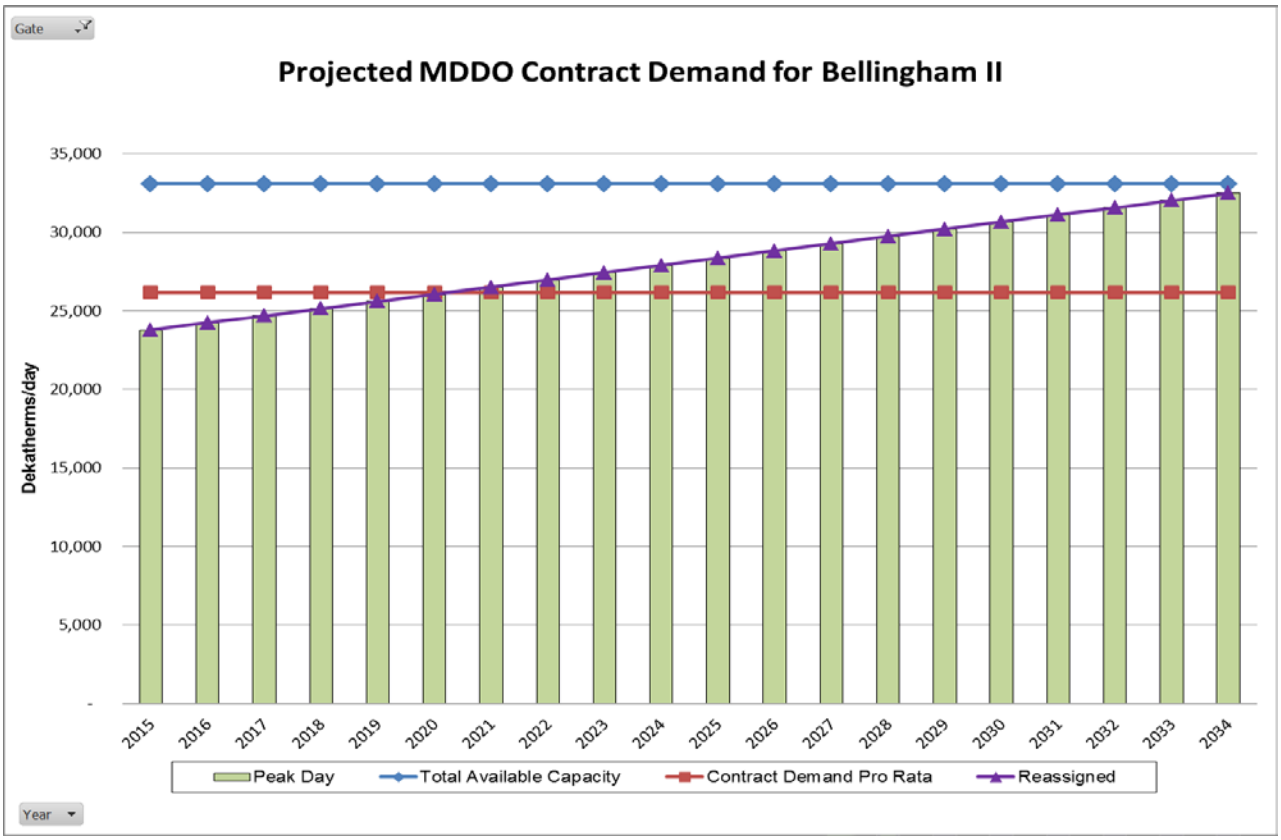

Gate
Projected MDDO Contract Demand for Athena
1,400
1,200
1,000
800
600
400
200
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

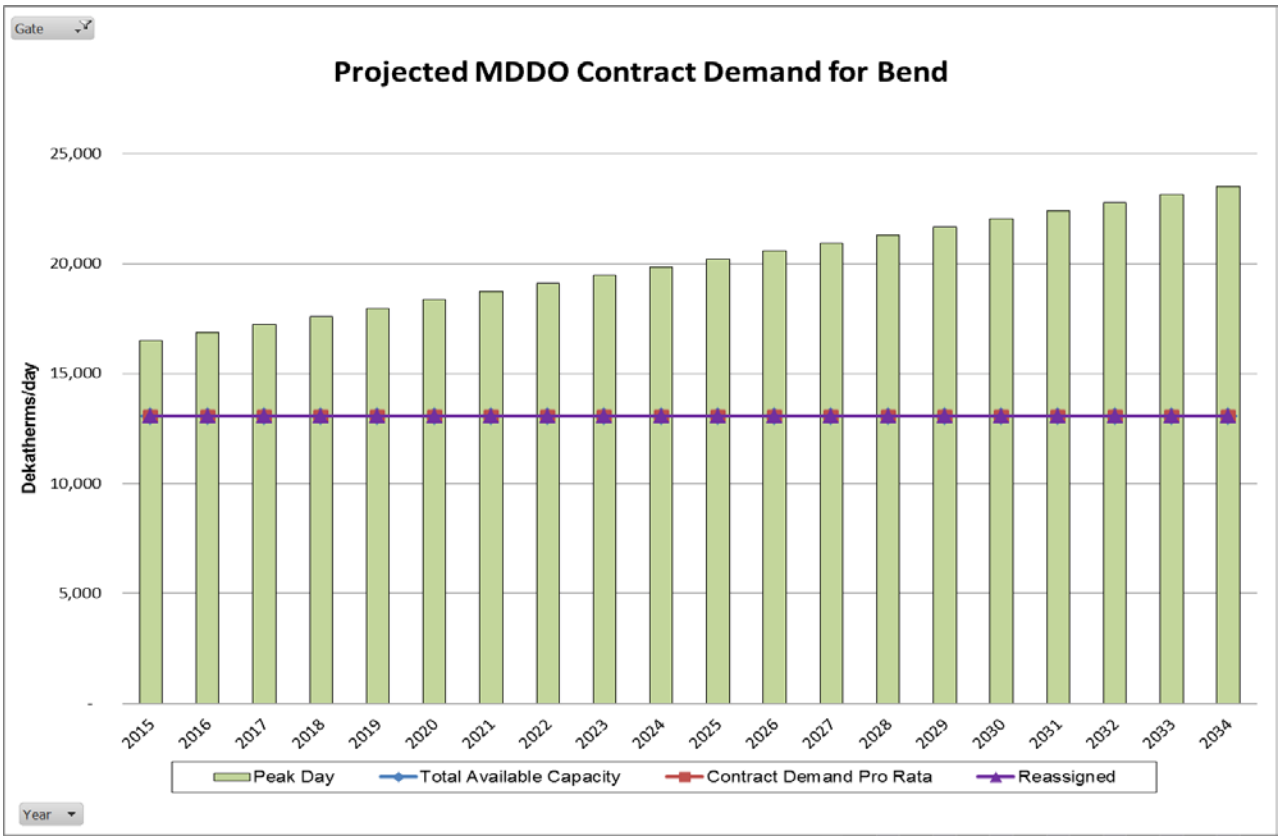

Gate
Projected MDDO Contract Demand for Baker
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

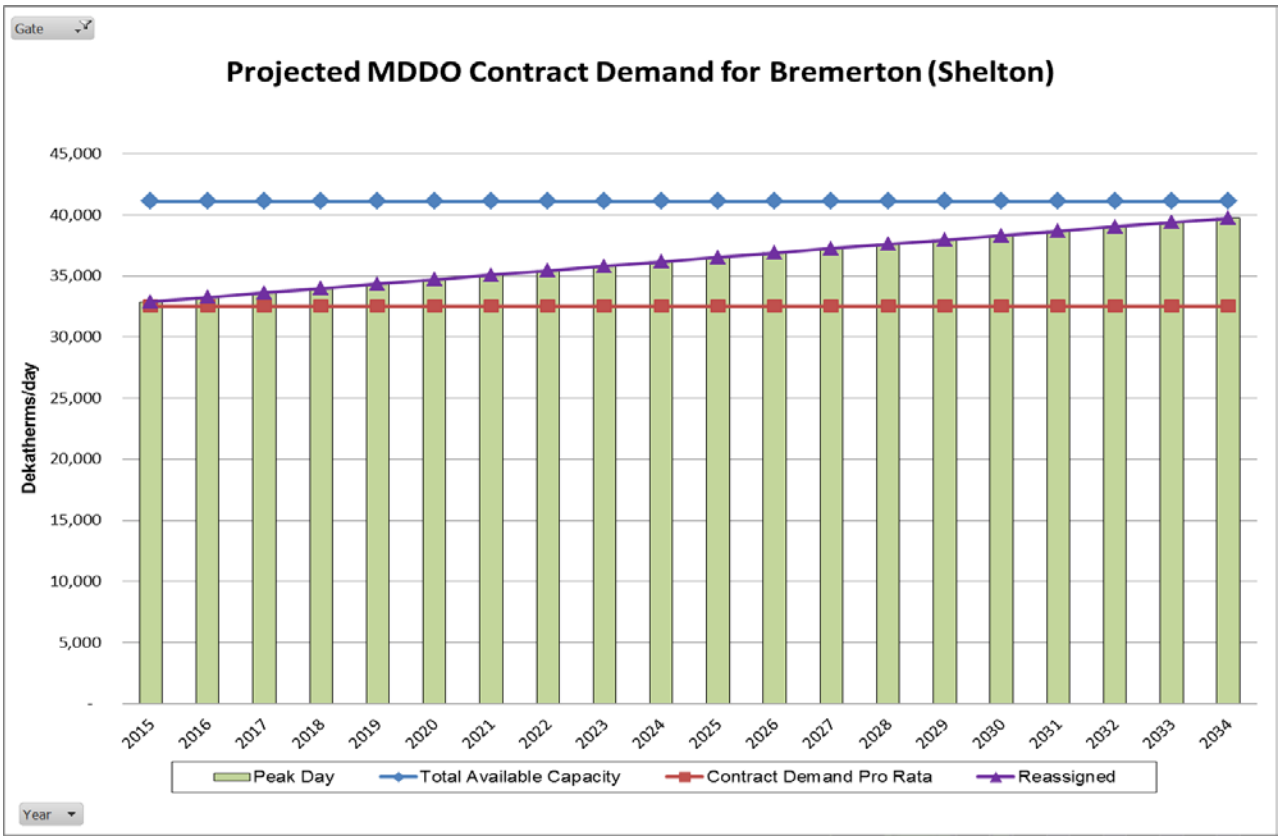

Gate
Projected MDDO Contract Demand for Beauchene Rd (Moxee)
Dekatherms/day
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

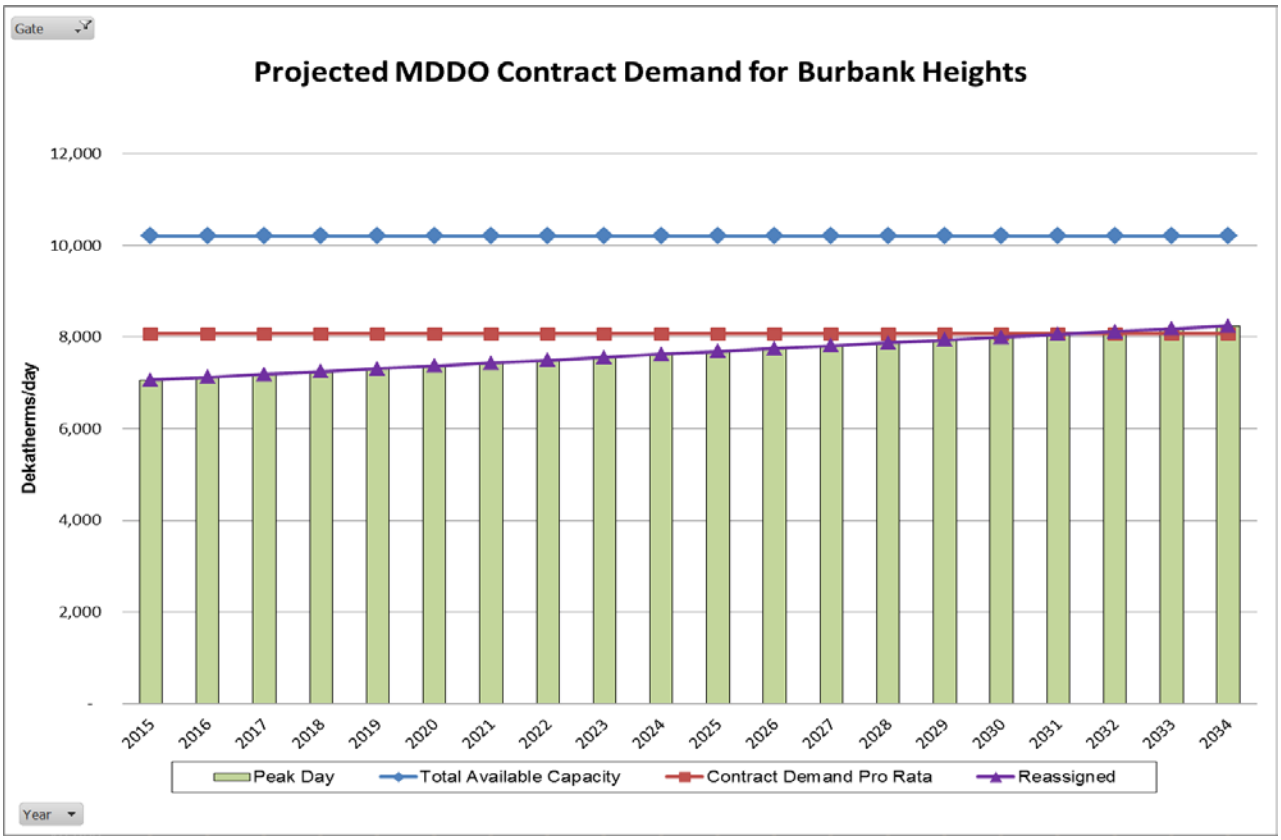

Gate
Projected MDDO Contract Demand for Beauchene Rd (Moxee)
Dekatherms/day
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

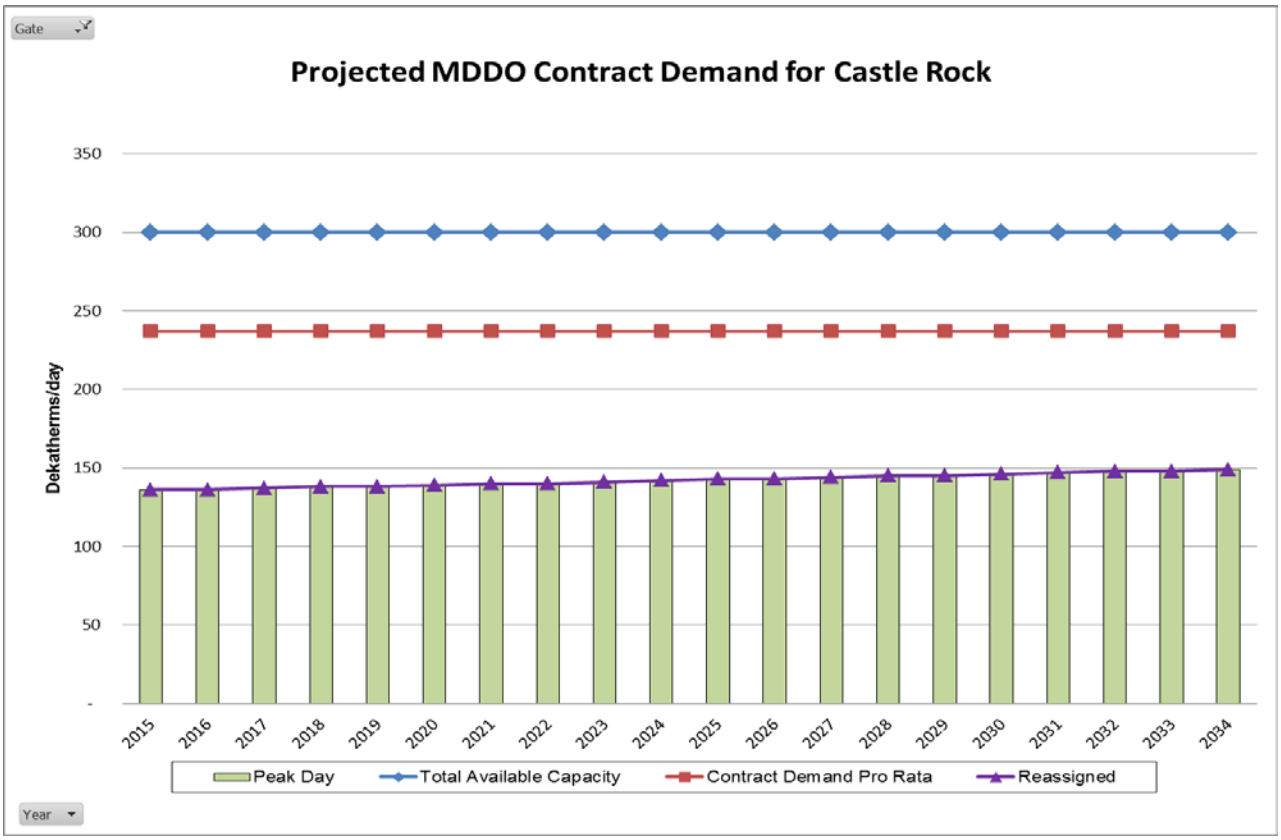

Gate
Projected MDDO Contract Demand for Bellingham (Ferndale)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

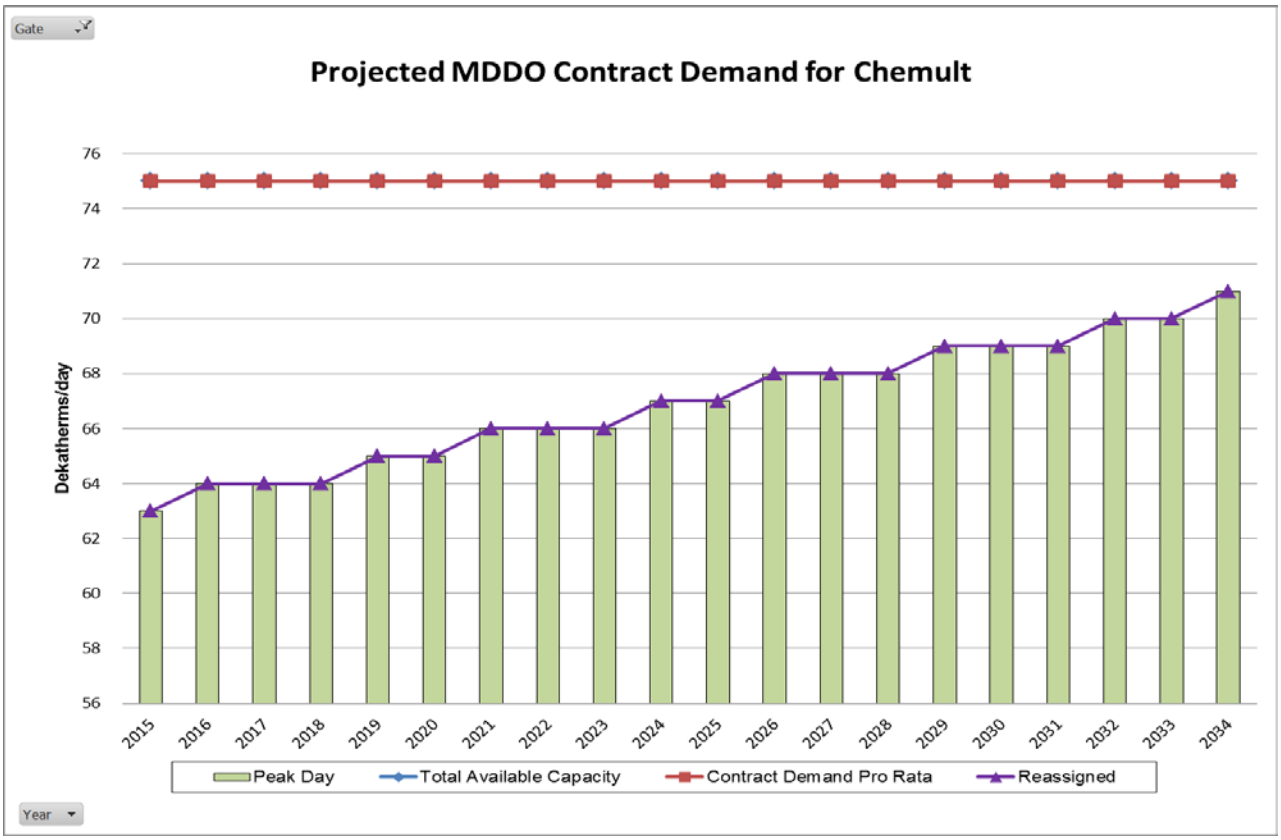

Gate
Projected MDDO Contract Demand for Bellingham II
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

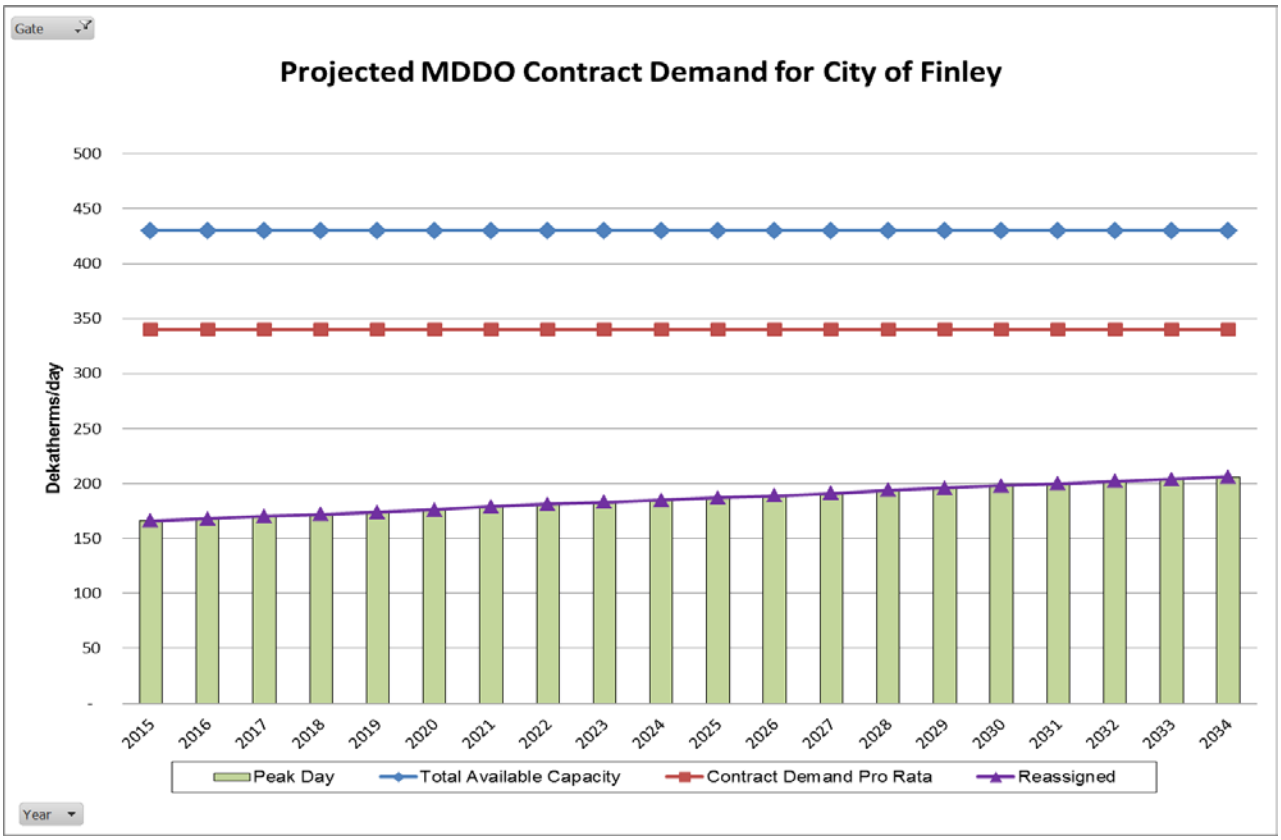

Gate
Projected MDDO Contract Demand for Bend
Dekatherms/day
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

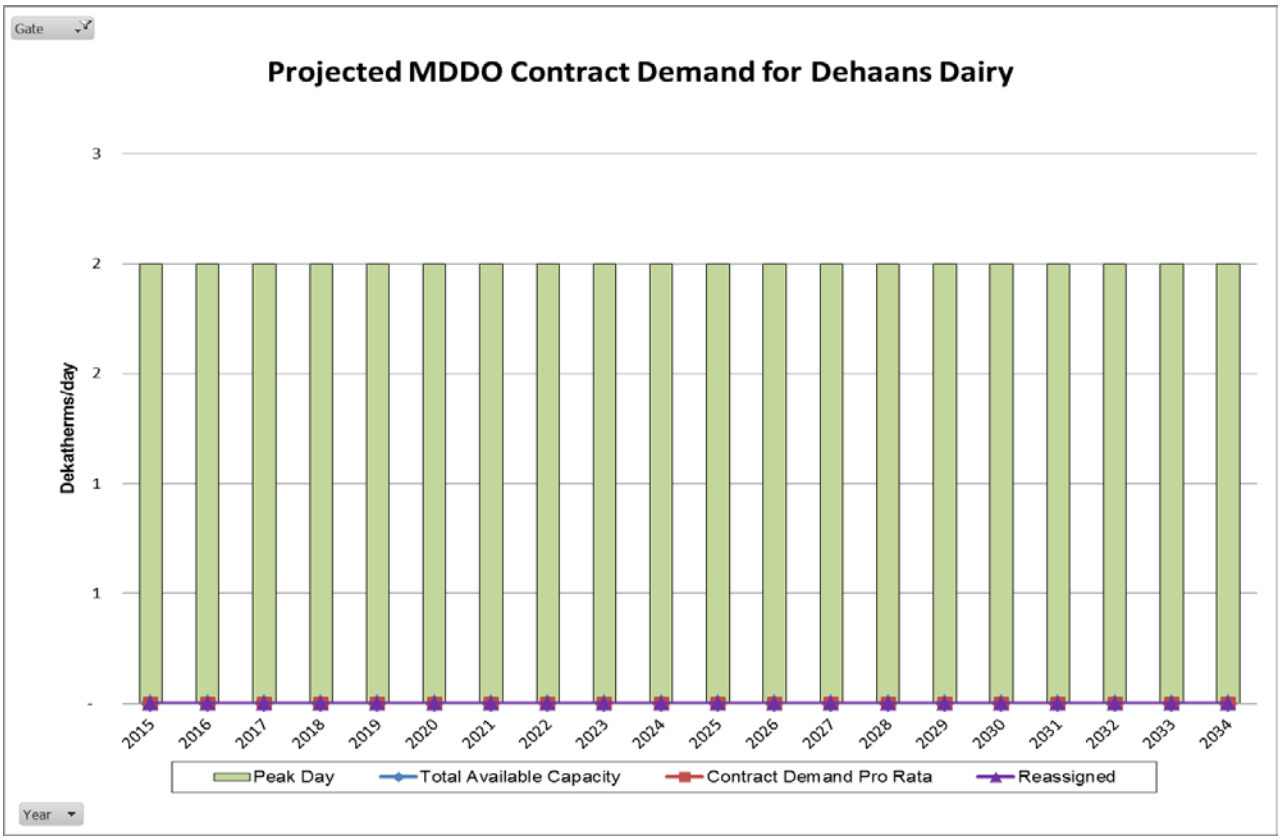

Gate
Projected MDDO Contract Demand for Bremerton (Shelton)
Dekatherms/day
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

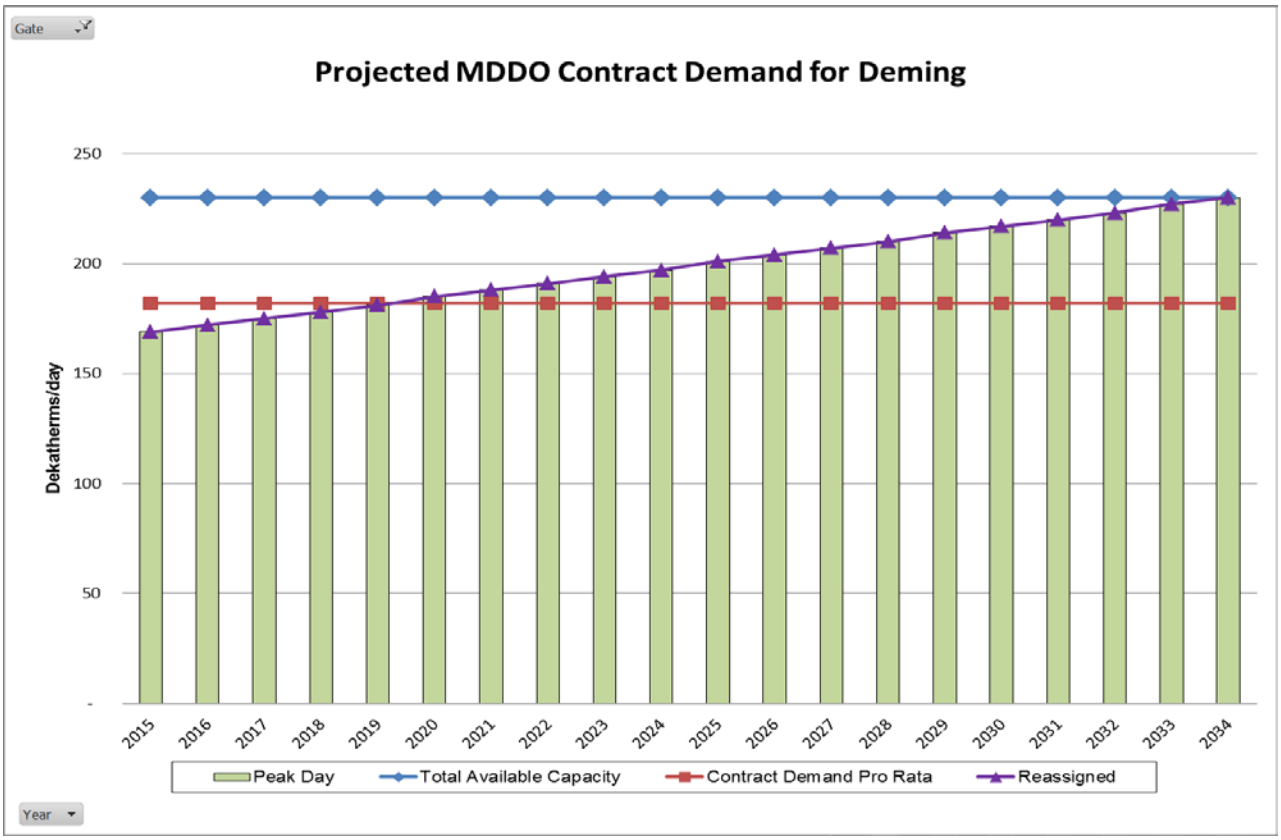

Gate
Projected MDDO Contract Demand for Burbank Heights
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

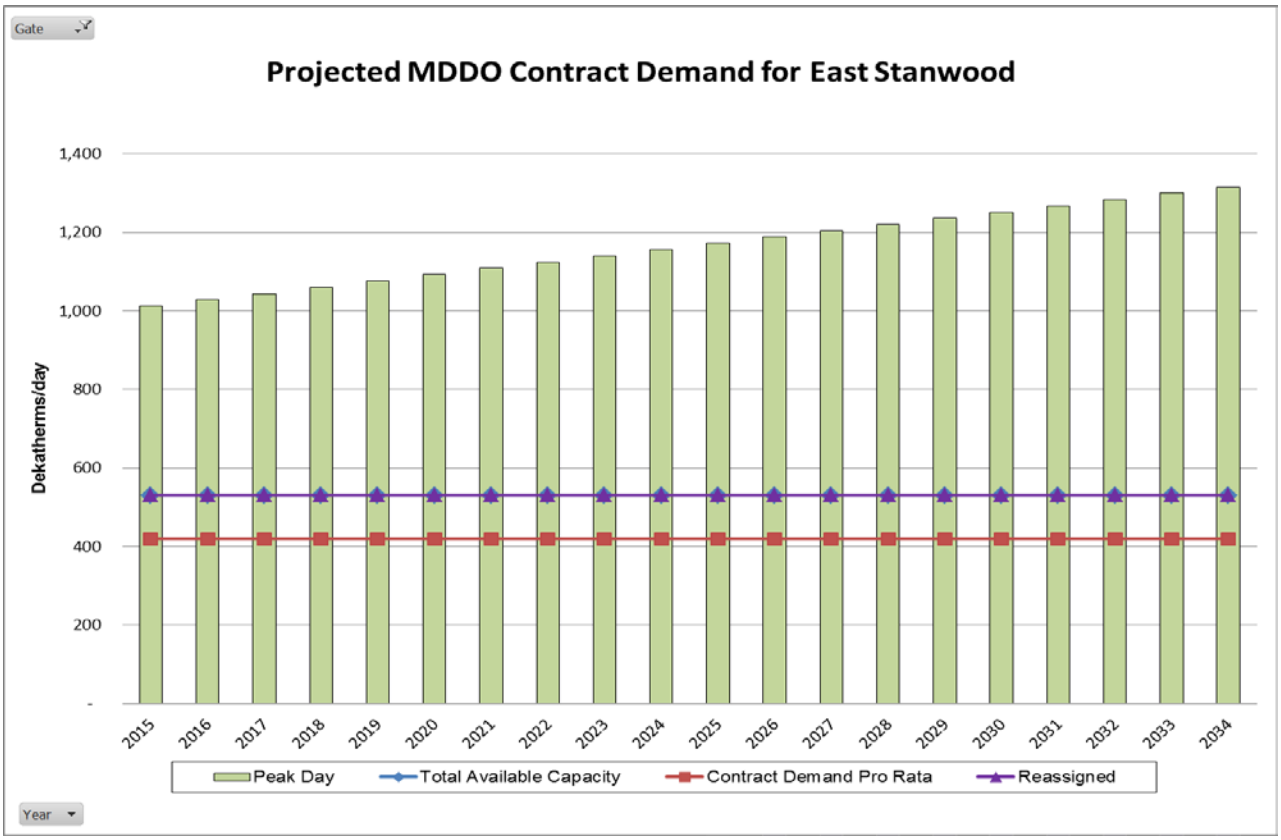

Gate
Projected MDDO Contract Demand for Castle Rock
350
300
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

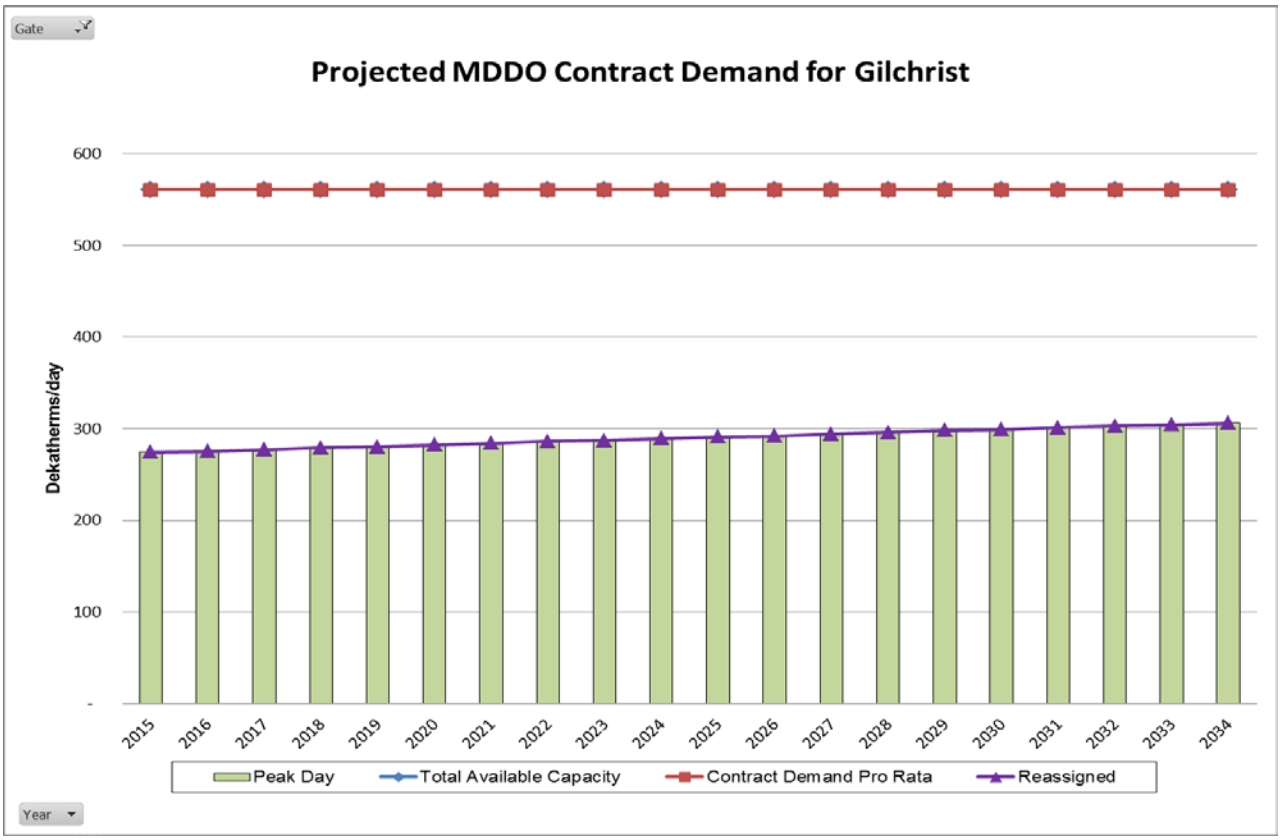

Gate
Projected MDDO Contract Demand for Chemult
Dekatherms/day
76
74
72
70
68
66
64
62
60
58
56
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

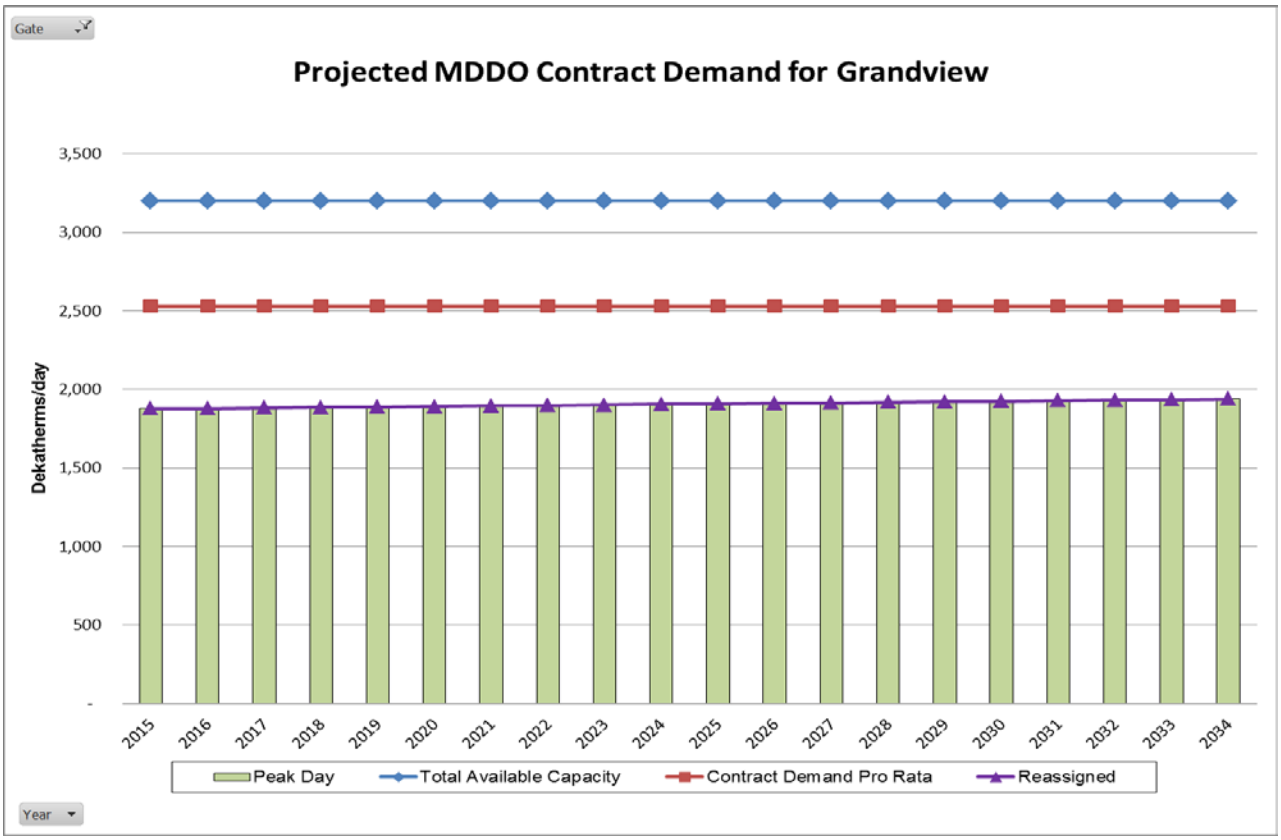

Gate
Projected MDDO Contract Demand for City of Finley
Dekatherms/day
500
450
400
350
300
250
200
150
100
50
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

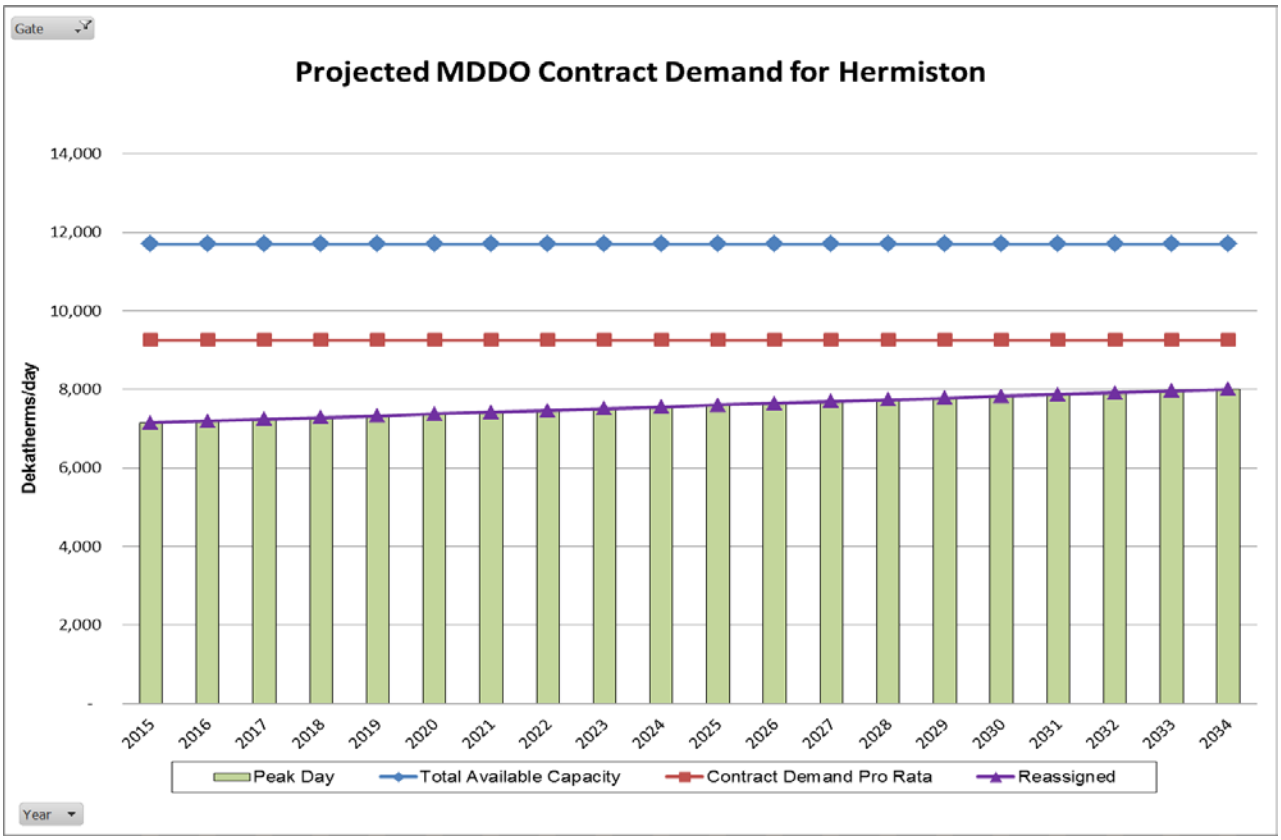

Gate
Projected MDDO Contract Demand for Dehaans Dairy
Dekatherms/day
3
2
2
1
1
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

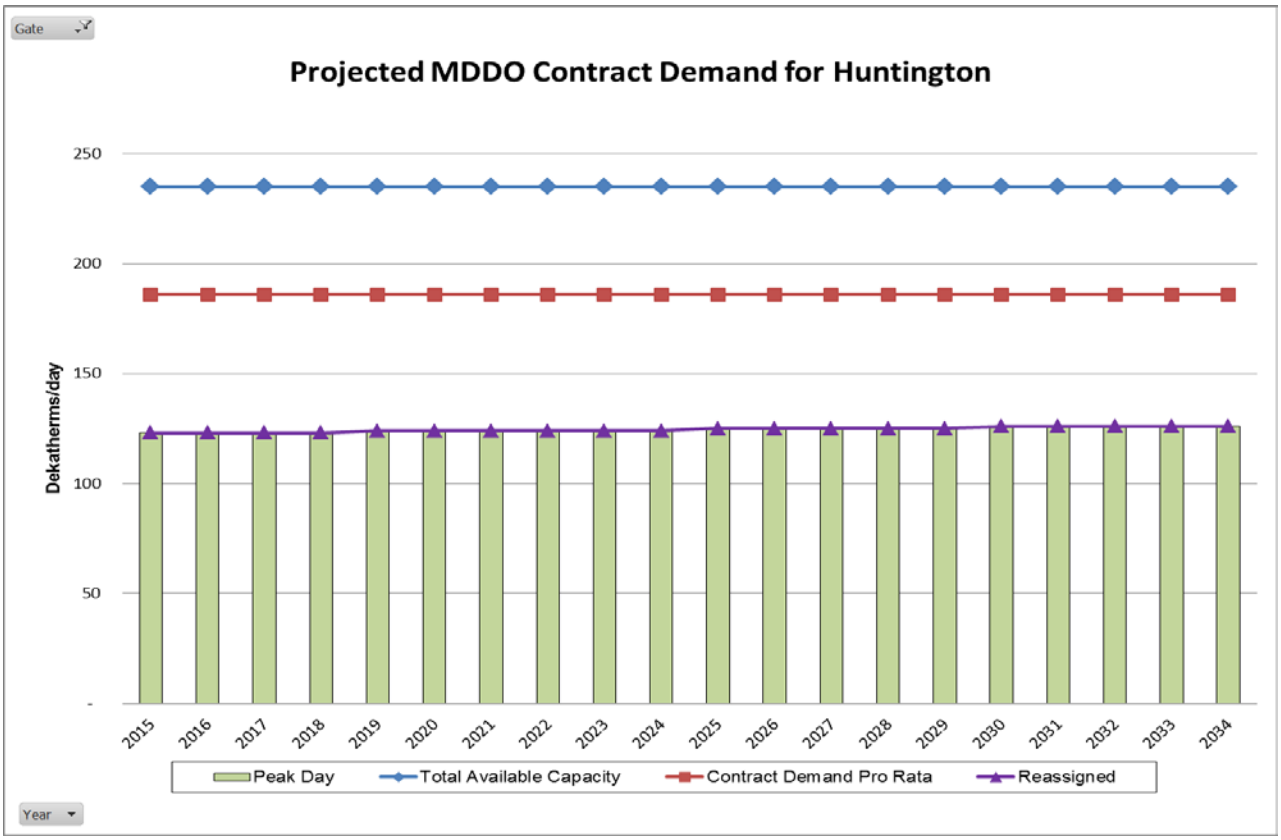

Gate
Projected MDDO Contract Demand for Deming
Dekatherms/day
250
200
150
100
50
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

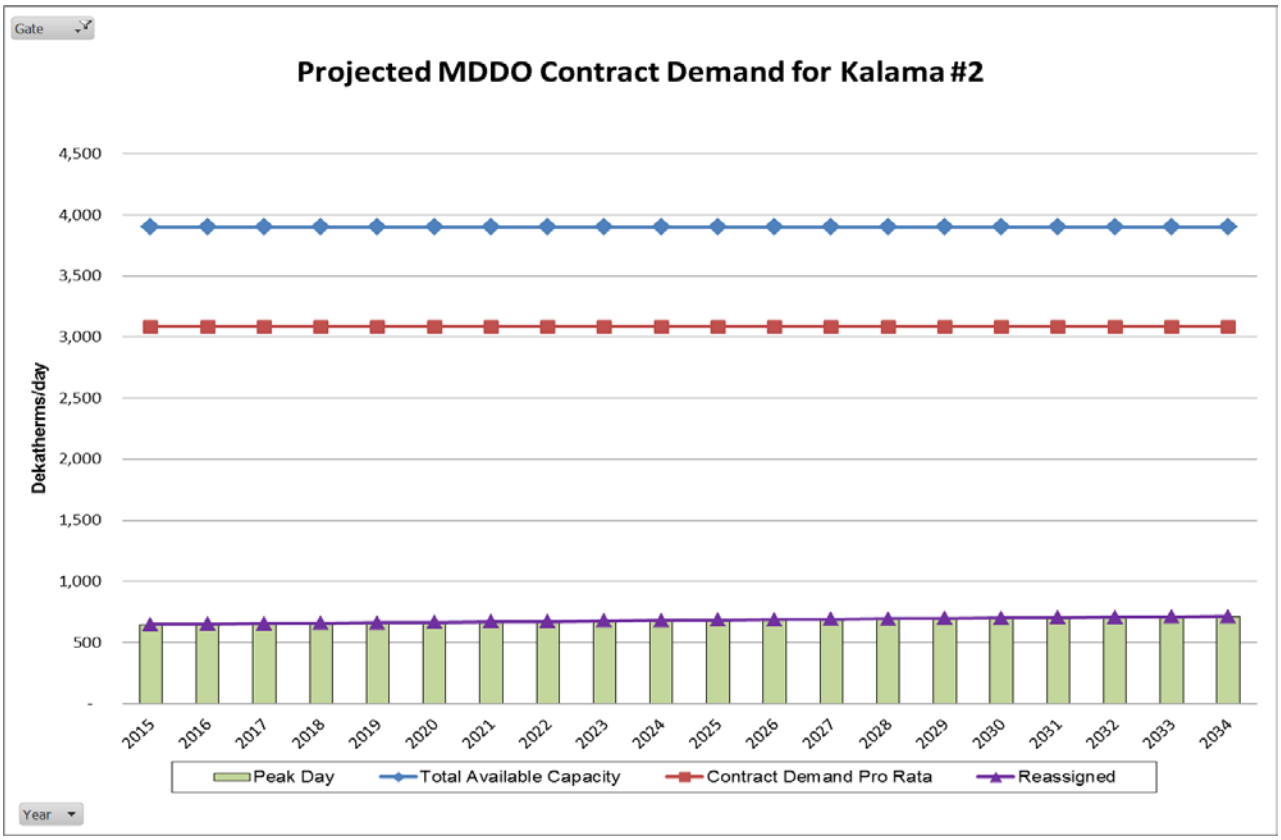

Gate
Projected MDDO Contract Demand for East Stanwood
Dekatherms/day
1,400
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

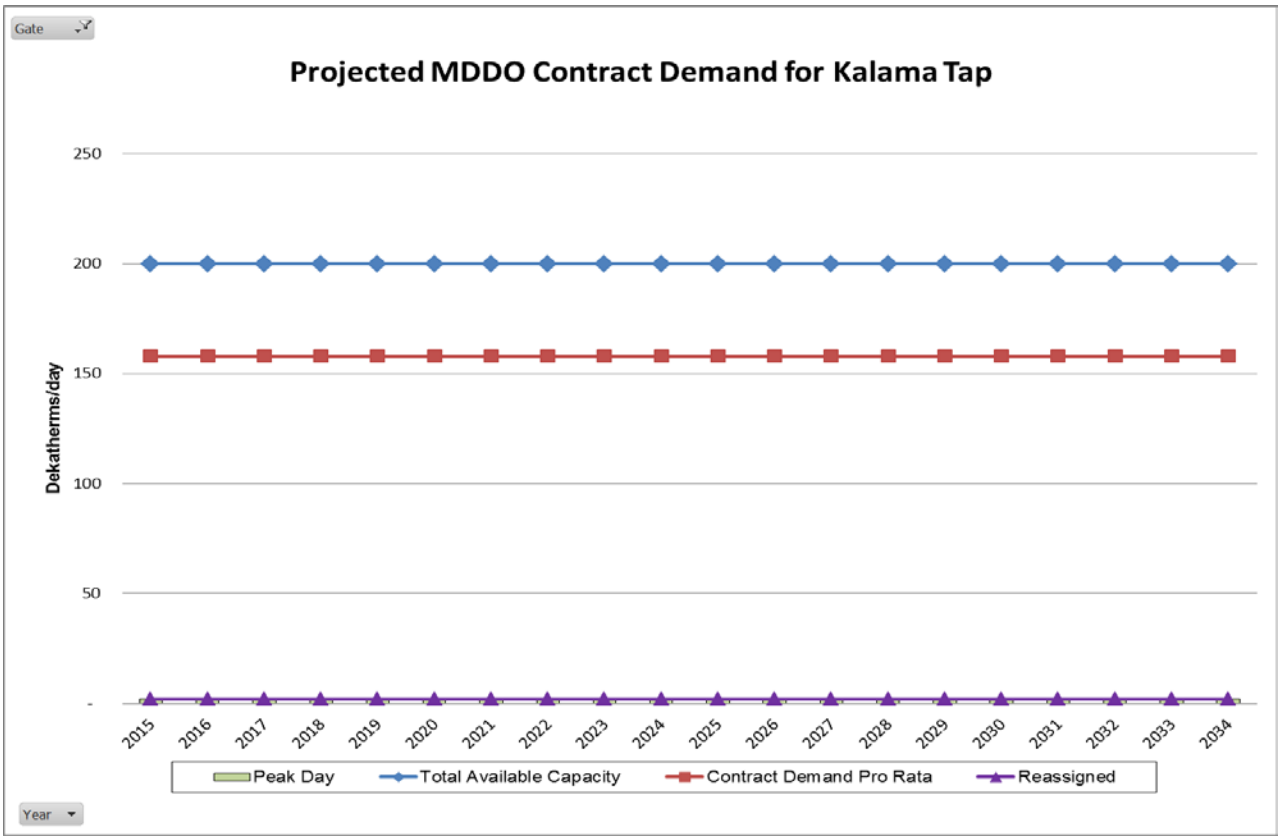

Gate
Projected MDDO Contract Demand for Gilchrist
Dekatherms/day
600
500
400
300
200
100
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

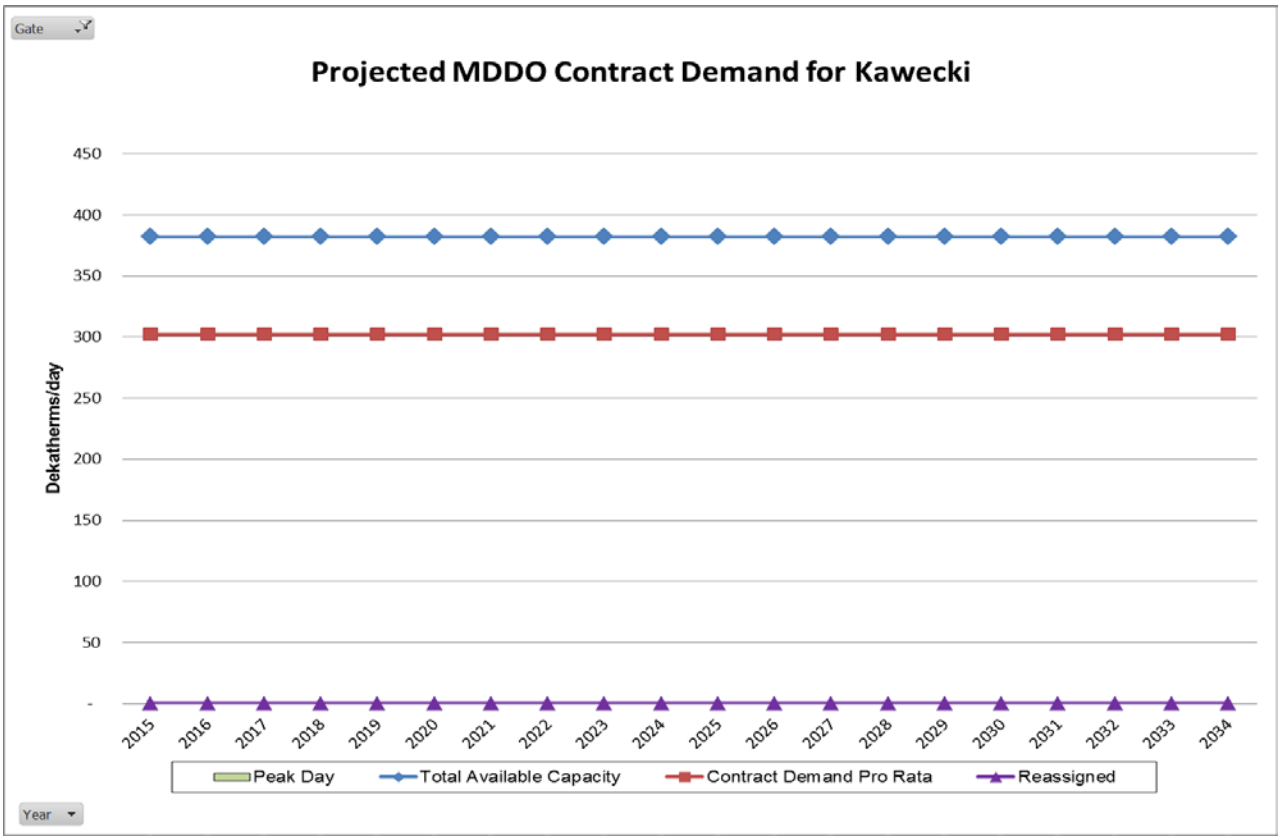

Gate
Projected MDDO Contract Demand for Grandview
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

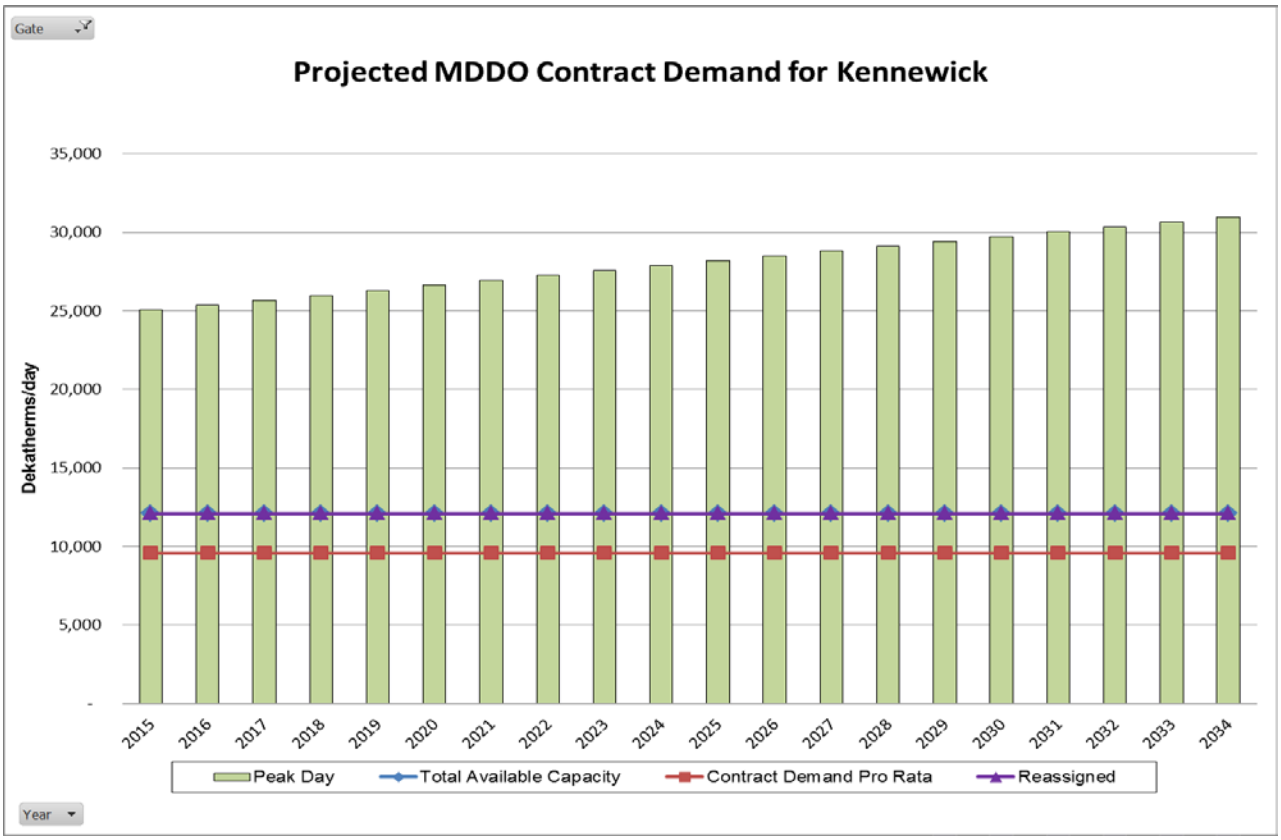

Gate
Projected MDDO Contract Demand for Hermiston
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

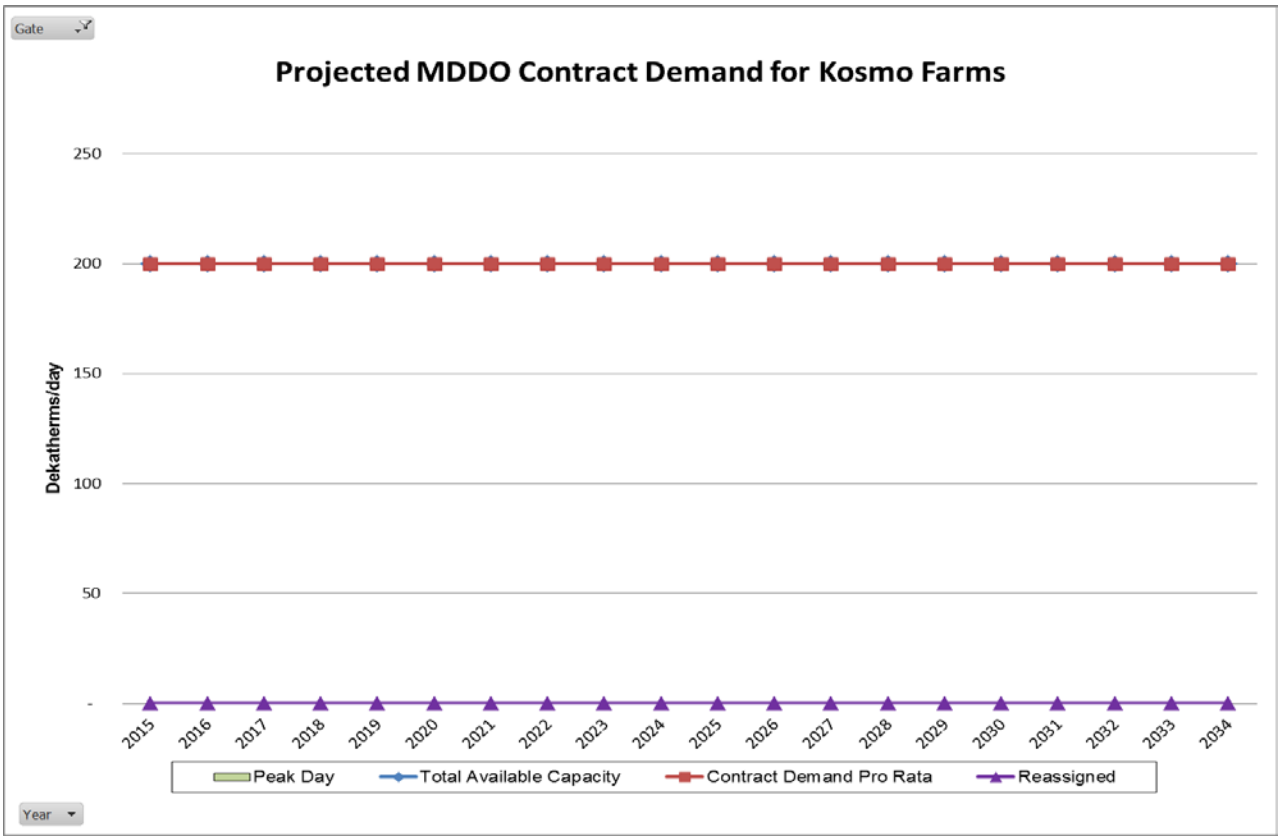

Gate
Projected MDDO Contract Demand for Huntington
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

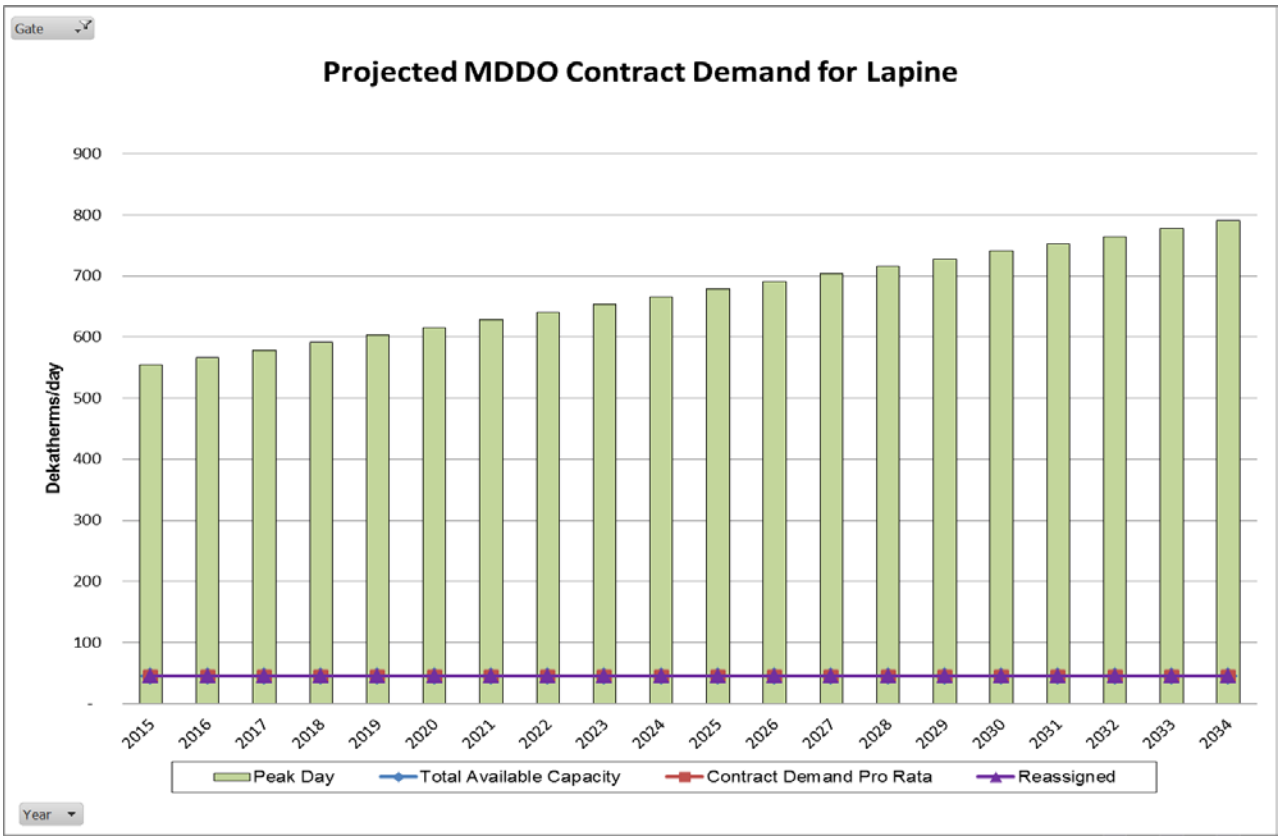

Gate
Projected MDDO Contract Demand for Kalama #2
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

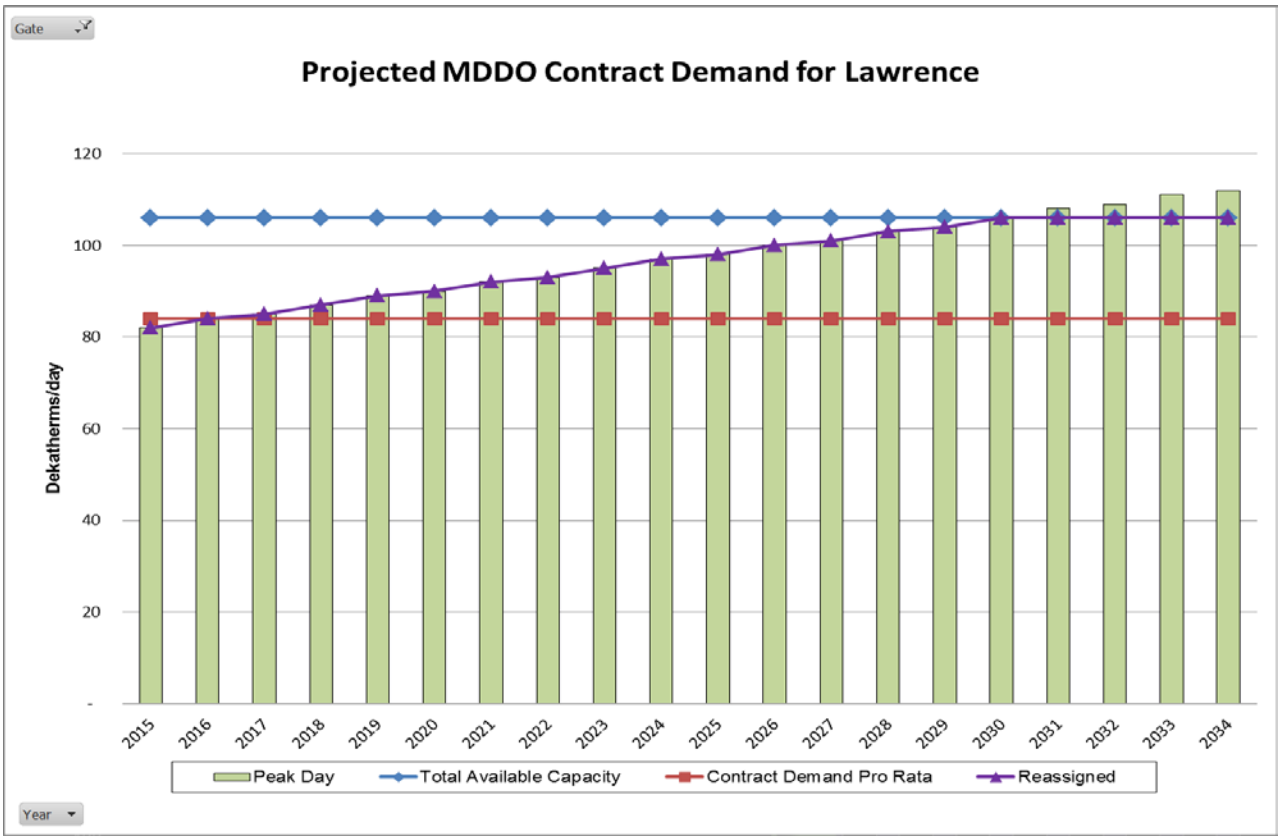

Gate
Projected MDDO Contract Demand for Kalama Tap
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

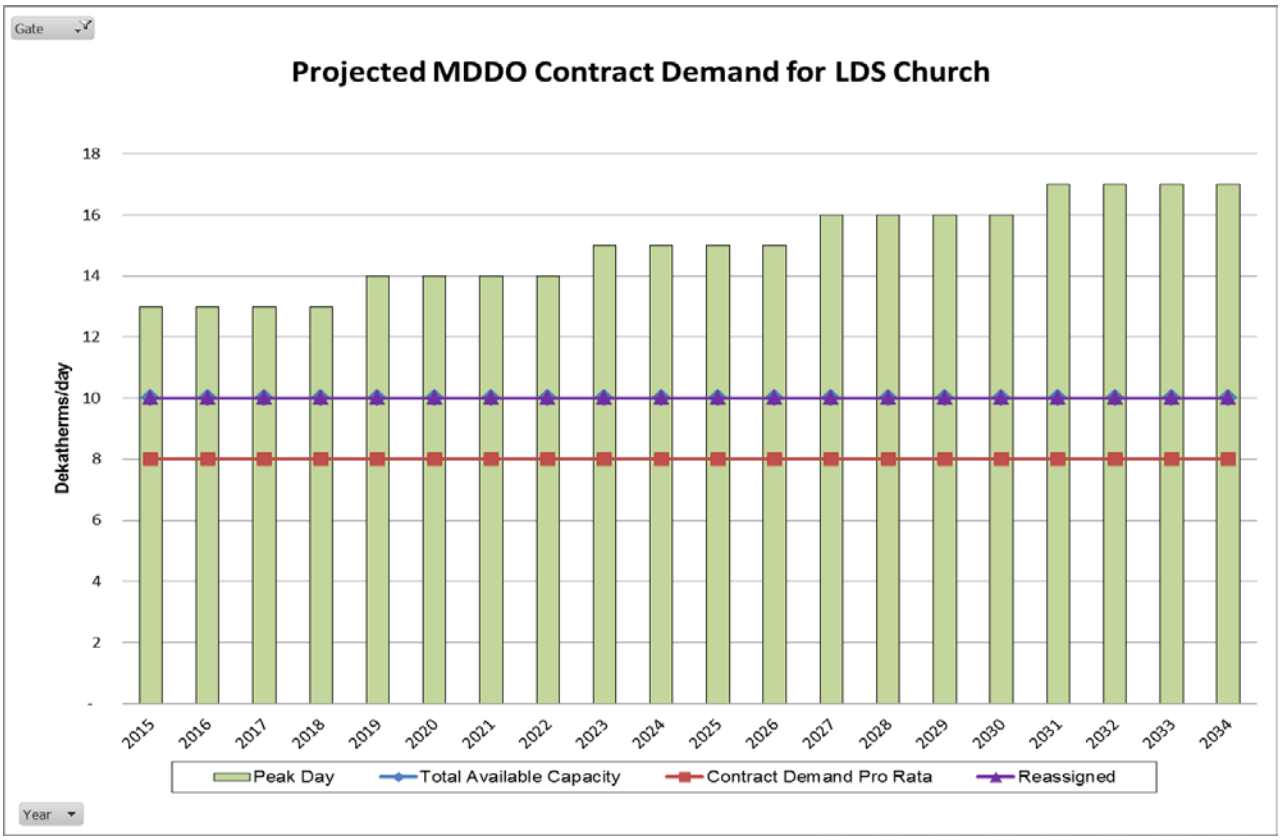

Gate
Projected MDDO Contract Demand for Kawecki
450
400
350
300
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

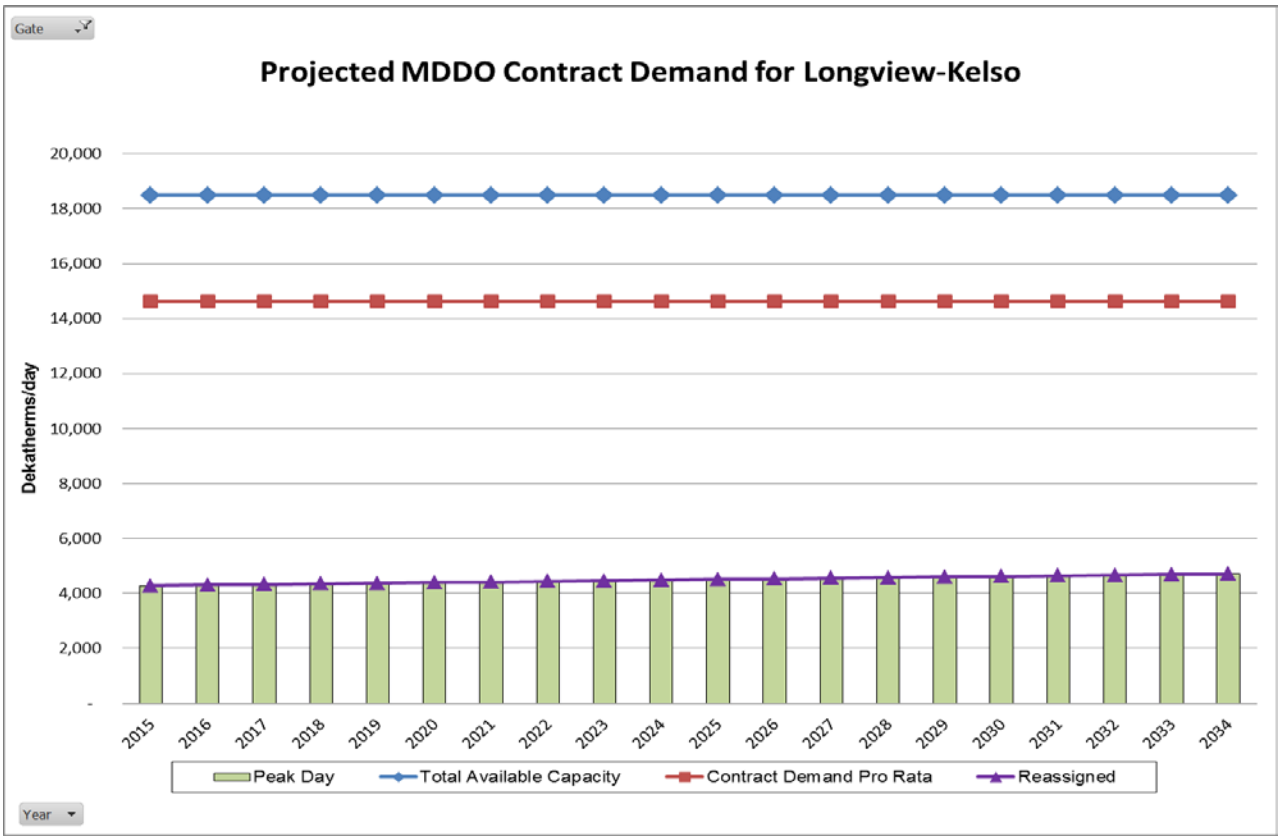

Gate
Projected MDDO Contract Demand for Kennewick
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

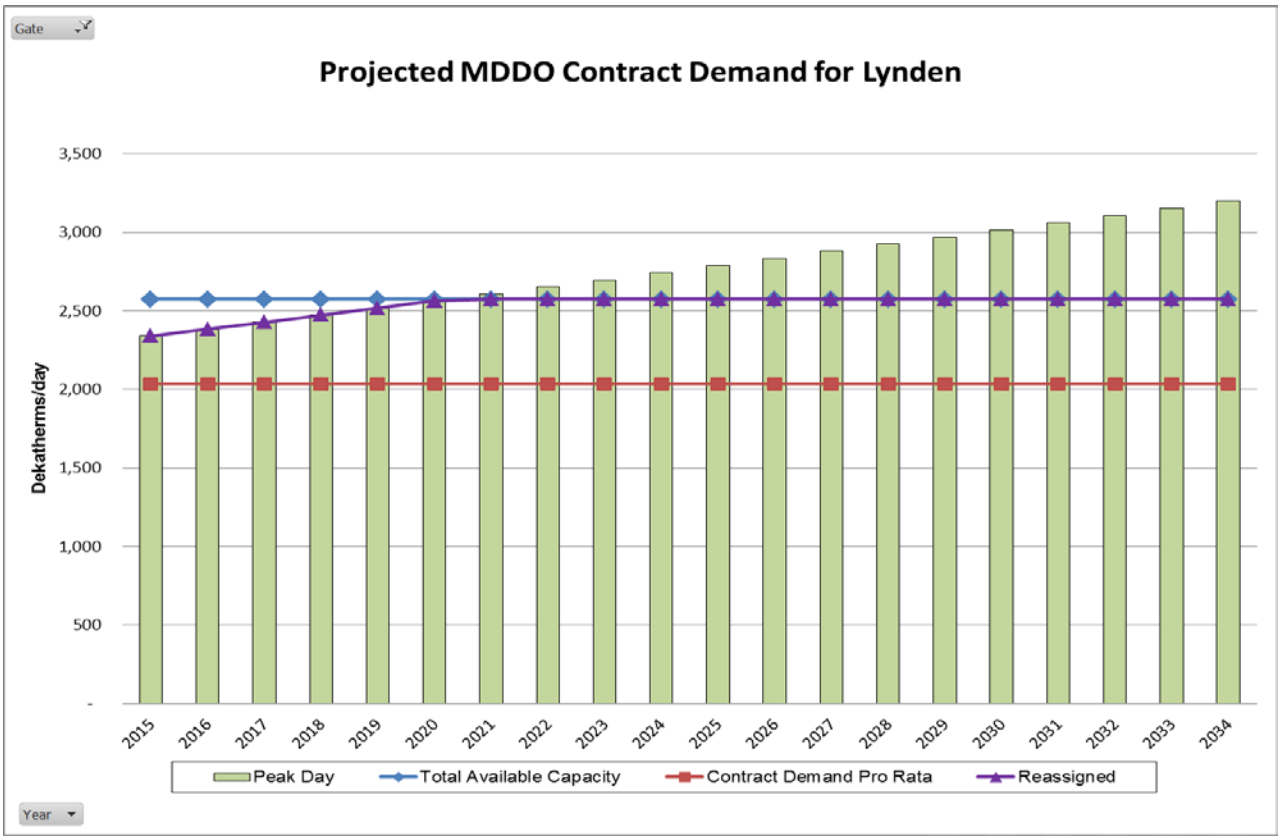

Gate
Projected MDDO Contract Demand for Kosmo Farms
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

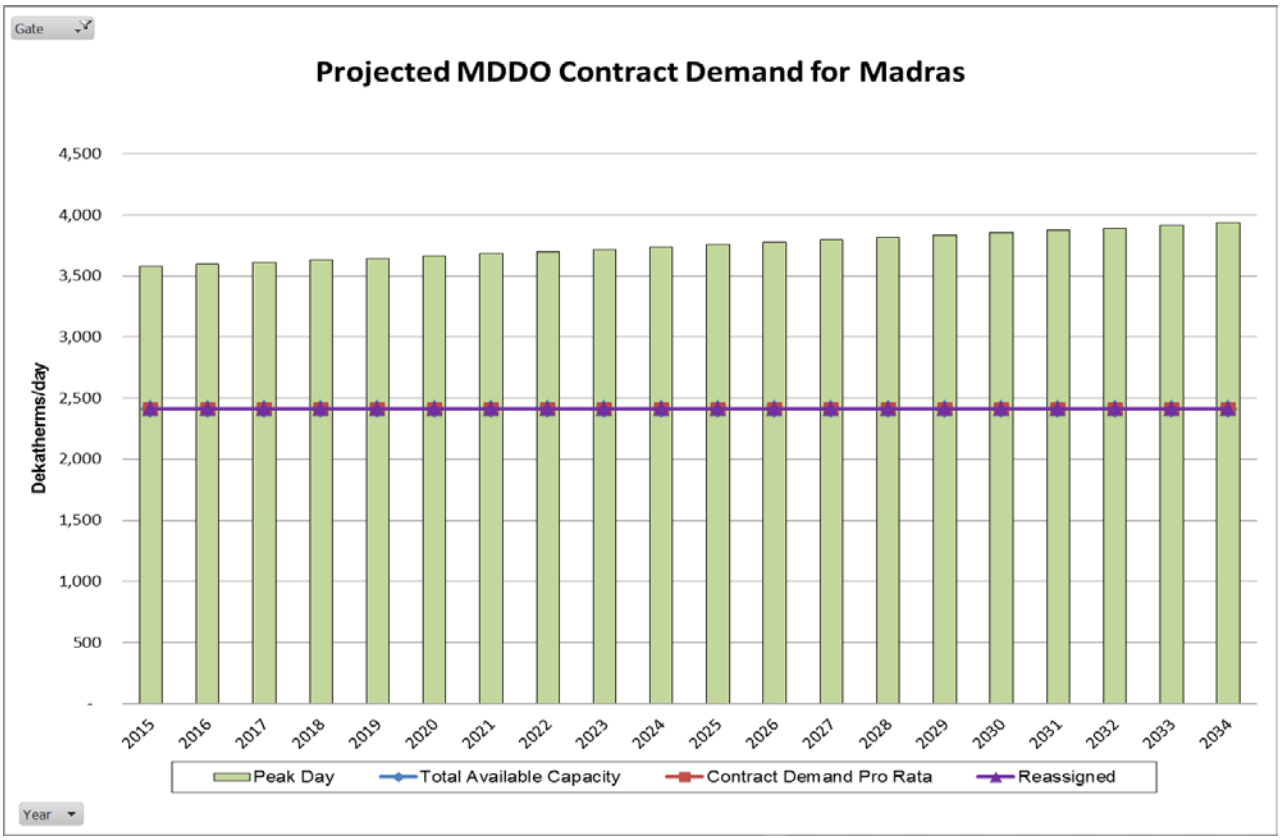

Gate
Projected MDDO Contract Demand for Lapine
900
800
700
600
500
400
300
200
100
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

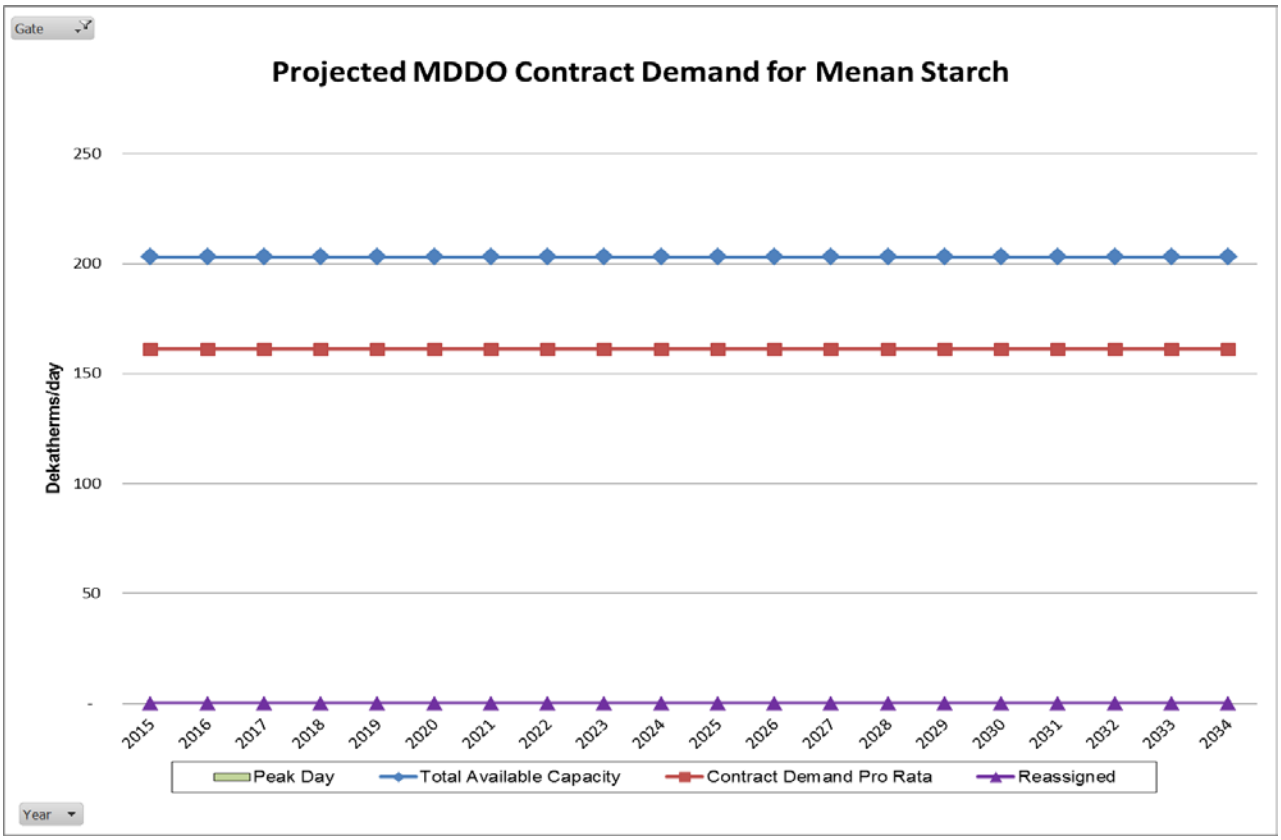

Gate
Projected MDDO Contract Demand for Lawrence
120
100
80
60
40
20
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

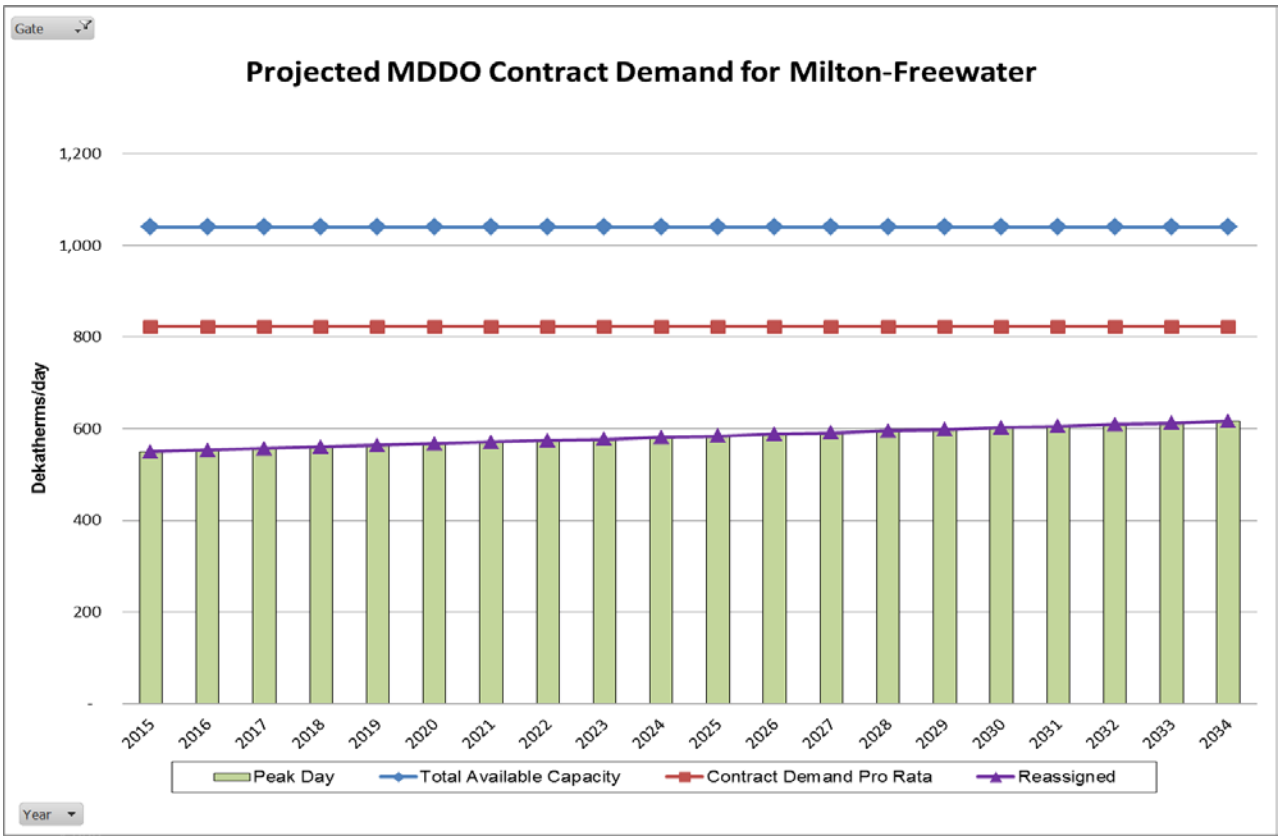

Gate
Projected MDDO Contract Demand for LDS Church
Dekatherms/day
18
16
14
12
10
8
6
4
2
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

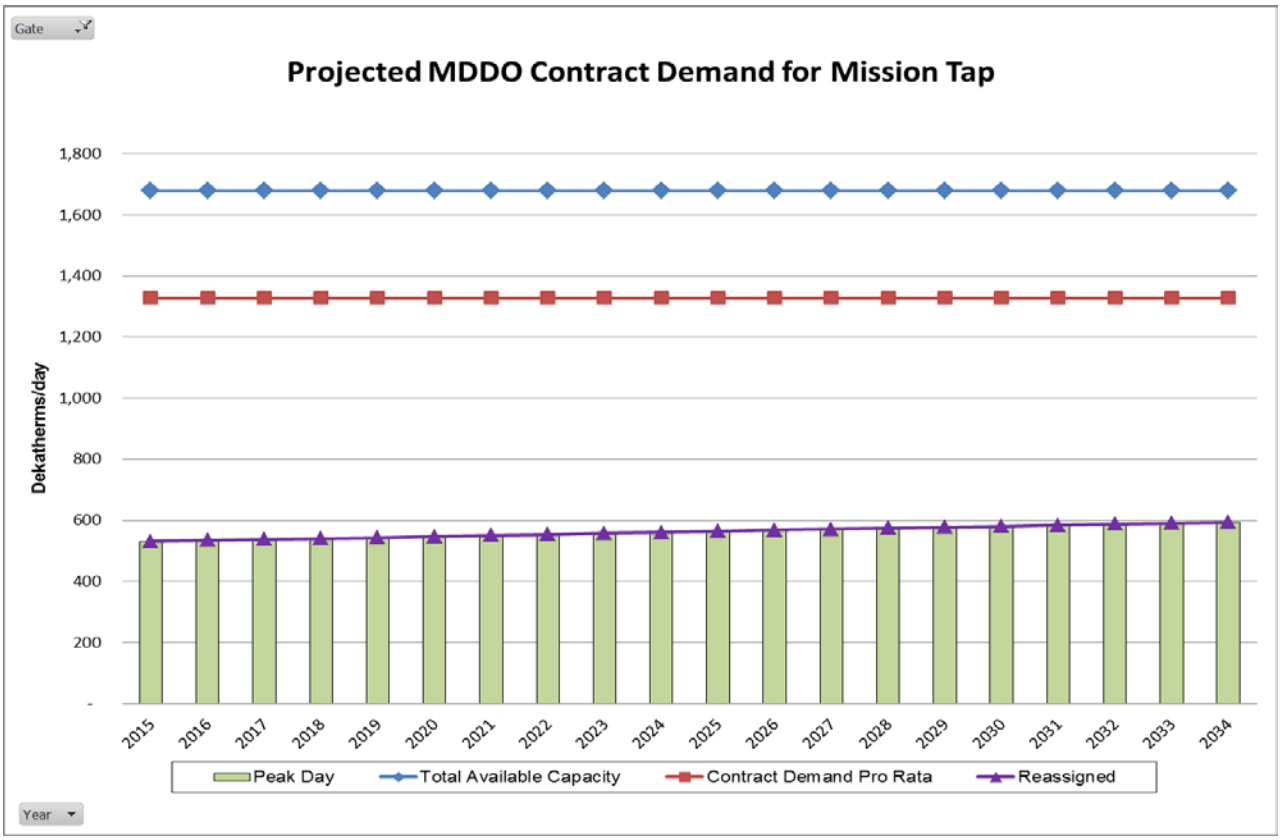

Gate
Projected MDDO Contract Demand for Longview-Kelso
Dekatherms/day
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

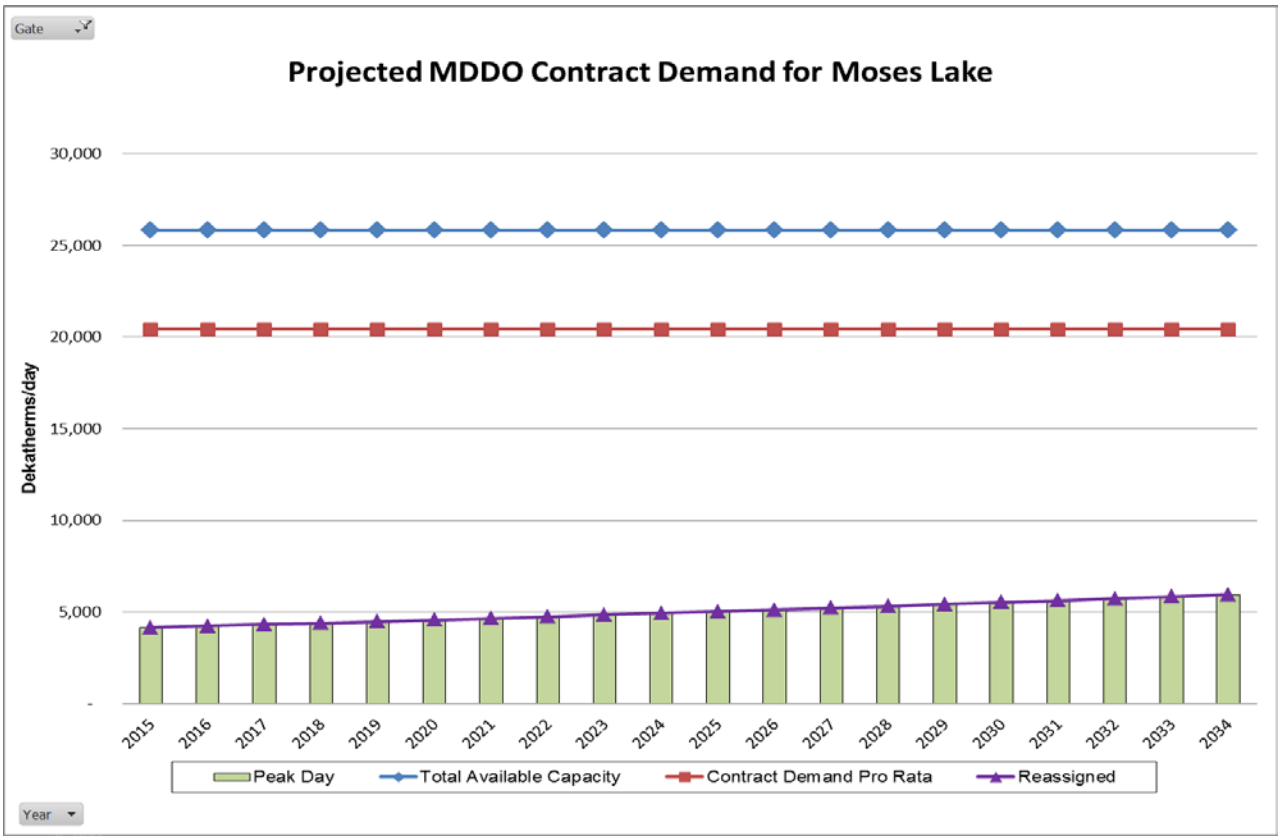

Gate
Projected MDDO Contract Demand for Lynden
Dekatherms/day
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

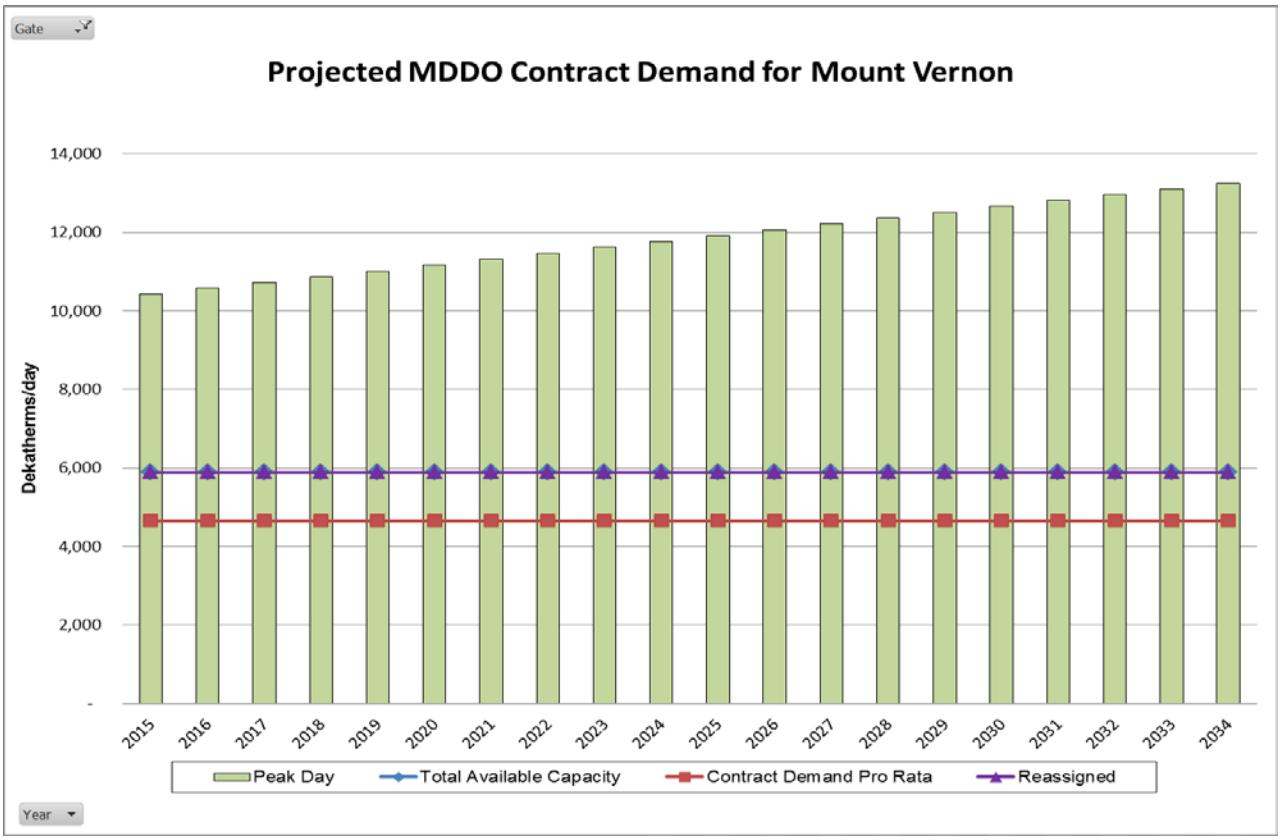

Gate
Projected MDDO Contract Demand for Madras
Dekatherms/day
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

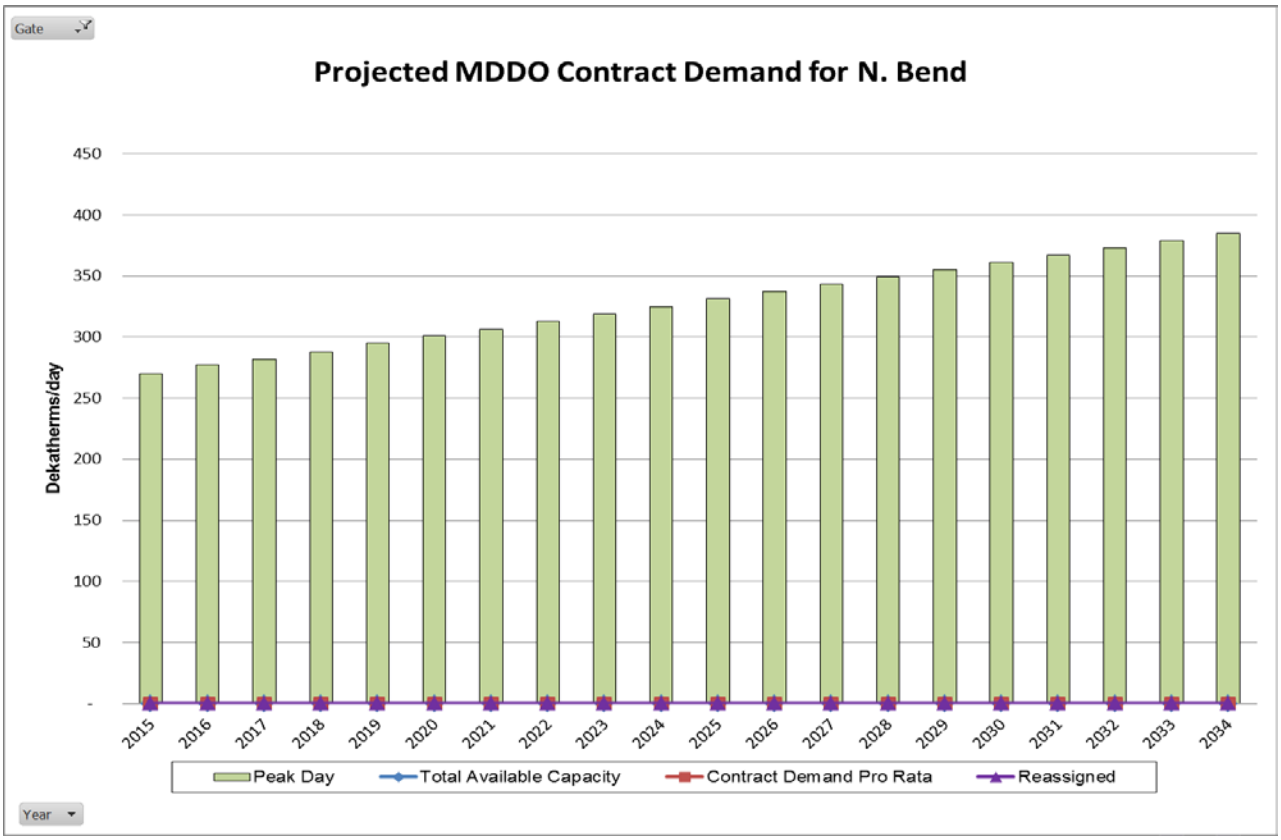

Gate
Projected MDDO Contract Demand for Menan Starch
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

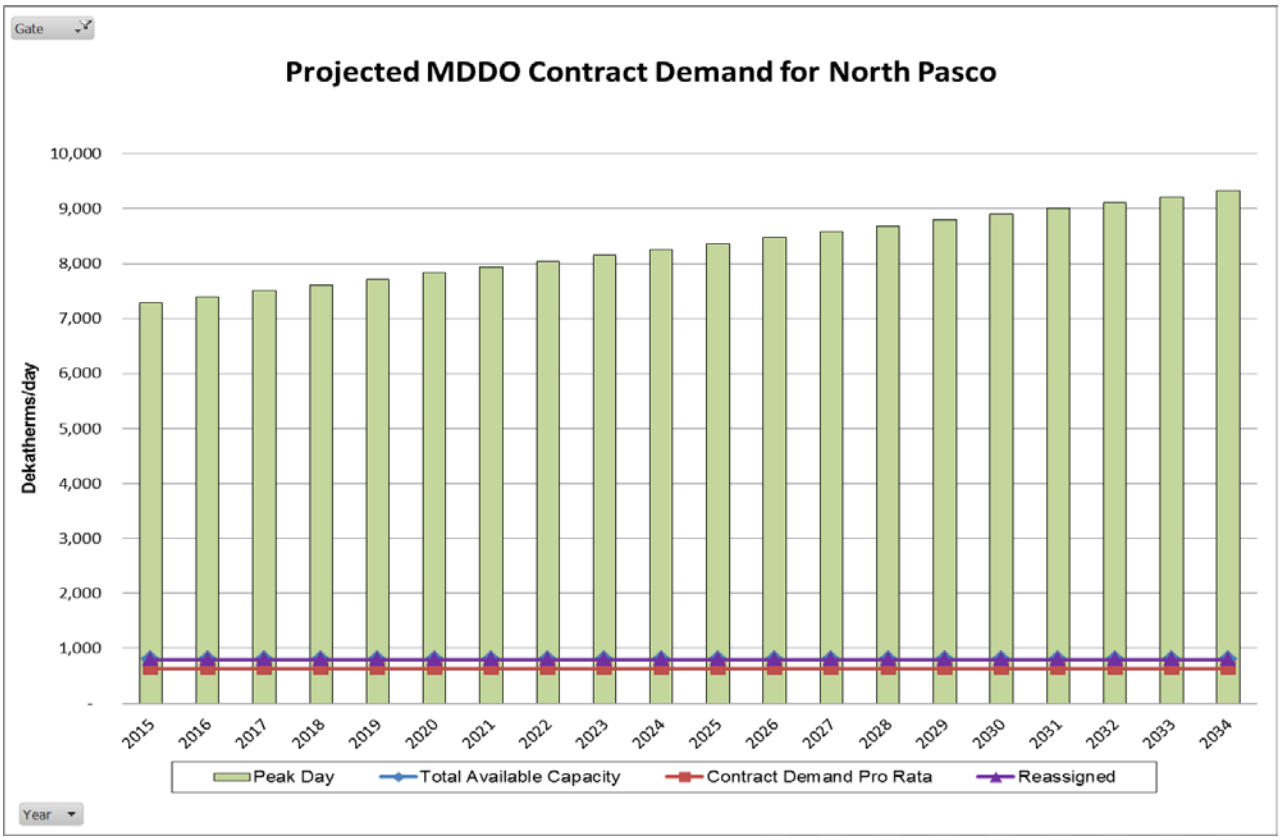

Gate
Projected MDDO Contract Demand for Milton-Freewater
1,200
1,000
800
600
400
200
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

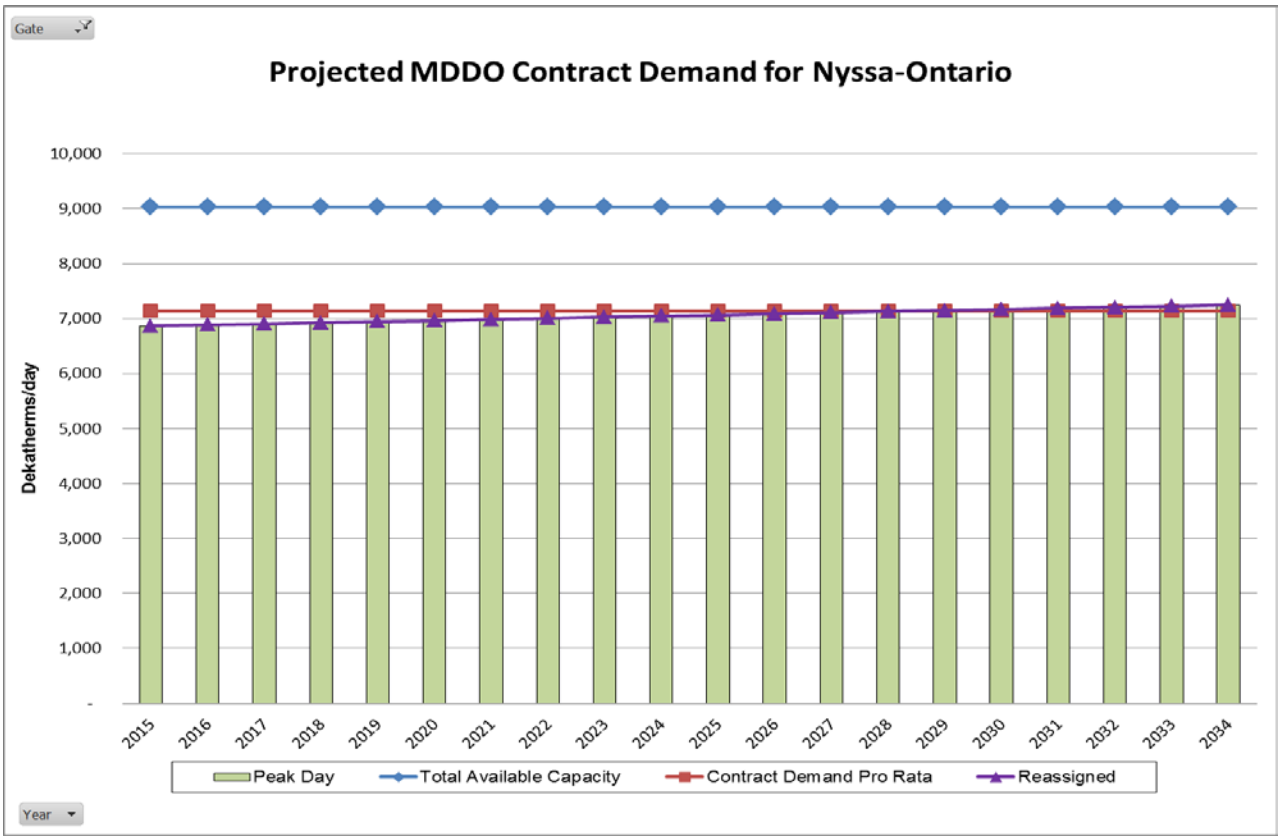

Gate
Projected MDDO Contract Demand for Mission Tap
Dekatherms/day
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

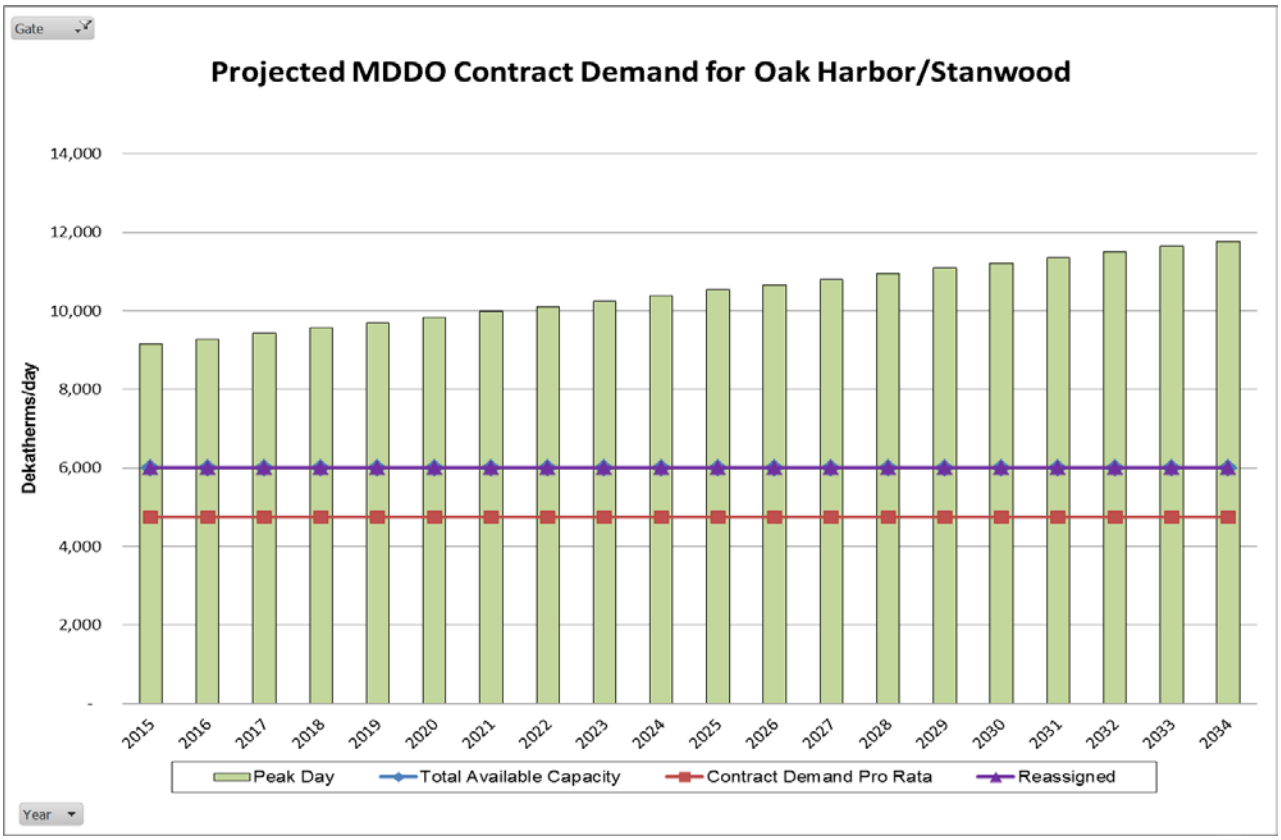

Gate
Projected MDDO Contract Demand for Moses Lake
Dekatherms/day
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

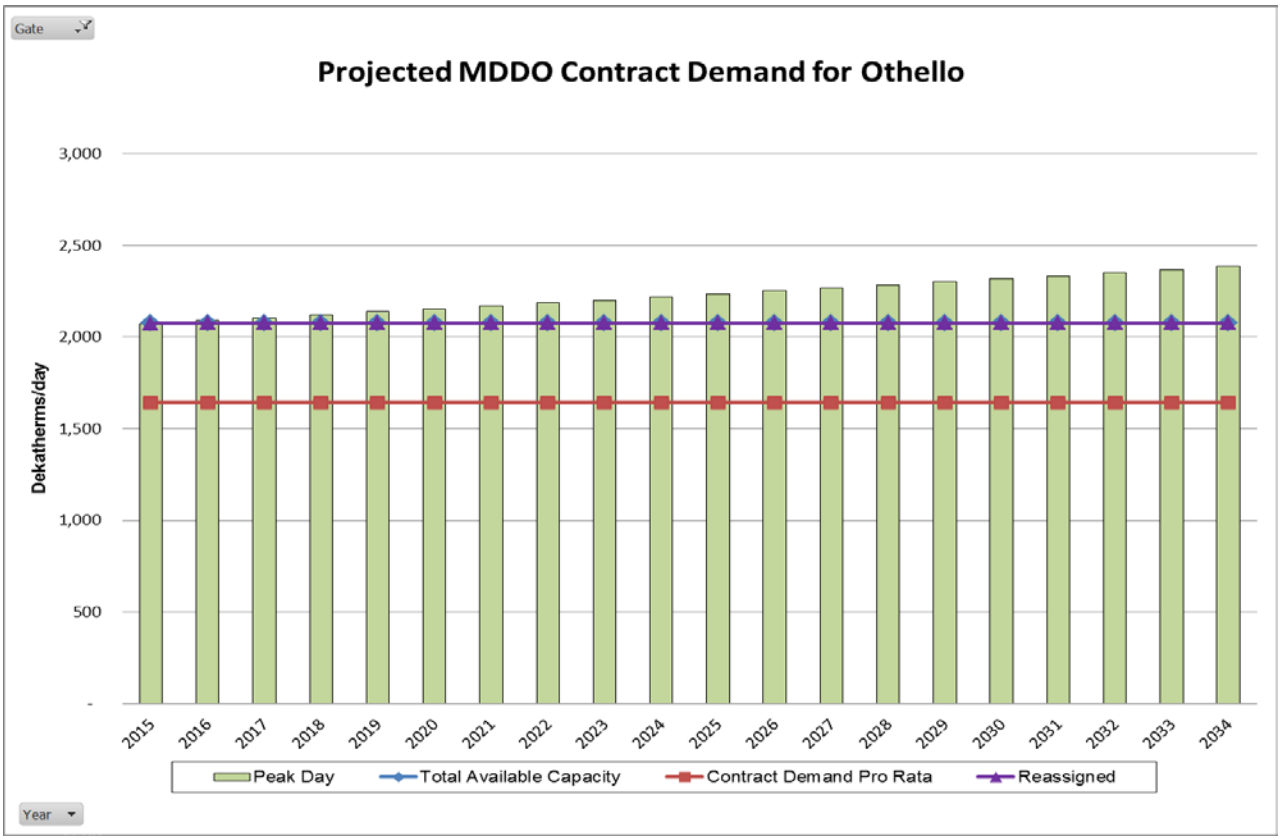

Gate
Projected MDDO Contract Demand for Mount Vernon
Dekatherms/day
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

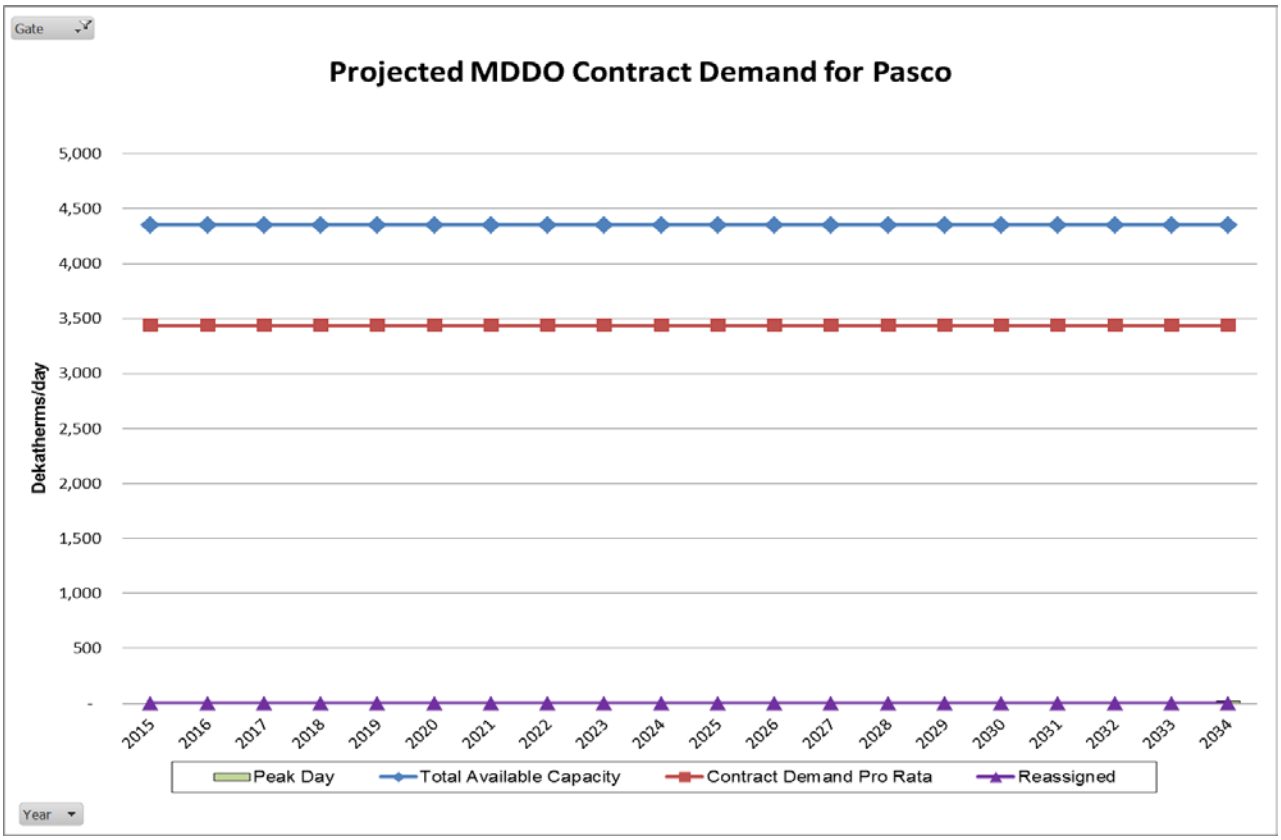

Gate
Projected MDDO Contract Demand for N. Bend
Dekatherms/day
450
400
350
300
250
200
150
100
50
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

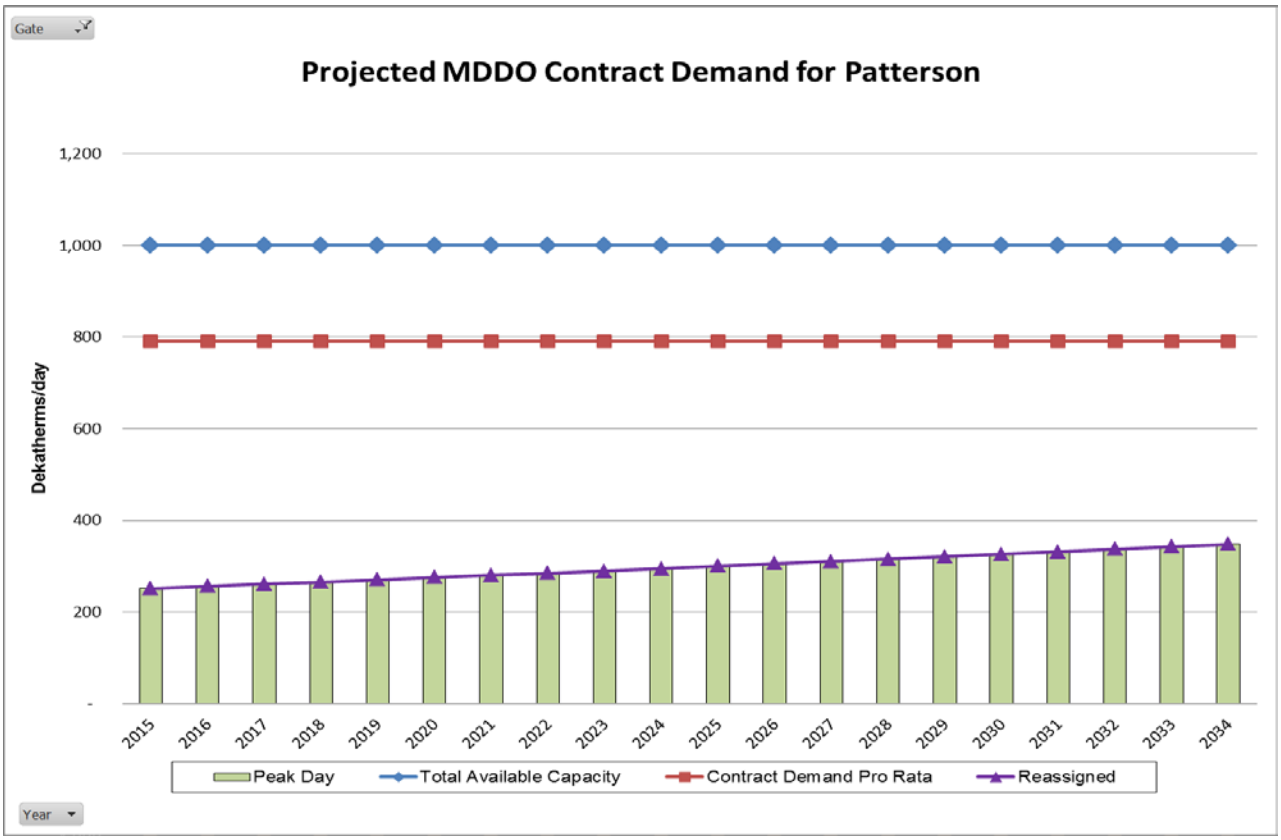

Gate
Projected MDDO Contract Demand for North Pasco
Dekatherms/day
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

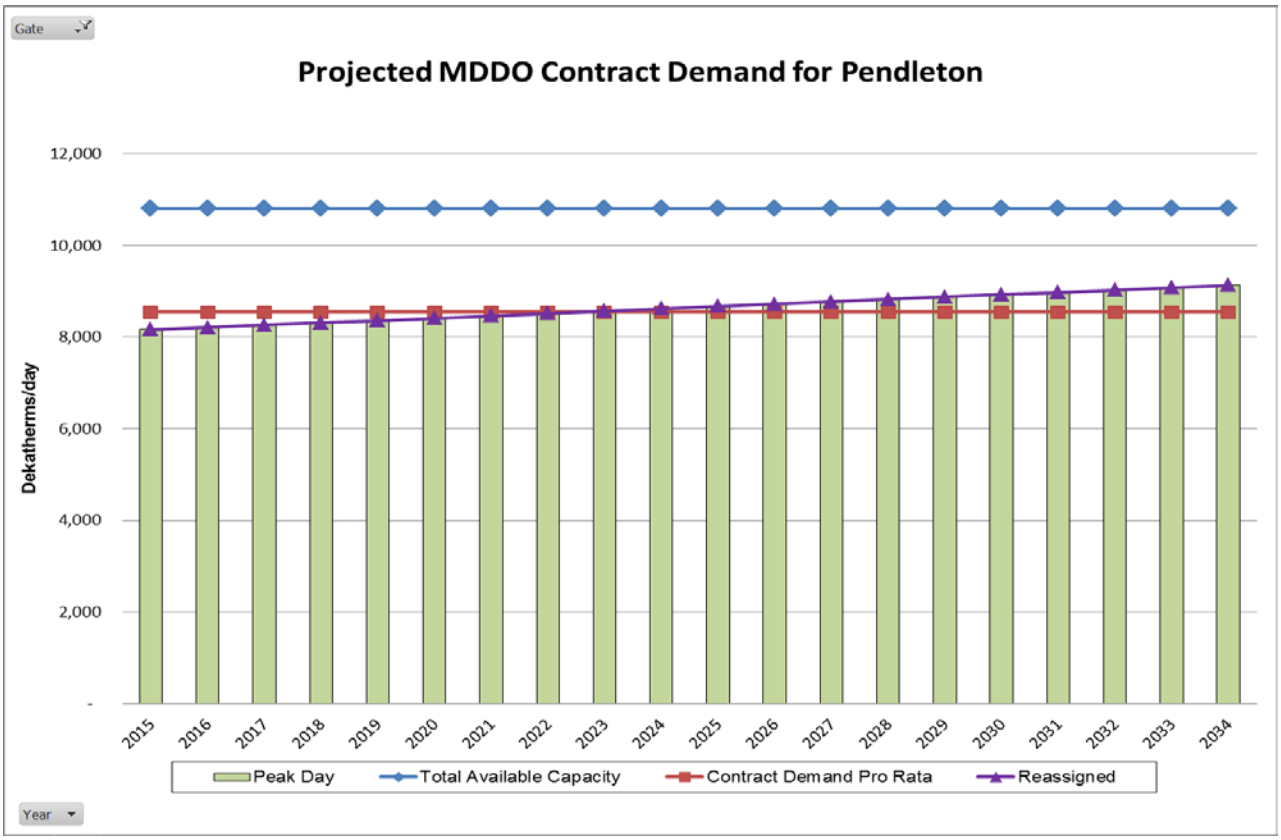

Gate
Projected MDDO Contract Demand for Nyssa-Ontario
Dekatherms/day
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

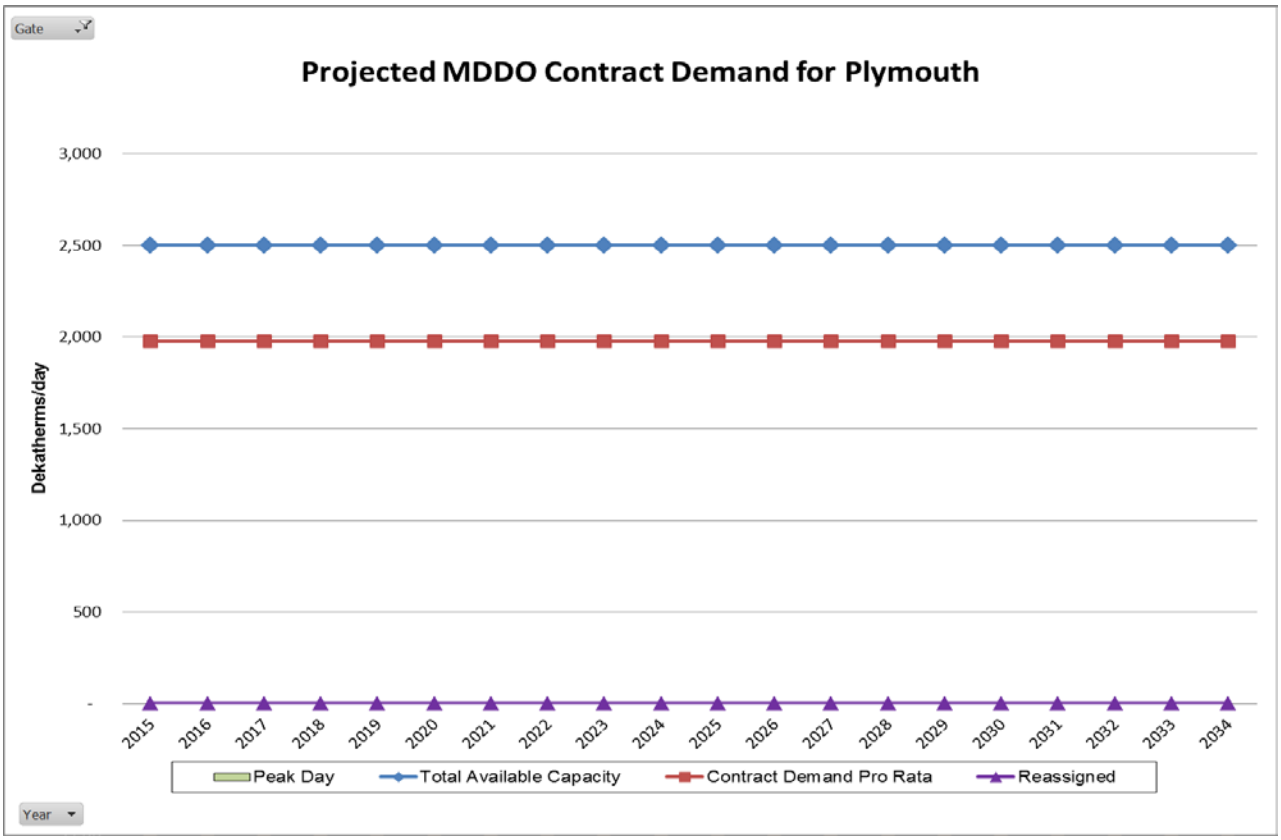

Gate
Projected MDDO Contract Demand for Oak Harbor/Stanwood
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

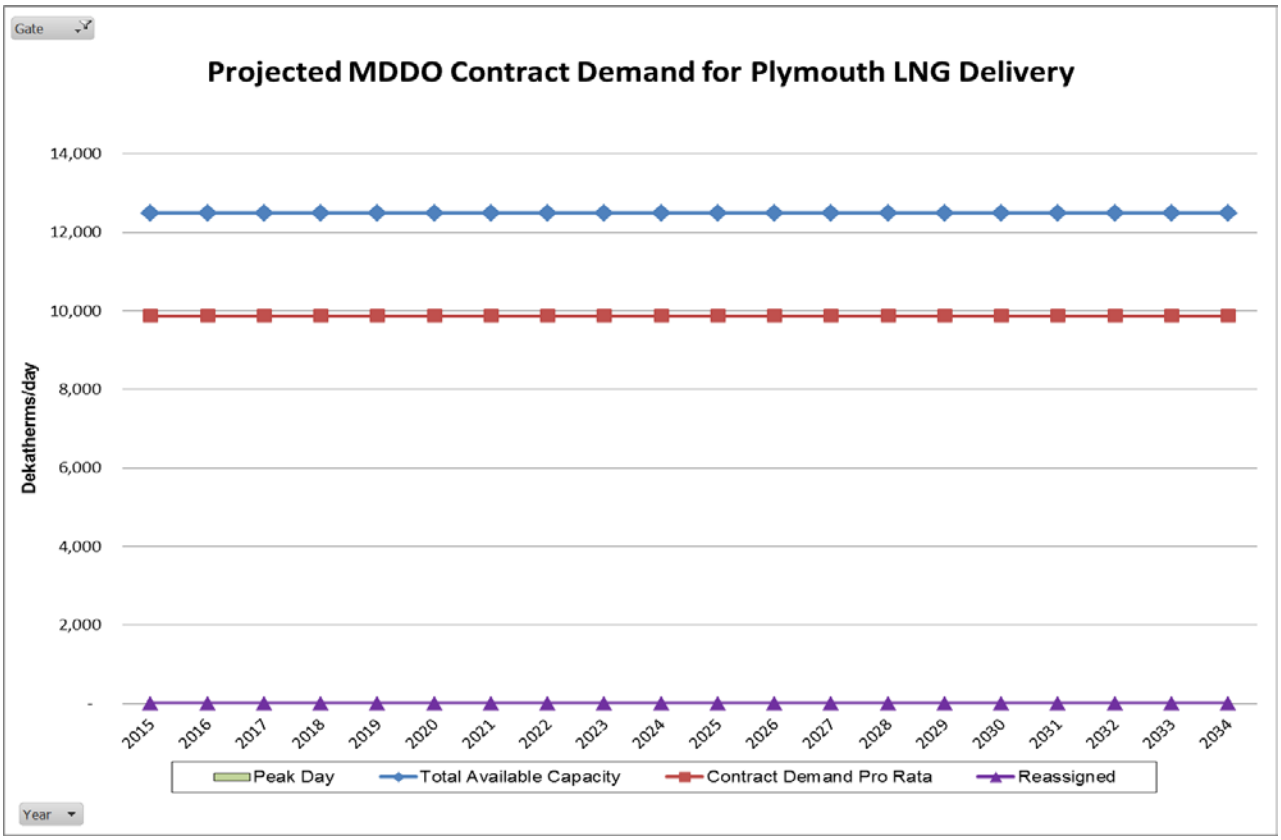

Gate
Projected MDDO Contract Demand for Othello
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

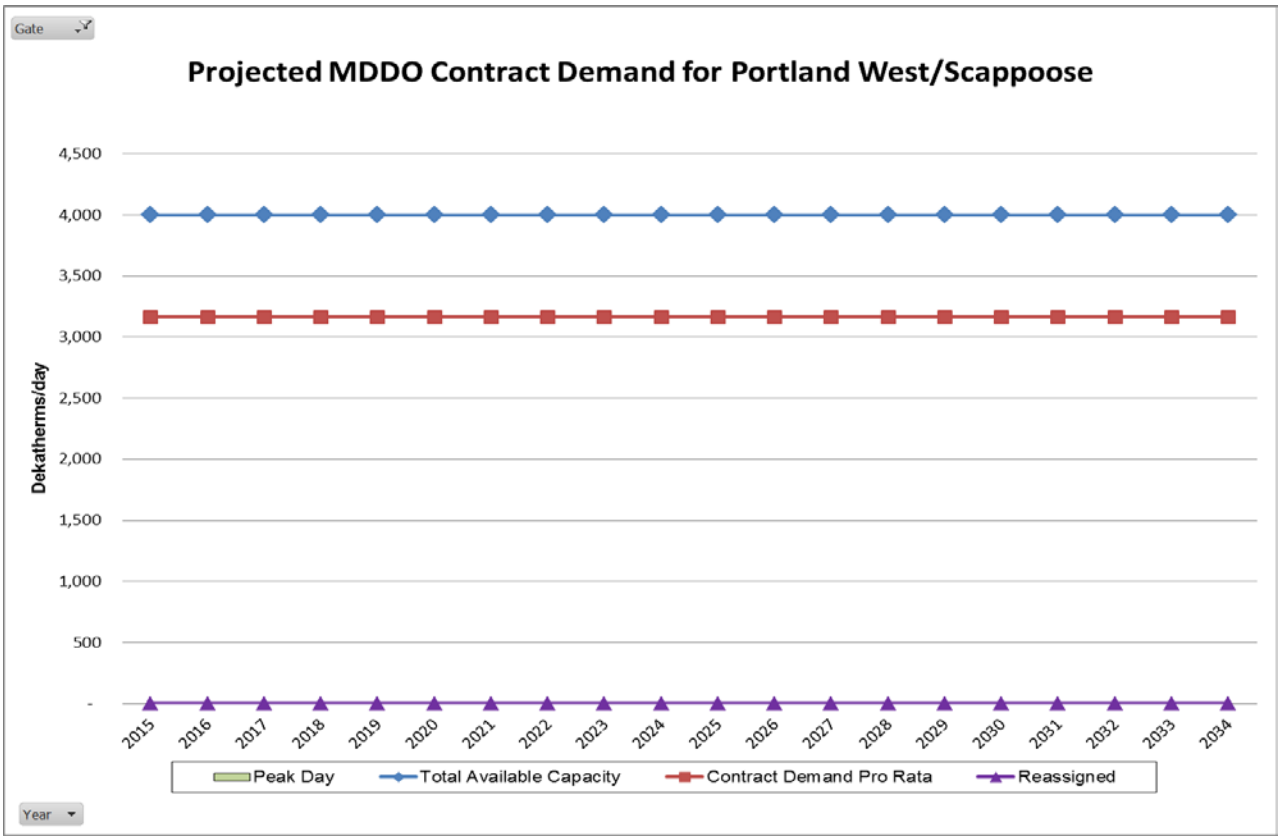

Gate
Projected MDDO Contract Demand for Pasco
Dekatherms/day
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

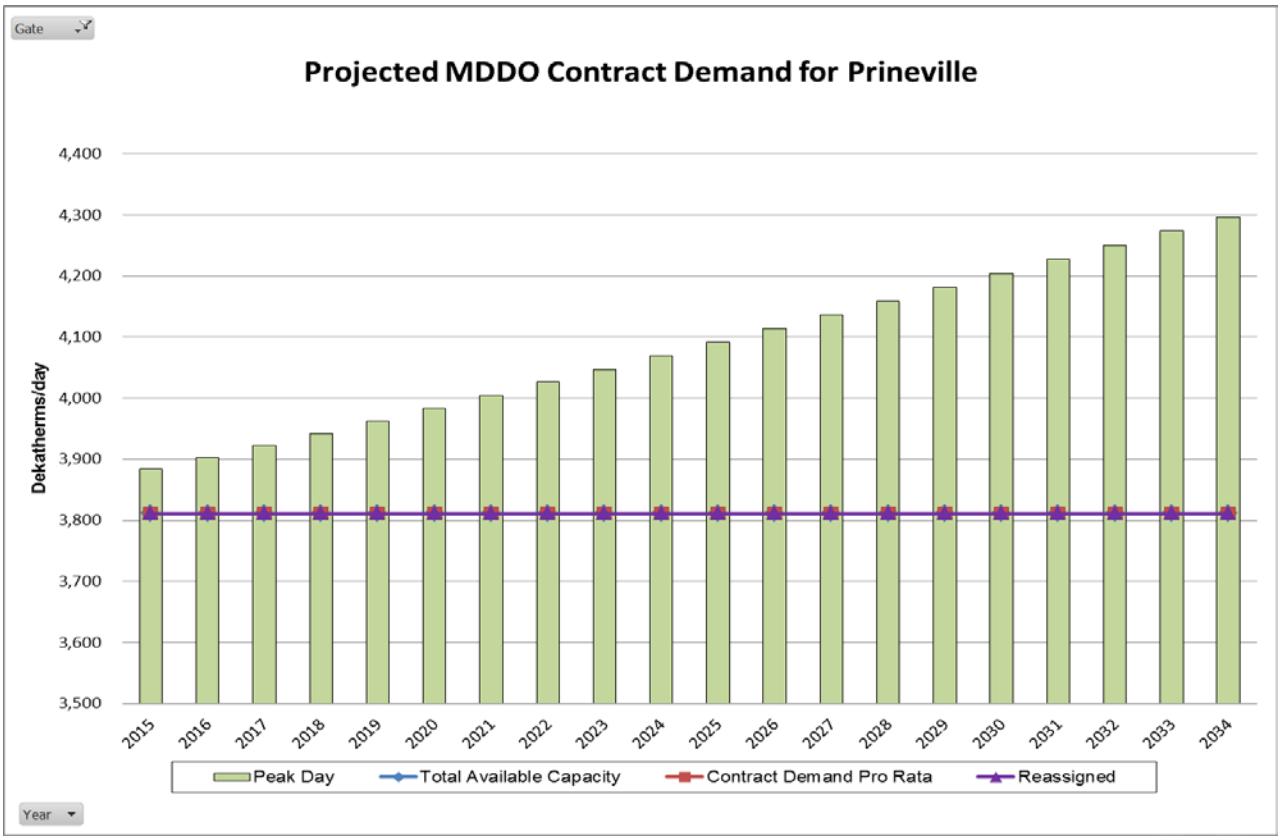

Gate
Projected MDDO Contract Demand for Patterson
Dekatherms/day
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

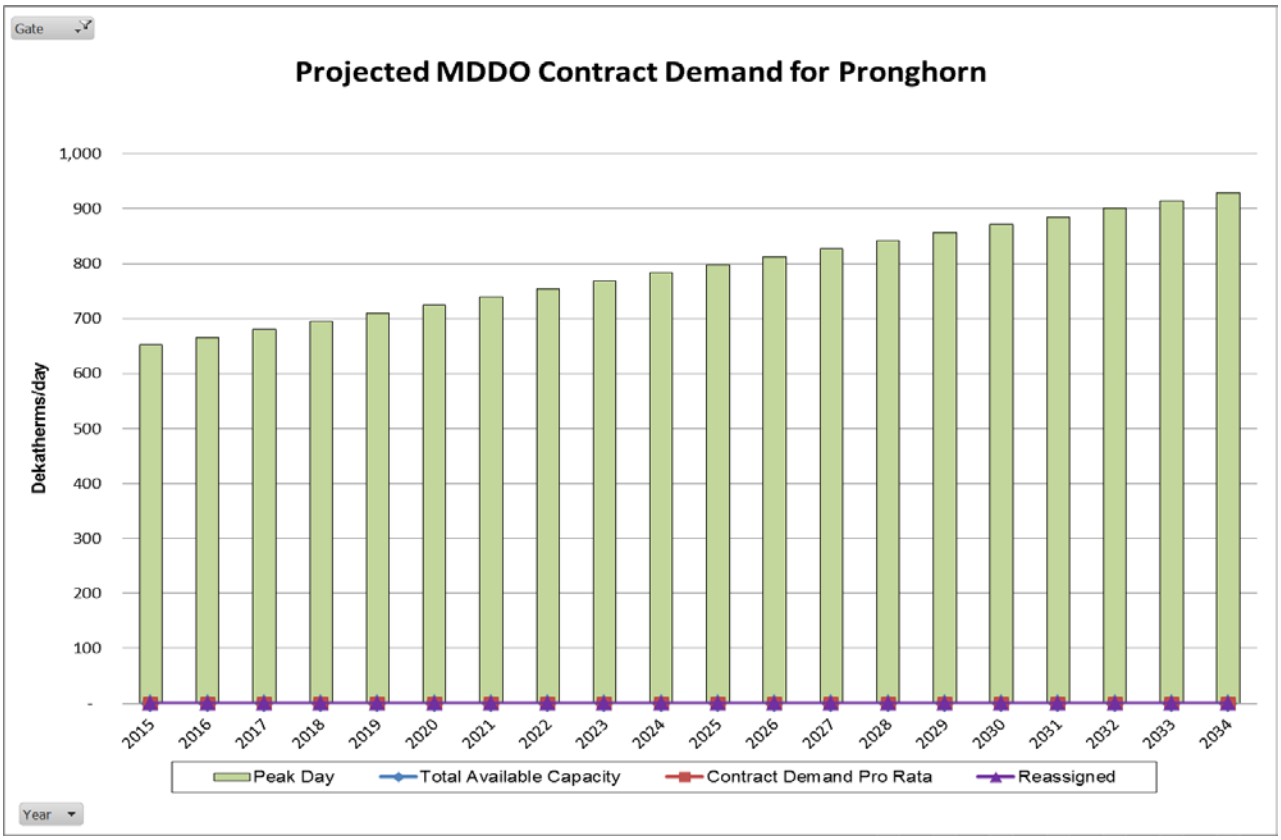

Gate
Projected MDDO Contract Demand for Pendleton
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

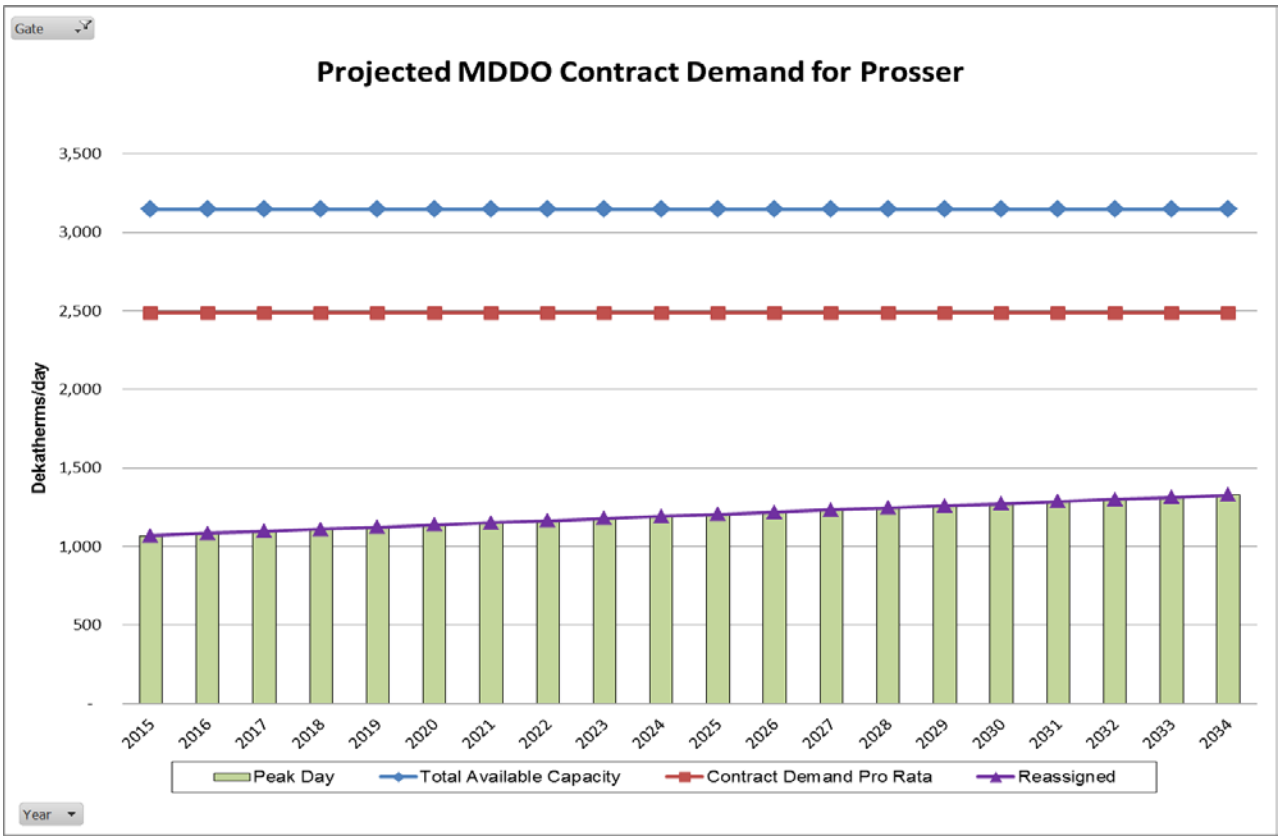

Gate
Projected MDDO Contract Demand for Plymouth
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

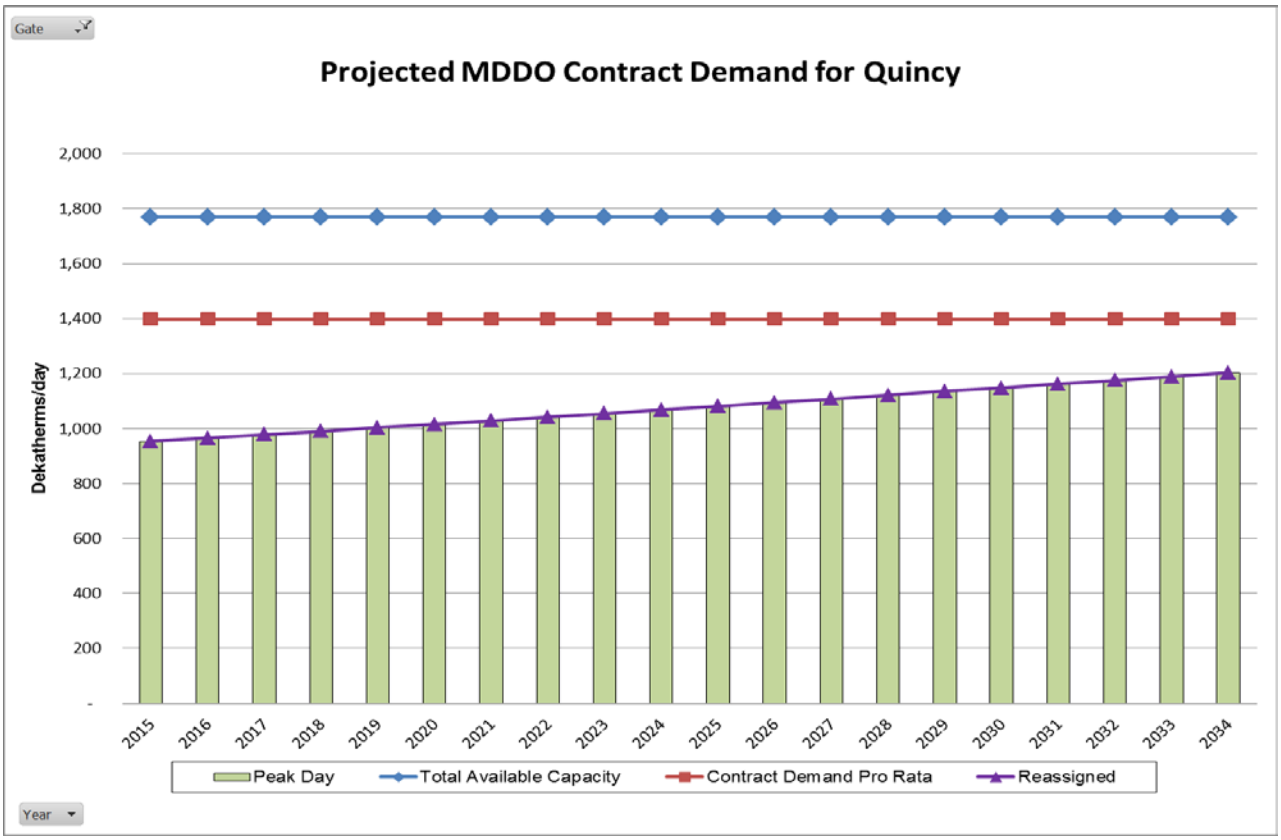

Gate
Projected MDDO Contract Demand for Plymouth LNG Delivery
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

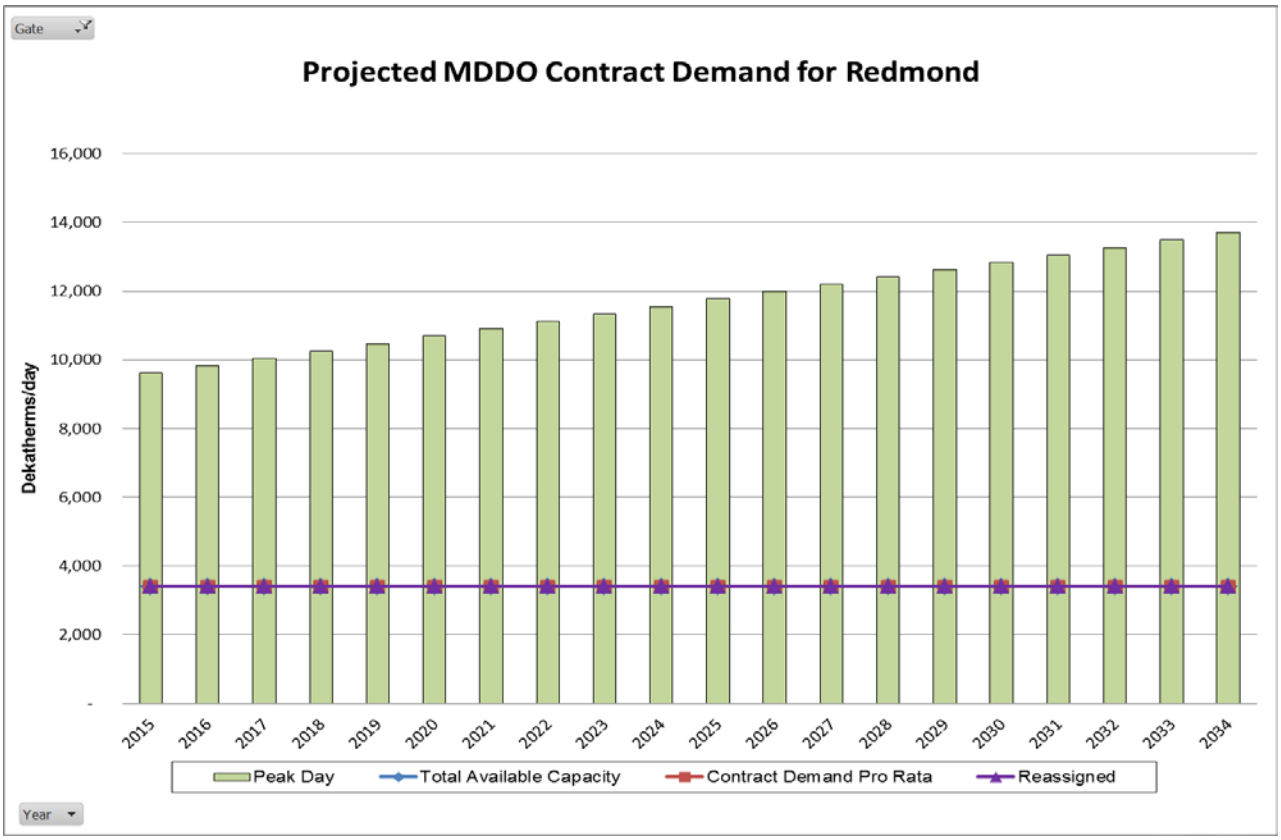

Gate
Projected MDDO Contract Demand for Portland West/Scappoose
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

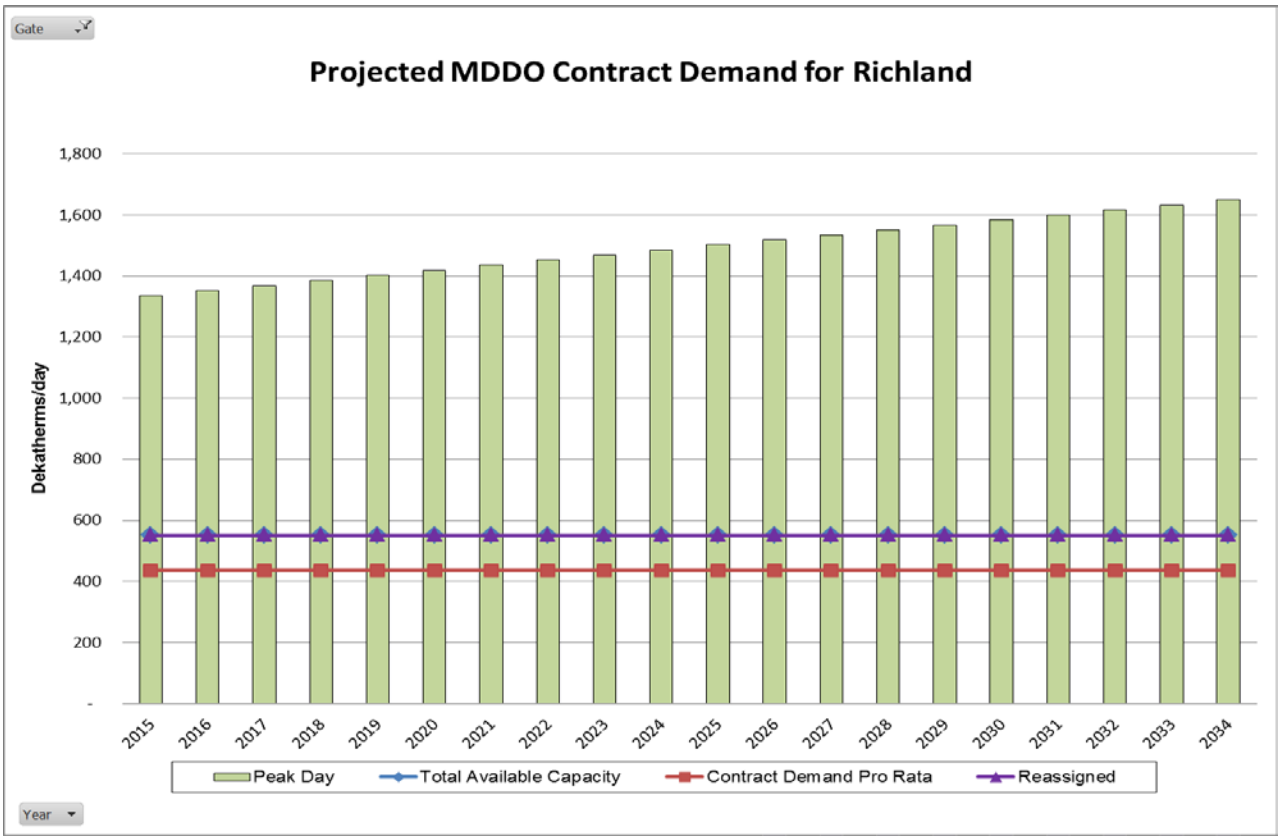

Gate
Projected MDDO Contract Demand for Prineville
Dekatherms/day
4,400
4,300
4,200
4,100
4,000
3,900
3,800
3,700
3,600
3,500
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

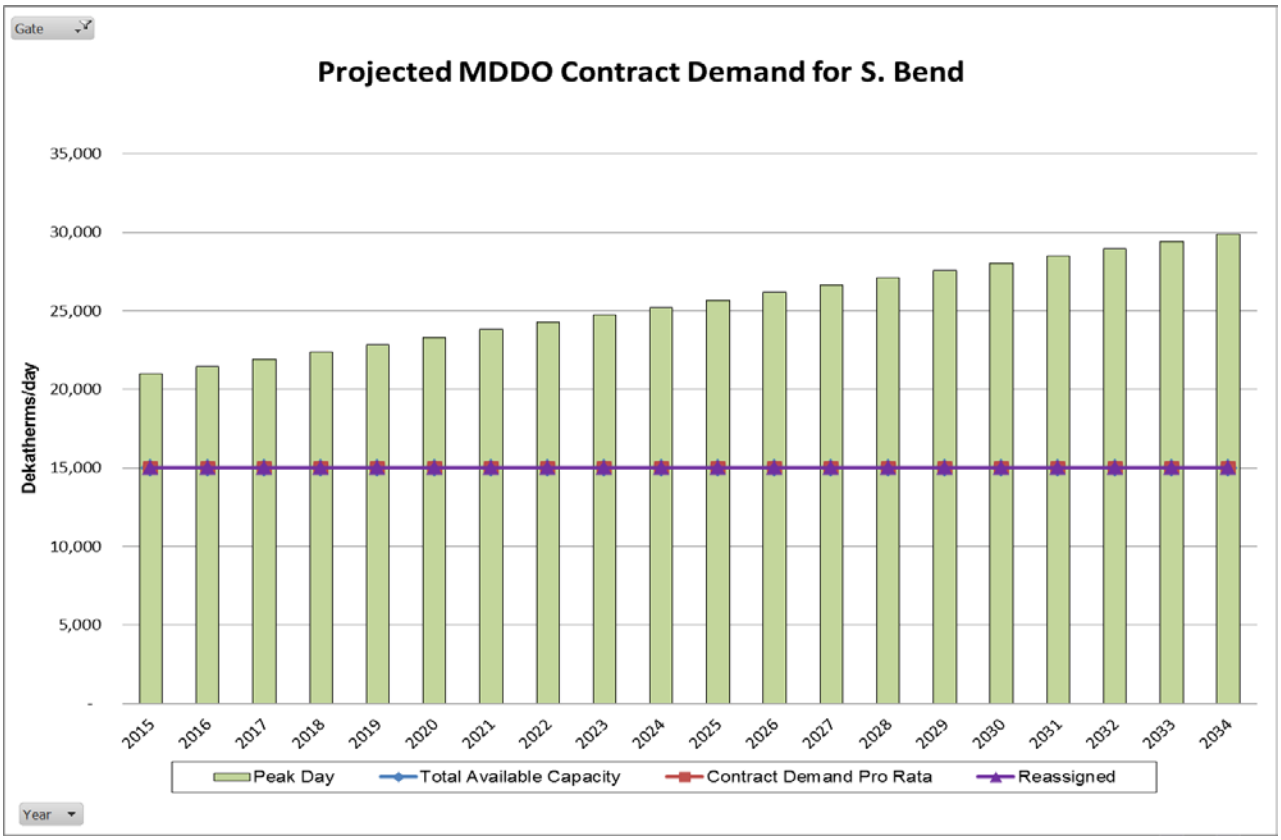

Gate
Projected MDDO Contract Demand for Pronghorn
Dekatherms/day
1,000
900
800
700
600
500
400
300
200
100
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

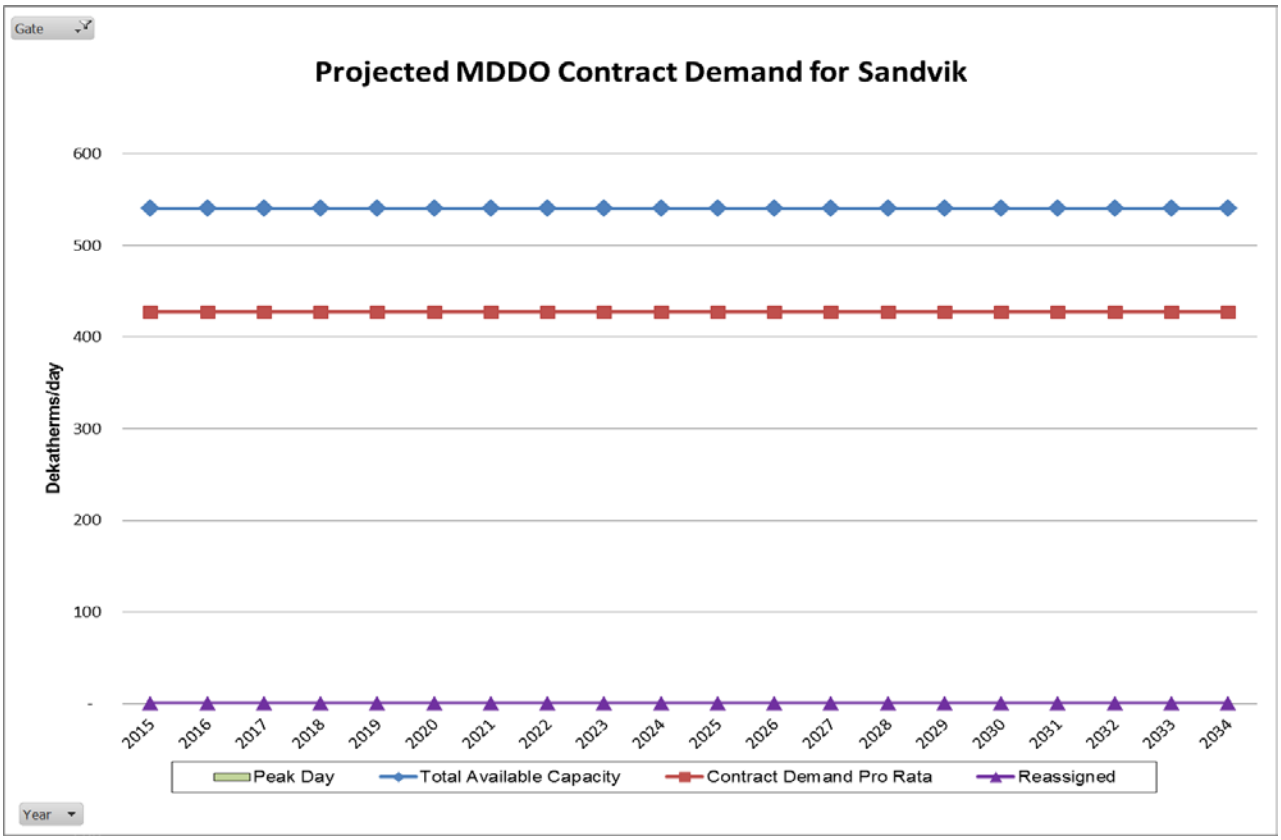

Gate
Projected MDDO Contract Demand for Prosser
Dekatherms/day
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

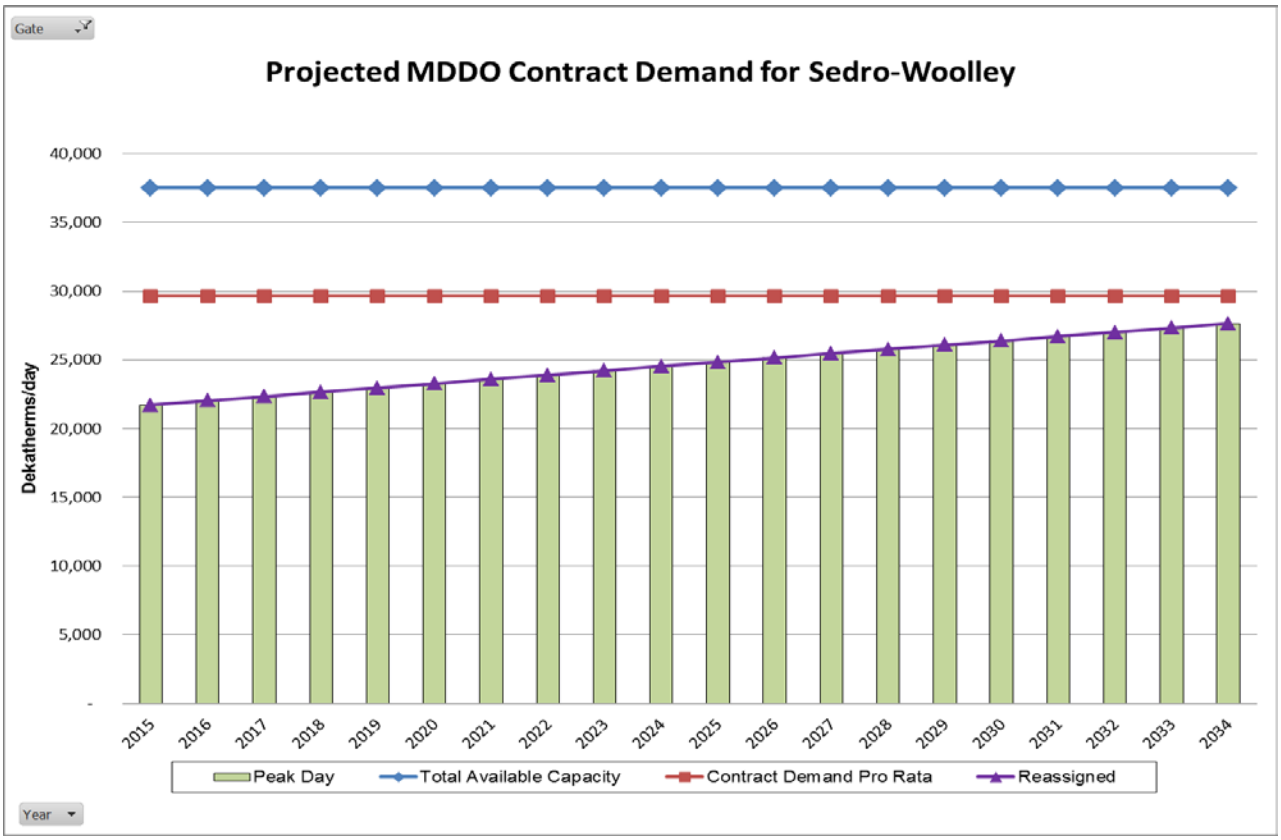

Gate
Projected MDDO Contract Demand for Quincy
Dekatherms/day
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

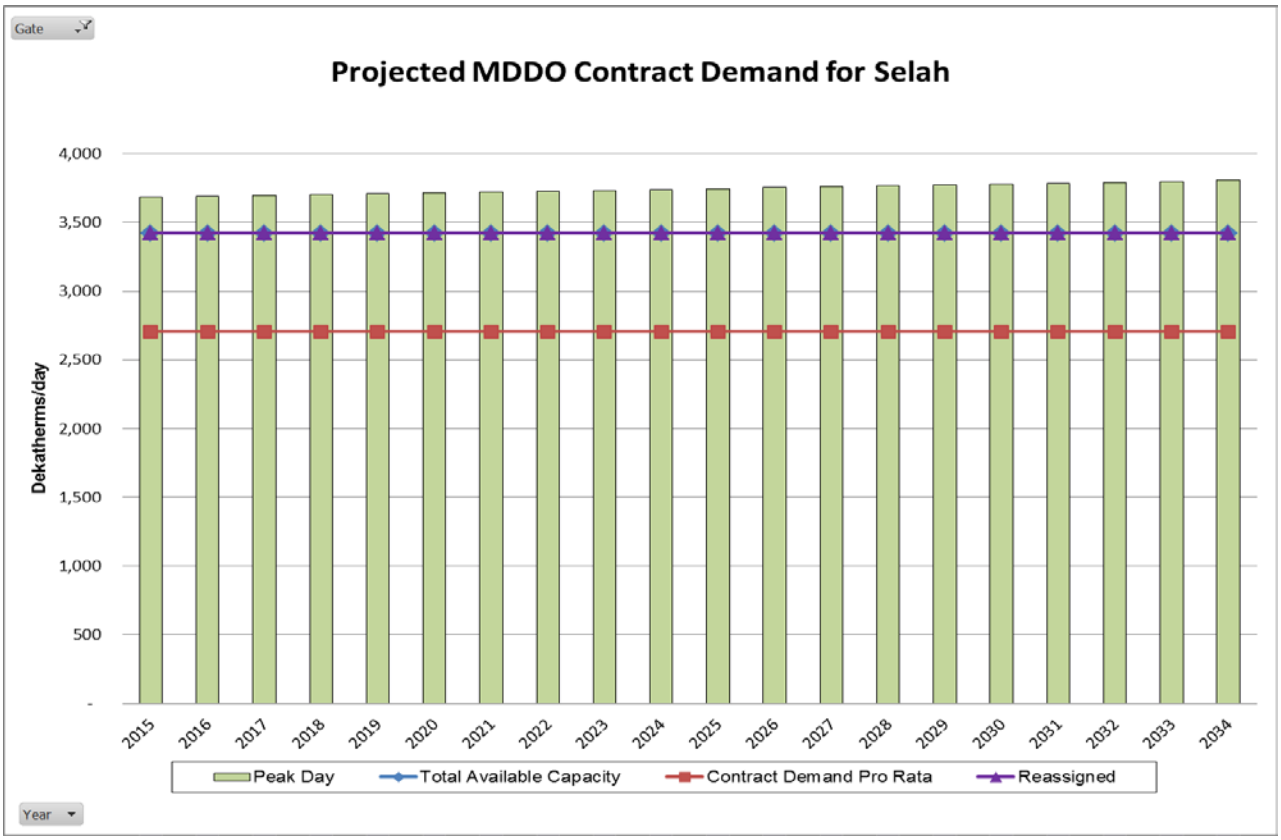

Gate
Projected MDDO Contract Demand for Redmond
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

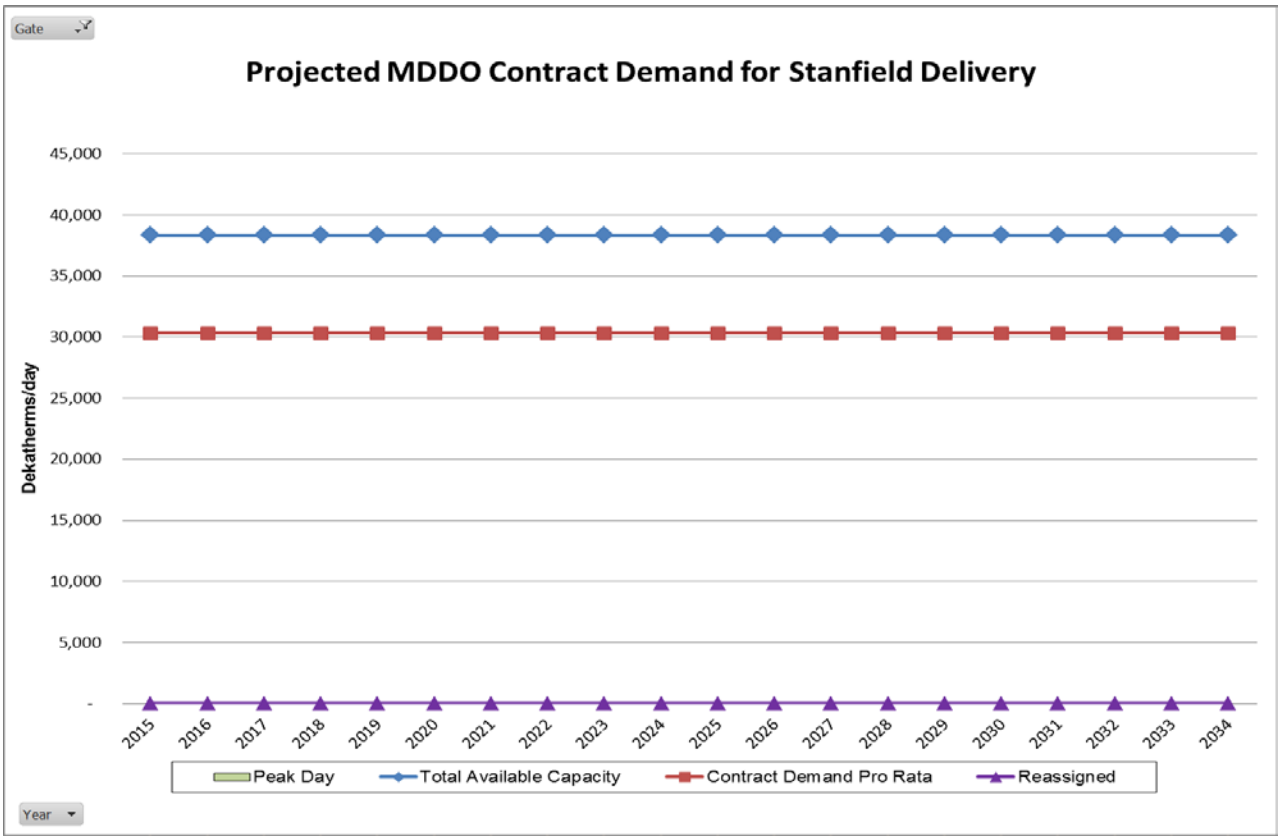

Gate
Projected MDDO Contract Demand for Richland
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

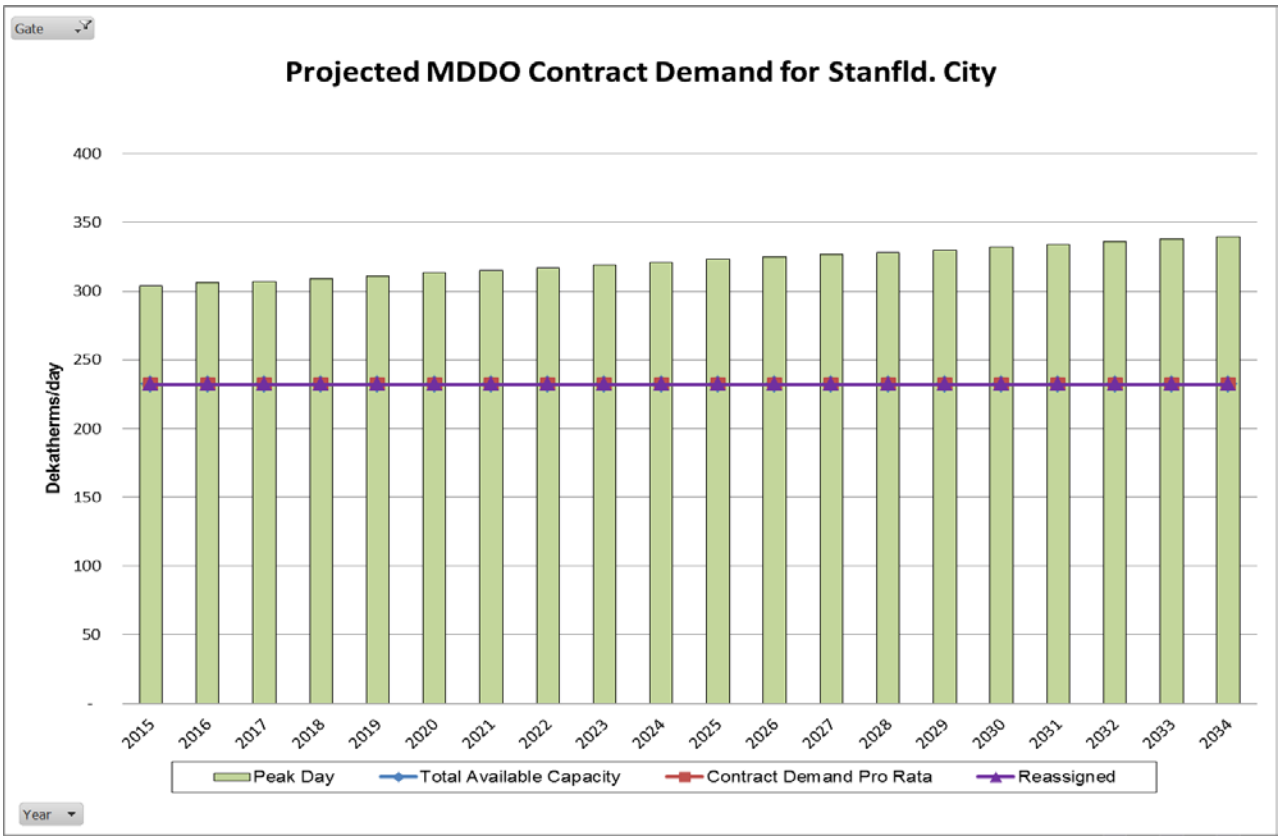

Gate
Projected MDDO Contract Demand for S. Bend
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

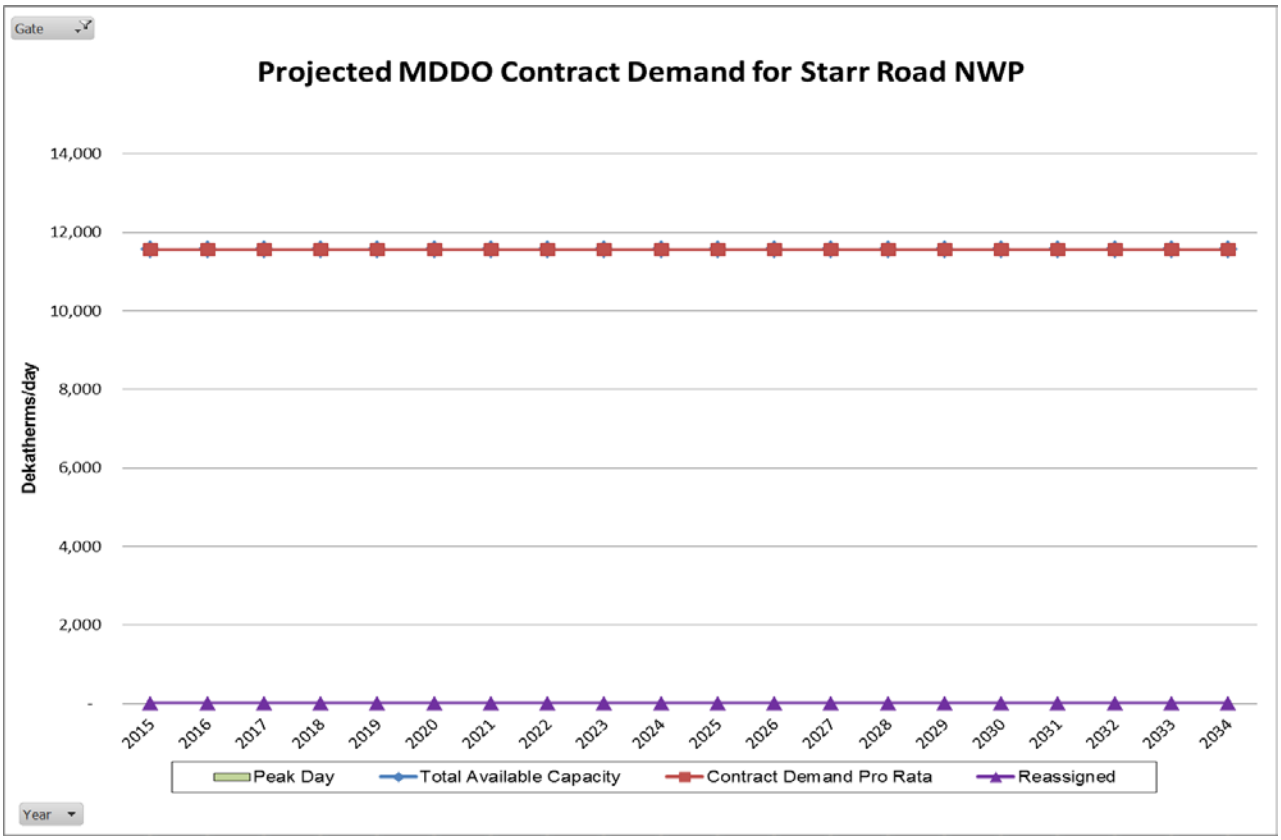

Gate
Projected MDDO Contract Demand for Sandvik
600
500
400
300
200
100
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

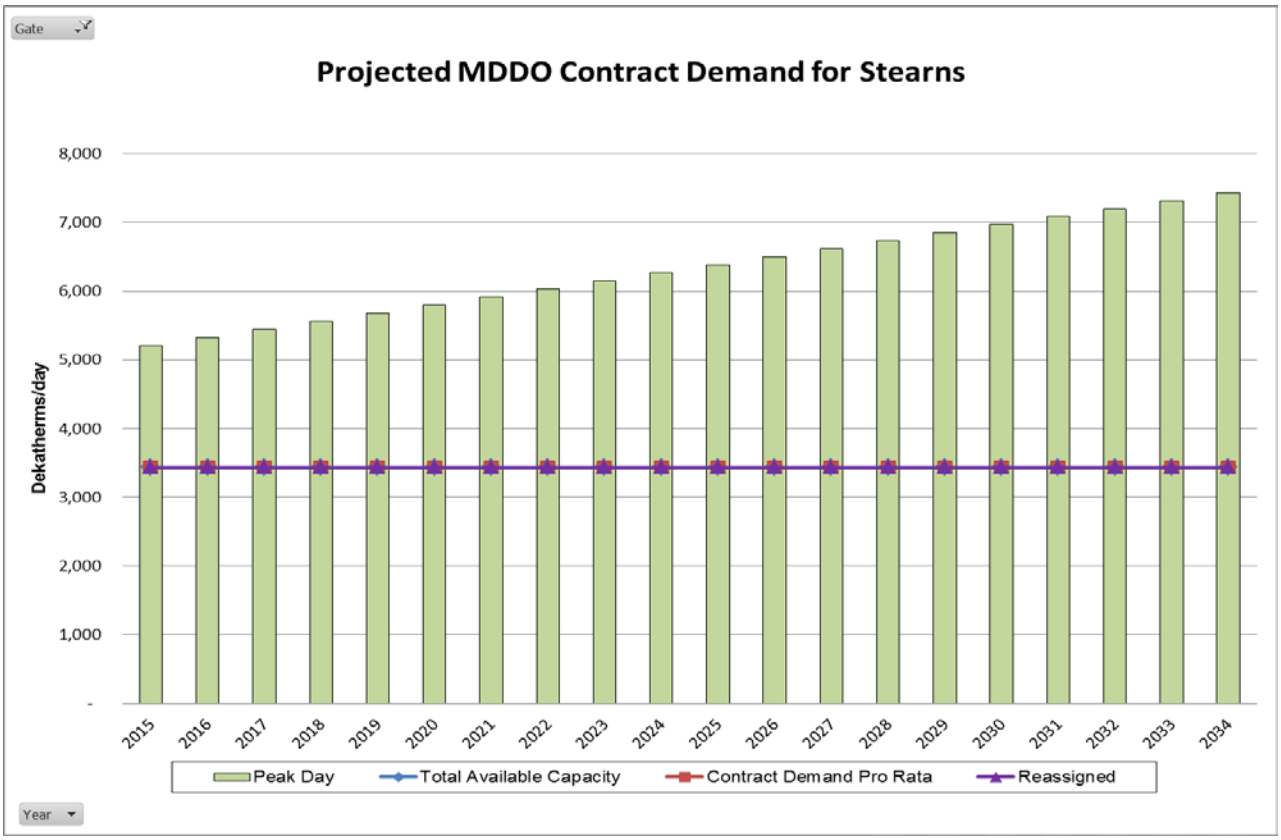

Gate
Projected MDDO Contract Demand for Sedro-Woolley
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

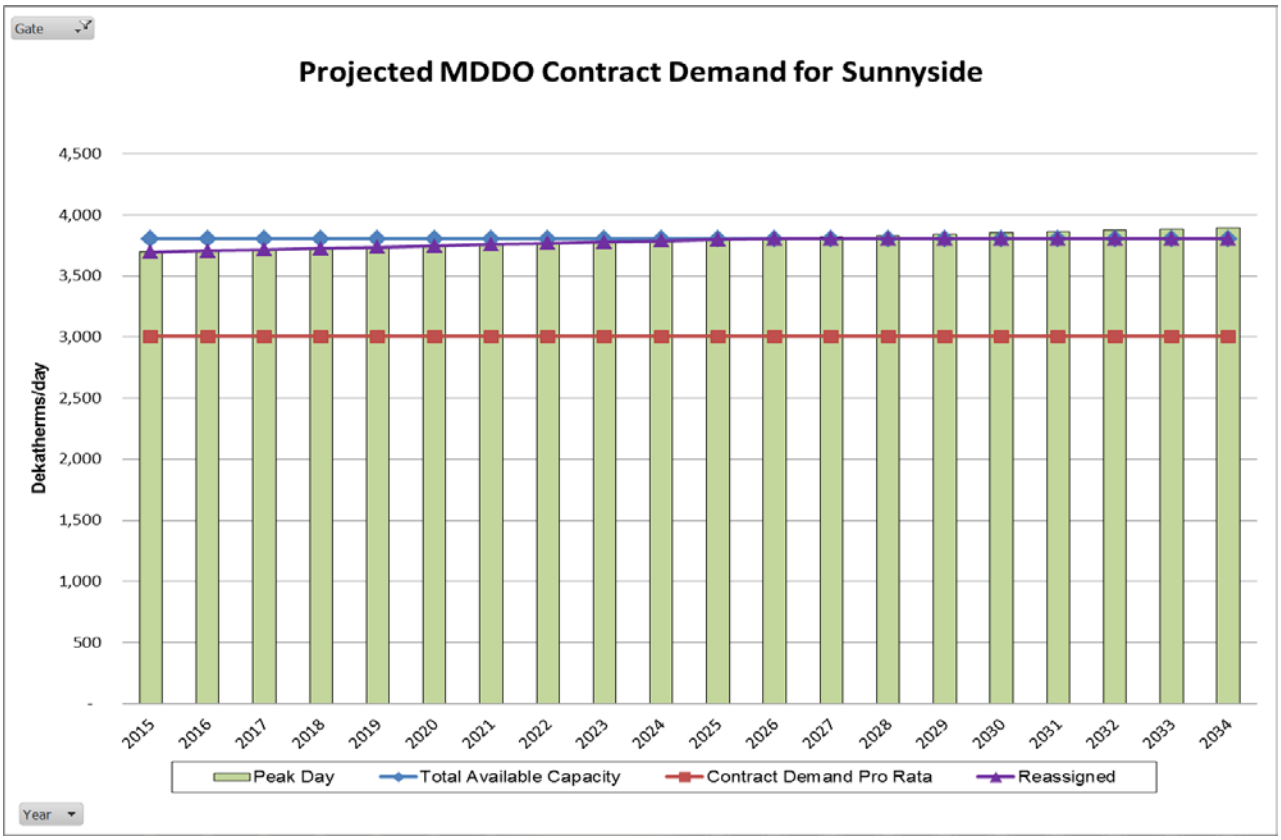

Gate
Projected MDDO Contract Demand for Selah
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

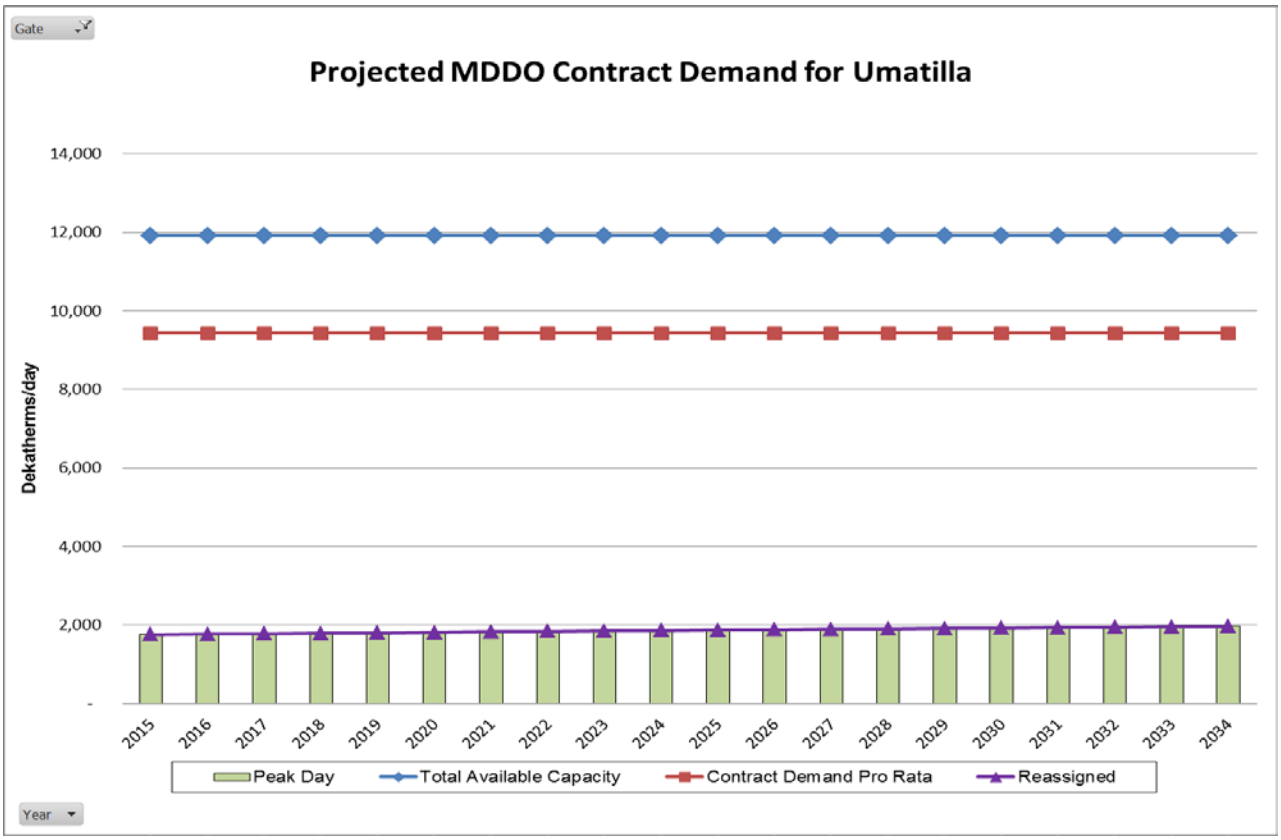

Gate
Projected MDDO Contract Demand for Stanfield Delivery
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Stanfld. City
400
350
300
250
200
150
100
50
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Starr Road NWP
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Stearns
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Sunnyside
Dekatherms/day
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Umatilla
Dekatherms/day
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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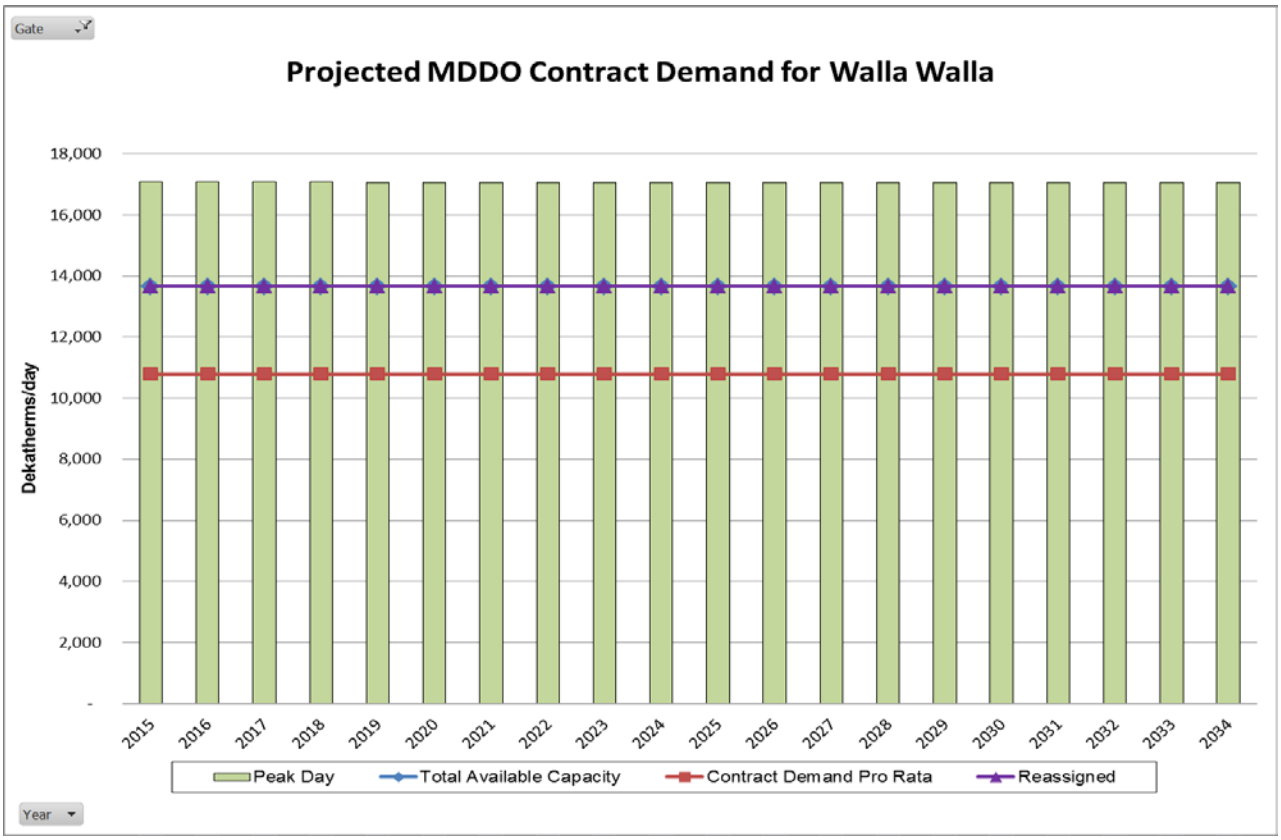
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Walla Walla
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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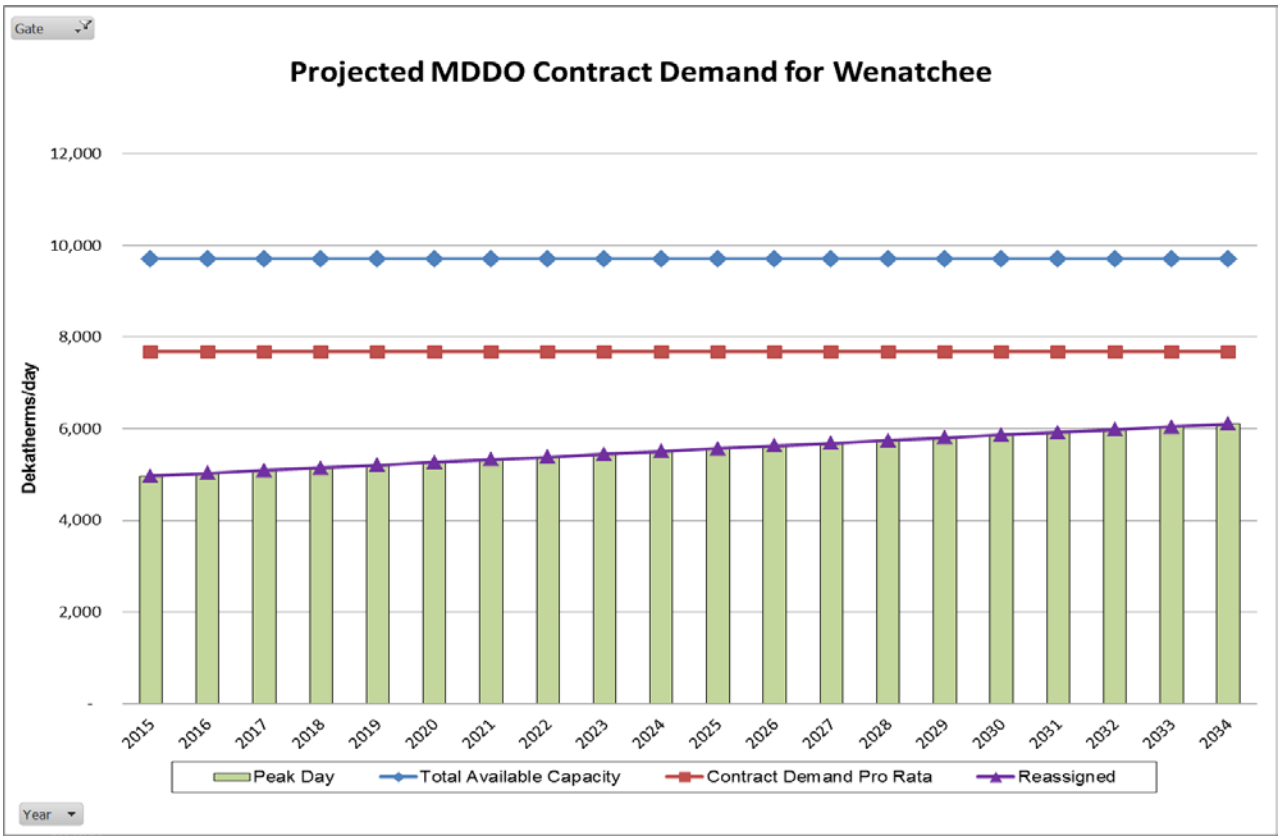
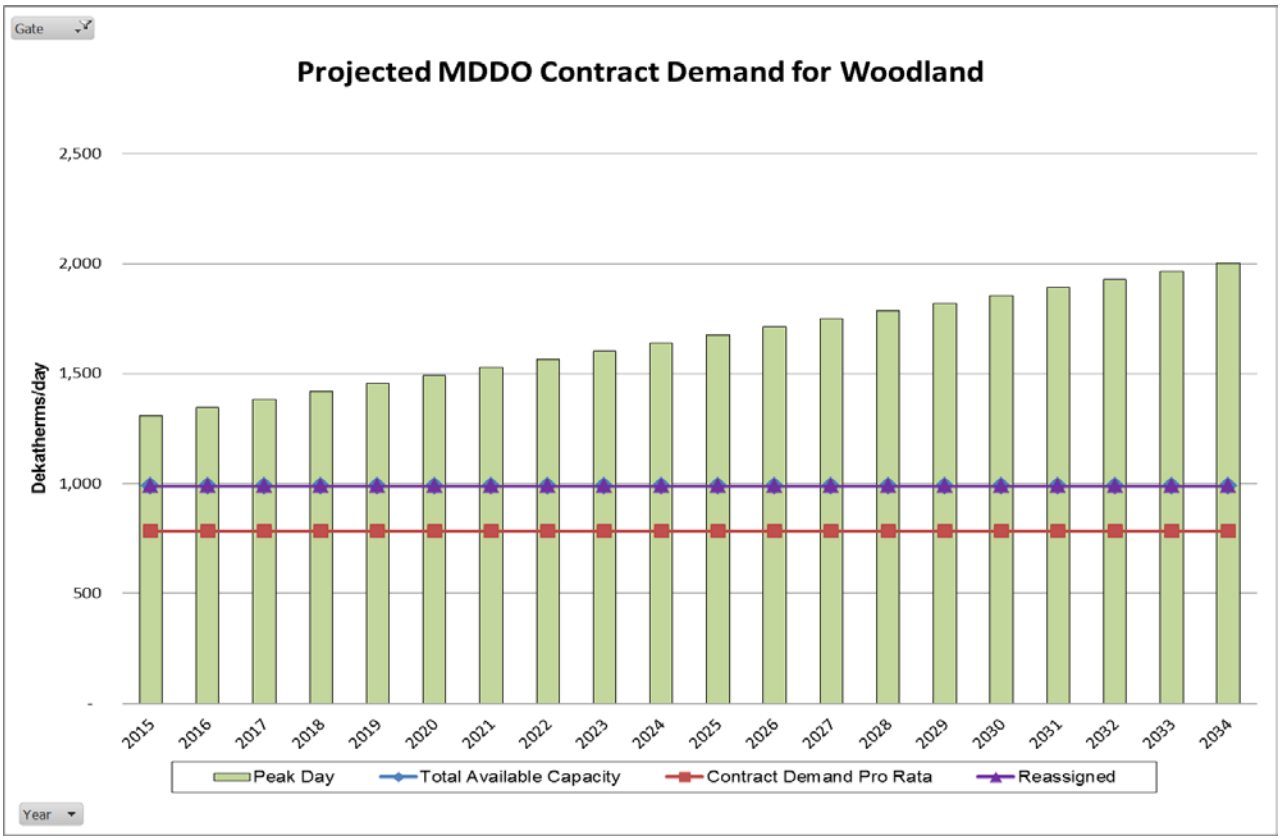
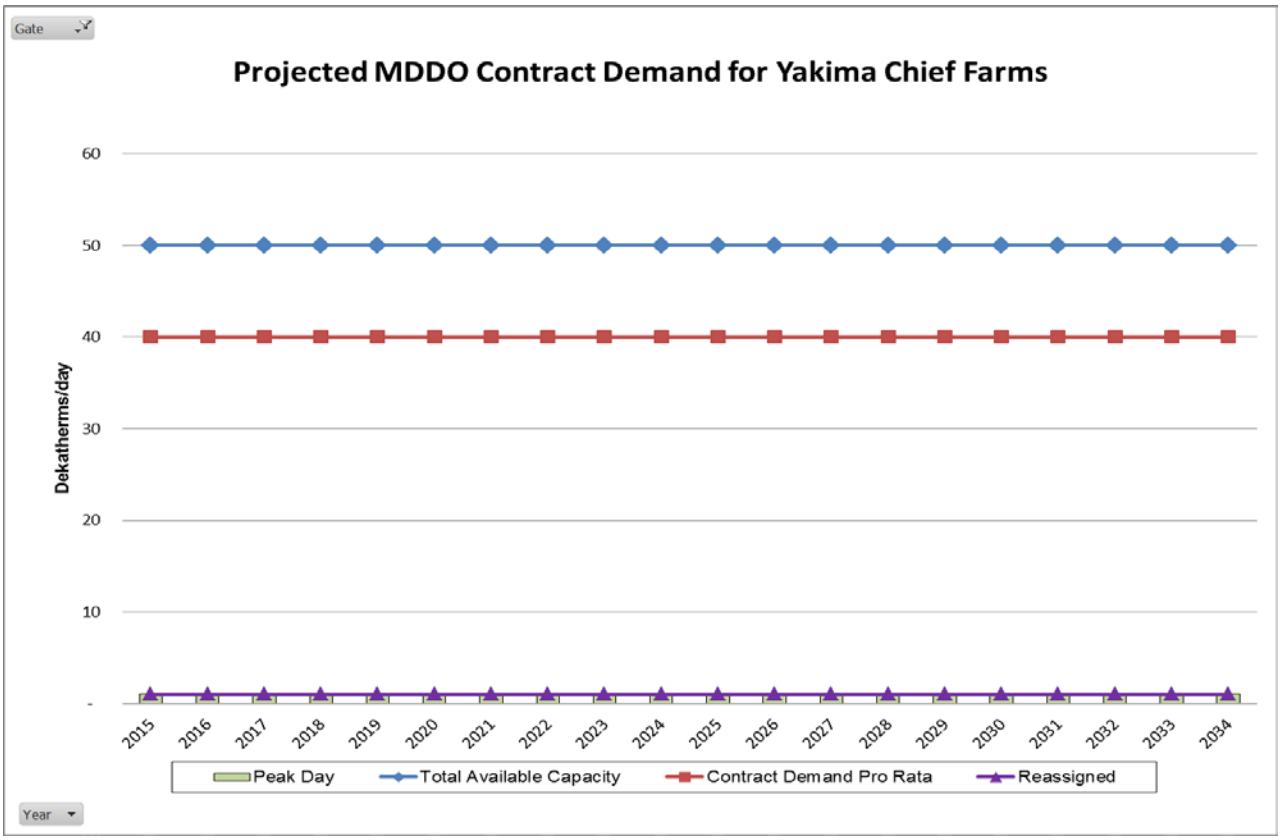
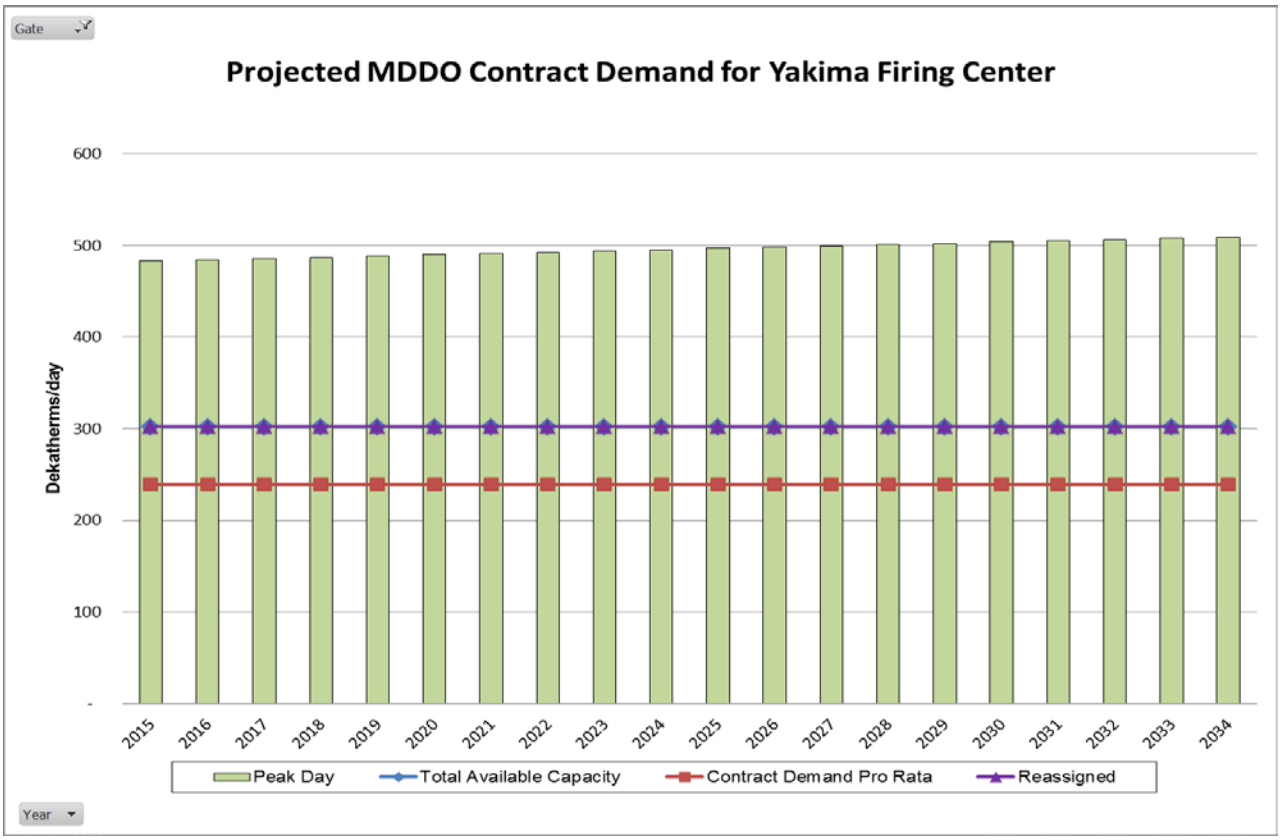
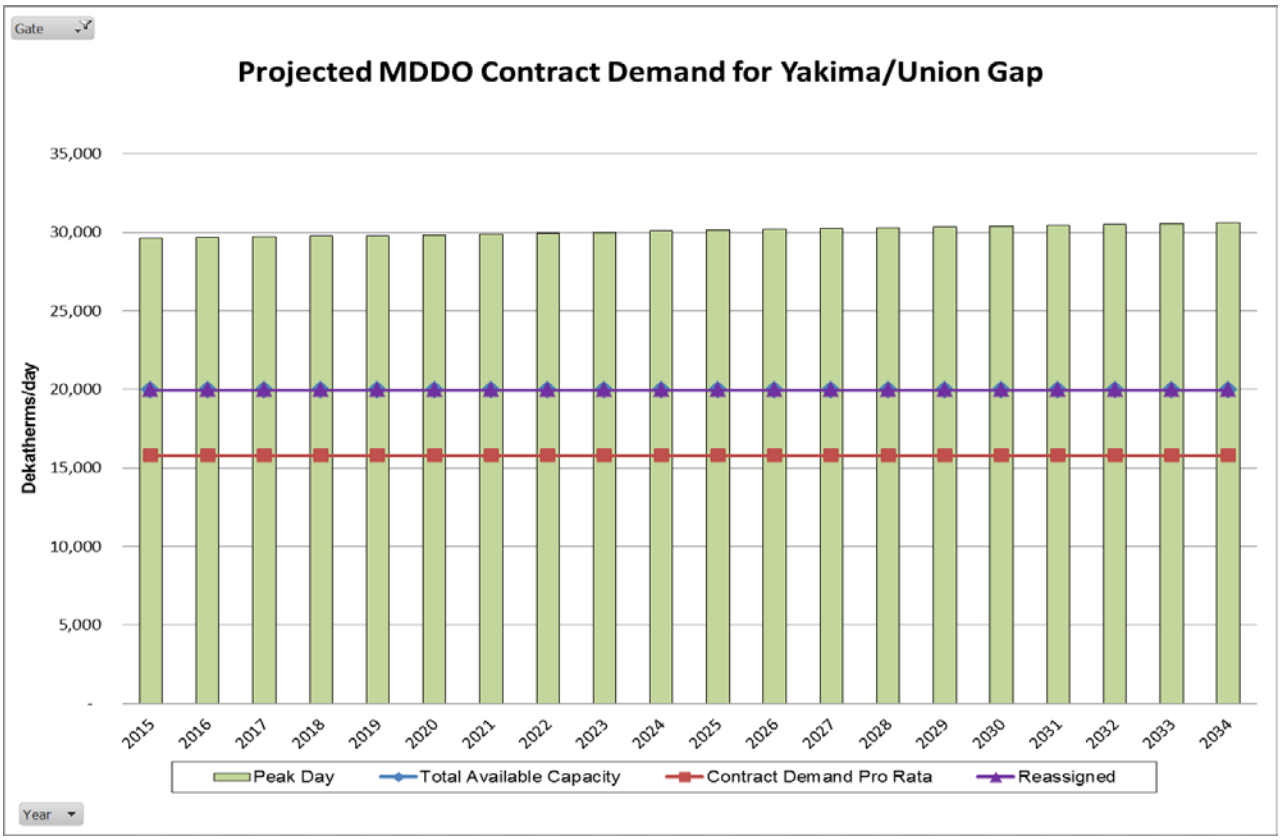
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

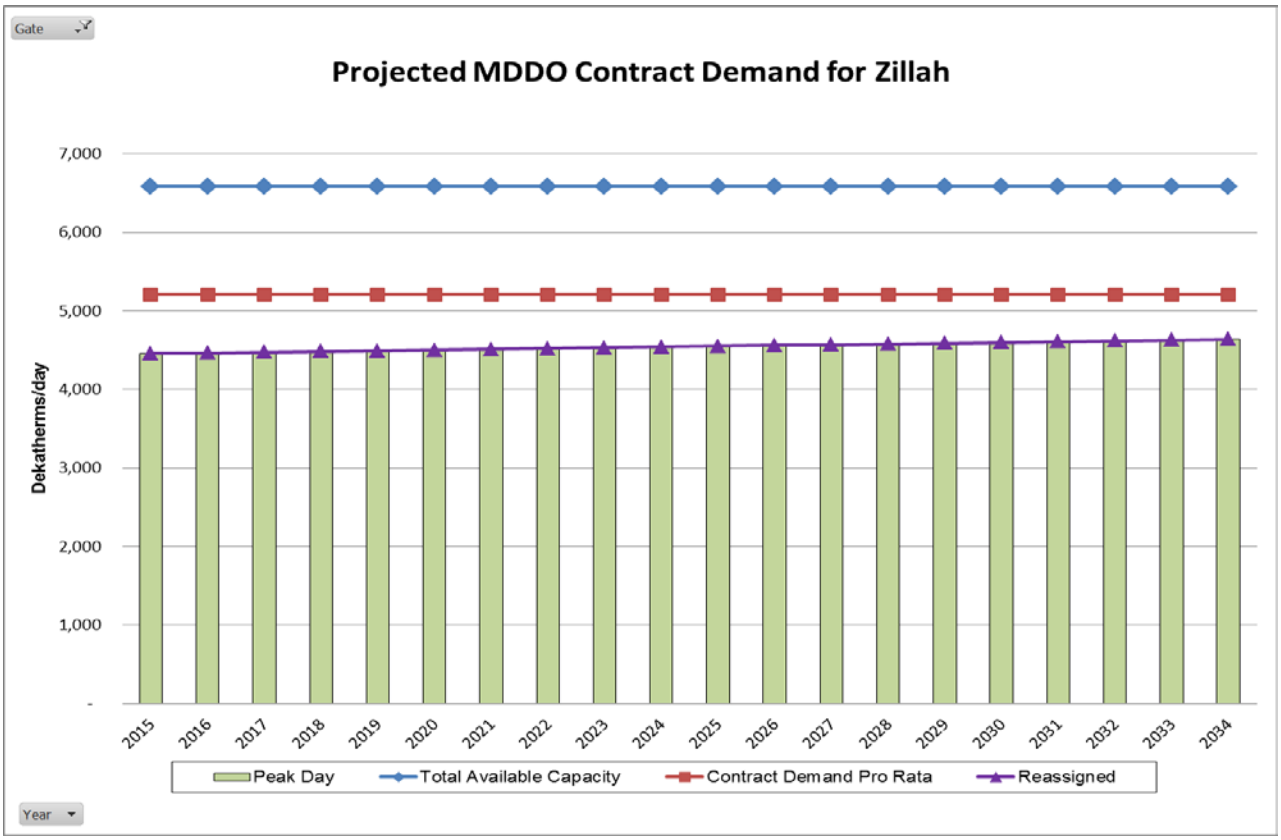

Gate
Projected MDDO Contract Demand for Wenatchee
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

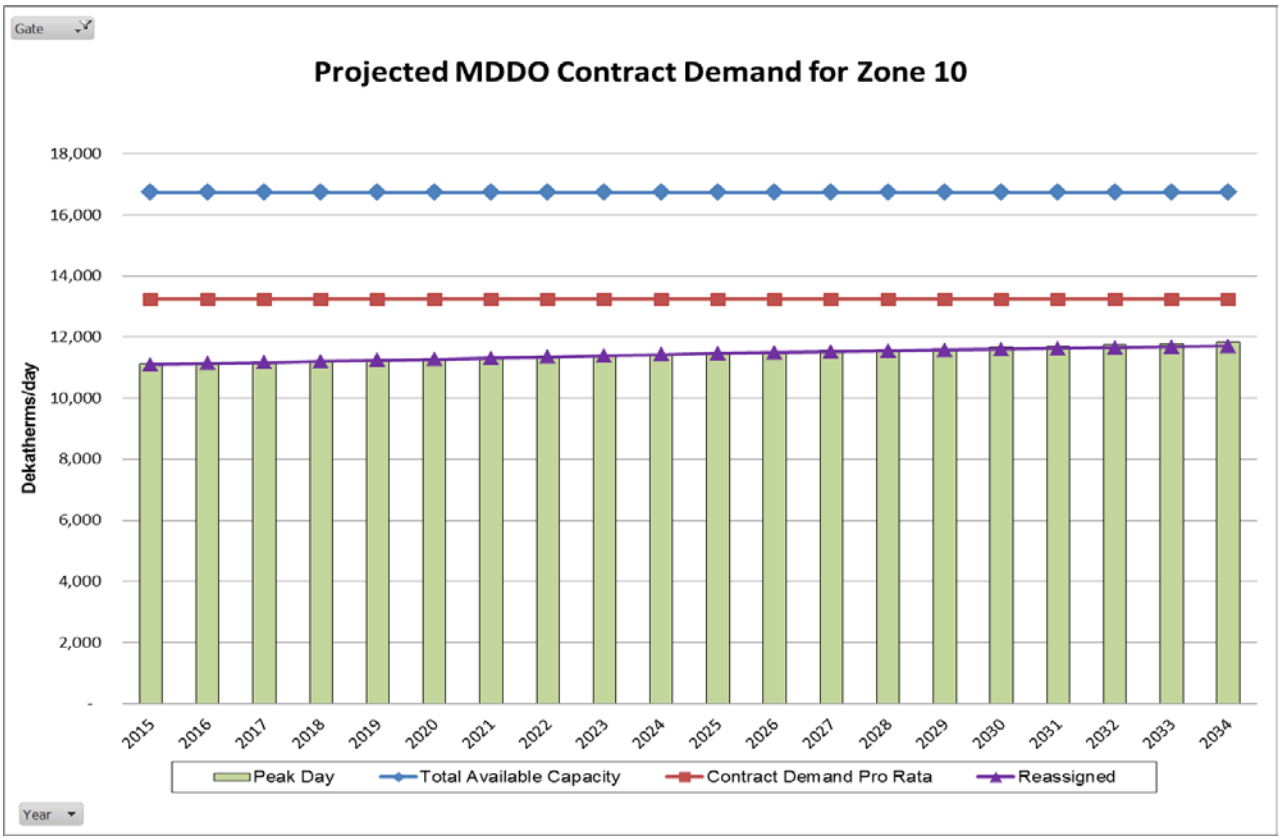

Gate
Projected MDDO Contract Demand for Woodland
2,500
2,000
1,500
1,000
500
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Yakima Chief Farms
60
50
40
30
20
10
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Yakima Firing Center
600
500
400
300
200
100
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Yakima/Union Gap
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zillah
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 10
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
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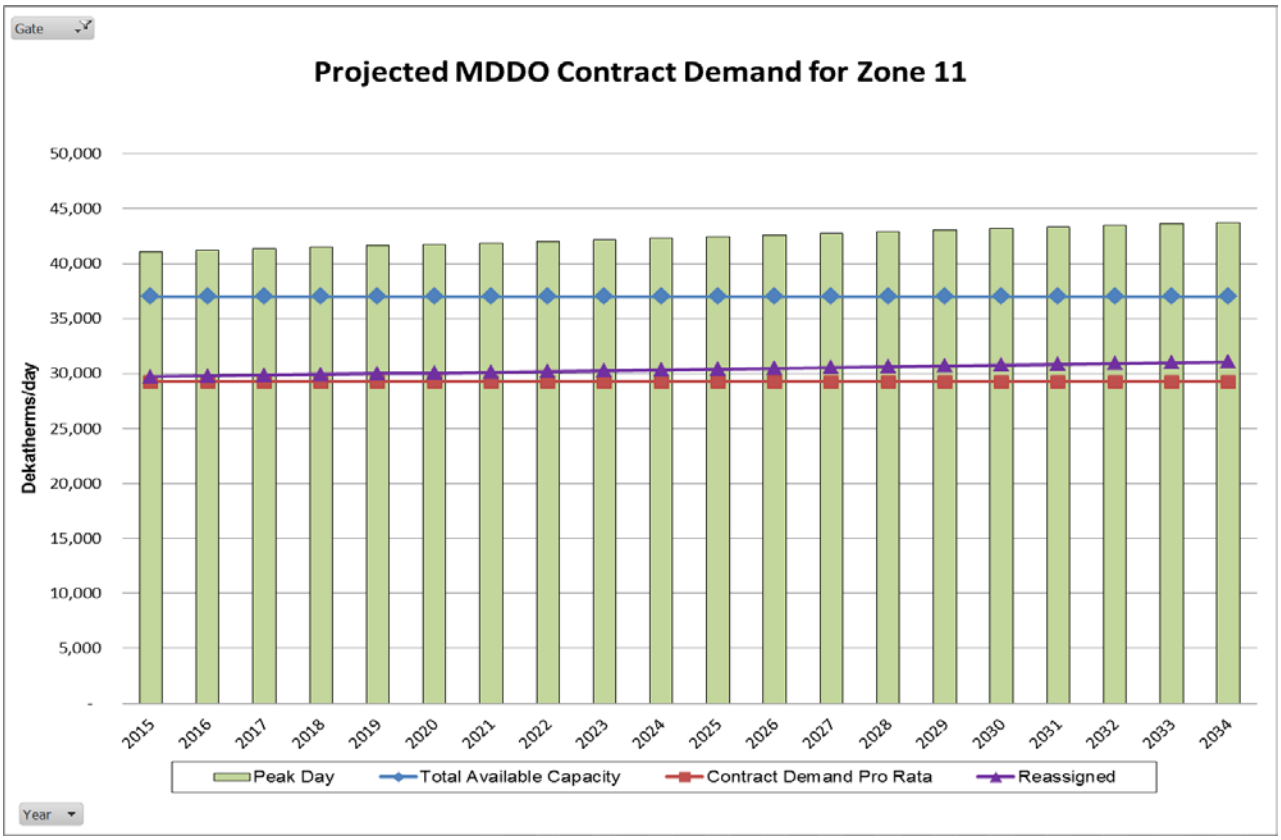
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 11
Dekatherms/day
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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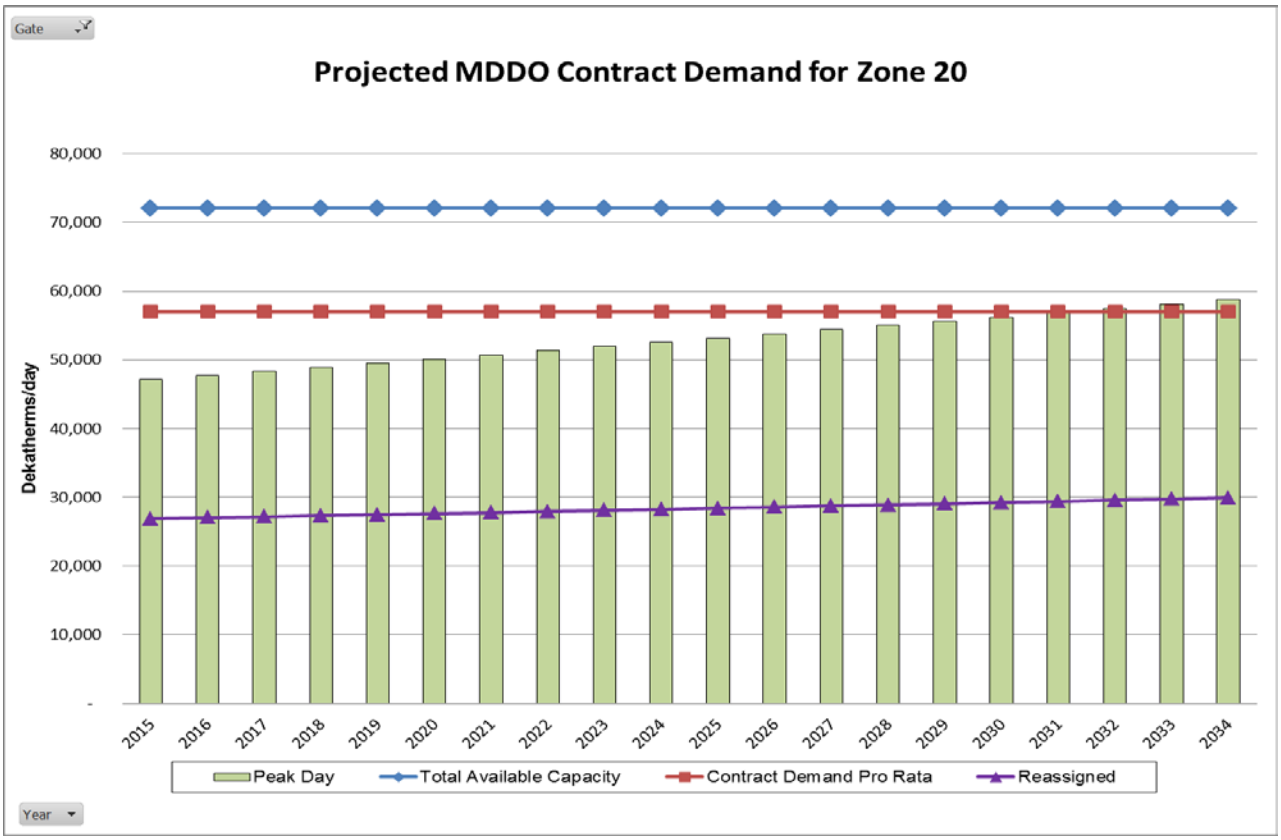
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 20
Dekatherms/day
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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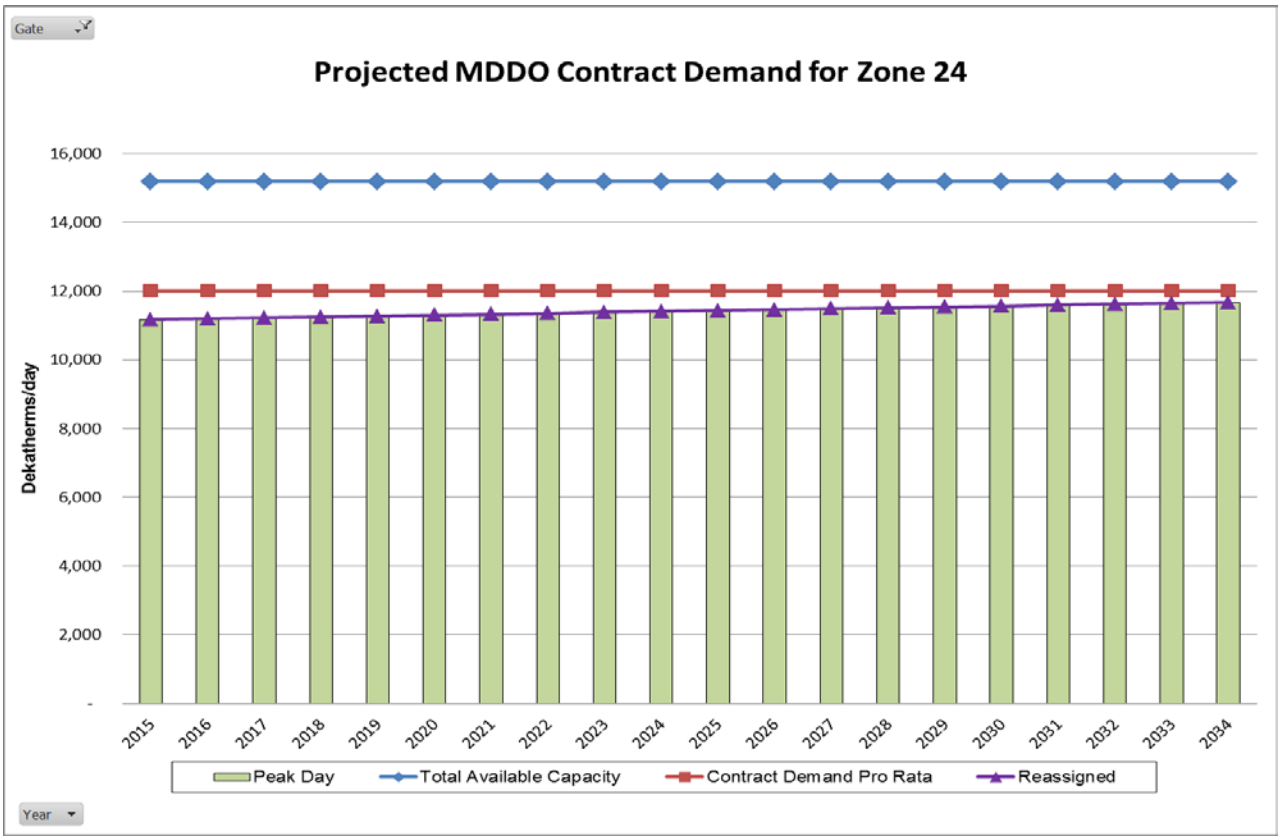
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 24
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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2030
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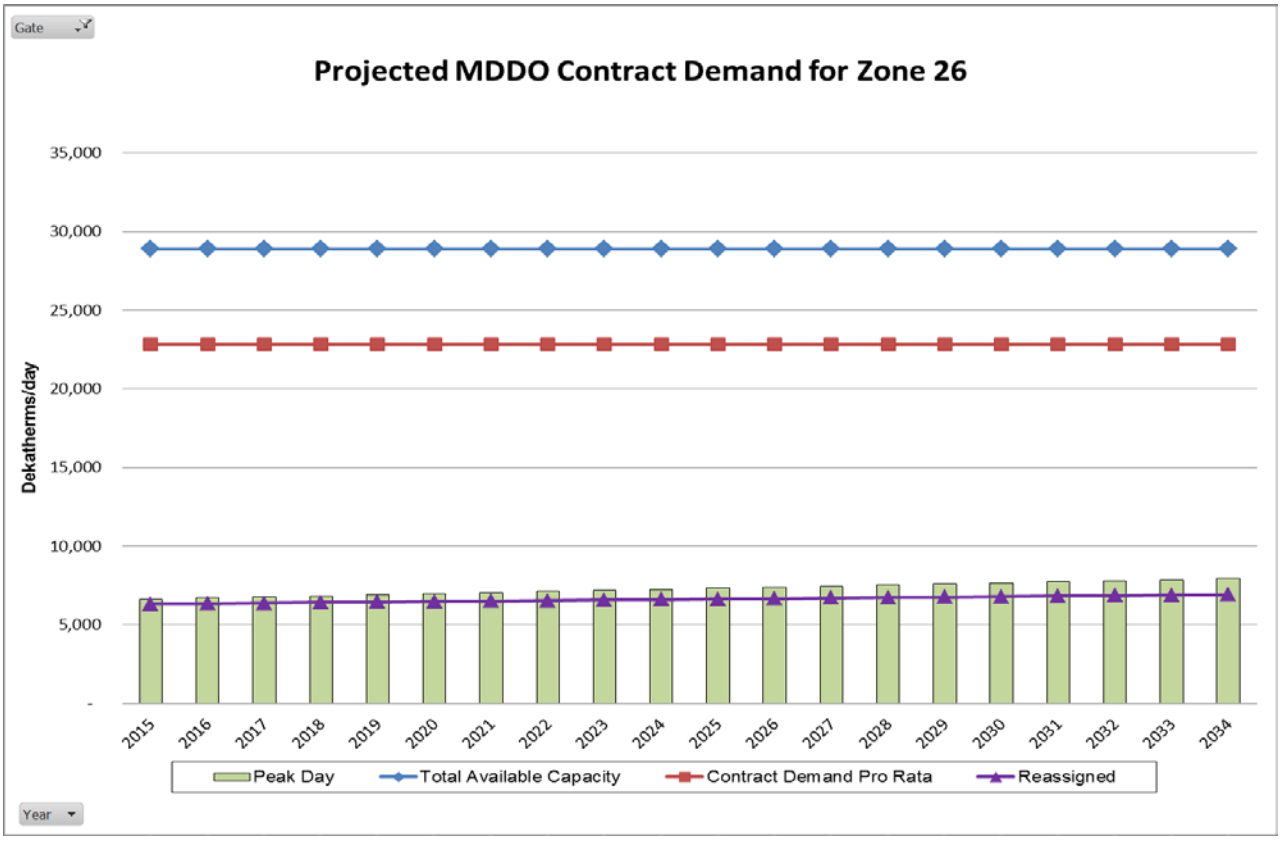
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 26
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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2030
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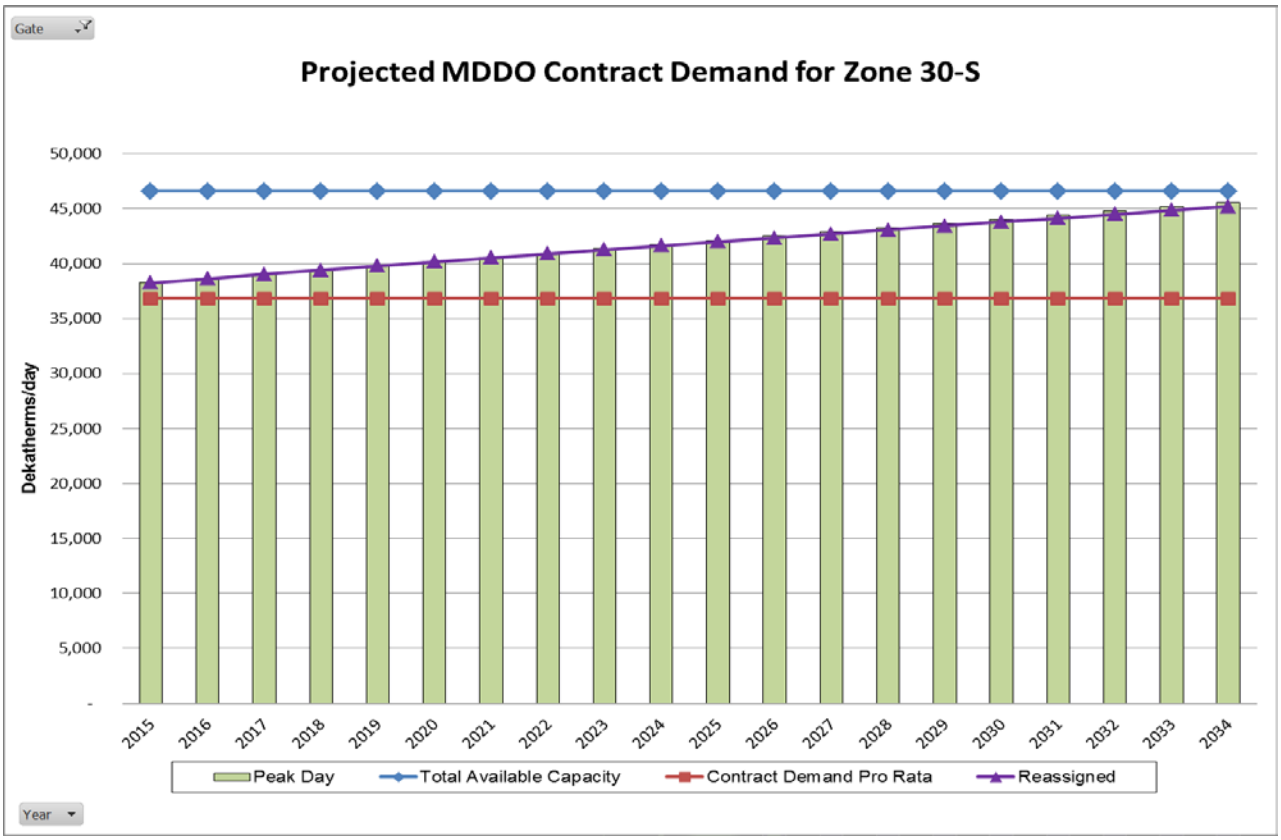
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 30-S
Dekatherms/day
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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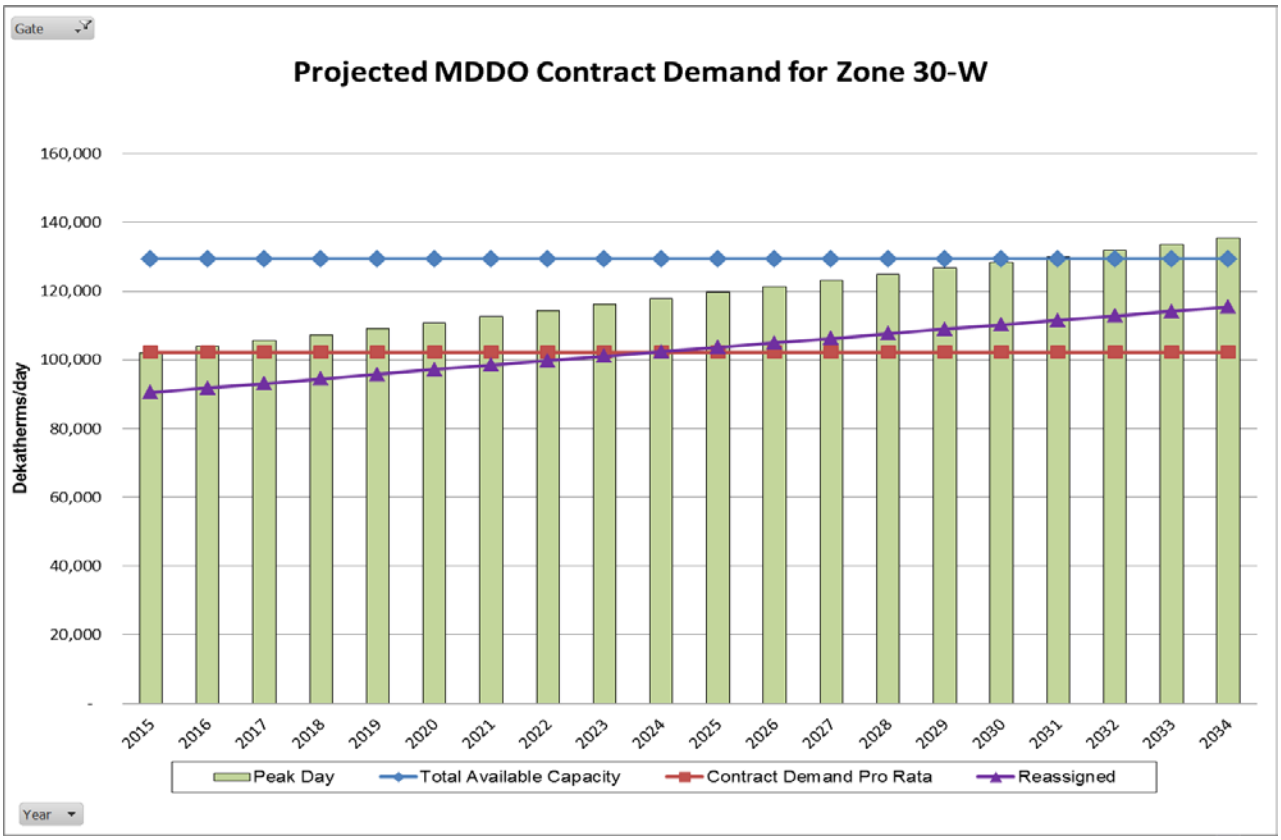
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone 30-W
Dekatherms/day
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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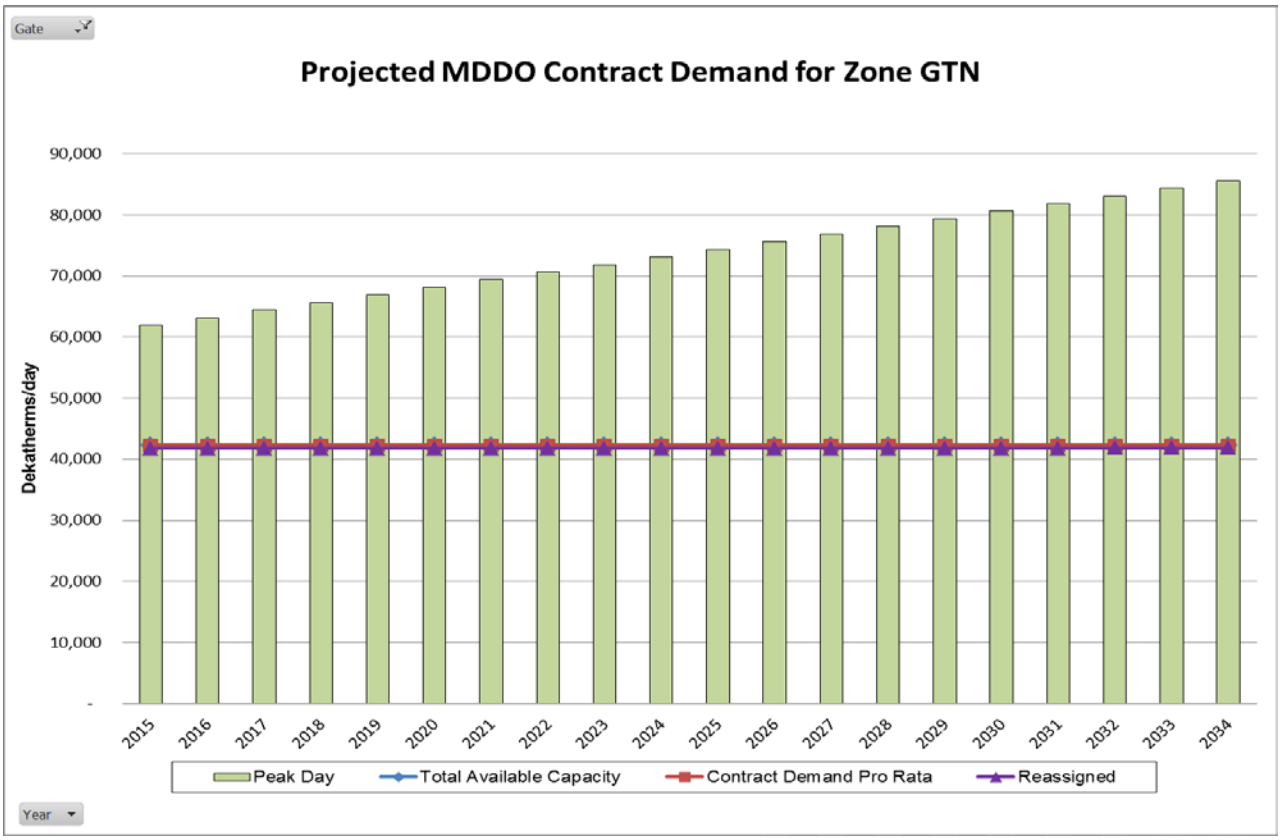
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone GTN
Dekatherms/day
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
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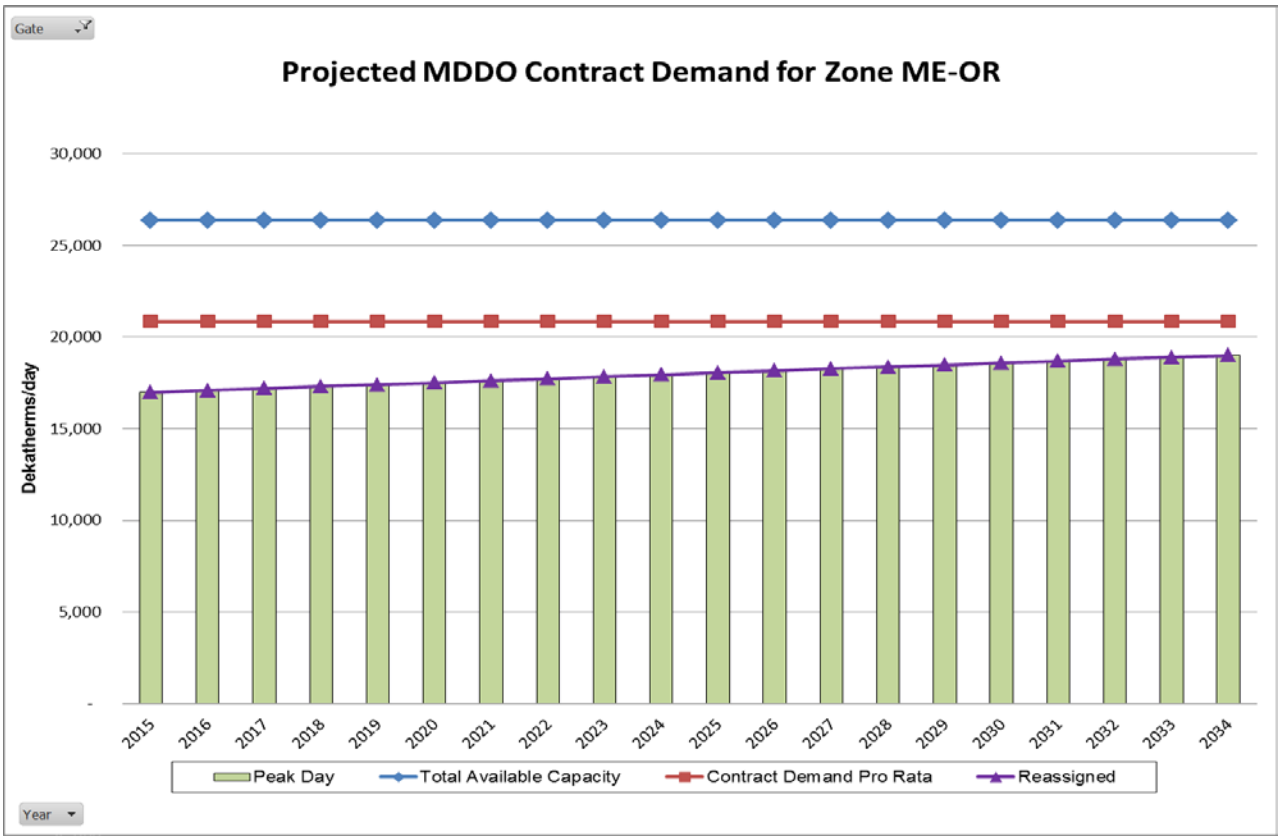
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone ME-OR
Dekatherms/day
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
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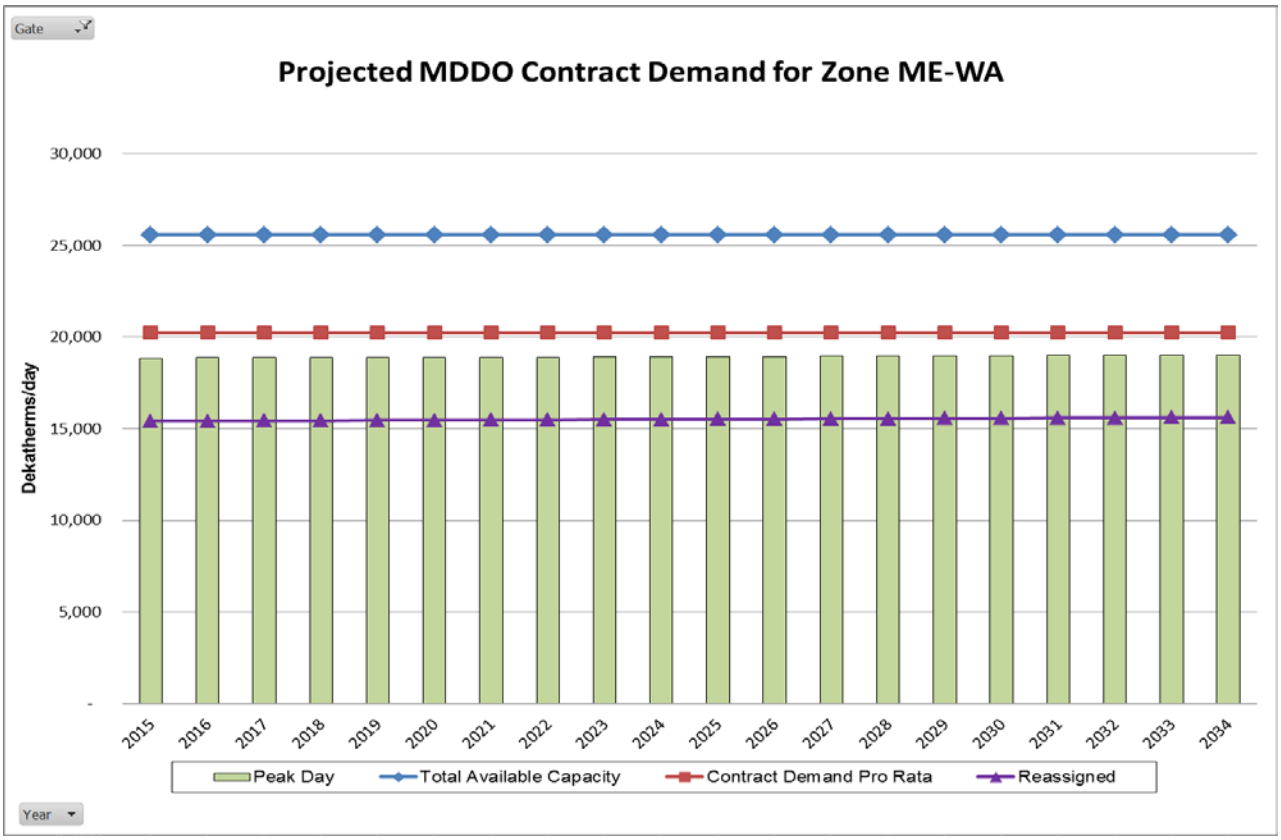
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Zone ME-WA
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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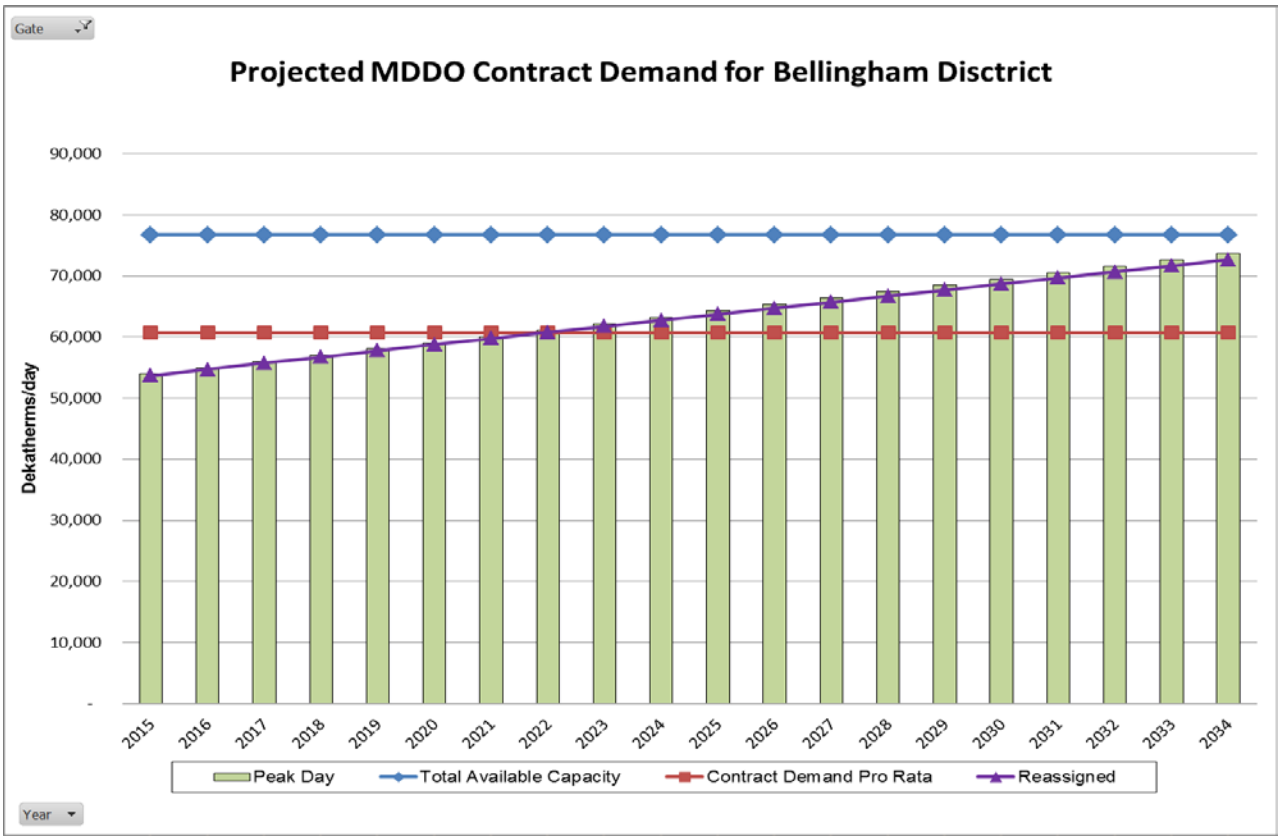
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Bellingham Disctrict
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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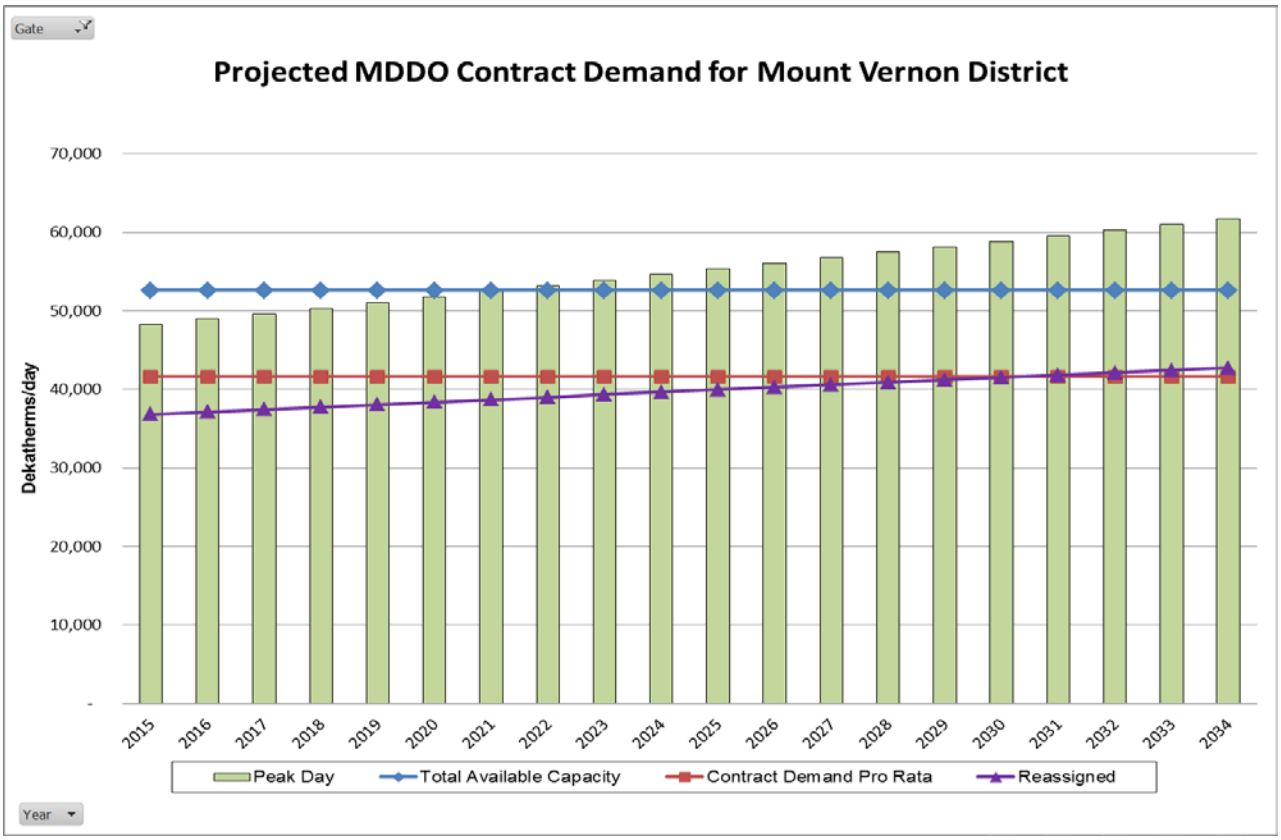
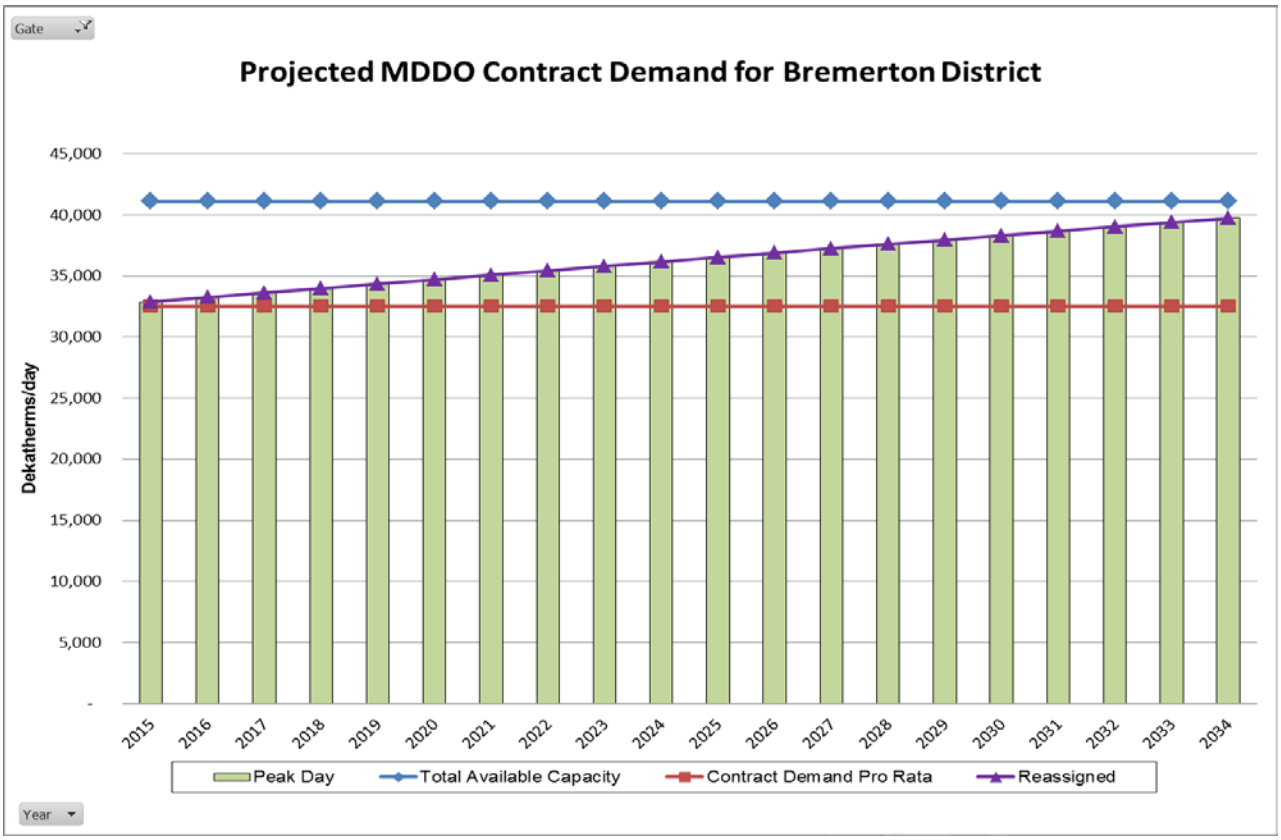
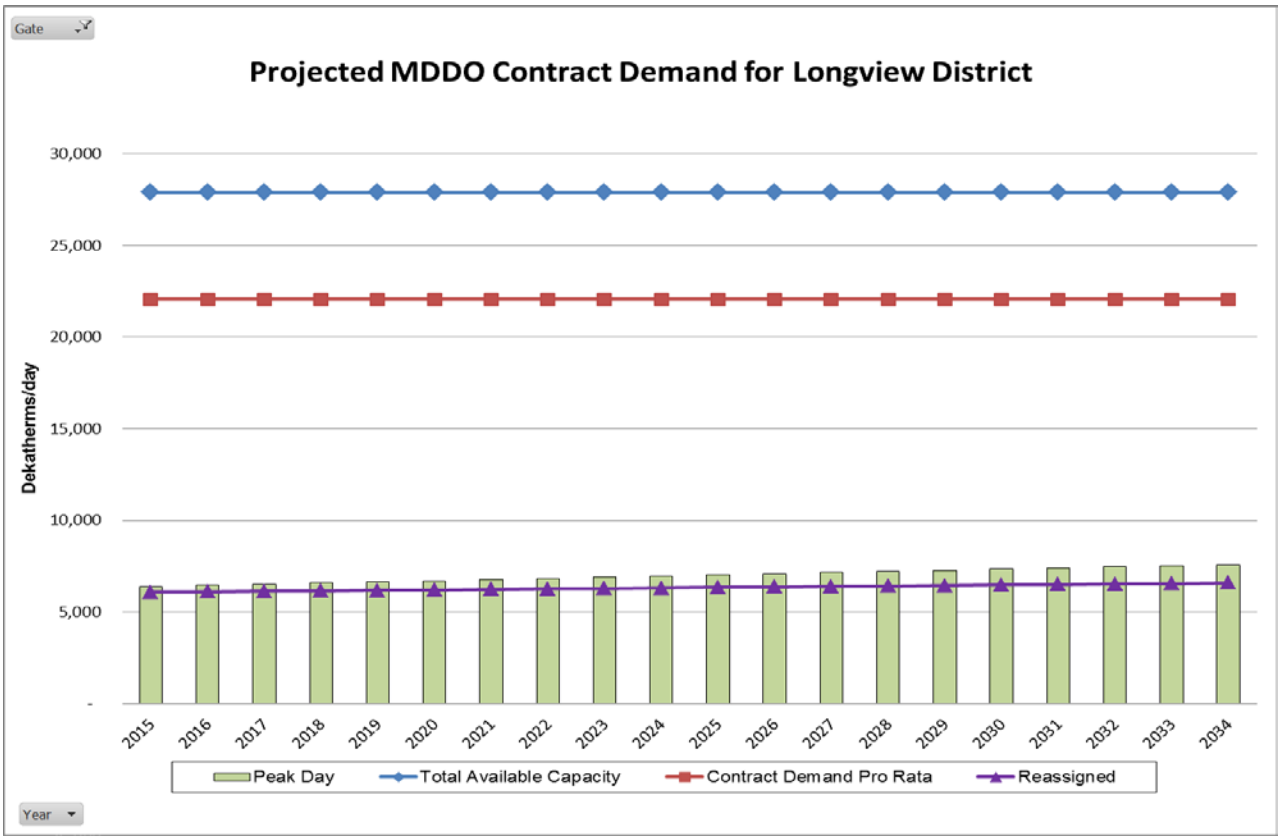
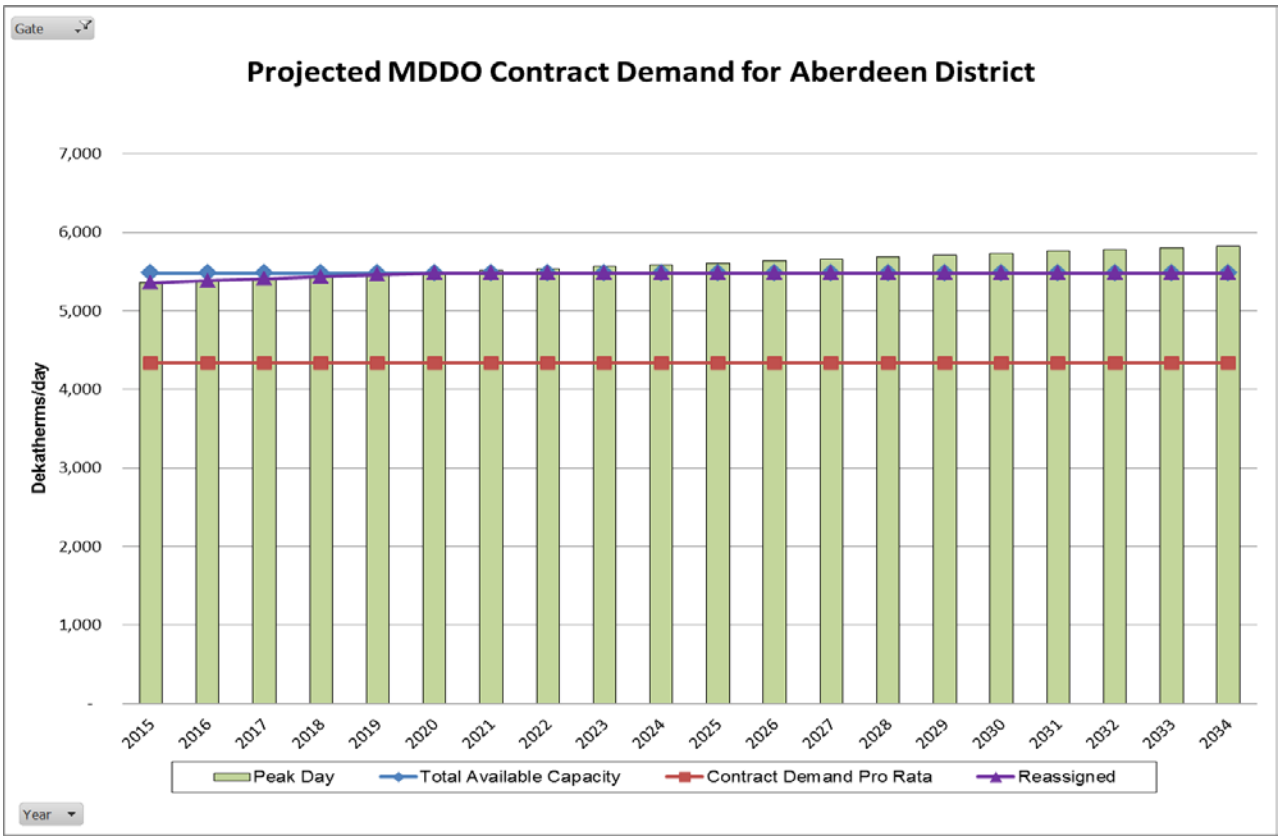
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Mount Vernon District
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Bremerton District
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Longview District
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Aberdeen District
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
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2029
2030
2031
2032
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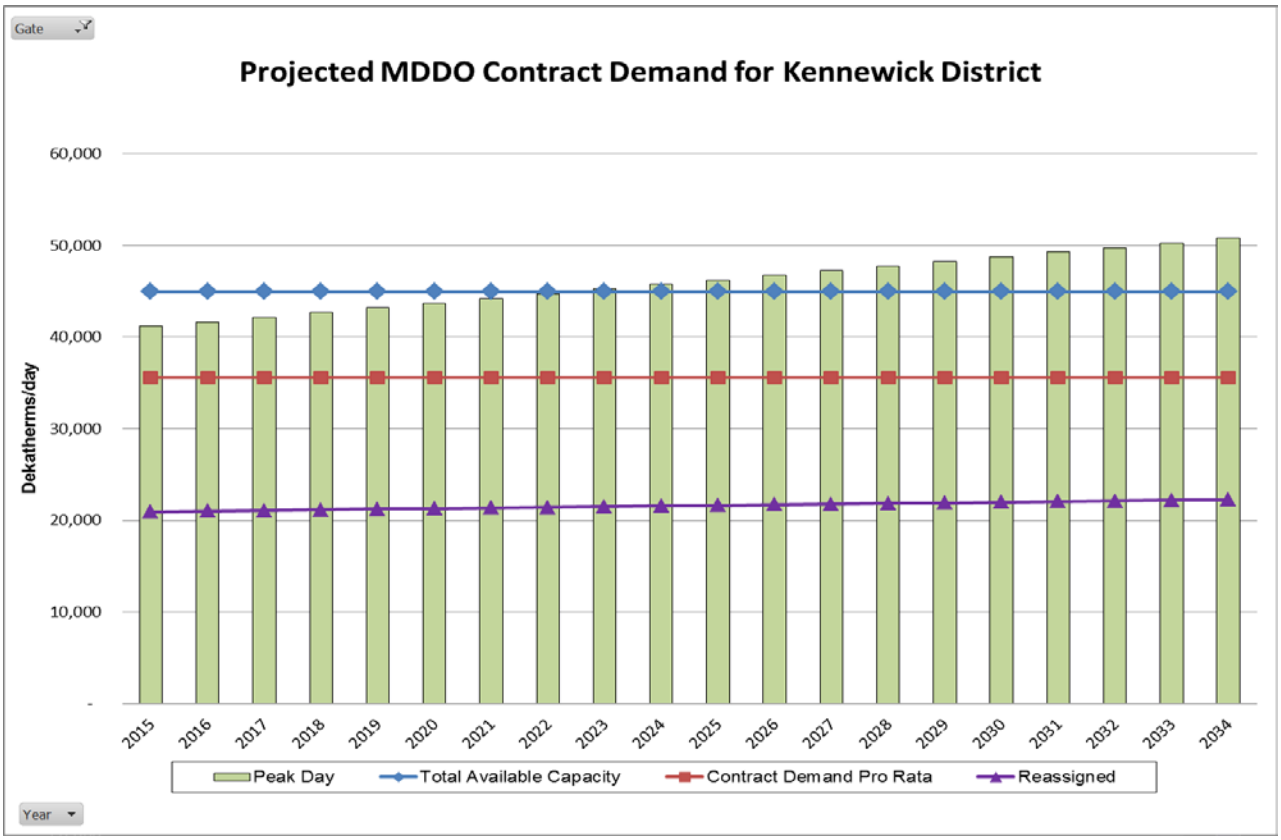
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Kennewick District
60,000
50,000
40,000
30,000
20,000
10,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
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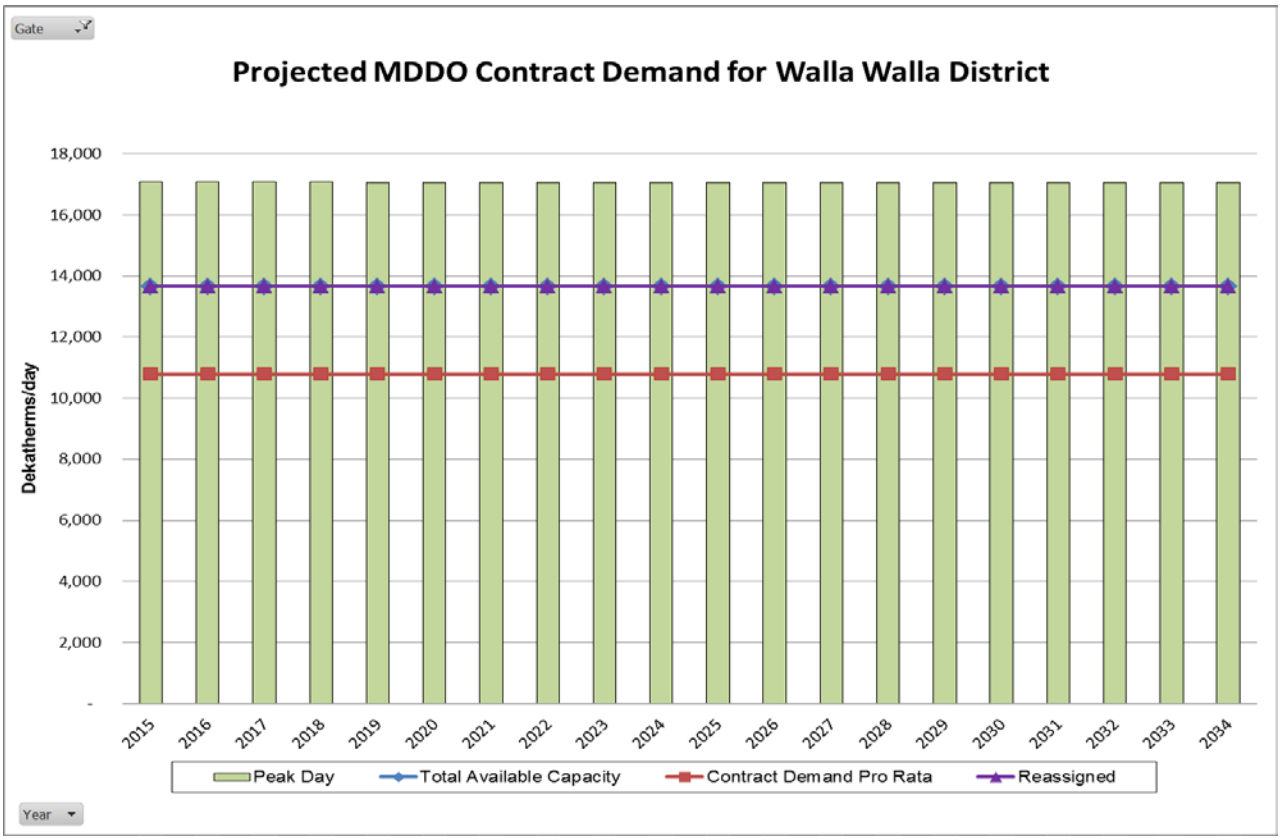
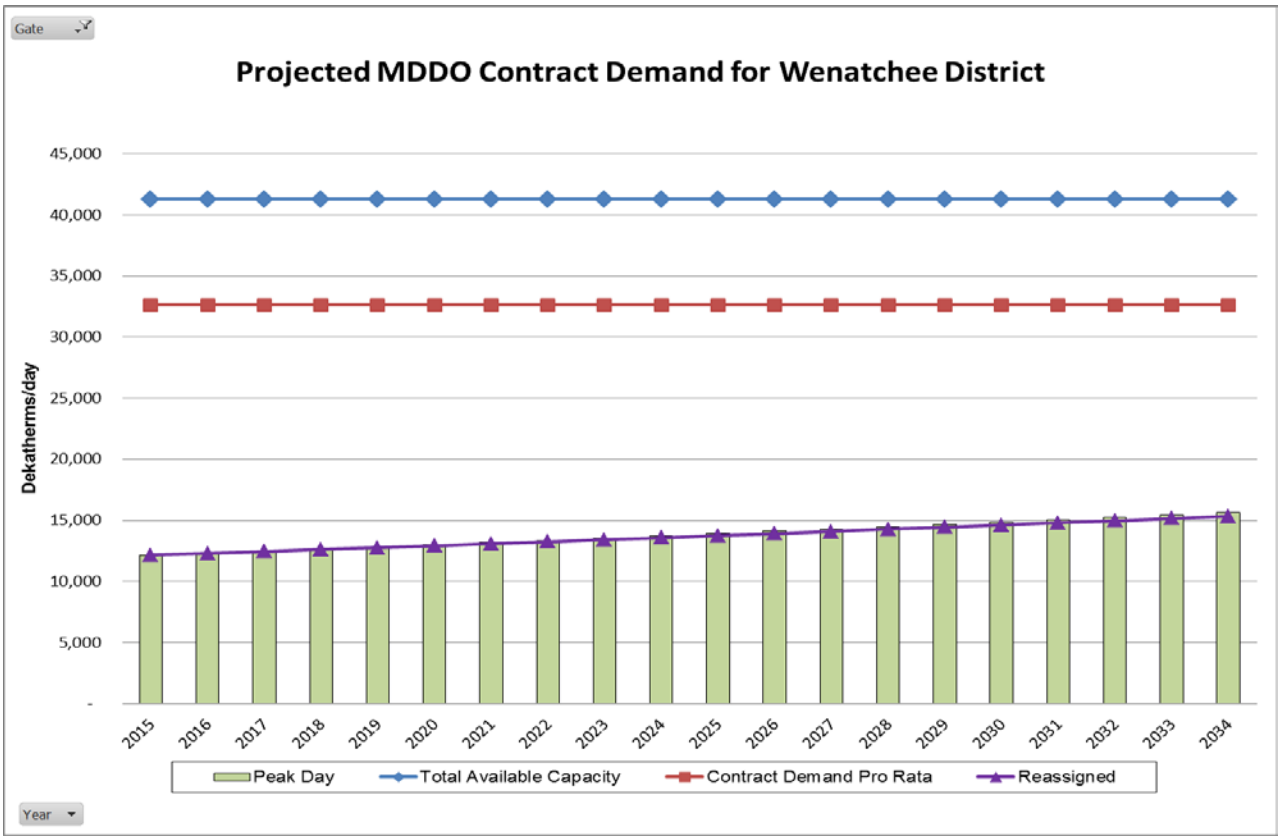
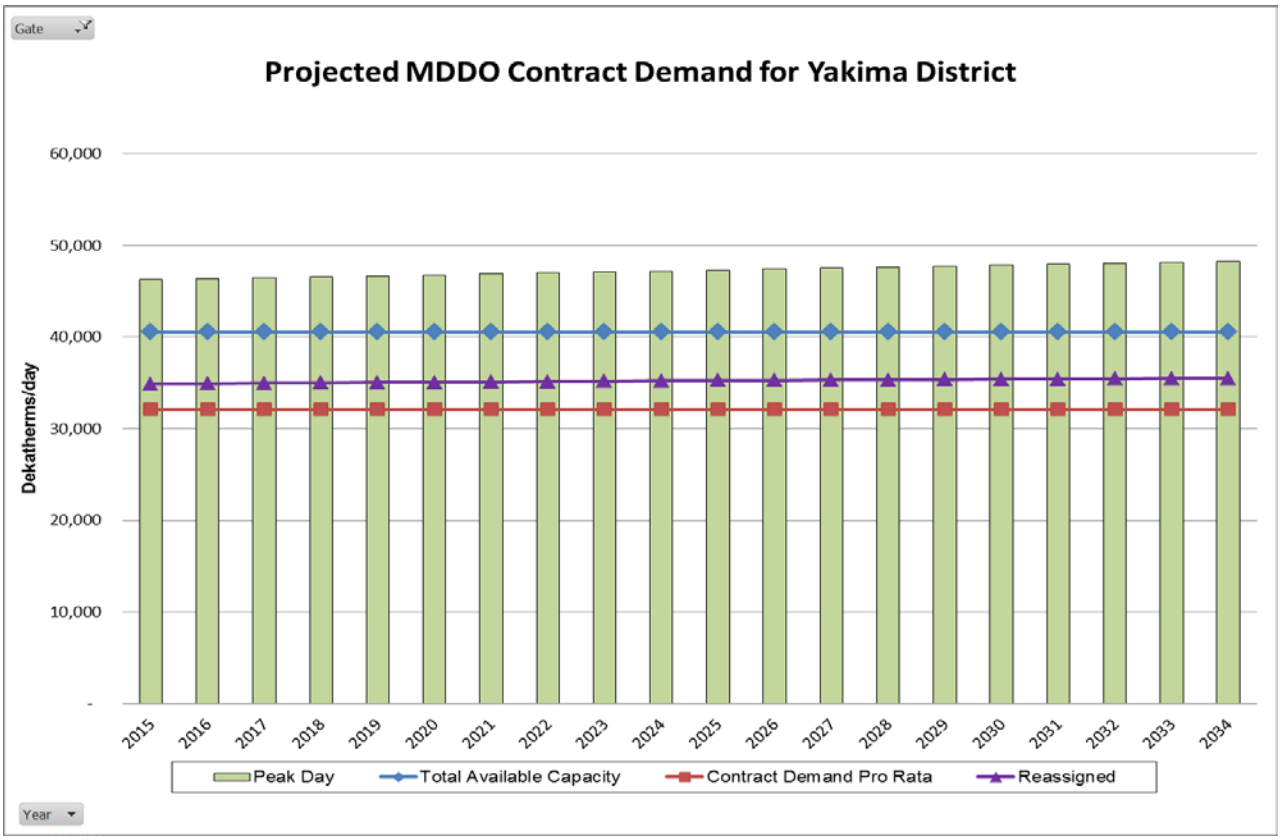
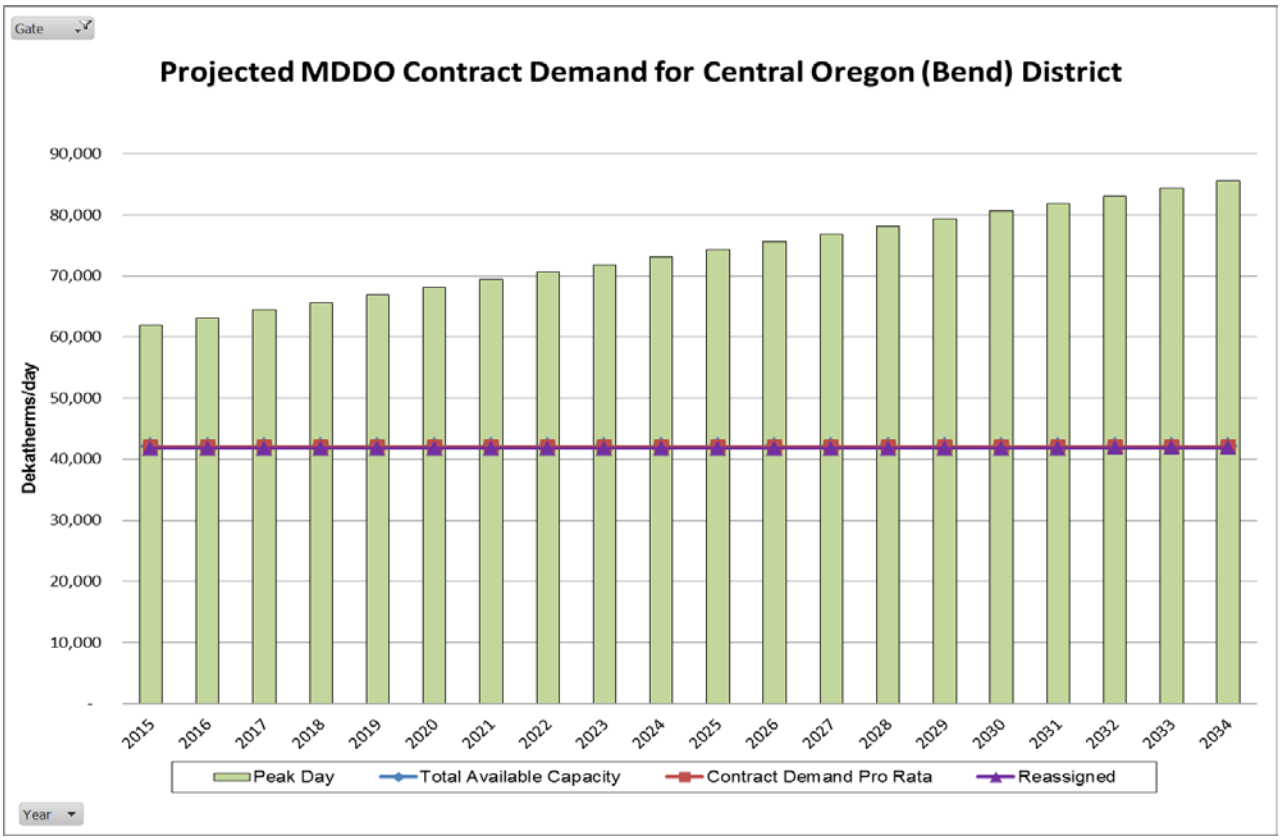
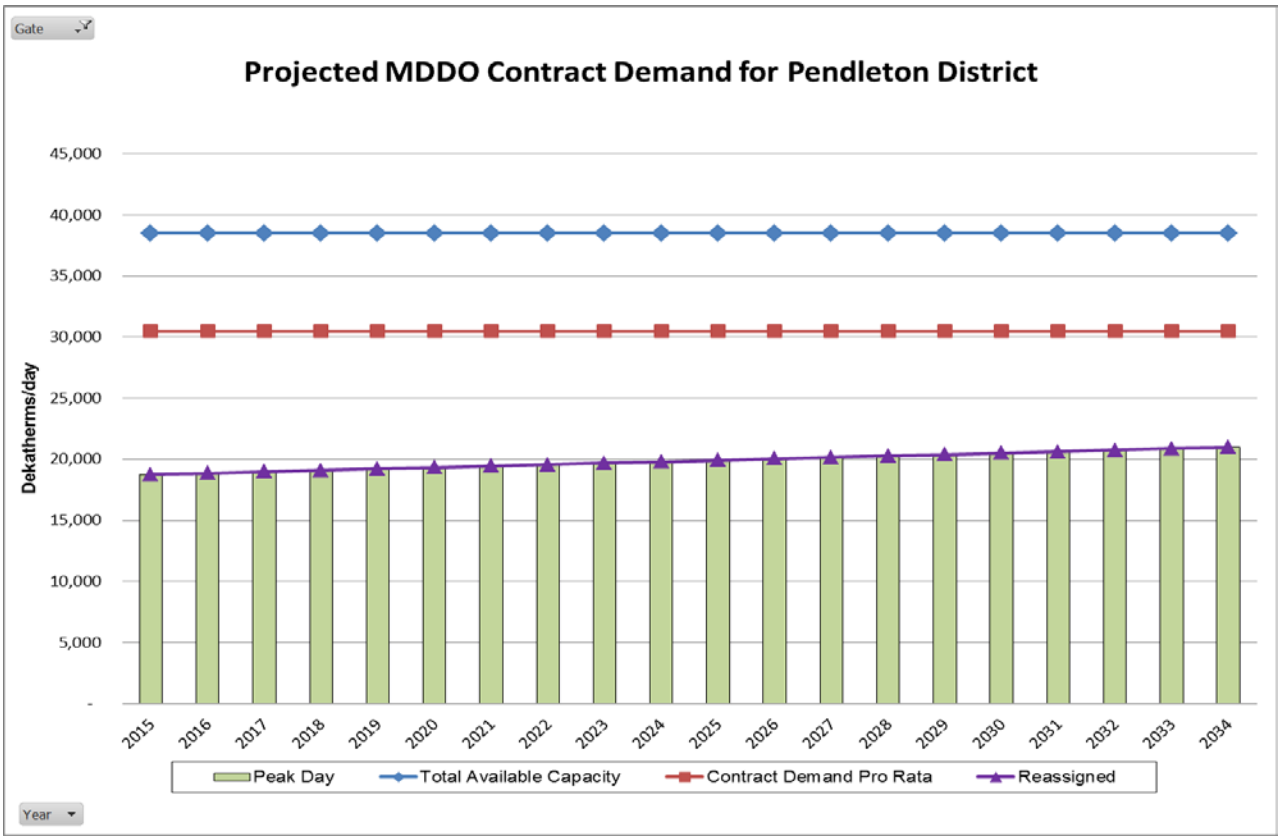
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

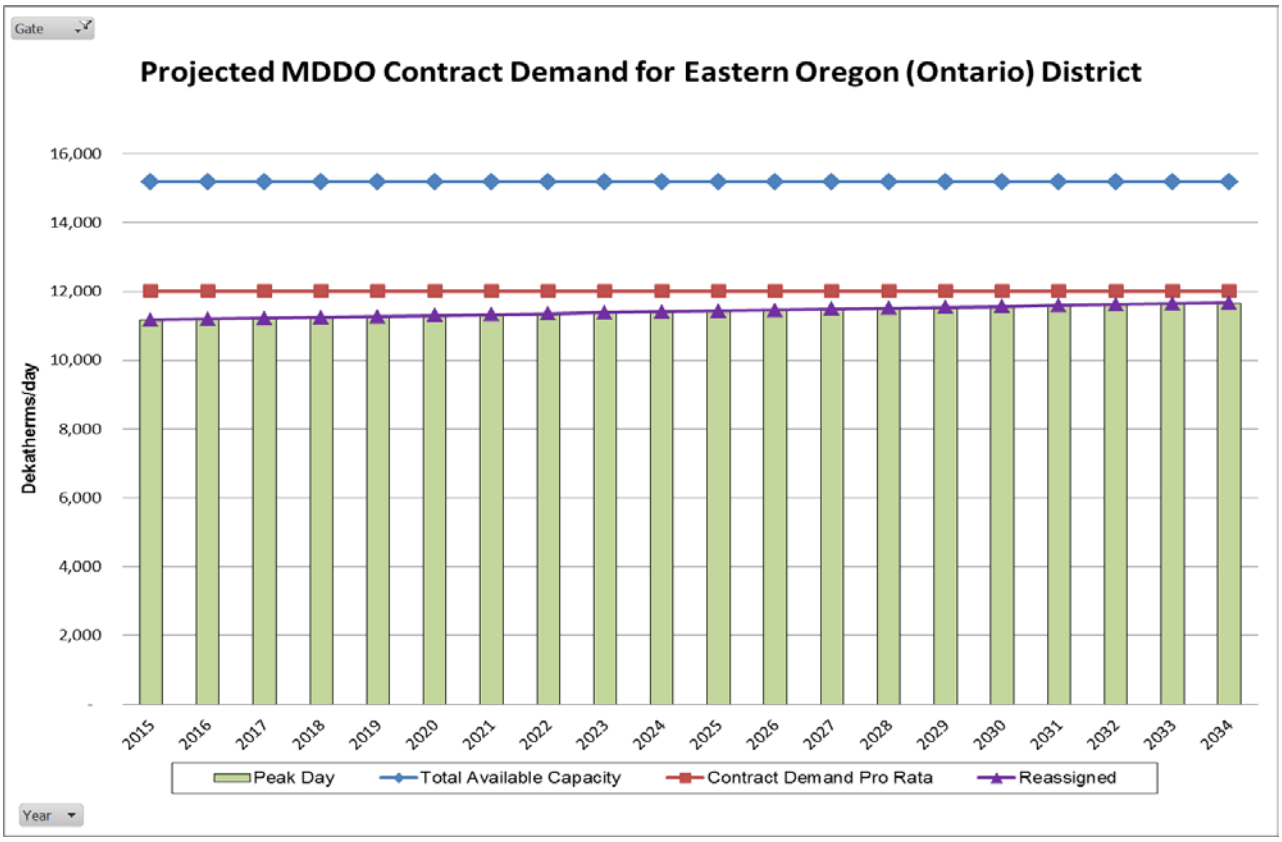

Gate
Projected MDDO Contract Demand for Walla Walla District
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

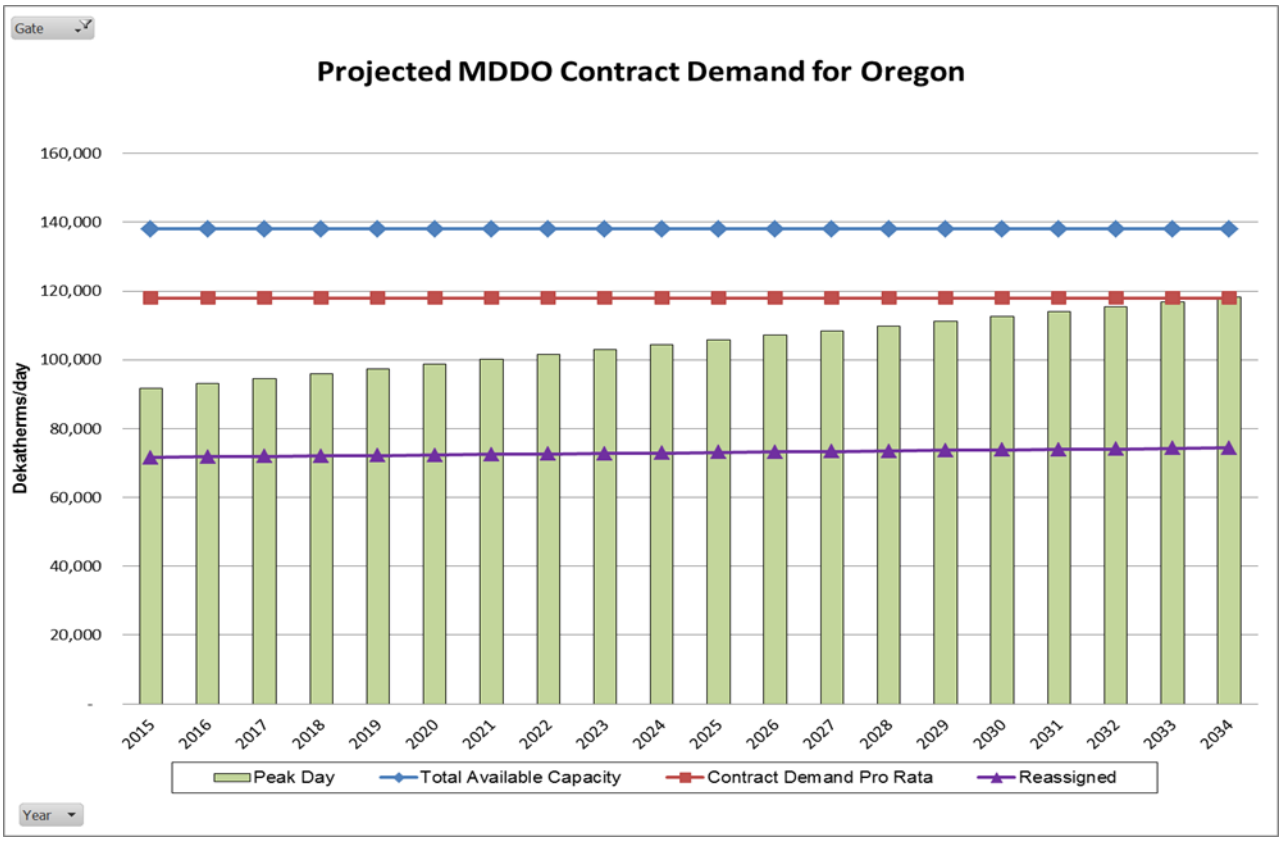

Gate
Projected MDDO Contract Demand for Wenatchee District
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

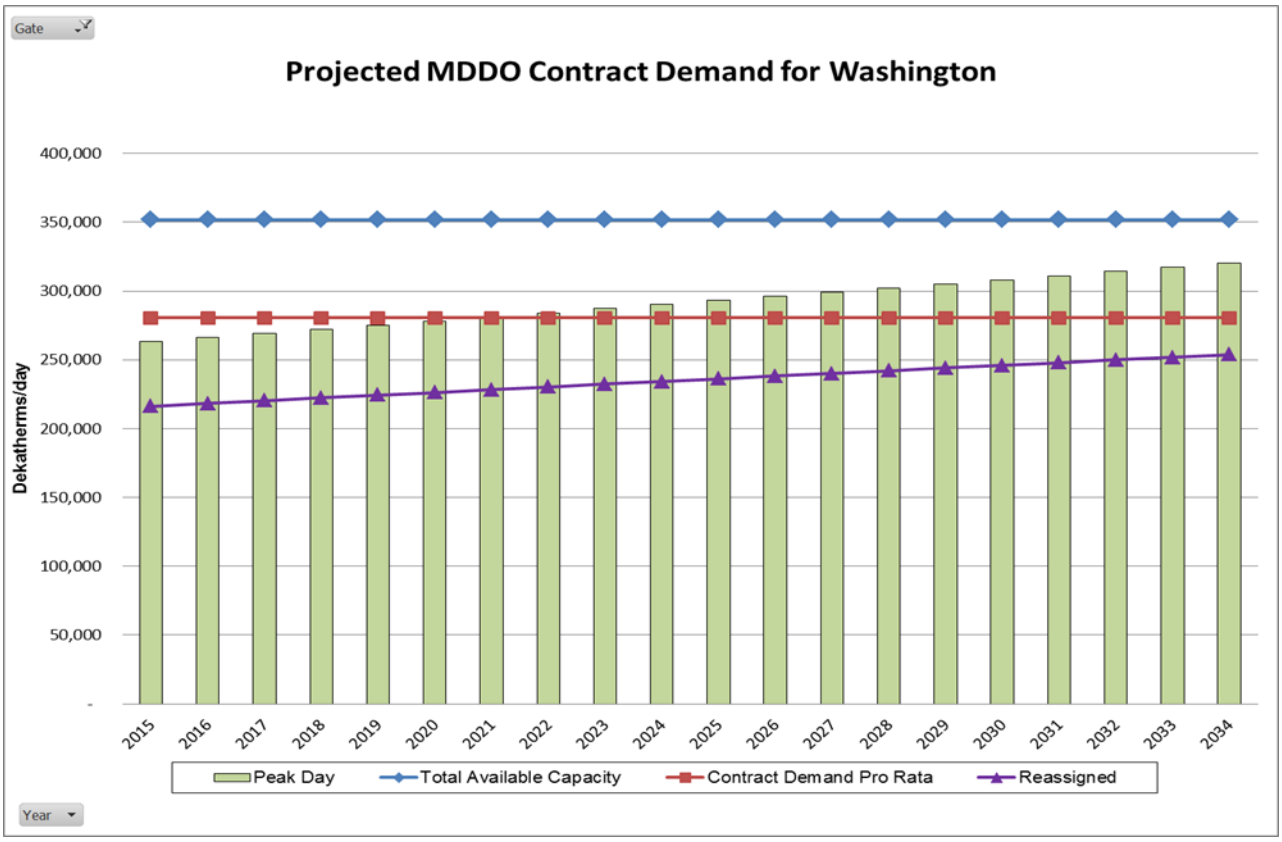

Gate
Projected MDDO Contract Demand for Yakima District
60,000
50,000
40,000
30,000
20,000
10,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

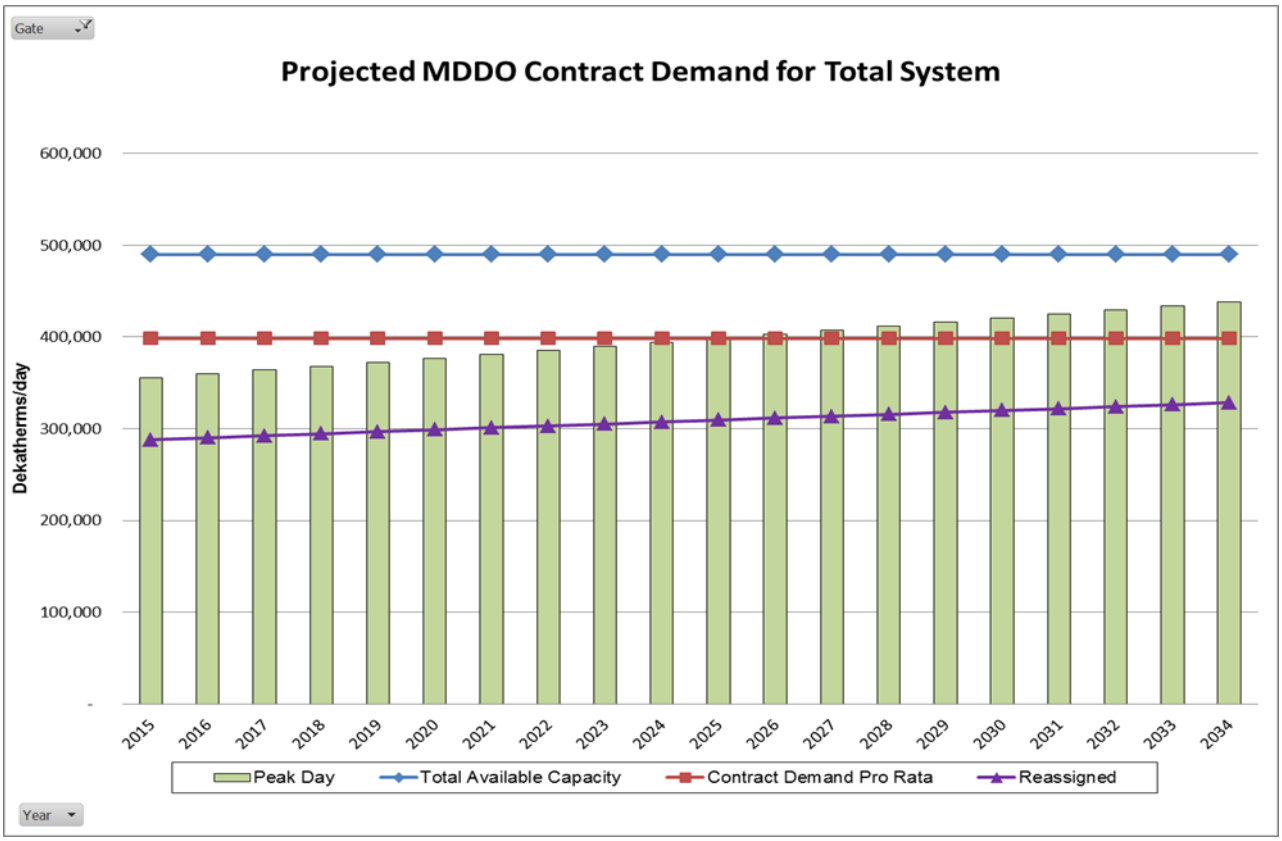

Gate
Projected MDDO Contract Demand for Central Oregon (Bend) District
Dekatherms/day
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Pendleton District
Dekatherms/day
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

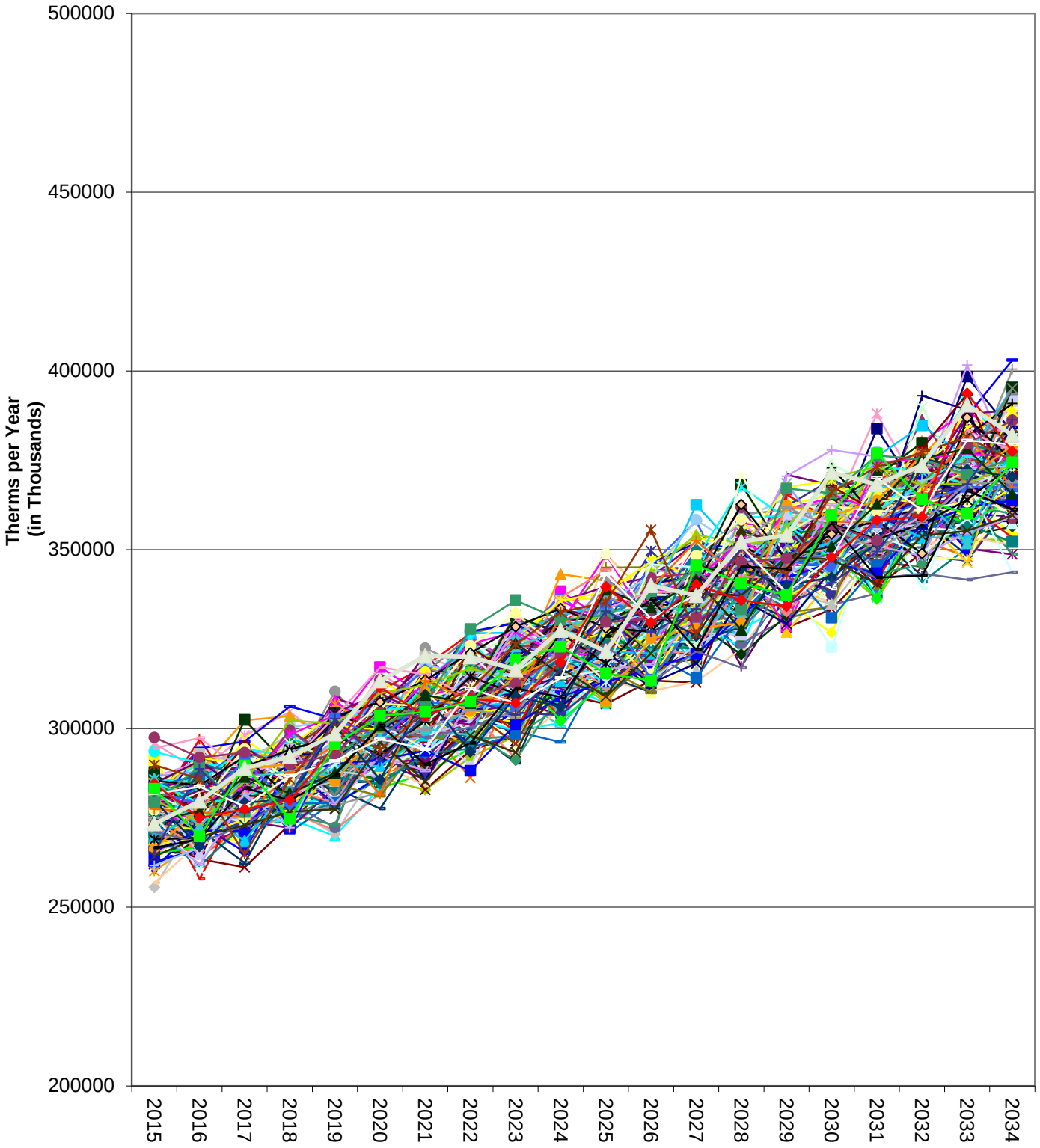

Gate
Projected MDDO Contract Demand for Eastern Oregon (Ontario) District
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Oregon
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Dekatherms/day
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Washington
Dekatherms/day
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year


Gate
Projected MDDO Contract Demand for Total System
Dekatherms/day
600,000
500,000
400,000
300,000
200,000
100,000
-
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Peak Day
Total Available Capacity
Contract Demand Pro Rata
Reassigned
Year

G -1 Monte-Carlo Simulation Results - Total System Demand
Medium Growth Forecast



	2015	2016	2017	2018	2019	2020	2021
High Growth-Cold Weather	292,700	295,598	300,404	305,013	314,640	319,673	328,127
HighGrowth-Avg weather	300,762	304,145	309,251	315,437	322,849	330,266	336,808
Medium 95%-Max	290,875	293,258	296,818	300,288	308,677	312,778	319,838
Medium-Avg Weather	298,887	301,736	305,560	310,551	316,731	323,142	328,301
Medium expected high	283,426	285,408	289,274	293,186	300,319	305,114	311,487
Medium Load-Expected	275,978	277,559	281,731	286,083	291,961	297,451	303,136
Medium Expected Low	268,529	269,710	274,187	278,981	283,603	289,787	294,785
Medium 95%-Min	261,080	261,860	266,644	271,879	275,245	282,124	286,434
Low Growth-Average Weather	295,999	297,532	300,764	305,019	310,410	315,745	320,195
Low Growth-Warm Weather	258,557	258,212	262,458	267,036	269,752	275,665	279,362

	2022	2023	2024	2025	2026	2027	2028
High Growth-Cold Weather	333,669	342,345	348,307	356,104	362,002	371,354	378,443
HighGrowth-Avg weather	343,372	350,965	358,509	365,246	371,740	379,756	389,006
Medium 95%-Max	324,395	331,784	336,518	342,564	347,028	354,863	360,916
Medium-Avg Weather	333,829	340,139	346,374	351,358	356,364	362,891	370,990
Medium expected high	316,129	322,403	328,008	333,479	338,003	345,264	351,468
Medium Load-Expected	307,863	313,022	319,498	324,395	328,977	335,665	342,021
Medium Expected Low	299,596	303,641	310,988	315,311	319,952	326,066	332,574
Medium 95%-Min	291,330	294,261	302,478	306,227	310,926	316,467	323,126
Low Growth-Average Weather	324,613	329,935	335,139	339,527	343,636	349,069	355,531
Low Growth-Warm Weather	283,287	285,433	292,666	295,916	299,821	304,413	309,662

	2029	2030	2031	2032	2033	2034
High Growth-Cold Weather	384,133	392,722	401,075	406,622	416,890	423,220
HighGrowth-Avg weather	396,263	403,745	412,136	419,888	427,466	435,251
Medium 95%-Max	364,583	371,290	377,696	381,831	389,897	394,314
Medium-Avg Weather	376,096	381,712	388,112	394,288	399,789	405,524
Medium expected high	355,953	361,718	368,283	372,413	379,246	383,754
Medium Load-Expected	347,323	352,146	358,871	362,995	368,594	373,194
Medium Expected Low	338,694	342,573	349,458	353,577	357,943	362,634
Medium 95%-Min	330,064	333,001	340,046	344,159	347,292	352,073
Low Growth-Average Weather	360,120	364,845	370,297	375,105	379,687	384,367
Low Growth-Warm Weather	316,044	318,287	324,436	327,415	329,830	333,705

Draw	2015	2016	2017	2018	2019	2020	2021	2022
1	276,340	275,640	286,115	295,397	289,616	295,181	308,818	324,184
2	283,083	279,704	289,104	288,425	289,634	305,602	316,851	316,888
3	281,654	290,461	271,985	288,235	287,667	309,340	310,962	300,410
4	272,344	269,349	275,702	286,974	290,248	288,696	301,997	314,876
5	271,072	278,572	270,445	280,125	299,996	294,823	294,219	308,235
6	280,888	275,571	289,455	288,373	286,839	300,518	296,062	306,354
7	274,580	274,799	272,871	286,726	284,069	303,879	290,614	301,434
8	268,526	268,711	284,189	275,896	285,770	297,817	298,142	303,091
9	271,343	275,129	275,326	285,854	283,817	296,578	307,141	314,339
10	266,391	273,081	276,841	285,759	303,783	294,987	301,327	296,887
11	274,977	266,858	279,884	275,548	284,468	293,516	285,560	310,308
12	282,095	279,788	280,700	280,280	290,751	296,063	304,058	297,240
13	295,870	287,985	298,058	304,605	295,079	315,349	307,391	318,239
14	274,150	279,947	270,157	292,189	288,089	294,018	316,036	304,332
15	283,575	280,742	285,157	288,068	288,807	298,499	300,987	302,156
16	273,256	277,001	275,266	275,679	295,780	290,375	306,643	299,929
17	276,274	273,804	284,540	273,037	280,756	295,963	291,390	307,334
18	276,078	277,581	271,364	283,040	278,828	286,119	282,836	292,025
19	276,139	289,174	294,465	289,830	298,249	297,408	296,434	314,367
20	277,045	288,062	302,241	303,450	296,747	291,055	312,266	318,158
21	280,879	274,724	279,239	277,454	297,389	301,066	300,838	286,186
22	270,853	276,974	283,450	292,108	284,877	289,801	306,791	305,970
23	276,034	283,339	285,493	287,029	310,403	296,325	322,472	316,480
24	277,761	272,892	276,875	284,695	286,253	292,791	303,049	300,309
25	269,393	283,940	273,123	274,113	289,434	303,446	292,907	308,077
26	261,602	281,590	271,634	288,928	291,713	304,447	301,469	303,470
27	277,875	282,541	271,587	292,697	306,688	300,229	311,221	304,555
28	266,595	274,401	290,757	286,118	295,745	305,787	308,384	305,942
29	280,665	281,591	285,914	291,686	301,684	306,916	316,261	315,046
30	264,683	284,708	284,974	275,302	295,234	286,160	298,935	307,631
31	274,487	272,487	280,170	288,639	289,885	302,555	308,862	311,632
32	277,117	277,668	270,690	289,584	288,253	291,032	300,314	313,715
33	277,567	296,958	279,135	280,854	302,902	310,556	317,427	326,563
34	274,469	271,148	288,399	288,209	290,601	283,332	287,507	294,487
35	270,462	285,820	276,134	293,437	299,293	302,397	297,692	306,241
36	278,530	268,674	269,060	288,539	289,578	298,767	297,832	301,307
37	283,580	280,814	281,721	292,306	300,625	317,155	309,021	302,092
38	284,607	278,429	272,457	274,725	269,926	283,486	302,935	307,194
39	269,014	263,509	261,181	273,198	287,017	297,294	282,876	293,850
40	278,187	272,340	277,022	283,045	278,344	297,308	303,449	318,547
41	265,794	264,792	289,217	283,300	299,037	290,648	292,472	307,039
42	281,486	292,142	286,970	291,860	302,304	304,138	304,342	326,475
43	280,847	294,342	281,873	286,053	308,475	304,326	320,554	308,471
44	278,231	273,686	284,408	287,875	289,213	311,302	303,867	316,632
45	255,563	275,951	278,257	277,958	270,433	289,697	293,359	302,445
46	273,373	270,812	291,567	293,251	297,415	291,588	288,189	298,850
47	266,171	275,301	291,313	297,540	284,293	307,108	300,600	301,957
48	280,945	279,214	280,019	282,713	296,152	299,620	305,709	307,551
49	277,287	283,265	279,666	299,047	301,833	299,741	316,273	300,914
50	287,611	269,329	276,705	289,156	299,893	288,135	305,279	297,615
51	266,805	278,989	274,414	286,966	283,465	290,602	285,783	302,311
52	270,326	262,359	280,138	276,537	271,520	281,893	301,018	304,350
53	265,380	272,085	286,315	271,140	279,545	306,165	305,228	302,603

Draw	2015	2016	2017	2018	2019	2020	2021	2022
54	279,637	276,173	285,122	282,876	284,261	301,518	301,761	289,504
55	286,629	282,419	293,268	287,653	287,360	300,968	300,906	305,964
56	274,960	277,598	286,601	278,819	292,433	292,935	307,631	305,596
57	279,376	279,856	297,043	288,173	296,000	313,048	307,407	311,335
58	267,226	266,096	282,813	280,252	291,144	298,132	294,599	302,905
59	288,066	266,520	272,328	282,409	304,587	294,467	298,190	315,904
60	283,989	263,342	290,560	289,309	290,343	298,147	290,318	302,121
61	273,652	289,725	279,165	284,340	290,487	298,160	309,606	295,997
62	275,586	294,412	296,356	306,121	302,645	304,984	310,232	327,108
63	278,058	279,088	279,977	288,227	284,833	294,589	310,840	305,455
64	265,022	285,216	283,192	284,609	285,824	300,875	302,468	309,927
65	282,693	278,823	276,840	283,321	301,504	292,592	311,055	319,741
66	273,076	279,879	281,436	283,389	284,837	295,030	313,084	306,610
67	280,121	274,350	279,109	289,685	306,831	303,203	301,638	313,345
68	265,021	274,854	280,345	285,223	290,776	299,927	303,891	305,845
69	286,522	290,630	285,772	286,446	304,289	304,530	306,901	320,132
70	256,869	268,070	267,764	277,528	296,454	290,094	284,053	305,172
71	278,735	289,359	285,332	288,251	298,108	296,797	308,248	318,447
72	269,832	269,599	282,167	285,023	302,011	297,669	293,862	312,255
73	284,678	290,402	281,714	284,549	303,024	290,251	314,991	304,078
74	276,921	274,572	281,111	278,199	293,389	305,685	294,613	309,296
75	262,680	281,055	275,570	293,064	294,858	286,803	300,559	308,926
76	271,410	263,961	273,042	283,007	290,589	287,496	290,414	302,764
77	273,118	272,038	271,501	279,051	272,290	304,772	304,839	300,443
78	283,403	285,872	282,223	295,122	287,974	294,867	317,253	312,672
79	264,755	274,190	282,905	284,775	283,378	277,567	297,194	299,800
80	280,572	269,638	277,107	275,885	272,985	303,686	298,049	296,820
81	261,629	269,329	282,074	280,636	282,678	289,265	290,181	302,935
82	278,053	276,695	282,088	294,117	291,196	285,093	302,949	314,034
83	279,595	273,746	289,051	294,199	302,541	290,424	305,115	321,823
84	273,316	280,617	277,697	290,293	277,557	302,427	311,053	308,910
85	277,133	276,573	281,512	292,292	289,424	290,494	312,732	314,302
86	266,423	280,196	269,862	280,827	285,143	285,093	304,442	295,836
87	266,218	262,884	284,455	276,345	284,941	294,784	297,713	310,466
88	281,617	257,967	281,332	287,592	305,407	288,657	309,308	303,552
89	276,256	281,886	272,899	277,502	280,398	290,074	312,221	308,045
90	271,283	282,279	284,081	278,247	290,425	303,449	303,915	313,503
91	290,977	273,564	287,181	299,089	288,500	304,666	297,611	303,773
92	285,856	283,495	282,182	283,453	307,749	298,579	296,357	315,271
93	272,441	277,937	281,172	278,369	281,088	298,567	293,467	302,412
94	276,612	283,081	283,996	282,765	296,538	289,373	290,736	301,520
95	279,419	274,669	286,484	290,490	291,583	308,063	306,612	298,418
96	282,183	274,551	269,548	288,746	283,888	294,376	301,935	311,360
97	276,557	279,432	281,801	290,331	300,912	287,879	297,293	307,446
98	274,389	279,632	291,368	284,706	301,827	295,446	303,485	325,548
99	280,791	267,412	289,754	274,391	279,475	285,787	291,656	297,614
100	279,372	292,942	290,188	298,550	292,169	297,259	319,816	315,973
101	268,576	274,478	284,511	296,385	294,957	298,187	315,654	325,864
102	286,610	287,992	283,710	286,253	293,809	285,206	307,216	306,598
103	278,736	280,011	287,500	285,648	284,112	295,956	298,516	311,541
104	273,392	276,914	273,765	286,681	288,566	309,253	311,842	308,098
105	280,058	275,027	280,703	281,173	287,149	302,530	296,419	308,081
106	276,589	289,346	288,400	284,992	295,816	306,706	318,085	296,154

Draw	2015	2016	2017	2018	2019	2020	2021	2022
107	278,301	288,469	287,957	295,579	291,478	310,658	309,553	318,793
108	276,944	279,666	285,931	295,145	291,942	298,726	312,651	300,658
109	279,067	280,582	268,670	300,048	286,333	301,063	292,964	308,021
110	269,428	285,395	282,199	282,532	279,001	297,626	299,329	311,919
111	280,062	275,040	280,905	289,770	299,357	299,975	306,658	310,987
112	282,323	291,854	289,910	294,596	304,730	299,769	313,043	308,591
113	293,503	290,300	288,781	277,620	303,710	303,937	311,711	311,428
114	274,187	288,981	289,068	286,812	304,135	310,008	299,835	317,191
115	276,219	271,327	274,483	279,994	294,958	290,115	288,137	301,560
116	270,836	261,616	273,175	282,485	278,539	298,336	307,201	314,907
117	260,802	273,235	265,511	289,843	278,523	286,887	302,624	296,320
118	282,835	273,118	286,233	297,561	291,541	311,213	305,093	326,615
119	277,168	275,739	278,811	286,670	294,319	294,579	307,121	303,622
120	281,713	285,426	273,075	295,724	291,521	299,836	299,433	320,627
121	261,467	281,912	273,442	287,649	284,629	285,449	297,018	306,232
122	280,797	276,954	277,906	300,201	302,707	303,953	318,043	314,364
123	263,559	278,424	283,564	292,206	295,648	298,987	298,574	302,209
124	268,895	269,553	281,151	277,459	292,352	289,912	305,592	308,923
125	278,135	279,453	279,737	295,191	293,484	297,716	316,348	304,775
126	276,387	285,498	294,872	287,119	282,770	306,234	316,542	300,147
127	271,780	284,290	291,776	292,562	295,631	295,276	310,637	305,496
128	284,164	279,119	289,582	290,975	294,112	295,356	302,755	321,500
129	267,919	270,880	278,038	274,362	289,357	306,003	300,706	295,303
130	260,120	268,920	279,279	278,195	306,781	298,875	306,458	318,918
131	273,001	277,379	278,248	277,769	296,632	298,261	292,885	316,706
132	271,342	274,175	283,231	299,521	289,727	306,053	308,687	296,943
133	276,430	287,047	271,226	275,854	278,284	282,325	297,755	306,801
134	269,825	271,792	262,382	285,414	284,483	285,462	306,023	312,022
135	281,673	285,633	283,158	275,274	280,991	299,312	297,522	298,664
136	287,801	274,061	302,395	288,986	304,420	299,529	300,145	310,328
137	276,108	266,296	287,003	291,884	281,586	300,253	300,485	309,901
138	282,492	287,328	277,722	290,116	298,228	299,905	309,989	304,990
139	267,832	282,901	277,471	286,250	302,688	291,338	297,281	301,764
140	266,148	269,047	273,957	280,410	287,985	291,687	287,017	300,788
141	278,807	275,914	290,460	283,690	304,555	298,505	313,336	308,673
142	284,970	284,153	292,897	284,431	295,157	295,665	310,454	298,134
143	280,681	283,973	282,875	279,189	288,129	297,622	297,580	308,360
144	265,110	266,863	286,253	274,549	291,659	301,546	310,909	316,336
145	262,831	266,184	293,534	271,933	296,252	298,218	305,090	307,400
146	272,837	271,808	287,081	277,970	293,102	288,407	298,756	306,064
147	273,920	276,216	273,184	284,936	298,706	294,841	308,958	312,177
148	285,771	285,028	294,399	292,093	297,843	298,412	312,410	325,070
149	279,169	280,877	295,078	285,043	302,890	291,839	303,194	304,271
150	282,019	285,681	275,344	297,012	288,939	285,401	304,481	310,167
151	275,216	271,925	286,703	293,092	292,187	298,626	310,175	304,493
152	270,439	267,583	286,317	289,876	284,471	281,094	297,846	295,911
153	284,366	284,311	274,117	272,210	283,209	290,202	291,499	304,712
154	269,335	290,241	286,876	293,008	282,248	296,667	309,521	318,790
155	276,260	276,012	274,335	281,817	285,273	293,902	305,582	302,293
156	270,001	275,724	281,206	286,095	281,439	303,193	306,147	307,265
157	279,281	270,905	276,000	283,142	297,800	295,452	297,822	308,925
158	280,086	274,212	283,660	299,563	291,015	313,700	309,187	314,048
159	276,536	282,396	286,407	287,324	297,507	291,920	308,276	312,159

Draw	2015	2016	2017	2018	2019	2020	2021	2022
160	279,611	274,217	290,663	288,932	280,460	289,791	293,492	301,318
161	284,667	290,947	282,085	286,344	290,953	301,005	303,793	301,680
162	274,727	265,793	281,982	283,063	279,139	299,495	300,120	308,107
163	283,655	287,174	268,236	279,005	279,168	294,640	306,305	294,712
164	281,494	264,883	288,281	291,692	288,023	286,653	297,933	301,908
165	280,418	270,822	284,023	289,591	302,732	307,768	285,165	309,966
166	280,291	279,229	283,424	298,330	303,651	301,519	312,796	323,683
167	267,363	269,896	274,626	290,544	300,810	299,741	315,777	304,337
168	285,250	279,094	280,662	286,094	295,551	304,850	306,631	307,177
169	277,532	282,793	288,436	286,055	291,709	309,981	303,168	301,033
170	282,099	277,353	281,255	280,566	294,705	305,332	296,541	322,791
171	275,958	283,975	278,916	282,901	286,430	284,532	292,927	294,327
172	265,652	271,448	271,295	287,627	290,090	291,249	293,744	288,177
173	269,691	276,310	268,631	284,002	289,562	289,522	297,963	305,560
174	275,680	260,614	292,619	284,807	289,826	301,074	294,266	320,832
175	281,311	276,054	273,941	295,793	291,353	294,562	301,629	311,519
176	277,128	278,137	294,221	285,504	296,102	306,910	306,237	323,132
177	261,646	266,698	281,626	272,216	298,678	293,237	303,655	315,679
178	294,396	297,349	287,856	290,365	303,229	317,093	315,108	308,504
179	272,255	261,980	280,194	295,448	279,033	292,285	288,217	308,039
180	285,364	284,087	292,117	280,662	303,381	307,347	313,517	321,046
181	282,377	278,972	290,933	278,760	302,803	297,374	307,477	306,183
182	285,968	272,437	286,431	287,993	286,934	297,362	299,903	298,074
183	279,921	273,900	285,145	302,172	301,383	309,910	312,177	316,775
184	268,937	269,420	289,293	294,062	297,887	292,599	302,193	314,523
185	266,269	277,627	288,874	289,967	285,304	299,968	309,827	304,809
186	277,447	276,573	275,196	287,673	295,300	281,552	313,337	308,113
187	271,125	268,000	272,959	280,815	290,814	300,620	297,440	300,290
188	274,574	279,024	276,005	283,226	301,379	296,097	299,746	305,266
189	279,755	266,966	279,267	280,176	300,858	285,650	309,446	293,432
190	279,220	289,387	276,642	282,016	292,636	300,388	306,944	327,834
191	274,217	276,798	286,412	281,927	287,542	300,721	309,344	307,027
192	264,185	269,693	272,907	276,644	277,380	296,003	285,251	297,977
193	289,825	285,928	264,749	285,838	300,364	294,087	304,775	310,900
194	297,479	291,880	293,259	289,875	292,833	304,414	303,357	308,779
195	265,141	288,663	276,502	280,840	302,670	290,846	303,841	308,294
196	266,650	269,009	283,355	279,873	286,957	300,755	289,980	295,944
197	281,778	283,706	278,219	286,808	290,919	297,018	294,207	311,139
198	284,543	274,930	277,377	279,983	295,237	311,473	303,536	308,329
199	283,132	269,779	289,652	274,719	295,542	303,542	304,630	307,507
200	273,345	279,677	288,910	292,107	298,456	313,358	320,248	320,006
Max	297,479	297,349	302,395	306,121	310,403	317,155	322,472	327,834
Min	255,563	257,967	261,181	271,140	269,926	277,567	282,836	286,186
Average	275,978	277,559	281,731	286,083	291,961	297,451	303,136	307,863

Draw	2023	2024	2025	2026	2027	2028	2029	2030
1	319,443	338,398	330,023	335,261	348,983	357,204	357,271	360,215
2	305,041	333,962	326,384	341,878	345,113	337,264	353,073	357,563
3	327,157	306,842	318,836	335,929	318,259	343,017	349,363	356,565
4	326,375	332,152	318,272	337,435	345,105	353,076	345,474	346,204
5	316,368	318,991	320,907	335,281	330,522	343,201	335,207	345,666
6	317,492	304,413	321,937	334,674	326,532	346,482	334,960	349,209
7	310,930	316,829	329,348	333,651	319,774	343,178	342,092	343,271
8	315,804	322,128	306,892	332,011	317,611	342,763	341,346	353,523
9	307,553	312,627	321,718	341,206	337,857	346,135	347,036	357,559
10	325,734	306,882	315,945	321,205	338,552	342,906	351,532	369,543
11	299,069	311,428	316,421	310,078	318,485	342,075	341,765	338,682
12	323,301	315,923	330,643	326,190	337,319	358,476	364,507	343,084
13	319,668	332,573	330,151	337,516	346,730	358,058	345,942	359,521
14	312,474	325,109	307,846	337,652	338,726	345,635	347,978	342,676
15	332,717	311,086	348,605	336,281	328,038	349,302	345,436	359,574
16	300,454	312,520	341,686	334,161	330,389	341,763	350,517	344,902
17	309,194	300,563	315,452	317,155	326,358	328,355	351,746	337,406
18	297,913	314,984	309,960	331,366	336,955	343,513	340,823	347,100
19	308,337	321,788	326,205	323,307	330,692	334,204	339,369	361,403
20	313,743	343,152	341,317	321,727	342,545	352,508	353,603	363,944
21	313,026	304,392	313,237	337,502	325,484	330,978	353,043	353,434
22	302,907	312,051	318,674	322,725	344,975	332,171	352,919	342,956
23	323,897	322,032	329,341	318,514	338,912	341,871	335,707	360,327
24	302,657	316,091	321,112	328,912	321,827	345,425	351,069	337,281
25	308,933	320,131	310,437	324,548	322,220	327,867	353,605	355,972
26	299,398	316,084	321,350	339,405	346,580	335,494	347,453	356,410
27	312,208	321,543	323,187	328,531	331,385	342,229	345,332	359,652
28	310,142	326,863	316,668	319,849	340,278	342,472	351,177	357,761
29	325,894	319,764	333,053	344,064	345,090	352,075	355,575	349,683
30	308,683	312,541	324,690	333,569	339,661	356,065	350,495	367,669
31	296,449	332,975	315,882	323,288	343,947	330,745	342,373	349,799
32	312,526	307,400	316,524	346,211	348,246	334,354	354,131	354,812
33	302,468	329,680	336,432	334,136	350,819	334,453	365,411	358,121
34	310,359	308,173	314,351	327,033	324,253	339,567	328,397	345,922
35	310,743	319,109	315,504	333,253	330,202	349,536	349,384	343,420
36	313,786	316,745	311,607	334,898	330,048	333,260	335,387	326,795
37	308,593	326,468	319,812	340,117	348,935	346,129	328,322	354,427
38	302,772	312,687	307,049	324,608	336,345	327,816	334,429	344,154
39	298,044	309,681	306,868	313,450	312,849	344,310	328,156	333,376
40	301,609	311,049	313,438	330,853	322,732	344,273	341,391	346,915
41	318,855	327,686	320,998	311,339	330,593	345,409	337,650	357,583
42	329,864	330,269	345,006	345,149	352,995	346,041	357,439	357,637
43	325,845	335,606	339,667	342,372	352,007	339,600	370,960	368,093
44	316,210	333,320	310,911	321,590	351,418	349,075	349,040	345,531
45	303,871	315,347	330,244	321,895	338,014	347,826	347,702	357,716
46	306,732	316,356	323,784	337,422	335,123	342,463	360,606	359,365
47	311,616	321,192	332,591	315,267	352,326	343,421	352,659	346,860
48	323,815	320,722	339,206	330,453	335,156	336,391	349,459	365,389
49	312,426	319,840	331,666	331,788	352,390	340,901	341,268	361,293
50	304,726	321,743	313,756	326,423	347,974	333,110	339,995	348,147
51	312,202	311,935	321,939	322,374	340,326	317,357	337,294	343,094
52	291,676	328,023	321,988	324,078	326,506	340,446	353,500	339,902
53	299,167	296,178	319,124	323,724	334,409	321,450	339,077	355,991

Draw	2023	2024	2025	2026	2027	2028	2029	2030
54	313,216	309,150	322,754	320,596	332,100	347,175	342,551	354,873
55	329,714	327,669	323,200	340,768	342,620	345,290	351,388	351,726
56	311,832	319,673	323,936	331,512	330,525	335,199	351,302	351,952
57	323,933	335,946	336,628	347,260	341,874	355,751	359,301	356,331
58	299,347	301,541	322,048	321,059	329,738	322,691	352,484	340,251
59	312,870	316,674	325,353	334,714	341,597	335,560	344,159	363,538
60	304,409	316,351	327,172	337,648	332,864	351,856	336,565	354,432
61	322,040	304,808	327,615	324,336	350,269	339,957	350,187	363,732
62	329,437	321,853	324,384	346,424	351,829	350,123	355,565	354,421
63	305,176	315,563	334,730	325,305	333,636	325,565	350,439	366,441
64	325,858	314,407	325,774	331,190	350,740	341,148	341,424	322,710
65	316,396	320,282	328,764	328,883	334,414	340,240	342,150	373,881
66	314,962	314,970	326,974	330,337	341,989	344,431	347,511	352,281
67	317,705	328,831	327,774	344,353	342,681	348,170	354,416	362,575
68	315,701	322,557	323,877	322,759	338,592	347,629	355,304	358,325
69	312,706	328,398	339,229	334,077	344,818	345,888	370,566	377,845
70	295,516	305,444	313,648	310,511	313,134	322,217	339,452	335,319
71	324,477	337,131	326,818	345,662	358,067	332,383	341,635	358,922
72	312,977	321,730	325,911	333,648	339,955	340,046	341,168	370,228
73	315,278	316,341	307,292	323,157	342,410	340,757	336,769	342,073
74	326,478	314,797	325,188	341,055	332,582	347,389	326,949	341,569
75	304,522	323,132	317,916	338,713	334,543	342,110	344,429	360,551
76	316,495	314,339	333,900	319,357	329,454	338,992	348,714	344,888
77	307,015	320,487	324,661	326,493	336,872	323,805	330,678	334,605
78	323,434	318,863	326,668	343,783	326,106	359,963	361,077	363,732
79	290,391	319,197	314,935	310,084	330,032	336,733	330,775	353,130
80	298,040	306,066	323,419	327,099	324,919	330,217	339,012	352,682
81	301,382	310,813	314,349	317,470	329,360	320,685	331,476	350,671
82	299,082	320,396	314,655	317,643	319,410	335,213	351,809	355,843
83	309,299	324,856	328,417	321,717	320,560	352,020	355,264	357,868
84	311,664	320,171	308,669	318,994	334,598	337,981	348,696	342,370
85	327,988	327,028	328,967	349,625	337,336	351,709	362,231	369,680
86	316,803	315,992	330,325	323,305	329,097	335,611	355,822	352,721
87	306,620	310,821	314,166	323,177	345,545	332,382	344,067	340,369
88	313,921	303,510	322,877	323,017	330,776	347,158	349,498	355,719
89	318,490	307,092	333,444	312,273	331,227	340,239	346,150	352,035
90	308,048	318,664	322,209	314,546	344,670	344,158	342,146	356,435
91	301,816	324,724	323,212	343,580	335,214	347,788	362,350	365,622
92	324,760	329,193	348,684	328,279	333,763	343,223	361,430	364,550
93	299,774	324,475	320,733	326,555	329,672	339,294	346,289	358,845
94	309,697	311,374	329,137	330,539	328,844	349,550	351,006	353,031
95	308,202	323,815	316,388	325,250	329,477	325,767	350,572	356,578
96	324,126	309,179	324,562	327,560	331,650	345,454	348,506	351,553
97	314,373	318,170	334,024	324,462	331,032	330,565	348,558	353,767
98	315,552	331,328	327,526	336,770	339,574	352,911	351,439	363,344
99	306,237	313,968	309,056	319,299	336,397	331,595	346,035	336,995
100	323,833	326,863	320,217	322,431	347,381	348,139	356,038	364,424
101	316,578	319,553	341,080	333,864	338,828	353,336	349,209	353,757
102	310,310	330,637	318,341	337,004	344,391	349,464	368,538	351,452
103	331,708	320,440	325,854	314,609	332,250	347,542	342,688	336,030
104	325,703	335,786	348,748	330,830	348,171	329,119	349,330	353,968
105	305,815	324,811	314,246	325,016	335,746	332,599	342,110	346,705
106	308,439	303,409	323,266	322,067	326,267	347,273	341,317	339,087

Draw	2023	2024	2025	2026	2027	2028	2029	2030
107	318,395	336,684	344,284	328,589	344,741	348,434	358,909	353,461
108	314,958	320,314	334,739	333,354	349,512	346,119	346,544	347,649
109	309,141	317,146	337,416	330,128	326,763	326,184	351,405	350,337
110	317,893	330,040	322,175	340,601	342,316	342,992	352,546	351,371
111	304,440	335,657	330,177	326,749	329,531	341,693	339,808	350,126
112	325,113	335,726	338,274	346,686	353,383	350,704	367,520	369,428
113	329,409	329,098	330,424	333,595	345,631	358,916	359,555	356,746
114	322,693	323,403	330,393	329,176	338,333	354,530	351,628	362,957
115	318,618	319,676	317,058	315,073	322,756	343,468	347,369	351,370
116	315,844	324,951	325,750	322,709	322,423	338,461	350,856	357,481
117	305,039	313,880	315,964	334,018	328,947	329,052	353,422	347,023
118	326,741	331,753	334,448	335,279	362,589	348,716	349,760	350,422
119	299,948	321,619	322,308	332,070	330,171	339,961	340,591	335,992
120	325,980	324,723	322,146	331,875	342,975	355,275	348,768	364,206
121	295,674	319,698	314,873	325,728	328,552	331,371	343,636	335,748
122	318,144	323,965	334,973	342,908	358,386	350,022	343,927	349,797
123	305,097	323,293	331,930	324,105	342,031	341,547	339,332	365,110
124	317,251	307,228	319,417	323,953	330,210	341,600	359,111	356,047
125	319,529	330,584	330,646	335,741	340,306	351,356	344,097	354,215
126	309,925	320,810	337,348	327,975	342,234	338,822	334,148	359,322
127	326,168	306,183	335,666	320,839	332,903	351,712	351,554	341,455
128	318,177	325,265	323,418	343,632	354,203	351,668	352,480	354,393
129	311,014	324,227	328,073	322,889	331,826	332,373	346,024	356,531
130	320,127	312,507	319,844	337,388	341,567	336,204	348,554	346,986
131	316,043	314,675	331,571	330,724	336,583	349,791	341,279	353,736
132	312,957	311,569	311,544	331,040	335,376	327,890	340,590	357,174
133	309,739	313,850	337,187	330,848	333,858	342,298	355,076	343,563
134	319,277	325,531	318,781	322,675	324,334	328,312	348,629	340,916
135	291,126	309,944	323,225	325,295	325,608	337,414	336,073	348,311
136	331,453	326,342	330,211	335,113	341,980	368,256	348,352	363,046
137	312,687	314,075	308,957	327,819	330,127	355,206	351,423	341,425
138	295,718	318,476	320,781	335,554	332,881	342,820	346,694	346,772
139	318,574	318,235	315,171	332,566	335,233	330,166	352,015	337,277
140	304,443	303,711	314,344	318,670	338,604	335,921	348,101	337,510
141	310,469	319,550	325,365	334,894	334,164	338,328	352,893	372,905
142	313,302	315,942	330,312	337,401	337,215	341,976	344,377	339,138
143	299,107	323,111	325,142	328,306	327,143	339,777	344,064	352,241
144	315,845	302,158	312,887	329,095	329,621	345,835	343,192	349,974
145	322,665	316,222	334,084	337,455	331,106	347,289	350,203	345,263
146	304,263	325,768	318,506	326,487	329,987	343,002	349,880	355,923
147	311,399	323,235	320,467	322,085	341,557	347,634	328,336	365,467
148	309,699	327,519	324,218	325,738	347,453	367,529	358,821	348,273
149	310,484	327,958	325,053	329,550	334,138	345,762	357,561	342,789
150	316,156	319,314	327,954	317,289	345,563	343,620	354,232	356,238
151	310,969	306,252	315,451	333,899	342,651	336,802	348,845	351,169
152	316,635	314,527	317,020	310,090	334,279	344,905	332,506	333,943
153	306,397	312,357	324,385	319,580	342,389	340,063	354,100	348,362
154	308,072	320,513	324,273	329,558	323,417	343,347	333,230	356,458
155	312,861	310,639	319,108	328,616	316,001	348,112	338,516	334,765
156	312,146	317,407	328,013	328,283	330,356	327,980	351,248	346,811
157	323,619	320,053	334,361	324,815	335,311	332,626	345,226	352,511
158	323,210	322,391	322,330	342,166	343,535	361,860	343,815	357,676
159	323,175	318,458	331,316	335,838	320,722	371,099	347,478	354,046

Draw	2023	2024	2025	2026	2027	2028	2029	2030
160	305,160	316,184	317,216	327,724	332,804	332,923	345,269	345,064
161	317,017	333,611	330,103	321,459	334,361	352,731	353,356	354,376
162	305,865	319,178	311,825	321,077	321,594	341,282	332,705	345,170
163	298,196	319,331	317,363	321,008	314,057	331,962	345,184	330,935
164	311,826	314,731	320,019	313,457	323,461	330,179	359,799	357,726
165	309,394	314,940	321,213	312,722	318,185	336,128	329,244	344,407
166	326,995	320,332	321,110	337,580	341,840	352,501	345,668	345,944
167	305,826	323,119	326,824	313,635	333,246	342,643	336,659	344,053
168	310,891	320,641	312,527	332,223	333,102	345,522	357,173	347,371
169	315,570	311,215	322,124	335,407	329,300	339,123	352,764	354,538
170	314,336	322,919	313,045	331,401	346,181	340,435	344,537	367,754
171	310,150	316,866	322,299	322,532	350,073	328,796	348,041	345,159
172	301,145	308,963	313,078	316,592	320,898	331,641	342,114	346,464
173	307,686	313,132	321,627	320,930	326,234	336,756	348,592	351,958
174	309,201	314,254	316,425	345,857	345,147	340,677	334,471	345,180
175	315,746	324,598	313,005	324,301	324,129	347,247	347,958	341,420
176	332,163	322,036	332,116	315,241	348,312	358,478	354,445	362,190
177	315,137	308,847	328,310	332,815	332,491	347,535	343,359	348,761
178	330,350	321,355	333,537	338,340	337,829	345,479	348,090	350,419
179	328,112	320,570	316,678	317,877	331,591	342,597	341,790	362,702
180	328,418	333,569	328,077	327,050	340,007	362,631	347,219	354,302
181	306,260	325,368	334,345	313,680	330,464	337,780	346,761	345,193
182	322,855	327,377	332,529	334,004	333,177	332,527	356,764	342,128
183	313,311	326,818	332,044	321,264	333,101	341,505	356,338	370,254
184	309,719	326,545	318,228	329,753	339,310	347,296	337,349	357,234
185	314,421	320,012	307,700	325,175	328,105	329,463	362,396	359,509
186	308,662	331,685	321,798	339,272	352,471	341,731	345,487	357,821
187	304,983	320,169	323,171	312,883	321,554	316,972	346,620	348,660
188	303,210	323,835	341,758	331,395	345,562	351,743	361,845	356,400
189	309,051	306,095	329,996	332,563	325,807	344,604	339,994	342,304
190	335,899	330,360	331,747	337,758	344,216	333,307	367,151	365,771
191	323,795	315,087	338,795	333,822	341,583	327,566	347,977	350,990
192	293,299	316,945	308,909	321,000	337,726	337,243	347,874	347,321
193	323,478	332,570	335,305	355,588	326,355	350,593	342,999	366,169
194	312,563	320,640	329,724	330,737	331,140	346,482	347,612	356,912
195	303,762	316,448	332,791	326,906	333,432	350,613	334,586	340,762
196	311,255	308,828	325,809	336,216	322,008	345,300	344,649	357,411
197	307,053	314,135	343,212	330,757	337,497	350,948	338,104	347,809
198	307,137	318,513	339,595	329,530	340,164	335,861	334,147	347,809
199	319,245	322,819	315,383	313,432	345,649	340,655	337,250	359,770
200	316,494	327,424	321,570	340,019	337,201	352,207	354,039	371,611
Max	335,899	343,152	348,748	355,588	362,589	371,099	370,960	377,845
Min	290,391	296,178	306,868	310,078	312,849	316,972	326,949	322,710
Average	313,022	319,498	324,395	328,977	335,665	342,021	347,323	352,146

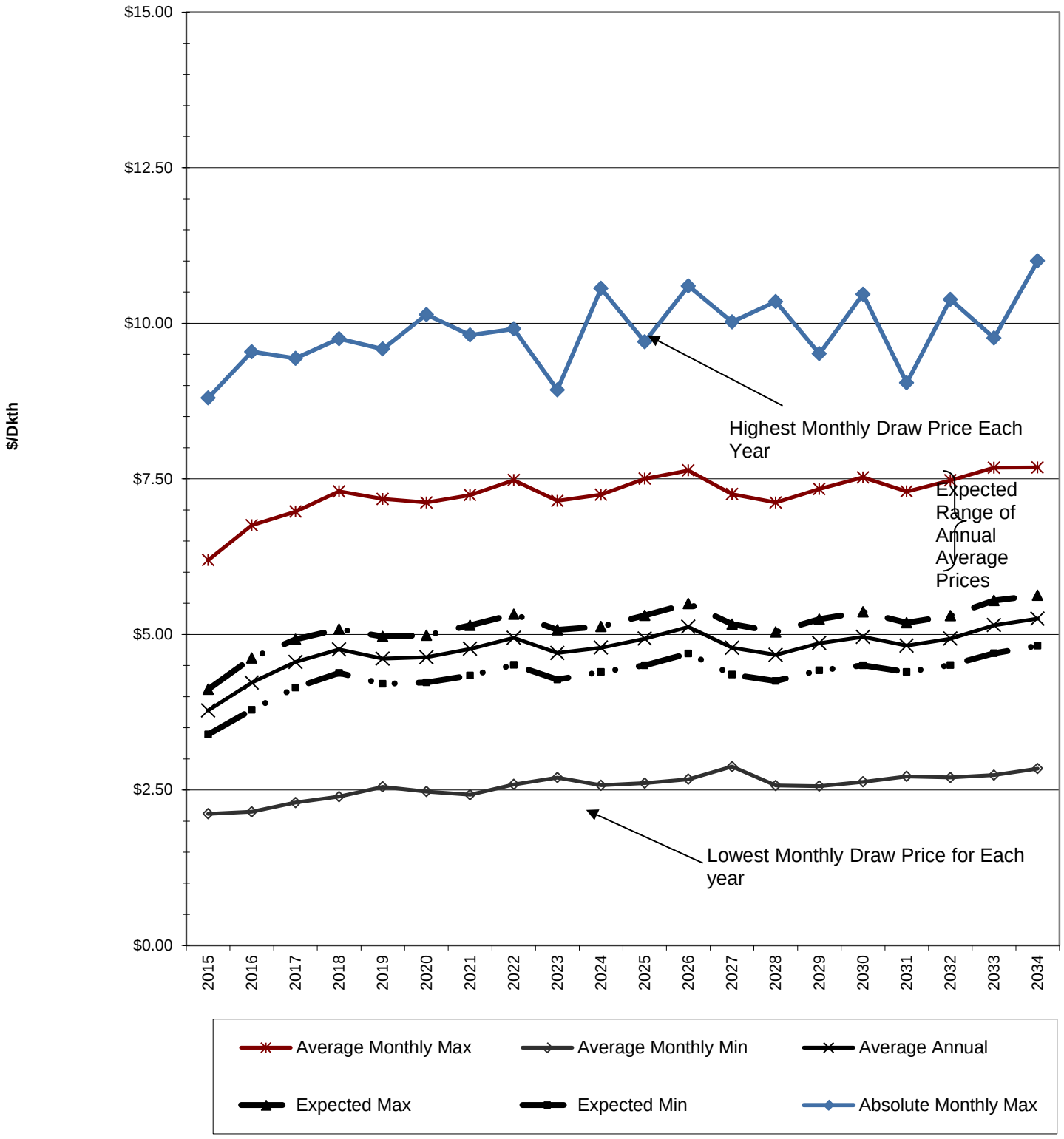
Draw	2031	2032	2033	2034	20 Yr Total
1	356,849	359,564	374,698	386,969	6,576,169
2	344,845	375,164	368,163	369,831	6,527,570
3	344,954	359,891	358,694	382,783	6,443,005
4	352,297	368,289	350,342	348,702	6,423,909
5	349,159	353,771	358,582	371,647	6,376,788
6	350,222	374,643	354,942	385,866	6,425,432
7	353,487	364,801	370,230	383,521	6,400,086
8	351,348	366,245	378,270	366,279	6,376,360
9	355,871	350,074	366,545	372,479	6,426,187
10	358,879	347,520	362,413	368,920	6,409,087
11	368,107	354,262	369,130	372,677	6,313,296
12	366,700	350,905	375,517	361,053	6,464,592
13	388,076	365,341	386,827	382,125	6,675,104
14	367,357	354,265	356,876	373,858	6,429,372
15	369,832	371,806	372,640	369,646	6,522,952
16	356,870	358,362	364,450	365,612	6,395,616
17	357,333	353,761	355,857	373,909	6,310,187
18	336,201	355,247	352,670	352,887	6,267,491
19	369,008	364,276	381,188	390,238	6,506,080
20	360,769	376,071	389,749	384,897	6,633,050
21	355,360	352,458	348,043	361,995	6,346,725
22	363,341	362,164	372,775	365,694	6,404,180
23	366,060	365,284	360,020	387,230	6,526,770
24	353,513	342,696	368,187	366,119	6,349,513
25	366,122	351,888	363,384	348,736	6,348,275
26	346,192	361,098	364,985	367,711	6,407,012
27	373,320	374,974	355,471	369,951	6,485,177
28	363,189	358,379	376,701	380,748	6,477,957
29	363,332	386,271	368,599	394,697	6,617,860
30	356,666	348,251	346,948	363,083	6,405,948
31	371,133	360,158	369,175	362,670	6,427,311
32	360,377	370,064	368,771	359,892	6,441,681
33	368,778	378,211	368,358	381,066	6,599,896
34	361,439	370,160	359,699	374,518	6,342,023
35	360,585	359,804	368,407	381,535	6,452,957
36	355,629	361,953	364,291	354,413	6,331,099
37	355,911	362,942	365,287	372,016	6,496,273
38	353,297	353,611	378,367	374,726	6,323,621
39	346,455	345,231	363,974	364,800	6,195,132
40	354,777	349,613	370,714	366,764	6,362,369
41	353,605	354,893	362,458	385,222	6,398,588
42	372,366	372,894	369,518	384,854	6,653,749
43	369,007	370,253	384,650	373,457	6,656,456
44	366,142	366,300	373,014	383,632	6,511,396
45	356,046	351,189	364,099	376,902	6,354,513
46	355,661	361,471	374,493	394,516	6,473,036
47	358,032	359,622	373,222	386,987	6,478,078
48	367,278	374,820	372,573	371,980	6,519,164
49	374,114	361,152	362,487	375,280	6,522,632
50	356,251	350,852	371,318	366,476	6,394,492
51	368,034	354,479	359,987	359,409	6,317,765
52	360,522	345,275	368,867	373,768	6,322,693
53	353,340	352,444	371,155	362,914	6,317,436

Draw	2031	2032	2033	2034	20 Yr Total
54	355,595	359,166	360,320	390,286	6,408,638
55	383,876	364,280	398,382	382,834	6,586,915
56	357,959	361,428	350,623	373,508	6,416,022
57	376,176	365,756	389,927	383,058	6,644,180
58	364,025	355,577	365,501	362,385	6,319,812
59	359,183	361,225	354,690	372,962	6,444,995
60	369,583	371,124	374,718	372,620	6,457,471
61	352,061	341,033	350,439	375,776	6,423,387
62	365,188	369,659	387,404	403,053	6,676,784
63	354,039	358,584	365,737	373,105	6,429,387
64	358,750	362,000	366,047	384,336	6,441,516
65	367,628	374,150	375,225	379,334	6,527,916
66	354,031	374,321	368,868	369,560	6,457,576
67	365,303	354,871	367,380	373,600	6,535,942
68	363,270	371,174	377,509	374,088	6,476,668
69	376,033	366,969	401,591	373,977	6,657,319
70	356,724	351,524	353,626	351,268	6,194,387
71	363,262	372,143	378,495	371,470	6,573,742
72	359,307	361,299	371,958	371,608	6,462,254
73	367,013	362,544	381,397	371,979	6,460,697
74	361,019	380,430	358,008	374,998	6,444,248
75	355,408	357,730	369,434	384,027	6,436,030
76	359,468	363,834	356,753	365,972	6,354,846
77	337,806	362,557	374,529	362,870	6,320,430
78	367,157	370,987	368,524	400,459	6,590,139
79	336,848	358,652	348,427	375,127	6,268,893
80	356,153	367,710	368,830	363,319	6,332,208
81	356,907	361,151	354,036	356,457	6,263,484
82	360,931	364,558	365,724	377,401	6,406,890
83	360,730	377,795	354,279	378,621	6,497,920
84	360,166	355,487	362,998	372,777	6,396,441
85	363,154	367,570	384,153	366,010	6,569,910
86	355,632	346,842	357,781	358,070	6,345,822
87	359,053	357,195	374,899	361,481	6,347,580
88	349,225	356,347	375,279	375,867	6,418,625
89	359,006	357,074	371,010	370,280	6,397,602
90	351,613	365,475	360,347	367,423	6,422,915
91	369,804	361,072	366,143	378,263	6,524,949
92	353,509	380,107	389,085	378,813	6,588,338
93	336,566	367,851	376,105	365,587	6,377,199
94	357,865	354,137	356,666	381,038	6,417,504
95	351,042	355,302	372,726	366,358	6,417,213
96	354,674	393,064	389,099	364,733	6,470,749
97	339,373	373,702	365,254	379,597	6,434,530
98	364,291	368,639	387,888	389,115	6,584,778
99	358,162	357,169	353,030	359,491	6,294,314
100	369,147	373,260	375,419	391,188	6,604,610
101	373,715	361,809	361,556	365,122	6,527,018
102	370,174	363,444	360,133	379,923	6,521,205
103	366,436	371,461	369,712	371,040	6,451,791
104	354,006	362,210	374,683	389,696	6,530,761
105	354,170	375,092	355,776	375,277	6,398,504
106	356,019	372,973	369,542	368,837	6,434,584

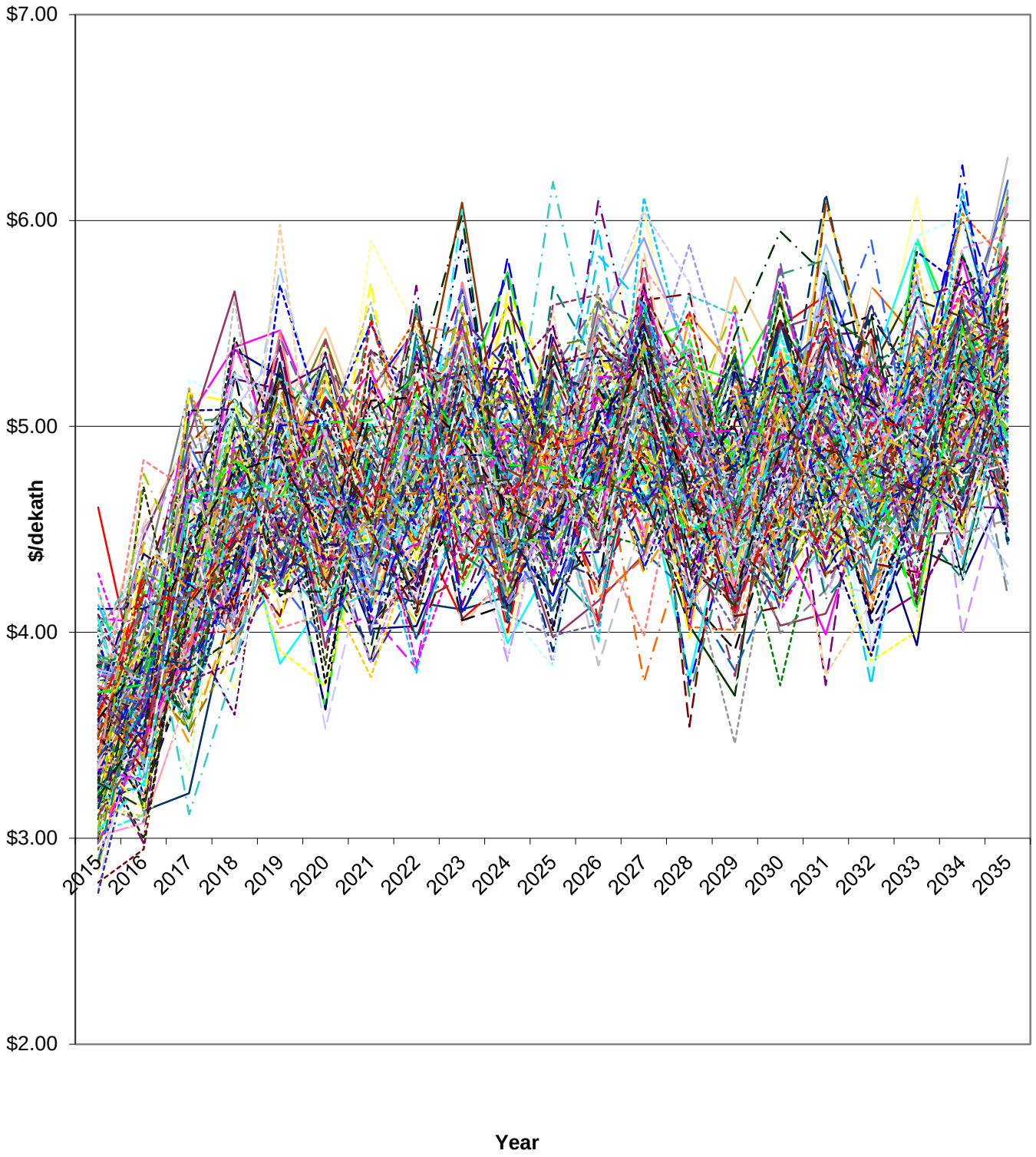
Draw	2031	2032	2033	2034	20 Yr Total
107	371,092	360,252	359,355	395,597	6,600,580
108	366,419	366,057	363,439	363,186	6,493,955
109	362,951	356,624	370,824	391,545	6,447,211
110	360,001	363,893	355,762	377,674	6,464,694
111	357,379	362,135	376,435	379,909	6,476,792
112	357,349	373,277	384,129	389,910	6,676,314
113	373,149	372,123	391,985	377,266	6,638,888
114	361,341	362,607	375,599	380,660	6,563,538
115	339,913	349,060	372,950	366,278	6,340,384
116	350,020	370,271	351,001	365,645	6,382,508
117	342,566	364,779	349,649	369,788	6,307,873
118	376,074	384,751	375,961	395,255	6,645,958
119	360,622	370,995	372,556	357,384	6,402,247
120	352,546	389,844	366,052	376,704	6,548,448
121	370,363	348,011	347,323	367,348	6,306,125
122	377,411	363,930	376,258	364,286	6,578,932
123	355,063	364,863	369,259	379,398	6,454,198
124	345,140	371,411	366,440	382,264	6,413,910
125	357,939	361,895	383,245	382,360	6,536,755
126	360,621	361,226	366,643	367,676	6,476,322
127	355,357	361,704	371,554	368,547	6,471,089
128	373,864	358,568	376,493	381,894	6,571,619
129	370,720	358,901	346,382	382,556	6,394,085
130	360,472	368,518	365,232	377,414	6,452,360
131	356,993	369,490	370,051	380,107	6,461,925
132	347,866	350,717	363,078	361,487	6,380,967
133	353,058	366,509	371,343	362,108	6,395,159
134	358,857	363,916	368,126	380,109	6,376,865
135	343,194	345,941	362,374	360,060	6,310,790
136	370,639	379,916	364,458	395,402	6,622,835
137	367,582	366,203	369,142	383,694	6,441,856
138	365,435	358,479	375,171	374,039	6,463,591
139	354,844	366,919	363,553	384,412	6,416,489
140	361,957	371,857	361,309	369,616	6,323,083
141	358,984	365,485	381,899	390,889	6,539,766
142	354,134	356,134	355,315	370,426	6,441,534
143	340,969	363,472	362,809	353,377	6,377,928
144	336,400	361,432	357,606	364,133	6,361,401
145	351,529	370,005	365,038	370,344	6,442,646
146	367,087	367,293	364,445	388,550	6,437,215
147	360,962	368,343	372,513	376,175	6,461,110
148	361,062	371,838	368,312	374,946	6,576,434
149	353,412	372,803	368,980	371,081	6,481,933
150	349,305	352,222	370,922	374,069	6,455,929
151	349,942	369,667	366,067	384,268	6,448,398
152	367,891	369,080	378,918	362,489	6,355,818
153	350,207	376,388	364,764	372,793	6,396,410
154	344,302	360,465	357,062	352,086	6,399,469
155	350,384	355,532	369,123	370,861	6,349,991
156	366,587	372,993	374,197	395,093	6,462,182
157	360,597	348,244	372,251	375,251	6,434,191
158	345,389	361,626	378,370	358,786	6,526,625
159	358,316	362,921	365,757	360,164	6,491,815

Draw	2031	2032	2033	2034	20 Yr Total
160	363,220	339,209	369,025	343,471	6,335,758
161	364,699	362,054	387,314	369,527	6,522,083
162	352,142	363,244	367,646	361,017	6,335,170
163	345,791	354,689	361,636	364,495	6,297,540
164	356,444	356,854	367,131	373,784	6,386,279
165	354,413	355,741	368,548	361,177	6,356,596
166	374,161	375,711	376,697	376,211	6,577,672
167	365,191	362,596	359,666	367,272	6,403,825
168	360,900	368,731	376,145	373,269	6,483,808
169	358,512	357,120	370,258	375,945	6,462,581
170	360,529	378,401	393,464	363,963	6,517,605
171	351,710	360,534	379,482	376,604	6,392,211
172	343,386	357,084	361,839	363,793	6,266,281
173	358,912	353,408	353,377	378,528	6,352,379
174	354,321	348,891	358,609	381,199	6,413,953
175	363,289	365,562	372,196	367,129	6,432,741
176	360,745	361,192	363,390	373,513	6,551,191
177	357,947	369,268	372,855	373,395	6,424,155
178	352,604	359,371	383,227	377,680	6,592,179
179	351,086	348,193	354,745	359,084	6,352,477
180	358,209	348,874	386,959	374,875	6,577,713
181	357,644	363,711	367,499	367,640	6,441,221
182	368,020	365,326	351,685	374,202	6,455,695
183	373,085	368,003	368,559	373,878	6,559,543
184	352,912	357,239	363,932	373,721	6,442,150
185	363,784	376,454	370,022	379,078	6,458,766
186	357,910	365,853	381,775	367,449	6,487,105
187	341,970	343,344	341,620	343,706	6,247,714
188	349,995	357,645	368,657	369,019	6,476,380
189	351,785	375,591	372,368	370,371	6,396,079
190	376,332	375,228	370,930	375,606	6,599,374
191	362,760	375,455	378,294	365,546	6,485,659
192	340,377	353,892	355,321	359,685	6,259,631
193	373,121	377,211	381,476	374,763	6,576,093
194	352,545	363,480	379,738	386,200	6,539,649
195	349,433	364,980	368,356	386,331	6,425,196
196	342,173	342,752	366,552	361,223	6,336,699
197	370,134	360,963	380,604	379,405	6,484,416
198	358,299	359,222	393,723	377,465	6,476,874
199	376,937	364,076	360,140	374,417	6,458,275
200	368,226	373,633	390,496	382,086	6,621,112
Max	388,076	393,064	401,591	403,053	6,676,784
Min	336,201	339,209	341,620	343,471	6,194,387
Average	358,871	362,995	368,594	373,194	6,448,464

G-2: NYMEX Annual Price Forecast



G-2 NYMEX ANNUAL AVERAGE PRICE



Draw	2015			2016			2017			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
1	$5.28	$2.08	$3.52	$6.88	$2.08	$4.28	$7.10	$2.08	$4.82	$6.81
2	$7.19	$2.63	$4.13	$7.08	$2.10	$5.15	$6.99	$2.10	$5.49	$7.14
3	$5.60	$2.10	$3.70	$5.41	$2.10	$3.90	$7.27	$2.10	$4.35	$7.98
4	$5.91	$2.12	$3.53	$7.01	$2.12	$4.38	$7.01	$2.12	$4.38	$6.62
5	$5.06	$2.12	$3.94	$8.53	$2.12	$4.17	$9.24	$2.84	$4.35	$6.50
6	$5.47	$2.12	$3.80	$7.40	$2.12	$4.32	$6.97	$2.12	$4.88	$8.09
7	$5.20	$2.12	$3.54	$6.34	$2.12	$4.48	$7.71	$2.12	$4.95	$7.74
8	$6.73	$2.08	$3.99	$6.81	$2.08	$3.64	$7.76	$2.08	$4.86	$6.86
9	$6.13	$2.10	$3.96	$7.22	$2.28	$4.36	$5.09	$2.10	$4.28	$7.43
10	$6.18	$2.12	$4.20	$7.41	$2.34	$4.43	$7.95	$2.12	$4.41	$6.37
11	$8.80	$2.10	$3.83	$6.75	$2.10	$3.99	$6.24	$2.49	$5.15	$6.47
12	$6.27	$2.10	$3.29	$5.88	$2.10	$4.11	$6.39	$2.10	$3.73	$7.12
13	$7.06	$2.12	$3.96	$8.06	$2.12	$4.77	$6.67	$2.12	$3.97	$7.81
14	$5.24	$2.10	$3.04	$6.12	$2.10	$3.67	$6.72	$2.56	$4.14	$6.94
15	$5.74	$2.10	$3.75	$7.11	$2.44	$4.16	$7.56	$2.10	$4.61	$7.77
16	$5.58	$2.14	$3.58	$7.05	$2.14	$4.31	$6.39	$2.43	$3.91	$7.00
17	$6.07	$2.08	$4.16	$7.20	$2.08	$4.96	$6.62	$3.12	$4.52	$7.41
18	$5.18	$2.12	$3.94	$6.66	$2.65	$4.48	$7.49	$2.46	$4.57	$6.40
19	$6.81	$2.08	$4.36	$6.55	$2.08	$4.16	$6.94	$2.08	$4.43	$6.28
20	$6.40	$2.10	$3.80	$8.92	$2.10	$4.70	$7.15	$2.10	$4.83	$6.37
21	$7.64	$2.10	$3.97	$5.49	$2.10	$3.74	$6.85	$2.10	$4.65	$6.14
22	$6.57	$2.12	$4.06	$5.99	$2.12	$3.89	$7.06	$2.12	$4.26	$8.00
23	$6.60	$2.08	$3.78	$6.20	$2.08	$4.37	$7.57	$2.08	$4.85	$7.90
24	$6.70	$2.12	$4.15	$7.29	$2.28	$3.54	$7.27	$2.12	$4.87	$9.39
25	$5.34	$2.10	$3.23	$5.02	$2.10	$3.32	$6.58	$2.10	$4.35	$8.80
26	$7.14	$2.12	$3.96	$6.28	$2.12	$3.96	$6.73	$2.32	$4.53	$6.41
27	$6.79	$2.10	$3.92	$7.96	$2.10	$4.67	$7.37	$2.10	$4.86	$9.75
28	$7.34	$2.14	$4.36	$6.58	$2.28	$4.13	$6.11	$2.14	$4.42	$7.03
29	$5.50	$2.14	$3.71	$4.93	$2.26	$3.78	$5.55	$2.70	$4.39	$7.27
30	$6.43	$2.12	$4.55	$8.00	$2.44	$5.05	$8.83	$2.99	$5.77	$7.74
31	$5.98	$2.12	$3.37	$5.87	$2.12	$4.11	$6.97	$2.12	$4.81	$5.59
32	$6.66	$2.10	$3.41	$8.88	$2.10	$4.28	$7.61	$2.10	$4.68	$7.57
33	$5.73	$2.14	$4.31	$6.91	$2.14	$3.93	$6.60	$2.65	$4.08	$7.32
34	$5.77	$2.08	$3.57	$5.17	$2.08	$3.71	$6.06	$2.08	$4.67	$6.27
35	$6.18	$2.19	$3.90	$6.79	$2.08	$4.61	$7.53	$2.97	$4.75	$7.41
36	$6.23	$2.08	$3.50	$6.74	$2.08	$4.32	$6.46	$2.26	$4.43	$7.86
37	$5.58	$2.14	$3.56	$7.46	$2.14	$4.68	$6.53	$2.74	$4.18	$7.36
38	$4.89	$2.14	$3.69	$5.21	$2.14	$3.84	$8.16	$2.14	$4.26	$6.91
39	$5.90	$2.08	$3.86	$7.29	$2.08	$4.28	$7.69	$2.08	$4.80	$7.53
40	$6.15	$2.10	$3.74	$6.33	$2.10	$3.95	$7.30	$2.10	$4.13	$6.33
41	$6.42	$2.12	$3.48	$6.79	$2.12	$4.02	$6.78	$2.20	$4.44	$7.22
42	$5.79	$2.08	$4.16	$6.59	$2.73	$4.27	$7.93	$2.08	$5.43	$7.24
43	$5.21	$2.08	$3.29	$8.39	$2.08	$4.32	$7.00	$2.08	$4.72	$6.81
44	$6.95	$2.14	$4.10	$5.96	$2.14	$3.65	$6.80	$2.14	$4.48	$7.29
45	$6.88	$2.08	$3.81	$7.39	$2.08	$4.17	$8.20	$2.08	$4.49	$7.31
46	$6.97	$2.08	$3.85	$6.25	$2.08	$4.12	$8.60	$2.18	$5.05	$8.28
47	$6.46	$2.14	$4.17	$8.46	$2.77	$5.07	$6.02	$3.35	$4.09	$7.09
48	$5.64	$2.10	$4.07	$7.32	$2.10	$4.46	$7.76	$2.10	$4.74	$8.92
49	$6.01	$2.14	$3.67	$8.73	$2.35	$4.78	$7.14	$2.14	$4.57	$7.18
50	$5.13	$2.10	$3.74	$7.65	$2.10	$3.93	$6.66	$2.10	$4.26	$6.45
51	$7.39	$2.14	$3.89	$6.79	$2.14	$4.34	$6.15	$2.14	$4.57	$7.57
52	$6.83	$2.08	$3.92	$6.35	$2.08	$4.21	$8.24	$2.33	$5.18	$8.32

Draw	2015			2016			2017			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
53	$5.79	$2.12	$3.39	$9.00	$2.12	$4.54	$5.94	$2.44	$4.34	$9.05
54	$5.92	$2.12	$3.99	$7.09	$2.12	$3.48	$7.56	$2.12	$4.63	$7.33
55	$5.14	$2.08	$3.74	$7.14	$2.08	$5.02	$7.16	$2.56	$5.24	$7.33
56	$5.89	$2.08	$3.24	$6.25	$2.08	$3.88	$6.60	$2.08	$4.48	$6.96
57	$7.18	$2.08	$4.10	$5.13	$2.08	$3.80	$7.58	$2.55	$5.06	$7.84
58	$6.90	$2.12	$3.88	$7.58	$2.12	$4.41	$6.35	$2.12	$4.27	$8.17
59	$5.81	$2.13	$3.21	$6.63	$2.08	$4.78	$8.48	$2.50	$4.80	$7.69
60	$4.64	$2.10	$2.92	$7.58	$2.10	$4.76	$6.42	$3.50	$4.20	$7.23
61	$6.75	$2.12	$4.23	$9.04	$2.12	$4.87	$9.44	$2.69	$4.88	$7.96
62	$4.98	$2.12	$3.69	$5.82	$2.12	$3.97	$6.28	$2.12	$4.75	$7.66
63	$6.48	$2.08	$3.58	$7.35	$2.08	$4.54	$7.09	$2.58	$5.05	$7.59
64	$6.40	$2.10	$3.76	$6.79	$2.18	$4.02	$7.50	$2.10	$4.61	$6.16
65	$5.65	$2.14	$3.62	$5.73	$2.14	$3.78	$7.24	$2.14	$4.74	$7.31
66	$5.44	$2.08	$4.03	$7.01	$2.42	$3.94	$7.68	$2.08	$4.71	$7.31
67	$6.78	$2.14	$3.96	$6.91	$2.14	$4.42	$7.23	$2.14	$4.28	$7.17
68	$6.57	$2.14	$3.88	$6.63	$2.14	$4.31	$7.58	$2.14	$4.60	$7.47
69	$7.02	$2.10	$4.31	$5.97	$2.10	$4.17	$6.49	$3.04	$4.44	$7.79
70	$6.27	$2.10	$3.78	$6.96	$2.10	$4.66	$5.75	$2.10	$4.36	$8.43
71	$6.67	$2.17	$4.52	$6.99	$2.10	$4.94	$7.29	$2.63	$4.98	$7.01
72	$5.41	$2.10	$3.39	$7.20	$2.10	$4.62	$7.31	$3.14	$4.58	$6.80
73	$5.62	$2.12	$3.63	$5.66	$2.12	$4.03	$6.17	$2.23	$4.49	$8.75
74	$6.38	$2.27	$3.90	$4.82	$2.71	$3.53	$7.73	$2.12	$4.77	$8.13
75	$7.01	$2.10	$3.99	$6.29	$2.20	$3.57	$6.68	$2.30	$4.03	$6.34
76	$6.33	$2.08	$3.93	$5.38	$2.08	$3.50	$5.22	$2.08	$4.19	$7.85
77	$6.23	$2.10	$3.38	$6.30	$2.10	$4.38	$7.65	$2.10	$4.29	$6.84
78	$6.85	$2.14	$4.37	$6.23	$2.14	$4.28	$5.43	$2.14	$4.09	$7.78
79	$5.67	$2.12	$3.90	$6.21	$2.12	$3.62	$6.23	$2.12	$4.41	$5.86
80	$6.59	$2.14	$3.79	$7.50	$2.14	$4.30	$7.20	$2.55	$4.28	$7.69
81	$6.64	$2.10	$4.12	$6.48	$2.10	$4.58	$7.06	$2.10	$4.64	$7.42
82	$6.52	$2.08	$3.91	$8.35	$2.08	$3.86	$6.43	$2.08	$4.02	$6.64
83	$7.28	$2.08	$3.30	$5.97	$2.08	$3.87	$7.62	$2.08	$4.34	$9.63
84	$6.45	$2.14	$3.66	$7.15	$2.14	$4.91	$8.00	$2.28	$5.13	$7.17
85	$6.91	$2.10	$3.88	$6.14	$2.10	$4.40	$8.16	$2.90	$4.35	$6.90
86	$5.51	$2.18	$3.62	$7.86	$2.12	$4.51	$6.31	$2.12	$4.42	$8.07
87	$5.18	$2.10	$3.56	$7.07	$2.10	$4.71	$6.91	$2.42	$5.37	$7.10
88	$5.32	$2.12	$3.23	$5.65	$2.12	$3.82	$5.32	$2.35	$4.03	$7.99
89	$7.18	$2.14	$4.42	$5.44	$2.14	$4.01	$6.14	$2.71	$4.57	$7.47
90	$7.52	$2.14	$4.19	$9.54	$2.14	$4.31	$7.22	$2.14	$5.12	$7.27
91	$6.53	$2.12	$3.95	$6.87	$2.12	$3.84	$6.36	$2.12	$4.31	$7.00
92	$6.92	$2.08	$3.79	$6.81	$2.08	$4.09	$5.99	$2.08	$4.56	$7.04
93	$5.48	$2.12	$3.56	$6.41	$2.12	$4.12	$7.98	$2.12	$5.46	$6.95
94	$5.44	$2.10	$3.26	$6.46	$2.10	$4.13	$6.37	$2.10	$4.48	$7.68
95	$6.36	$2.14	$3.66	$5.62	$2.14	$4.34	$6.12	$2.14	$4.46	$7.57
96	$5.17	$2.08	$3.19	$5.74	$2.08	$4.22	$6.34	$2.54	$4.39	$7.22
97	$5.80	$2.12	$3.76	$7.07	$2.12	$4.01	$7.54	$2.12	$4.18	$7.04
98	$6.00	$2.08	$3.82	$5.30	$2.08	$3.56	$6.28	$2.08	$3.96	$7.21
99	$7.11	$2.10	$3.70	$6.33	$2.10	$4.41	$6.77	$3.19	$4.49	$8.03
100	$6.61	$2.08	$3.50	$7.09	$2.08	$3.94	$7.45	$2.08	$4.76	$6.58
101	$5.98	$2.08	$4.43	$6.84	$2.08	$3.64	$8.04	$2.08	$4.78	$7.50
102	$6.84	$2.12	$4.07	$7.02	$2.12	$5.08	$5.83	$3.70	$4.57	$6.35
103	$5.27	$2.14	$3.68	$6.78	$2.14	$4.53	$6.72	$2.14	$4.60	$6.34
104	$5.24	$2.10	$3.76	$5.76	$2.10	$4.04	$8.97	$2.10	$4.50	$7.89

Draw	2015			2016			2017			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
105	$6.21	$2.08	$4.05	$5.89	$2.08	$3.60	$6.62	$2.08	$4.30	$7.93
106	$5.52	$2.10	$3.82	$5.37	$2.10	$4.13	$7.44	$2.57	$4.65	$7.55
107	$5.58	$2.10	$3.33	$7.06	$2.10	$3.94	$7.85	$2.10	$4.67	$7.85
108	$6.85	$2.08	$3.21	$5.87	$2.08	$4.02	$7.40	$2.08	$4.66	$6.78
109	$5.59	$2.10	$3.56	$6.52	$2.10	$4.26	$7.23	$2.36	$4.94	$7.99
110	$7.66	$2.10	$3.96	$5.76	$2.10	$4.11	$7.48	$2.23	$4.71	$7.61
111	$7.44	$2.14	$3.94	$6.55	$2.16	$4.49	$6.27	$2.14	$4.11	$6.56
112	$6.35	$2.85	$3.65	$7.33	$2.14	$3.85	$7.05	$2.14	$4.88	$6.58
113	$6.93	$2.08	$4.45	$7.05	$2.71	$4.17	$7.31	$2.08	$4.57	$5.83
114	$5.66	$2.08	$3.36	$6.33	$2.08	$4.57	$6.33	$2.24	$4.62	$7.12
115	$5.89	$2.12	$3.58	$5.86	$2.12	$4.10	$6.09	$2.12	$4.00	$6.41
116	$4.85	$2.14	$2.98	$7.29	$2.14	$4.37	$6.71	$2.14	$4.66	$7.27
117	$5.87	$2.12	$3.60	$8.93	$2.12	$4.47	$5.91	$2.12	$4.38	$7.21
118	$5.70	$2.12	$3.65	$6.40	$2.12	$4.19	$5.78	$2.12	$4.15	$7.86
119	$5.53	$2.08	$3.32	$6.47	$2.08	$4.20	$6.29	$2.08	$4.04	$7.75
120	$5.94	$2.10	$3.79	$8.40	$2.10	$5.23	$7.21	$2.95	$5.12	$6.93
121	$5.61	$2.12	$3.86	$4.44	$2.12	$3.33	$6.93	$2.12	$4.81	$7.33
122	$6.53	$2.08	$4.05	$7.11	$2.08	$4.02	$7.26	$2.39	$4.46	$6.22
123	$4.84	$2.14	$3.24	$6.75	$2.14	$4.64	$7.29	$2.14	$5.21	$7.81
124	$5.66	$2.14	$3.48	$5.73	$2.14	$3.81	$7.04	$2.85	$4.49	$7.33
125	$6.27	$2.08	$3.97	$6.19	$2.08	$4.20	$6.35	$2.08	$4.56	$7.01
126	$5.71	$2.14	$3.61	$9.54	$2.14	$4.58	$6.99	$2.14	$3.86	$8.94
127	$7.02	$2.14	$3.80	$6.72	$2.14	$4.30	$7.23	$2.30	$4.57	$6.87
128	$5.62	$2.10	$3.88	$5.17	$2.35	$3.70	$5.71	$2.10	$4.44	$8.40
129	$5.46	$2.12	$3.36	$6.43	$2.13	$3.89	$7.49	$2.12	$4.98	$7.02
130	$4.48	$2.08	$3.11	$7.11	$2.08	$4.47	$6.46	$2.36	$4.58	$7.30
131	$4.94	$2.08	$3.34	$7.99	$2.11	$5.08	$7.77	$3.07	$4.52	$8.26
132	$5.96	$2.14	$3.70	$6.03	$2.32	$4.00	$6.47	$2.14	$4.22	$6.06
133	$6.10	$2.08	$3.87	$7.41	$2.08	$4.23	$7.71	$2.08	$4.52	$6.44
134	$7.07	$2.14	$4.16	$6.37	$2.14	$3.96	$6.67	$2.14	$4.30	$7.41
135	$5.91	$2.12	$4.21	$6.25	$2.25	$3.73	$6.36	$2.12	$4.33	$6.43
136	$6.22	$2.10	$3.76	$6.74	$2.10	$3.92	$8.22	$2.10	$5.03	$7.22
137	$4.80	$2.12	$3.03	$6.50	$2.12	$4.31	$7.76	$2.12	$5.48	$8.51
138	$6.88	$2.12	$4.75	$6.85	$2.15	$3.78	$6.38	$2.12	$4.82	$8.55
139	$6.90	$2.12	$3.83	$6.98	$2.12	$3.85	$7.81	$2.12	$4.51	$8.07
140	$5.73	$2.56	$3.80	$7.29	$2.12	$4.43	$6.66	$2.12	$4.03	$8.03
141	$5.41	$2.10	$3.77	$6.48	$2.10	$4.11	$5.47	$2.10	$4.42	$7.57
142	$5.39	$2.08	$3.21	$7.14	$2.08	$4.13	$7.02	$2.08	$4.40	$7.23
143	$7.21	$2.12	$3.66	$6.23	$2.12	$3.49	$5.88	$2.12	$4.48	$7.24
144	$7.99	$2.10	$4.30	$8.76	$2.10	$4.03	$5.59	$2.66	$4.05	$7.73
145	$6.44	$2.08	$3.85	$5.98	$2.31	$3.99	$7.98	$2.08	$4.79	$7.35
146	$5.50	$2.10	$3.82	$6.93	$2.10	$4.28	$6.83	$2.54	$4.35	$6.81
147	$6.21	$2.14	$3.94	$7.19	$2.14	$4.04	$7.48	$2.14	$4.97	$6.89
148	$5.29	$2.10	$3.38	$7.04	$2.10	$4.83	$6.98	$2.10	$4.84	$7.83
149	$5.73	$2.10	$3.72	$6.35	$2.08	$3.82	$7.00	$2.08	$4.64	$5.77
150	$5.68	$2.12	$3.54	$6.52	$2.12	$3.81	$6.54	$2.12	$4.09	$6.00
151	$8.53	$2.12	$3.94	$7.36	$2.12	$3.57	$7.37	$2.12	$4.74	$7.90
152	$6.67	$2.12	$3.49	$7.40	$2.12	$5.08	$7.60	$2.61	$5.08	$7.19
153	$5.52	$2.10	$4.32	$6.48	$2.10	$4.79	$7.96	$2.38	$4.94	$7.87
154	$6.12	$2.14	$3.69	$6.20	$2.14	$3.84	$5.65	$2.14	$3.93	$6.66
155	$6.92	$2.14	$3.63	$7.11	$2.14	$4.75	$6.82	$2.14	$4.50	$8.44
156	$6.96	$2.14	$3.93	$5.88	$2.14	$3.86	$7.32	$2.14	$5.56	$7.52

	2015			2016			2017			
Draw	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
157	$6.11	$2.12	$3.11	$6.88	$2.12	$5.22	$7.96	$3.19	$4.61	$7.65
158	$7.12	$2.08	$3.99	$6.61	$2.08	$4.59	$7.61	$2.30	$4.44	$8.41
159	$5.32	$2.19	$3.48	$6.60	$2.12	$4.40	$7.37	$2.12	$4.09	$6.49
160	$4.81	$2.14	$3.02	$6.73	$2.14	$3.71	$7.08	$2.14	$4.99	$5.99
161	$7.84	$2.10	$4.50	$6.61	$2.10	$4.17	$7.34	$2.10	$5.18	$7.55
162	$4.58	$2.12	$3.44	$8.41	$2.12	$3.99	$5.12	$2.12	$3.56	$7.72
163	$7.41	$2.08	$4.88	$7.37	$3.74	$4.74	$7.04	$2.08	$4.57	$5.95
164	$5.68	$2.10	$3.48	$8.65	$2.10	$4.15	$7.50	$2.10	$4.23	$7.79
165	$6.88	$2.08	$4.56	$6.84	$2.11	$4.15	$6.74	$2.08	$4.63	$6.71
166	$6.33	$2.14	$4.38	$5.55	$2.55	$4.23	$7.29	$2.14	$4.08	$6.87
167	$7.07	$2.08	$3.48	$5.98	$2.08	$3.93	$7.36	$2.08	$4.23	$6.72
168	$4.74	$2.08	$3.08	$7.22	$2.08	$5.06	$8.03	$3.72	$5.01	$5.38
169	$5.14	$2.10	$3.27	$7.66	$2.10	$4.52	$6.45	$2.10	$4.20	$8.00
170	$6.92	$2.14	$3.35	$5.78	$2.14	$3.81	$5.64	$2.62	$4.38	$7.03
171	$4.94	$2.14	$3.55	$6.11	$2.14	$4.94	$5.58	$3.57	$4.23	$6.84
172	$6.51	$2.08	$3.95	$5.76	$2.08	$3.93	$6.87	$2.08	$4.42	$6.62
173	$5.82	$2.10	$3.78	$6.71	$2.10	$3.78	$5.82	$2.10	$4.19	$6.96
174	$5.72	$2.08	$3.30	$7.37	$2.08	$4.77	$8.73	$3.82	$4.78	$8.44
175	$7.31	$2.08	$4.04	$5.70	$2.08	$3.85	$4.58	$2.14	$3.62	$7.89
176	$5.54	$2.10	$3.90	$6.97	$2.10	$4.30	$6.48	$2.10	$4.83	$7.11
177	$5.74	$2.10	$3.37	$7.57	$2.10	$4.64	$7.62	$2.10	$4.43	$6.42
178	$5.52	$2.08	$3.69	$5.44	$2.08	$3.81	$7.08	$2.08	$5.15	$7.12
179	$6.41	$2.10	$3.50	$6.10	$2.10	$4.07	$7.05	$2.15	$5.52	$6.64
180	$7.18	$2.12	$4.50	$7.74	$2.12	$4.82	$6.21	$2.12	$4.07	$7.21
181	$6.32	$2.10	$3.73	$7.91	$2.10	$4.83	$6.65	$2.52	$3.88	$7.19
182	$5.65	$2.10	$3.64	$6.58	$2.10	$4.19	$5.58	$2.10	$3.98	$7.29
183	$8.79	$2.14	$4.38	$4.79	$2.69	$3.15	$5.49	$2.14	$3.87	$8.31
184	$8.80	$2.14	$4.82	$7.06	$2.14	$4.31	$8.54	$2.44	$5.07	$6.38
185	$5.68	$2.12	$3.98	$6.39	$2.12	$4.21	$6.14	$2.12	$4.47	$7.83
186	$7.04	$2.12	$4.39	$7.14	$2.12	$4.16	$7.61	$2.12	$4.78	$9.24
187	$6.15	$2.08	$3.63	$5.24	$2.08	$3.88	$6.50	$2.08	$4.60	$7.77
188	$6.42	$2.14	$4.10	$6.61	$2.14	$4.13	$7.58	$2.14	$4.52	$6.27
189	$6.10	$2.14	$3.78	$7.13	$2.18	$4.87	$6.05	$3.22	$4.01	$5.88
190	$6.15	$2.10	$4.00	$6.07	$2.10	$3.96	$7.77	$2.10	$4.98	$6.40
191	$5.91	$2.10	$3.74	$9.49	$2.10	$4.97	$8.71	$2.10	$4.99	$8.48
192	$5.97	$2.10	$3.55	$5.81	$2.10	$4.15	$8.11	$2.10	$5.00	$6.82
193	$6.68	$2.08	$3.08	$6.82	$2.08	$4.05	$6.81	$2.08	$4.34	$8.37
194	$6.51	$2.12	$4.16	$6.05	$2.12	$4.23	$6.39	$2.12	$4.33	$7.32
195	$5.30	$2.12	$3.49	$6.16	$2.12	$4.54	$7.48	$2.95	$4.72	$6.99
196	$6.31	$2.12	$3.72	$7.40	$2.12	$4.79	$7.73	$2.23	$5.13	$6.87
197	$5.53	$2.08	$3.83	$7.07	$2.08	$4.37	$7.98	$2.35	$4.73	$6.30
198	$5.59	$2.08	$3.32	$6.07	$2.08	$4.58	$5.81	$2.36	$3.69	$7.20
199	$8.55	$2.12	$4.31	$8.10	$2.12	$4.28	$6.71	$2.12	$4.61	$6.36
200	$7.28	$2.10	$3.86	$6.42	$2.10	$4.74	$6.94	$3.12	$4.98	$7.61
average	$6.19	$2.12	$3.78	$6.75	$2.15	$4.23	$6.97	$2.30	$4.56	$7.30
Max	$8.80			$9.54			$9.44			$9.75
Avg			$3.78			$4.23			$4.56	
Min	$2.08			$2.08			$2.08			$2.08
Range	6.72			7.47			7.36			7.67

Draw	2018		2019			2020			2021	
	min	avg	max	min	avg	max	min	avg	max	min
1	$2.66	$4.56	$7.07	$2.57	$4.71	$6.34	$3.42	$4.29	$7.84	$2.82
2	$2.10	$5.58	$8.49	$4.19	$5.03	$7.05	$2.10	$4.20	$7.31	$2.10
3	$2.93	$4.83	$8.76	$2.53	$5.21	$7.18	$3.14	$4.47	$6.79	$2.10
4	$2.12	$4.29	$7.81	$2.61	$5.07	$7.32	$2.64	$4.22	$5.75	$2.12
5	$2.13	$4.55	$6.91	$2.12	$4.53	$8.90	$2.14	$5.11	$6.66	$3.24
6	$2.12	$5.45	$6.92	$3.15	$4.53	$6.40	$2.12	$4.43	$7.05	$2.32
7	$2.12	$4.98	$7.40	$2.49	$4.99	$6.99	$2.27	$4.15	$7.60	$2.12
8	$2.63	$4.41	$7.25	$2.08	$4.71	$7.63	$2.72	$4.79	$7.52	$2.08
9	$2.59	$4.68	$7.61	$2.58	$5.22	$6.33	$3.26	$4.26	$7.66	$2.98
10	$2.12	$4.40	$6.18	$2.12	$4.27	$7.30	$2.12	$5.22	$6.90	$3.14
11	$3.90	$4.72	$7.80	$2.21	$4.92	$6.73	$2.10	$4.34	$7.06	$2.77
12	$2.14	$4.64	$8.50	$3.61	$4.61	$7.26	$2.10	$4.75	$8.57	$2.77
13	$2.12	$4.87	$6.30	$2.12	$4.17	$6.29	$2.48	$4.42	$7.96	$2.61
14	$2.28	$4.58	$5.99	$2.56	$4.69	$6.47	$3.18	$4.37	$7.09	$2.10
15	$2.10	$5.05	$6.67	$2.10	$4.72	$8.11	$3.01	$4.47	$6.23	$2.10
16	$2.14	$5.04	$7.67	$2.14	$5.48	$7.01	$2.34	$4.88	$6.56	$2.14
17	$2.45	$4.22	$7.98	$2.33	$4.44	$7.12	$2.08	$4.26	$7.94	$2.08
18	$2.29	$4.90	$8.44	$3.25	$5.23	$6.84	$2.12	$4.84	$8.31	$2.12
19	$2.08	$4.44	$7.33	$2.08	$4.62	$7.55	$3.02	$4.68	$7.66	$2.08
20	$2.90	$4.41	$8.22	$2.15	$4.95	$7.63	$2.75	$4.07	$5.78	$2.10
21	$2.10	$5.02	$5.82	$3.53	$4.13	$6.78	$2.33	$4.68	$6.29	$2.10
22	$2.12	$5.34	$6.75	$2.89	$4.85	$7.31	$2.97	$5.02	$8.81	$3.27
23	$2.85	$4.58	$7.77	$2.42	$4.83	$6.78	$2.08	$4.52	$7.79	$2.08
24	$3.14	$5.12	$6.01	$2.67	$4.71	$6.39	$3.15	$4.14	$6.46	$2.12
25	$2.10	$5.47	$5.31	$3.50	$4.30	$5.83	$2.10	$4.34	$6.28	$2.10
26	$2.12	$4.75	$7.23	$2.67	$5.33	$7.03	$2.83	$5.12	$7.84	$2.32
27	$2.10	$5.42	$6.15	$3.12	$4.79	$6.77	$2.56	$4.90	$8.18	$3.21
28	$2.14	$4.74	$5.68	$2.14	$4.39	$7.69	$2.30	$4.96	$7.06	$2.14
29	$2.93	$4.99	$7.60	$2.14	$4.80	$7.07	$2.14	$4.89	$6.52	$2.15
30	$2.74	$4.58	$8.14	$2.12	$5.46	$7.42	$2.77	$4.75	$8.17	$2.12
31	$3.49	$4.40	$6.49	$2.52	$4.26	$7.63	$2.52	$4.63	$6.96	$2.27
32	$2.97	$5.17	$7.26	$3.53	$4.63	$6.72	$3.29	$4.00	$6.56	$2.10
33	$2.14	$4.97	$6.87	$3.13	$4.52	$6.97	$2.63	$4.93	$6.13	$2.40
34	$2.16	$4.32	$6.51	$2.74	$4.33	$8.66	$2.08	$4.45	$7.58	$2.58
35	$2.08	$5.05	$6.62	$2.77	$4.44	$8.39	$2.21	$4.40	$7.63	$2.08
36	$2.69	$5.15	$7.30	$2.27	$4.35	$8.64	$2.08	$5.23	$8.43	$2.77
37	$2.18	$4.74	$7.33	$2.14	$4.42	$8.24	$2.14	$4.62	$8.95	$2.56
38	$2.14	$4.85	$7.10	$2.93	$4.65	$5.83	$2.57	$4.56	$5.68	$3.25
39	$2.38	$3.93	$6.69	$2.08	$4.24	$7.32	$2.08	$4.95	$6.83	$2.94
40	$2.10	$4.81	$6.73	$3.14	$4.62	$6.93	$2.96	$4.36	$6.13	$2.74
41	$2.22	$4.95	$8.50	$3.33	$5.20	$6.99	$3.31	$4.54	$6.69	$2.26
42	$2.08	$5.29	$6.91	$3.35	$4.61	$5.66	$2.08	$4.06	$5.57	$2.08
43	$2.25	$4.93	$7.21	$2.15	$5.42	$6.81	$2.83	$4.78	$6.87	$2.08
44	$2.86	$5.15	$6.41	$3.24	$4.26	$6.80	$2.66	$4.65	$6.56	$2.72
45	$2.08	$4.82	$6.39	$2.76	$4.53	$6.08	$3.02	$4.15	$9.13	$2.82
46	$3.17	$4.48	$7.09	$2.31	$5.03	$7.21	$3.12	$4.45	$7.48	$2.08
47	$2.49	$4.77	$6.94	$3.00	$4.32	$6.21	$2.52	$4.47	$7.40	$2.14
48	$2.45	$4.82	$6.74	$2.10	$4.46	$7.40	$2.40	$4.55	$7.31	$2.59
49	$2.14	$5.18	$6.24	$2.94	$4.00	$7.72	$2.14	$5.07	$6.50	$2.29
50	$2.46	$4.12	$7.24	$2.10	$4.61	$6.88	$2.10	$4.59	$6.18	$2.89
51	$3.31	$4.85	$7.18	$2.14	$4.52	$6.75	$2.54	$4.29	$7.34	$2.14
52	$2.08	$5.13	$7.97	$2.08	$5.25	$7.29	$2.29	$4.57	$6.29	$2.92

Draw	2018		2019			2020			2021	
	min	avg	max	min	avg	max	min	avg	max	min
53	$2.12	$5.52	$8.07	$3.15	$4.37	$6.79	$2.20	$4.83	$6.18	$2.12
54	$2.43	$4.76	$7.25	$2.41	$4.63	$7.46	$3.00	$4.58	$5.57	$2.19
55	$2.36	$5.54	$7.51	$3.95	$4.37	$7.88	$2.08	$4.59	$7.21	$2.08
56	$2.63	$4.57	$7.49	$2.16	$4.17	$7.90	$2.35	$4.85	$7.40	$2.08
57	$2.08	$4.99	$6.38	$2.08	$4.08	$6.29	$2.08	$4.16	$6.23	$2.08
58	$2.12	$4.47	$8.73	$2.48	$5.00	$6.75	$2.12	$4.46	$8.23	$2.34
59	$2.60	$4.66	$6.84	$2.45	$4.83	$7.43	$2.08	$4.50	$7.22	$2.08
60	$2.10	$4.72	$6.55	$2.18	$3.95	$8.25	$2.10	$4.56	$7.35	$2.22
61	$2.12	$4.69	$6.16	$2.12	$4.35	$7.10	$2.57	$4.28	$6.53	$2.12
62	$2.40	$5.11	$7.25	$2.12	$4.55	$5.90	$2.12	$4.50	$7.18	$2.85
63	$2.08	$4.73	$6.91	$2.08	$4.54	$7.57	$2.08	$4.92	$6.50	$2.22
64	$2.10	$4.91	$7.50	$3.02	$4.53	$6.88	$2.10	$4.45	$7.40	$2.62
65	$2.14	$4.17	$9.59	$2.39	$5.10	$6.29	$2.14	$4.17	$8.52	$2.14
66	$2.45	$4.79	$7.18	$2.19	$4.74	$6.72	$2.57	$4.48	$7.19	$2.08
67	$2.32	$4.74	$7.09	$2.23	$4.32	$5.84	$2.35	$3.94	$6.31	$2.14
68	$2.14	$5.83	$8.32	$4.31	$4.94	$7.58	$3.05	$5.03	$7.02	$2.66
69	$2.10	$4.71	$7.76	$2.85	$4.65	$8.00	$2.44	$4.83	$6.77	$2.89
70	$2.10	$4.62	$5.72	$2.10	$4.11	$7.09	$2.21	$5.41	$7.64	$2.37
71	$2.10	$4.11	$7.38	$2.10	$4.40	$7.45	$2.10	$4.97	$7.22	$2.10
72	$2.45	$4.25	$8.19	$2.10	$4.39	$6.75	$2.10	$4.29	$6.70	$2.28
73	$2.12	$4.42	$7.53	$2.12	$4.16	$7.79	$2.16	$4.29	$5.84	$2.12
74	$3.03	$5.02	$7.84	$2.12	$4.49	$6.86	$2.58	$4.63	$7.21	$2.12
75	$2.10	$4.63	$6.67	$2.10	$4.85	$6.65	$2.84	$4.33	$7.01	$2.10
76	$2.08	$5.14	$8.29	$2.08	$4.27	$7.23	$2.11	$4.18	$6.77	$2.08
77	$2.51	$4.78	$6.07	$2.85	$4.35	$7.52	$2.61	$5.26	$6.57	$2.10
78	$2.14	$5.54	$8.40	$3.74	$5.03	$8.33	$2.14	$4.34	$7.69	$2.14
79	$2.12	$4.27	$7.39	$2.12	$5.18	$7.12	$2.30	$4.97	$7.79	$2.96
80	$2.20	$4.67	$6.50	$2.59	$4.60	$7.33	$2.67	$4.89	$6.42	$2.98
81	$2.10	$4.85	$8.17	$2.10	$4.53	$8.84	$2.10	$5.71	$7.35	$3.96
82	$2.08	$4.56	$8.06	$2.11	$4.45	$5.52	$2.41	$3.90	$8.53	$2.08
83	$2.30	$5.14	$6.73	$2.47	$4.50	$8.96	$2.83	$5.07	$6.41	$2.08
84	$2.14	$4.90	$6.18	$2.73	$4.61	$6.76	$2.14	$4.58	$8.04	$2.14
85	$2.10	$3.99	$7.81	$2.11	$4.57	$7.00	$2.85	$4.80	$7.11	$3.09
86	$3.29	$5.03	$6.54	$3.35	$4.68	$5.74	$3.17	$3.92	$7.06	$2.12
87	$2.10	$4.26	$7.24	$2.10	$4.44	$8.04	$2.10	$4.47	$7.36	$2.70
88	$3.12	$4.66	$6.39	$2.12	$4.72	$6.89	$3.61	$4.60	$7.55	$2.20
89	$2.66	$4.78	$7.58	$2.14	$4.77	$6.21	$2.14	$4.49	$6.53	$2.96
90	$3.66	$4.63	$6.05	$2.14	$3.63	$7.81	$2.59	$4.96	$6.49	$2.14
91	$2.12	$4.87	$7.21	$2.12	$4.56	$6.86	$2.12	$4.62	$6.55	$2.12
92	$3.31	$4.29	$8.19	$2.36	$4.50	$8.40	$2.28	$5.76	$7.95	$3.01
93	$3.45	$4.84	$7.96	$3.25	$5.02	$7.47	$2.94	$5.32	$7.12	$2.12
94	$2.10	$4.90	$7.71	$2.79	$4.94	$7.90	$2.10	$5.01	$7.47	$2.10
95	$2.31	$4.76	$7.68	$3.23	$4.84	$6.35	$2.14	$4.56	$7.49	$2.14
96	$2.08	$4.63	$7.18	$2.75	$4.47	$6.26	$2.08	$4.57	$7.71	$2.35
97	$2.12	$4.66	$8.02	$2.64	$3.63	$8.55	$2.12	$5.25	$7.72	$2.17
98	$2.09	$4.52	$7.36	$2.55	$4.77	$5.99	$2.81	$4.42	$6.18	$2.08
99	$2.56	$5.38	$7.05	$2.10	$4.34	$8.59	$2.10	$4.67	$6.51	$2.65
100	$2.55	$4.90	$6.97	$3.28	$4.89	$6.79	$3.01	$4.63	$7.61	$2.47
101	$2.38	$5.09	$6.42	$2.79	$4.32	$8.39	$2.47	$4.63	$9.57	$2.54
102	$2.64	$4.72	$6.56	$2.42	$4.48	$6.08	$2.92	$4.89	$8.43	$3.60
103	$3.24	$4.57	$6.19	$3.00	$4.18	$6.31	$2.14	$4.56	$6.16	$2.76
104	$2.10	$4.58	$7.84	$2.33	$5.47	$7.31	$2.10	$4.70	$7.62	$2.26

	2018		2019			2020			2021	
Draw	min	avg	max	min	avg	max	min	avg	max	min
105	$2.08	$4.80	$7.38	$2.83	$4.64	$8.57	$2.18	$4.72	$7.73	$2.08
106	$2.56	$5.10	$7.89	$3.07	$4.51	$6.07	$2.41	$4.18	$6.95	$2.10
107	$2.64	$5.06	$6.89	$2.58	$4.68	$7.73	$3.45	$5.18	$7.64	$3.32
108	$3.23	$4.51	$5.99	$2.75	$4.31	$9.64	$2.87	$5.10	$7.89	$2.24
109	$2.49	$4.75	$6.17	$2.10	$4.34	$6.74	$3.20	$4.77	$6.61	$2.10
110	$2.10	$4.83	$5.66	$2.24	$3.64	$8.22	$2.10	$4.61	$7.59	$2.10
111	$2.14	$4.57	$8.30	$2.14	$5.41	$6.49	$2.14	$4.07	$7.04	$2.14
112	$2.78	$4.45	$6.83	$2.44	$4.41	$7.19	$2.48	$4.58	$7.45	$2.73
113	$2.23	$3.95	$8.15	$2.08	$3.78	$8.22	$2.08	$4.65	$7.67	$2.08
114	$2.36	$5.03	$6.22	$2.27	$4.86	$6.61	$2.36	$4.90	$7.59	$3.49
115	$2.12	$4.42	$6.67	$2.12	$4.69	$6.86	$3.28	$4.53	$6.19	$2.12
116	$2.14	$4.81	$7.49	$2.14	$4.58	$7.98	$2.14	$4.78	$6.20	$2.14
117	$2.66	$4.40	$7.71	$2.12	$4.78	$6.56	$2.14	$4.95	$9.11	$2.98
118	$2.12	$5.74	$6.74	$3.58	$5.03	$7.17	$2.95	$5.55	$7.49	$4.03
119	$2.08	$4.98	$7.33	$2.88	$4.96	$6.78	$3.52	$4.60	$6.44	$2.08
120	$2.33	$4.83	$7.64	$2.81	$4.41	$7.13	$2.43	$4.95	$7.54	$3.00
121	$2.12	$4.67	$6.89	$2.23	$4.69	$7.41	$3.22	$4.57	$7.02	$2.12
122	$2.08	$4.62	$6.29	$2.49	$4.31	$9.14	$2.37	$5.96	$7.52	$2.24
123	$2.14	$5.08	$6.81	$2.47	$4.20	$6.18	$2.45	$4.49	$9.53	$2.45
124	$2.14	$4.60	$7.42	$2.14	$4.57	$6.72	$2.14	$4.09	$6.84	$2.14
125	$2.33	$4.67	$5.94	$2.09	$4.54	$7.00	$2.08	$3.93	$8.14	$2.08
126	$2.14	$5.92	$7.05	$3.27	$4.11	$7.40	$2.14	$5.11	$6.60	$2.90
127	$2.14	$4.29	$7.93	$2.71	$4.59	$7.45	$3.15	$4.16	$7.51	$2.16
128	$2.10	$5.39	$7.23	$2.69	$5.22	$6.60	$3.12	$5.02	$8.27	$2.69
129	$2.86	$4.90	$6.99	$2.97	$4.61	$6.60	$2.42	$4.55	$7.10	$2.12
130	$2.08	$4.74	$6.49	$2.38	$4.23	$5.79	$2.08	$3.78	$7.58	$2.08
131	$2.32	$4.59	$8.85	$2.82	$5.14	$7.34	$2.92	$4.36	$8.91	$2.08
132	$2.14	$4.28	$7.35	$2.89	$4.47	$6.56	$2.67	$4.22	$6.97	$3.15
133	$2.08	$4.50	$7.00	$2.09	$4.89	$6.04	$2.97	$4.29	$8.58	$2.50
134	$2.14	$4.94	$8.40	$2.84	$4.27	$8.99	$2.14	$5.39	$7.65	$2.77
135	$2.50	$4.36	$7.01	$2.12	$4.58	$6.32	$2.12	$4.85	$6.24	$2.90
136	$2.65	$4.69	$7.70	$2.10	$4.60	$6.44	$2.34	$4.41	$5.95	$2.10
137	$2.80	$4.98	$6.51	$2.89	$4.45	$6.48	$2.12	$4.81	$6.34	$3.02
138	$2.93	$5.08	$5.04	$2.82	$3.88	$8.82	$2.56	$5.42	$8.05	$2.12
139	$2.12	$4.77	$7.79	$2.46	$4.74	$7.52	$3.07	$4.83	$8.15	$2.12
140	$2.49	$4.34	$7.49	$2.12	$5.23	$6.25	$2.41	$4.90	$6.48	$2.57
141	$3.63	$4.74	$7.83	$2.10	$4.39	$6.09	$2.10	$4.53	$6.59	$2.65
142	$3.01	$5.04	$6.39	$2.50	$3.79	$6.74	$2.08	$4.92	$5.97	$2.39
143	$2.12	$5.06	$6.81	$3.23	$4.26	$6.62	$2.12	$4.75	$7.07	$2.98
144	$2.10	$4.58	$5.77	$3.01	$4.25	$9.02	$2.10	$5.57	$7.11	$3.20
145	$2.08	$4.72	$6.90	$2.33	$4.72	$7.08	$2.08	$4.47	$8.25	$2.70
146	$2.10	$4.28	$8.20	$2.10	$4.67	$7.15	$2.77	$4.62	$6.20	$2.55
147	$2.79	$4.91	$7.10	$2.14	$4.41	$7.24	$2.84	$4.37	$7.41	$2.14
148	$2.10	$5.14	$6.50	$3.08	$4.40	$7.37	$2.10	$4.93	$6.06	$3.27
149	$2.43	$4.71	$7.52	$2.97	$4.67	$7.19	$2.08	$4.50	$6.10	$2.08
150	$2.12	$4.59	$7.81	$3.21	$4.99	$7.22	$2.12	$4.44	$7.40	$2.12
151	$2.12	$4.98	$5.46	$2.55	$4.11	$7.01	$2.28	$4.79	$7.42	$2.12
152	$3.92	$4.50	$6.71	$2.13	$4.36	$6.10	$2.12	$4.37	$7.34	$2.12
153	$3.36	$5.22	$6.57	$2.68	$4.97	$6.77	$3.44	$4.83	$7.11	$2.74
154	$2.75	$4.48	$5.71	$2.14	$4.15	$6.23	$2.67	$4.40	$7.50	$2.37
155	$2.14	$4.48	$7.64	$3.53	$4.05	$6.29	$2.14	$4.77	$6.87	$2.14
156	$3.35	$4.17	$7.24	$2.14	$4.90	$9.86	$2.66	$5.55	$7.63	$3.30

	2018		2019			2020			2021	
Draw	min	avg	max	min	avg	max	min	avg	max	min
157	$2.12	$4.87	$7.93	$2.12	$4.82	$8.15	$2.77	$4.98	$8.12	$3.26
158	$2.08	$4.67	$5.89	$2.08	$4.71	$5.88	$3.42	$4.23	$7.56	$2.08
159	$2.12	$4.36	$7.57	$2.12	$4.82	$6.60	$2.12	$4.07	$6.72	$2.12
160	$2.70	$4.20	$6.84	$2.14	$4.12	$7.28	$2.66	$4.63	$8.02	$2.14
161	$2.48	$4.66	$8.41	$2.10	$4.52	$7.42	$2.10	$5.13	$6.41	$2.10
162	$2.12	$4.98	$6.03	$2.89	$4.31	$6.20	$2.12	$4.33	$8.11	$2.12
163	$2.24	$4.06	$6.14	$2.08	$4.13	$7.69	$2.08	$4.67	$8.68	$2.40
164	$2.27	$4.74	$6.79	$2.16	$4.49	$7.92	$2.10	$5.17	$9.81	$2.10
165	$3.12	$4.61	$7.08	$2.08	$5.02	$6.26	$2.66	$4.93	$6.34	$2.85
166	$2.14	$4.86	$7.18	$2.82	$4.43	$7.38	$2.14	$4.43	$6.72	$2.14
167	$2.08	$4.81	$7.98	$2.08	$4.85	$6.11	$2.08	$4.34	$6.40	$2.08
168	$2.08	$3.95	$7.92	$2.14	$5.13	$7.27	$3.61	$4.49	$8.79	$2.27
169	$2.10	$4.85	$6.04	$2.10	$4.06	$8.17	$2.48	$4.80	$7.21	$2.42
170	$2.84	$4.39	$7.75	$2.14	$4.56	$6.23	$2.14	$4.31	$7.07	$2.94
171	$2.49	$5.26	$7.31	$3.99	$4.84	$6.22	$2.38	$4.62	$6.50	$2.97
172	$2.08	$4.45	$8.13	$2.84	$4.91	$6.09	$2.08	$4.21	$7.77	$2.08
173	$2.13	$4.95	$7.29	$2.96	$4.98	$5.85	$3.26	$4.06	$7.73	$2.10
174	$2.08	$4.82	$7.78	$2.08	$4.73	$6.20	$2.08	$4.42	$7.75	$2.08
175	$2.08	$4.88	$7.83	$3.53	$5.27	$5.68	$3.05	$4.36	$6.37	$2.72
176	$2.66	$4.44	$5.98	$2.10	$4.27	$6.71	$2.95	$4.35	$8.62	$2.10
177	$2.10	$4.12	$7.95	$2.10	$5.07	$7.09	$2.40	$4.56	$5.55	$2.10
178	$2.11	$4.72	$6.41	$2.08	$4.76	$6.21	$3.71	$3.93	$8.53	$2.08
179	$4.02	$5.18	$6.96	$2.10	$5.12	$7.90	$3.40	$4.75	$7.25	$2.12
180	$2.18	$5.11	$7.24	$2.12	$4.66	$7.25	$2.12	$4.20	$8.30	$2.12
181	$2.10	$4.68	$8.95	$2.52	$5.34	$6.59	$2.10	$4.55	$5.83	$3.21
182	$2.17	$4.25	$7.52	$2.10	$3.96	$7.01	$2.10	$4.45	$6.95	$2.10
183	$2.14	$4.85	$7.51	$3.06	$4.24	$7.16	$2.14	$4.32	$7.79	$2.14
184	$2.14	$5.13	$8.91	$3.56	$4.89	$7.66	$2.14	$4.37	$6.45	$2.14
185	$2.93	$5.23	$6.65	$3.34	$4.32	$6.86	$2.12	$4.60	$6.61	$2.27
186	$2.12	$4.81	$9.14	$2.12	$5.14	$7.60	$2.12	$4.78	$6.11	$3.40
187	$2.08	$4.60	$6.97	$2.26	$4.41	$6.85	$2.08	$4.60	$6.49	$2.08
188	$2.14	$4.31	$7.22	$2.14	$4.81	$7.45	$3.16	$4.30	$7.11	$2.54
189	$2.31	$4.46	$6.99	$3.52	$4.41	$6.22	$2.14	$4.54	$8.54	$2.14
190	$2.10	$4.51	$6.56	$2.10	$4.39	$6.55	$2.27	$4.05	$7.27	$2.10
191	$3.01	$4.50	$7.10	$3.08	$4.85	$7.24	$2.53	$4.93	$6.76	$2.10
192	$2.77	$4.20	$5.92	$2.10	$4.20	$7.30	$3.03	$5.08	$7.94	$2.16
193	$2.08	$5.09	$7.91	$3.14	$4.92	$7.34	$2.47	$4.45	$7.83	$2.08
194	$2.12	$5.28	$6.39	$3.52	$4.25	$6.63	$2.12	$4.79	$7.16	$2.12
195	$2.12	$4.26	$7.09	$2.12	$4.97	$8.73	$2.12	$5.42	$7.56	$4.23
196	$3.27	$4.49	$6.58	$2.12	$4.93	$5.55	$2.12	$4.03	$8.10	$2.12
197	$2.08	$4.80	$6.86	$2.95	$4.41	$10.14	$3.21	$5.07	$8.43	$2.08
198	$2.08	$5.23	$8.65	$2.10	$4.44	$7.18	$2.08	$4.48	$6.18	$2.74
199	$2.12	$4.76	$8.00	$2.12	$5.30	$6.51	$2.12	$4.75	$8.19	$2.53
200	$2.10	$4.79	$7.70	$2.61	$5.17	$8.29	$2.69	$5.18	$7.78	$2.67
average	$2.39	$4.76	$7.18	$2.55	$4.61	$7.12	$2.47	$4.63	$7.24	$2.42
Max			$9.59			$10.14			$9.81	
Avg		$4.76			$4.61			$4.63		
Min			$2.08			$2.08			$2.08	
Range			7.51			8.06			7.73	

Draw		2022			2023			2024		
	avg	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**
1	$4.44	$7.00	$2.08	$5.36	$6.52	$4.18	$4.50	$6.87	$2.39	$4.85
2	$4.73	$7.37	$2.10	$5.02	$6.63	$2.10	$4.86	$9.00	$3.09	$4.92
3	$5.12	$7.89	$3.98	$4.82	$8.17	$2.91	$4.40	$7.94	$2.53	$5.01
4	$4.39	$7.14	$2.12	$4.81	$7.20	$2.80	$4.97	$7.12	$3.10	$5.11
5	$4.63	$6.80	$2.37	$4.80	$6.90	$2.12	$5.17	$10.56	$3.31	$4.80
6	$5.11	$6.38	$3.30	$5.12	$8.03	$2.12	$5.64	$7.29	$3.00	$5.18
7	$5.50	$7.69	$3.41	$5.31	$7.58	$2.12	$5.20	$6.83	$2.84	$5.08
8	$5.29	$9.91	$2.71	$5.36	$8.30	$2.67	$4.92	$6.95	$2.19	$4.47
9	$5.29	$8.91	$3.16	$4.86	$6.33	$3.46	$4.07	$6.72	$2.10	$4.93
10	$5.03	$7.04	$2.41	$5.23	$7.19	$3.28	$4.80	$7.43	$2.62	$5.33
11	$4.83	$6.50	$2.40	$4.99	$6.54	$2.10	$4.71	$5.74	$3.01	$4.50
12	$5.21	$6.82	$2.75	$4.58	$6.99	$2.17	$3.98	$7.72	$2.10	$4.74
13	$5.12	$7.33	$2.41	$5.30	$6.84	$2.60	$4.18	$8.11	$2.12	$5.14
14	$4.81	$6.15	$2.33	$4.37	$6.97	$2.10	$4.09	$6.67	$2.10	$4.60
15	$4.71	$9.56	$2.37	$5.16	$6.07	$2.10	$4.73	$6.07	$2.29	$4.73
16	$5.02	$6.60	$3.76	$4.72	$8.85	$2.14	$4.68	$7.66	$2.14	$5.18
17	$5.11	$7.56	$2.08	$5.00	$6.66	$3.90	$4.22	$6.54	$2.08	$4.62
18	$4.76	$8.77	$2.12	$5.18	$8.36	$3.42	$5.13	$6.77	$3.08	$4.76
19	$4.88	$8.10	$2.08	$5.22	$5.55	$2.47	$4.24	$8.97	$2.14	$4.85
20	$4.68	$7.70	$3.15	$4.80	$6.03	$3.23	$4.61	$6.47	$2.74	$4.28
21	$4.52	$7.62	$2.88	$5.47	$7.31	$2.24	$4.74	$6.61	$2.10	$4.58
22	$5.07	$8.18	$3.73	$5.01	$7.54	$2.96	$4.58	$6.55	$2.62	$5.17
23	$5.00	$6.84	$2.70	$5.02	$7.71	$2.16	$4.94	$6.14	$2.40	$4.68
24	$4.95	$8.80	$2.54	$5.32	$7.28	$2.26	$4.89	$7.24	$3.31	$5.14
25	$4.27	$5.28	$2.31	$4.24	$6.48	$2.62	$4.30	$7.13	$2.10	$4.72
26	$5.02	$7.03	$3.39	$4.77	$6.70	$2.70	$4.22	$8.65	$2.12	$5.15
27	$4.76	$7.58	$2.10	$5.46	$6.50	$2.59	$4.79	$6.97	$3.14	$4.85
28	$4.56	$7.94	$2.14	$5.17	$7.26	$2.85	$4.88	$6.42	$2.55	$4.46
29	$4.89	$8.31	$3.24	$5.96	$7.15	$4.43	$4.58	$7.63	$2.77	$4.70
30	$5.00	$8.35	$2.12	$5.59	$6.39	$3.19	$4.82	$8.75	$2.88	$5.36
31	$5.06	$6.87	$3.80	$5.08	$7.92	$2.97	$4.32	$6.80	$2.12	$4.79
32	$4.24	$6.40	$2.10	$4.51	$7.58	$2.95	$4.45	$7.26	$2.10	$5.29
33	$3.80	$8.03	$2.14	$5.37	$6.53	$2.14	$4.41	$8.26	$2.61	$4.30
34	$4.48	$5.97	$3.33	$4.02	$7.82	$2.08	$4.21	$7.14	$2.08	$5.34
35	$5.01	$6.21	$3.54	$4.18	$6.84	$2.08	$4.60	$7.41	$2.08	$5.01
36	$5.53	$6.54	$2.27	$4.14	$7.41	$2.57	$4.51	$7.36	$2.08	$4.22
37	$4.49	$7.86	$2.43	$4.51	$7.86	$3.01	$4.57	$7.77	$3.31	$4.77
38	$4.48	$7.40	$2.30	$5.03	$6.24	$2.51	$5.15	$8.21	$2.17	$5.02
39	$4.97	$6.97	$3.43	$4.79	$5.24	$2.08	$4.03	$6.15	$2.08	$4.44
40	$4.20	$7.28	$2.69	$4.74	$6.63	$3.14	$4.31	$8.07	$2.10	$4.61
41	$4.83	$6.69	$2.18	$4.62	$8.68	$2.46	$4.44	$6.59	$2.12	$4.75
42	$4.07	$7.62	$2.08	$4.61	$6.29	$2.08	$4.36	$6.77	$2.35	$4.83
43	$4.40	$6.46	$2.08	$4.71	$6.80	$2.08	$4.87	$7.21	$2.68	$5.00
44	$4.78	$7.63	$2.14	$5.40	$7.42	$3.60	$5.38	$7.98	$3.08	$5.07
45	$5.59	$7.14	$3.91	$4.38	$6.39	$2.15	$4.22	$7.48	$3.04	$4.30
46	$5.05	$7.68	$2.25	$4.67	$7.01	$2.72	$5.07	$8.71	$2.52	$5.17
47	$4.22	$8.30	$2.14	$5.18	$6.67	$2.74	$4.75	$7.44	$2.66	$4.19
48	$4.62	$5.82	$2.10	$4.74	$6.17	$2.88	$4.51	$6.91	$2.77	$4.97
49	$4.62	$8.30	$2.23	$4.96	$7.70	$3.08	$4.72	$5.77	$2.14	$4.06
50	$4.69	$8.79	$2.49	$5.00	$7.46	$3.18	$5.63	$6.96	$2.77	$4.76
51	$5.18	$8.18	$2.67	$4.93	$7.88	$3.21	$4.65	$9.62	$2.69	$5.01
52	$4.74	$6.94	$2.37	$5.07	$6.56	$2.08	$4.07	$6.82	$2.08	$5.38

Draw		2022			2023			2024		
	avg	max	min	avg	max	min	avg	max	min	avg
53	$4.29	$8.63	$2.12	$5.76	$6.65	$4.04	$4.88	$6.92	$2.64	$4.69
54	$3.93	$7.57	$2.12	$4.58	$8.01	$3.47	$5.07	$8.14	$3.09	$5.09
55	$4.65	$8.90	$2.08	$5.84	$7.66	$4.04	$5.02	$7.29	$3.43	$4.76
56	$4.89	$8.50	$2.69	$5.08	$7.95	$3.08	$5.14	$8.48	$3.42	$5.09
57	$3.90	$7.62	$2.08	$5.14	$6.25	$2.08	$4.87	$8.30	$3.01	$4.70
58	$4.64	$6.74	$2.12	$4.65	$8.58	$2.26	$5.71	$8.81	$3.91	$5.24
59	$5.18	$6.32	$3.41	$4.53	$6.88	$2.54	$4.49	$7.66	$2.56	$4.75
60	$4.94	$8.49	$3.46	$5.55	$6.31	$3.24	$4.53	$6.18	$2.44	$4.90
61	$4.57	$7.12	$2.90	$5.03	$6.90	$2.30	$4.83	$6.54	$2.12	$4.12
62	$4.38	$7.75	$2.12	$5.42	$8.45	$2.43	$5.22	$8.33	$2.48	$5.15
63	$4.61	$7.50	$2.43	$4.86	$7.49	$2.08	$4.22	$7.80	$2.08	$4.70
64	$4.81	$9.01	$2.10	$5.14	$6.57	$2.65	$4.49	$6.73	$2.10	$5.12
65	$5.23	$6.08	$2.33	$4.20	$6.16	$2.14	$4.09	$8.00	$2.14	$4.91
66	$4.76	$6.72	$2.08	$5.61	$7.66	$3.02	$4.65	$6.40	$2.88	$4.90
67	$4.56	$6.02	$2.14	$4.35	$7.84	$2.24	$4.34	$6.77	$2.44	$5.18
68	$5.34	$7.63	$3.08	$5.12	$7.13	$2.14	$4.65	$7.86	$2.65	$4.92
69	$4.36	$8.61	$2.42	$5.19	$7.35	$2.15	$5.15	$6.93	$2.30	$4.69
70	$5.22	$7.69	$2.35	$5.49	$8.66	$2.85	$4.99	$7.44	$3.24	$5.31
71	$5.10	$6.66	$3.08	$4.03	$6.37	$2.74	$4.28	$6.59	$2.10	$5.05
72	$4.52	$8.99	$2.90	$5.61	$7.71	$2.89	$4.75	$5.96	$3.17	$4.25
73	$4.49	$7.42	$2.80	$5.03	$8.27	$2.12	$4.84	$8.46	$3.16	$5.34
74	$4.48	$8.69	$3.30	$4.88	$8.35	$2.35	$4.73	$5.96	$2.81	$4.63
75	$4.05	$7.72	$2.43	$5.07	$6.43	$3.34	$4.47	$8.42	$2.10	$5.30
76	$5.00	$6.03	$3.38	$4.70	$6.69	$3.23	$5.12	$6.96	$3.06	$4.78
77	$4.37	$7.92	$2.10	$5.50	$7.21	$2.93	$4.41	$6.91	$2.62	$4.75
78	$5.17	$6.35	$2.72	$4.37	$8.34	$2.31	$5.44	$6.60	$3.41	$4.60
79	$4.76	$6.68	$3.32	$5.22	$6.14	$3.82	$4.09	$7.72	$2.12	$5.29
80	$4.54	$8.19	$2.14	$5.31	$7.68	$2.64	$5.05	$6.74	$3.09	$4.25
81	$4.72	$6.84	$2.10	$5.06	$6.18	$2.97	$4.40	$6.72	$2.10	$4.63
82	$4.75	$7.22	$2.08	$5.14	$6.39	$2.08	$4.42	$7.36	$2.31	$4.86
83	$4.71	$7.48	$2.08	$5.01	$8.68	$2.87	$5.08	$6.59	$3.09	$4.88
84	$5.18	$8.75	$3.07	$5.27	$8.49	$3.05	$4.44	$7.00	$2.14	$4.97
85	$4.59	$7.62	$2.10	$5.10	$7.83	$2.63	$5.32	$7.21	$2.65	$4.15
86	$4.32	$8.20	$2.12	$5.33	$7.66	$2.98	$5.85	$5.90	$3.52	$4.11
87	$5.14	$7.05	$2.79	$4.14	$6.55	$2.10	$4.22	$7.57	$2.10	$4.82
88	$4.97	$9.05	$2.41	$5.21	$6.85	$2.78	$4.35	$6.98	$2.12	$4.72
89	$4.64	$6.93	$2.66	$5.18	$5.63	$3.10	$4.12	$6.88	$2.14	$5.18
90	$4.98	$8.06	$2.14	$4.97	$6.62	$2.79	$4.30	$6.44	$2.26	$4.80
91	$4.55	$6.66	$2.12	$4.73	$7.82	$3.02	$5.94	$8.66	$4.65	$4.81
92	$4.38	$8.58	$2.08	$5.41	$7.06	$2.08	$4.95	$7.85	$3.04	$4.97
93	$4.77	$7.08	$2.12	$4.43	$8.33	$2.12	$5.41	$6.61	$3.09	$4.60
94	$4.32	$7.80	$2.16	$4.98	$7.03	$2.20	$4.70	$6.66	$2.10	$4.77
95	$4.73	$7.31	$3.04	$4.57	$5.71	$2.14	$4.45	$7.09	$2.14	$5.27
96	$4.73	$7.68	$2.08	$4.33	$8.16	$2.08	$5.58	$6.43	$3.68	$4.38
97	$4.46	$7.59	$2.12	$5.09	$8.61	$2.12	$4.36	$8.48	$2.36	$5.49
98	$4.33	$8.60	$2.08	$4.78	$8.03	$2.71	$4.97	$6.50	$2.12	$4.96
99	$5.33	$7.60	$3.65	$4.75	$6.58	$3.01	$4.45	$7.42	$2.10	$4.71
100	$4.65	$8.19	$3.04	$5.46	$6.32	$3.05	$4.13	$7.40	$2.08	$5.79
101	$5.03	$7.66	$2.08	$4.82	$8.08	$2.08	$5.04	$7.51	$3.70	$4.82
102	$5.66	$6.51	$3.51	$4.99	$7.64	$3.40	$5.36	$6.03	$3.03	$4.61
103	$4.05	$7.49	$2.32	$4.85	$5.68	$2.96	$4.06	$5.77	$2.95	$4.40
104	$5.41	$6.61	$4.13	$4.89	$6.62	$3.02	$4.20	$7.12	$2.10	$4.89

Draw		2022			2023			2024		
	avg	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**
105	$5.20	$7.61	$2.08	$5.53	$5.75	$3.35	$4.44	$8.90	$2.45	$4.74
106	$4.91	$7.30	$2.43	$4.55	$6.27	$2.10	$4.60	$6.55	$2.54	$4.80
107	$4.96	$6.86	$2.10	$4.92	$8.33	$2.77	$5.37	$6.56	$3.28	$4.71
108	$5.49	$7.67	$3.10	$5.45	$6.35	$2.87	$4.23	$6.68	$2.22	$4.68
109	$5.03	$6.87	$2.10	$4.50	$8.43	$2.10	$4.73	$6.74	$2.10	$4.89
110	$5.13	$6.64	$3.26	$4.87	$6.55	$2.95	$4.50	$8.10	$2.69	$4.97
111	$4.47	$7.81	$2.14	$4.83	$7.78	$3.63	$5.30	$5.98	$2.22	$4.97
112	$4.63	$6.91	$3.12	$5.48	$7.40	$3.23	$4.74	$7.08	$2.63	$4.31
113	$4.78	$7.32	$2.08	$4.92	$8.33	$2.59	$5.31	$7.80	$2.35	$4.87
114	$4.93	$8.66	$2.98	$5.28	$7.84	$3.88	$5.02	$6.82	$2.08	$4.78
115	$4.29	$7.21	$2.72	$4.65	$7.54	$2.32	$5.19	$8.28	$3.31	$5.43
116	$4.52	$7.39	$3.02	$4.67	$8.52	$2.65	$5.01	$7.52	$2.14	$4.97
117	$4.71	$6.43	$2.12	$5.06	$6.81	$3.49	$5.03	$6.13	$2.35	$4.19
118	$5.06	$6.97	$3.67	$5.06	$7.67	$3.66	$5.33	$6.54	$3.28	$4.64
119	$3.76	$7.11	$2.40	$4.72	$8.15	$2.08	$4.72	$8.32	$2.51	$4.69
120	$5.05	$7.89	$3.81	$4.68	$6.74	$2.10	$4.73	$8.86	$2.60	$4.58
121	$4.43	$7.88	$2.12	$4.85	$6.53	$2.18	$4.90	$6.91	$3.12	$4.80
122	$5.52	$7.50	$2.72	$4.46	$8.93	$2.08	$5.41	$6.39	$3.78	$4.85
123	$4.91	$7.41	$2.14	$4.37	$6.29	$2.62	$4.52	$7.19	$2.91	$4.91
124	$4.14	$7.28	$2.60	$5.28	$7.40	$3.40	$4.74	$7.36	$3.30	$4.61
125	$4.58	$5.99	$2.90	$4.99	$7.44	$3.34	$4.54	$7.17	$2.59	$5.12
126	$4.52	$6.33	$2.14	$5.00	$7.37	$3.19	$4.59	$7.81	$2.14	$5.51
127	$5.41	$7.80	$3.87	$5.31	$7.81	$2.38	$4.82	$7.39	$2.14	$4.52
128	$5.24	$7.76	$3.11	$5.61	$6.80	$2.10	$4.61	$6.78	$2.68	$4.61
129	$4.71	$7.14	$2.76	$5.05	$7.75	$2.68	$5.07	$8.11	$2.97	$5.01
130	$4.46	$7.39	$2.08	$4.72	$6.82	$2.49	$4.18	$8.89	$2.08	$4.69
131	$4.95	$7.87	$2.41	$5.32	$7.48	$2.08	$5.08	$6.71	$2.08	$4.64
132	$4.92	$7.85	$2.86	$5.31	$7.47	$3.12	$4.44	$7.74	$2.14	$5.04
133	$4.92	$6.48	$3.03	$4.61	$6.08	$2.08	$4.12	$5.83	$2.28	$4.02
134	$5.02	$8.45	$2.14	$5.44	$6.54	$3.43	$5.08	$6.65	$2.82	$4.76
135	$4.19	$7.30	$2.12	$5.42	$6.57	$2.93	$4.77	$6.50	$2.49	$4.54
136	$4.21	$7.50	$2.10	$4.75	$6.30	$2.10	$4.79	$7.61	$3.39	$5.04
137	$4.12	$7.05	$2.12	$4.82	$8.09	$3.03	$5.46	$7.73	$2.12	$4.94
138	$5.26	$7.64	$3.17	$4.38	$8.75	$2.39	$4.64	$7.50	$2.12	$4.56
139	$4.49	$7.17	$2.89	$5.16	$6.66	$2.12	$4.30	$7.02	$2.12	$5.35
140	$4.55	$7.19	$2.77	$5.49	$6.30	$4.25	$4.70	$8.17	$2.12	$4.82
141	$4.86	$7.89	$2.90	$4.77	$7.36	$2.26	$5.16	$7.42	$2.67	$4.75
142	$4.62	$8.33	$2.08	$5.34	$7.39	$3.38	$4.82	$6.65	$2.08	$4.05
143	$4.17	$7.06	$2.12	$5.05	$7.72	$2.24	$4.74	$6.74	$2.12	$4.31
144	$4.87	$7.16	$2.10	$4.29	$7.37	$2.10	$4.77	$6.56	$2.73	$4.51
145	$5.11	$7.16	$3.69	$4.39	$6.88	$2.08	$4.59	$6.43	$3.15	$4.30
146	$4.29	$5.95	$2.10	$4.73	$6.28	$2.10	$4.48	$6.74	$2.11	$4.45
147	$4.62	$7.11	$2.14	$4.63	$6.41	$2.14	$4.56	$8.63	$2.45	$4.90
148	$3.96	$8.24	$2.16	$4.60	$6.91	$2.10	$5.18	$6.46	$3.44	$4.81
149	$4.53	$6.77	$2.08	$5.11	$7.86	$3.50	$5.07	$6.47	$2.80	$5.08
150	$5.19	$6.37	$2.12	$5.11	$6.65	$3.42	$5.13	$7.11	$3.89	$4.70
151	$4.76	$6.83	$2.18	$4.75	$6.95	$2.49	$4.78	$8.45	$2.66	$5.01
152	$4.21	$6.87	$2.12	$4.86	$6.78	$2.18	$4.85	$7.81	$2.93	$5.31
153	$4.50	$8.00	$2.10	$4.89	$7.22	$2.44	$5.34	$7.05	$2.66	$4.73
154	$4.91	$7.87	$2.14	$5.00	$6.45	$2.68	$4.70	$7.84	$2.70	$4.40
155	$4.56	$7.87	$2.33	$5.38	$8.47	$2.71	$4.38	$7.00	$2.37	$5.38
156	$4.70	$6.76	$2.14	$5.25	$6.15	$3.33	$4.30	$5.65	$2.14	$4.31

		2022			2023			2024		
Draw	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**
157	$4.51	$6.67	$2.12	$4.91	$7.72	$3.60	$4.39	$7.64	$2.12	$5.03
158	$4.12	$6.43	$2.08	$4.44	$7.72	$2.08	$4.70	$5.66	$2.50	$3.80
159	$4.31	$7.79	$2.33	$5.44	$7.29	$2.95	$4.47	$9.15	$2.12	$5.65
160	$5.50	$6.14	$2.83	$4.24	$6.37	$2.22	$4.36	$7.66	$2.14	$4.31
161	$4.66	$6.91	$2.55	$4.23	$6.70	$2.18	$4.14	$5.08	$2.10	$3.87
162	$5.31	$7.40	$2.95	$4.42	$6.62	$2.70	$4.63	$7.50	$2.57	$4.75
163	$5.00	$6.57	$2.70	$4.43	$5.98	$2.09	$4.76	$6.93	$2.83	$4.70
164	$5.53	$6.99	$2.10	$4.66	$6.44	$2.88	$4.58	$6.69	$2.21	$4.92
165	$4.52	$7.16	$2.76	$4.98	$6.45	$2.48	$3.91	$7.38	$2.08	$4.83
166	$4.79	$8.22	$3.10	$5.91	$7.40	$3.99	$4.48	$6.46	$3.12	$4.18
167	$4.43	$7.16	$2.78	$4.53	$6.50	$2.25	$4.95	$7.31	$4.09	$4.28
168	$4.49	$7.81	$2.08	$4.65	$8.01	$2.08	$5.48	$7.28	$3.40	$4.50
169	$4.47	$8.38	$2.88	$6.05	$7.25	$4.43	$4.36	$6.57	$2.10	$4.53
170	$5.57	$6.96	$2.78	$4.05	$7.34	$2.14	$4.61	$6.37	$2.14	$4.52
171	$4.22	$9.82	$2.18	$5.37	$8.17	$2.14	$5.14	$6.94	$3.51	$5.03
172	$5.56	$6.72	$2.85	$4.64	$7.69	$2.08	$4.57	$6.19	$2.22	$4.46
173	$4.54	$8.20	$2.10	$4.91	$7.39	$2.23	$5.38	$8.73	$4.02	$4.79
174	$4.96	$7.10	$3.51	$4.95	$7.60	$2.28	$4.54	$8.08	$2.08	$4.78
175	$5.07	$8.06	$3.64	$5.30	$7.62	$3.48	$4.37	$6.86	$2.08	$4.68
176	$5.32	$6.88	$2.98	$5.44	$7.33	$3.85	$4.80	$7.49	$2.29	$5.33
177	$4.01	$7.31	$2.16	$4.55	$5.83	$3.24	$4.27	$8.11	$2.10	$4.77
178	$4.68	$7.23	$2.25	$4.64	$5.77	$2.70	$4.34	$6.95	$2.89	$4.66
179	$5.45	$7.36	$2.10	$5.22	$7.22	$2.11	$4.67	$7.75	$2.10	$4.47
180	$5.13	$6.74	$2.71	$4.66	$5.86	$2.37	$3.86	$6.97	$2.12	$4.89
181	$4.28	$6.73	$3.25	$4.61	$7.25	$2.47	$4.62	$8.12	$2.10	$4.53
182	$4.80	$8.32	$3.12	$4.42	$6.27	$2.10	$4.41	$6.46	$2.10	$4.10
183	$4.68	$8.13	$2.14	$5.23	$8.14	$3.07	$4.77	$10.28	$2.75	$6.25
184	$4.83	$9.45	$2.31	$5.66	$6.79	$2.85	$4.50	$5.76	$2.14	$4.48
185	$4.85	$8.25	$3.58	$4.56	$6.63	$2.12	$4.61	$8.04	$2.24	$4.83
186	$4.37	$7.99	$2.12	$4.76	$7.66	$2.12	$4.28	$7.27	$2.18	$4.84
187	$4.63	$7.15	$2.69	$4.92	$7.13	$3.47	$4.93	$8.81	$2.08	$4.80
188	$4.89	$9.32	$2.14	$4.64	$7.22	$2.14	$4.38	$6.72	$2.14	$5.22
189	$5.27	$8.22	$2.84	$5.22	$6.01	$3.27	$4.13	$6.58	$2.18	$4.37
190	$5.18	$6.38	$3.48	$4.19	$7.99	$2.10	$4.81	$5.70	$2.47	$4.03
191	$4.67	$7.00	$2.10	$4.79	$6.36	$3.58	$4.24	$7.61	$2.10	$4.77
192	$5.24	$9.01	$3.25	$6.03	$7.80	$3.21	$4.37	$7.54	$2.10	$4.55
193	$5.45	$8.33	$2.19	$4.62	$7.05	$2.81	$4.65	$6.50	$3.34	$4.15
194	$4.18	$6.66	$2.39	$4.31	$7.10	$2.24	$4.84	$7.34	$2.80	$4.73
195	$5.12	$8.49	$2.99	$5.02	$6.11	$3.38	$4.26	$6.89	$2.12	$5.19
196	$4.68	$8.01	$2.15	$5.58	$7.68	$3.45	$5.33	$7.61	$2.41	$4.40
197	$5.09	$8.51	$3.49	$4.89	$6.33	$2.18	$4.56	$8.04	$3.07	$4.45
198	$4.37	$7.41	$2.62	$5.24	$7.05	$2.08	$4.27	$6.90	$2.08	$5.08
199	$5.39	$7.87	$2.98	$4.48	$7.53	$2.61	$4.78	$6.87	$2.42	$5.15
200	$5.41	$8.28	$2.74	$5.08	$6.64	$2.81	$4.96	$7.67	$3.48	$4.94
average	$4.77	$7.48	$2.59	$4.95	$7.15	$2.70	$4.70	$7.25	$2.57	$4.79
Max		$9.91			$8.93			$10.56		
Avg	$4.77			$4.95			$4.70			$4.79
Min		$2.08			$2.08			$2.08		
Range		7.83			6.85			8.48		

Draw	2025			2026			2027			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
1	$7.49	$2.08	$5.24	$8.83	$3.29	$5.60	$6.95	$2.80	$4.99	$10.35
2	$6.93	$3.34	$5.22	$7.06	$3.01	$5.41	$5.29	$2.96	$4.09	$7.71
3	$7.98	$2.10	$4.48	$7.40	$2.10	$4.87	$6.49	$2.10	$4.30	$7.47
4	$7.24	$3.14	$4.84	$6.43	$2.12	$4.83	$6.42	$3.36	$3.82	$7.28
5	$7.14	$2.12	$5.17	$7.71	$2.86	$5.02	$6.15	$2.12	$4.27	$5.72
6	$7.56	$3.15	$4.66	$6.37	$2.28	$5.07	$6.68	$2.83	$4.67	$7.47
7	$8.26	$3.60	$5.06	$10.60	$3.00	$4.63	$8.12	$2.12	$5.34	$7.32
8	$6.76	$2.08	$4.48	$8.18	$2.08	$5.15	$8.15	$2.08	$4.99	$6.13
9	$7.13	$2.59	$4.20	$7.95	$2.10	$4.68	$7.19	$2.10	$5.09	$6.66
10	$6.59	$2.26	$4.77	$8.91	$3.45	$5.41	$7.55	$3.37	$5.03	$7.90
11	$7.75	$2.41	$5.34	$7.10	$3.07	$5.13	$8.27	$2.52	$4.71	$8.08
12	$8.64	$2.34	$5.27	$8.61	$2.66	$6.06	$6.93	$4.09	$4.81	$5.53
13	$6.48	$2.89	$4.63	$8.95	$2.20	$5.63	$7.47	$2.12	$4.92	$7.00
14	$8.29	$2.46	$4.87	$6.95	$2.10	$4.71	$7.90	$2.91	$5.04	$6.36
15	$6.63	$2.54	$5.24	$7.76	$2.10	$5.54	$6.37	$2.33	$4.54	$6.61
16	$6.44	$3.28	$4.68	$7.62	$3.01	$4.97	$7.55	$2.88	$4.81	$7.50
17	$7.05	$3.45	$4.99	$8.51	$3.40	$5.49	$7.76	$2.75	$5.15	$6.62
18	$7.37	$2.12	$5.15	$8.00	$3.64	$5.18	$7.56	$3.30	$4.44	$6.87
19	$8.78	$2.08	$5.22	$7.20	$2.37	$4.66	$8.48	$2.19	$5.18	$6.95
20	$7.19	$2.75	$4.89	$7.19	$3.40	$4.74	$6.23	$2.86	$5.00	$6.05
21	$8.00	$2.58	$5.31	$6.85	$2.10	$4.51	$7.74	$2.58	$5.66	$8.17
22	$6.66	$3.90	$4.97	$6.78	$3.47	$4.53	$7.11	$2.31	$5.38	$6.94
23	$7.97	$2.27	$5.65	$8.59	$2.29	$5.53	$7.60	$2.79	$5.17	$6.73
24	$6.56	$2.57	$4.40	$7.00	$2.12	$5.04	$6.60	$2.90	$4.63	$7.09
25	$6.52	$3.11	$4.88	$8.71	$3.70	$5.69	$7.18	$3.20	$4.83	$6.37
26	$6.89	$3.46	$4.91	$7.72	$2.72	$5.27	$6.71	$2.91	$4.95	$8.00
27	$7.49	$2.12	$4.62	$7.90	$2.10	$4.81	$5.29	$2.24	$4.16	$6.52
28	$7.04	$2.14	$4.69	$8.25	$2.87	$5.66	$7.55	$3.84	$4.56	$7.10
29	$7.35	$3.14	$4.91	$6.86	$2.99	$4.95	$6.78	$2.87	$4.60	$7.08
30	$9.21	$3.52	$4.74	$7.21	$2.12	$5.06	$5.83	$2.12	$4.23	$5.78
31	$7.36	$3.04	$5.08	$7.38	$2.63	$5.35	$7.34	$2.81	$5.27	$7.43
32	$7.33	$3.19	$4.74	$8.79	$2.66	$5.38	$7.61	$3.60	$4.89	$8.31
33	$8.42	$2.14	$4.70	$8.10	$2.14	$6.17	$7.71	$3.25	$4.99	$7.65
34	$8.63	$3.85	$4.73	$7.40	$2.25	$4.98	$7.20	$2.92	$4.77	$6.03
35	$5.79	$3.14	$4.59	$8.59	$2.49	$5.54	$7.29	$3.70	$5.24	$8.36
36	$6.95	$2.20	$4.83	$7.34	$2.42	$5.24	$7.80	$2.30	$5.02	$7.08
37	$7.46	$2.14	$5.28	$7.78	$2.48	$5.71	$7.59	$3.49	$5.02	$6.84
38	$7.03	$2.14	$4.92	$8.03	$3.76	$5.04	$7.27	$2.65	$4.46	$6.94
39	$6.31	$2.55	$4.99	$6.36	$2.79	$4.74	$7.22	$2.79	$4.60	$5.98
40	$7.10	$2.10	$4.90	$8.10	$2.10	$5.65	$6.96	$2.10	$5.21	$7.89
41	$9.07	$2.73	$4.99	$7.30	$3.20	$4.76	$6.86	$2.92	$4.62	$8.83
42	$7.21	$2.08	$5.37	$8.77	$2.42	$5.39	$6.78	$3.13	$4.96	$5.78
43	$7.86	$2.08	$4.50	$7.79	$2.16	$5.35	$7.09	$3.89	$5.19	$6.23
44	$6.42	$2.60	$4.67	$7.32	$2.14	$4.90	$7.70	$2.14	$4.40	$6.20
45	$6.98	$2.08	$4.07	$6.91	$2.12	$5.16	$8.07	$3.64	$4.99	$6.65
46	$7.24	$2.80	$4.86	$7.76	$2.08	$5.33	$8.21	$3.43	$4.86	$7.91
47	$7.63	$2.66	$5.18	$7.40	$2.79	$5.19	$9.22	$2.14	$4.77	$6.51
48	$8.08	$2.10	$5.54	$10.19	$4.34	$5.97	$7.48	$3.17	$5.37	$7.11
49	$6.77	$2.36	$4.24	$7.61	$2.31	$4.47	$7.43	$2.14	$5.19	$7.10
50	$7.67	$2.10	$4.64	$6.36	$2.10	$4.69	$7.07	$3.11	$4.92	$7.22
51	$8.28	$2.15	$4.95	$7.78	$2.21	$5.52	$8.00	$3.76	$5.04	$8.89
52	$7.13	$4.21	$4.84	$7.01	$3.34	$5.18	$6.77	$3.67	$4.92	$7.99

Draw	2025			2026			2027			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
53	$6.50	$2.31	$4.07	$8.86	$2.84	$5.78	$6.01	$3.69	$4.20	$8.07
54	$7.17	$3.46	$4.62	$7.94	$2.68	$5.03	$6.88	$3.04	$4.93	$7.41
55	$7.71	$2.39	$5.04	$7.26	$2.08	$5.38	$8.04	$3.15	$5.56	$6.60
56	$6.85	$2.60	$5.16	$8.69	$2.14	$4.80	$6.86	$2.83	$4.55	$7.15
57	$7.66	$2.08	$5.33	$7.52	$2.44	$5.49	$6.06	$3.25	$4.31	$7.15
58	$7.16	$3.30	$4.54	$7.92	$2.12	$5.17	$7.15	$3.18	$5.11	$7.24
59	$8.03	$2.38	$4.93	$8.44	$2.58	$4.96	$7.02	$2.08	$4.44	$8.22
60	$5.95	$3.54	$4.88	$6.74	$2.17	$4.73	$8.46	$3.76	$4.73	$6.82
61	$7.57	$2.24	$4.54	$7.63	$2.46	$5.61	$10.02	$3.26	$5.64	$6.74
62	$6.67	$3.42	$4.57	$7.30	$3.15	$5.29	$6.66	$2.76	$4.56	$8.59
63	$8.22	$2.08	$5.50	$8.02	$3.63	$5.22	$5.23	$2.89	$3.82	$7.05
64	$7.82	$2.94	$6.14	$7.66	$2.98	$4.78	$7.27	$2.10	$4.72	$6.25
65	$7.61	$2.14	$5.35	$8.34	$2.36	$5.80	$6.43	$4.14	$4.68	$7.54
66	$8.42	$2.89	$5.14	$7.73	$2.87	$5.27	$7.89	$2.72	$4.77	$6.83
67	$8.86	$3.15	$4.51	$6.44	$2.14	$4.76	$6.52	$3.02	$4.76	$5.81
68	$7.89	$2.58	$5.42	$7.03	$3.71	$5.57	$7.51	$3.71	$5.28	$8.01
69	$8.50	$2.99	$4.34	$7.63	$2.10	$5.85	$7.36	$4.08	$4.75	$7.60
70	$6.95	$2.88	$5.43	$5.82	$4.44	$4.54	$6.48	$2.10	$5.23	$8.32
71	$8.18	$2.88	$4.67	$7.71	$2.10	$5.85	$8.72	$3.47	$4.72	$7.69
72	$8.56	$2.46	$5.18	$7.71	$2.10	$4.89	$8.30	$2.10	$4.99	$6.92
73	$7.75	$3.02	$5.22	$7.31	$2.21	$5.43	$8.75	$3.16	$5.12	$6.97
74	$9.19	$2.36	$5.53	$7.57	$2.12	$5.17	$6.84	$2.12	$4.68	$6.63
75	$8.34	$3.42	$5.34	$8.60	$2.69	$4.97	$5.77	$2.63	$4.08	$8.15
76	$7.37	$2.94	$4.92	$6.91	$2.08	$4.79	$8.19	$2.57	$4.70	$7.45
77	$6.80	$2.10	$4.13	$6.30	$2.10	$4.32	$8.86	$2.41	$5.16	$7.52
78	$7.08	$2.17	$5.02	$7.05	$2.83	$5.37	$6.25	$3.29	$5.01	$6.68
79	$6.93	$3.27	$5.23	$7.35	$2.24	$5.05	$6.33	$2.32	$4.69	$5.76
80	$7.52	$2.53	$5.06	$8.82	$2.64	$4.96	$6.00	$2.17	$4.13	$6.57
81	$9.11	$2.16	$5.70	$7.84	$3.39	$5.26	$8.13	$4.05	$4.75	$8.18
82	$7.98	$2.08	$5.19	$7.61	$3.65	$4.89	$6.99	$2.73	$4.69	$7.61
83	$6.67	$2.49	$4.54	$7.84	$2.54	$5.30	$7.17	$2.18	$4.51	$6.25
84	$8.07	$2.14	$4.80	$6.94	$2.14	$4.78	$8.33	$2.14	$4.73	$6.31
85	$8.93	$2.78	$5.06	$7.52	$2.98	$5.32	$8.06	$2.87	$4.86	$6.39
86	$7.13	$2.12	$4.91	$6.75	$2.78	$5.20	$7.51	$3.27	$5.49	$6.59
87	$8.26	$2.45	$5.29	$7.41	$2.10	$4.89	$5.51	$3.15	$4.24	$6.45
88	$7.70	$3.05	$5.19	$6.58	$3.84	$4.84	$8.33	$2.92	$4.92	$6.33
89	$7.46	$2.79	$5.07	$8.06	$2.14	$5.45	$7.12	$4.07	$5.25	$7.07
90	$8.23	$2.14	$5.04	$7.51	$2.14	$5.41	$7.36	$2.83	$5.51	$8.28
91	$6.36	$2.37	$4.62	$7.01	$2.14	$4.82	$7.28	$2.68	$4.83	$6.62
92	$7.60	$2.88	$5.37	$9.18	$2.08	$5.23	$7.85	$2.79	$4.01	$7.68
93	$8.27	$2.97	$4.56	$8.12	$3.17	$5.71	$8.01	$3.92	$5.05	$7.96
94	$7.70	$3.33	$4.97	$7.47	$2.63	$5.54	$7.03	$2.10	$4.87	$6.73
95	$7.82	$2.14	$4.82	$8.47	$2.57	$5.53	$6.08	$2.14	$3.54	$7.97
96	$7.74	$2.97	$4.70	$8.72	$2.08	$5.64	$6.86	$3.64	$4.68	$7.48
97	$7.16	$2.52	$4.65	$7.69	$2.98	$5.26	$7.96	$3.00	$4.65	$9.63
98	$8.18	$3.23	$4.98	$9.06	$2.08	$5.33	$8.82	$3.63	$4.94	$8.60
99	$6.40	$2.10	$4.51	$7.67	$2.10	$4.75	$7.50	$2.62	$4.68	$7.10
100	$7.50	$3.37	$5.39	$6.66	$2.08	$4.64	$7.01	$2.46	$4.70	$6.64
101	$5.90	$2.08	$3.88	$6.82	$2.08	$4.61	$7.17	$2.13	$4.26	$7.02
102	$6.26	$2.35	$4.88	$6.07	$2.12	$5.27	$7.63	$3.45	$4.67	$7.11
103	$7.74	$2.76	$4.57	$8.44	$2.14	$5.19	$8.08	$2.99	$4.45	$7.87
104	$8.31	$2.73	$5.25	$7.72	$3.26	$5.58	$7.25	$4.46	$4.97	$6.11

Draw	2025			2026			2027			
	max	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
105	$7.21	$2.08	$4.78	$7.19	$2.68	$5.25	$6.46	$3.03	$4.74	$8.23
106	$7.84	$3.11	$4.61	$7.46	$2.10	$5.10	$6.54	$3.92	$4.82	$7.41
107	$5.76	$2.69	$4.24	$7.65	$2.80	$4.90	$7.86	$2.66	$4.85	$6.91
108	$7.44	$2.97	$5.54	$7.08	$3.45	$5.36	$7.59	$3.14	$4.84	$7.63
109	$6.99	$3.77	$4.74	$7.67	$2.18	$4.35	$7.11	$2.24	$4.15	$6.20
110	$7.14	$2.34	$5.13	$6.99	$3.34	$5.16	$5.77	$2.88	$4.27	$7.69
111	$7.71	$3.26	$5.01	$8.48	$3.20	$5.55	$6.60	$3.23	$4.65	$8.05
112	$6.19	$2.61	$4.77	$7.44	$2.14	$5.12	$6.76	$3.30	$4.61	$7.54
113	$7.96	$2.08	$5.11	$6.28	$3.84	$5.43	$6.68	$4.19	$4.39	$8.30
114	$8.33	$2.25	$4.96	$7.01	$3.08	$4.77	$7.07	$2.61	$4.95	$6.15
115	$8.09	$3.55	$4.78	$7.88	$2.81	$5.63	$7.08	$3.29	$4.67	$6.99
116	$7.34	$2.30	$4.47	$7.67	$2.23	$4.70	$6.36	$2.14	$4.16	$6.45
117	$8.52	$2.12	$4.86	$6.89	$2.51	$5.01	$7.09	$2.86	$5.20	$7.50
118	$7.00	$2.81	$4.98	$7.14	$3.30	$5.52	$5.84	$3.10	$4.42	$7.30
119	$7.65	$2.40	$3.91	$8.13	$2.08	$6.05	$8.06	$3.32	$5.20	$7.49
120	$9.40	$2.99	$6.11	$8.08	$3.45	$5.33	$6.67	$3.49	$4.86	$6.68
121	$7.02	$3.39	$4.64	$7.87	$2.12	$4.47	$5.90	$2.12	$4.26	$6.41
122	$7.21	$2.41	$5.37	$6.92	$3.33	$5.09	$6.23	$2.84	$4.59	$6.82
123	$7.33	$3.36	$4.64	$7.24	$2.34	$5.17	$6.43	$3.22	$4.64	$7.07
124	$7.37	$2.46	$4.41	$9.67	$2.97	$5.71	$8.05	$3.59	$5.40	$5.95
125	$7.18	$2.91	$5.19	$7.76	$2.61	$4.44	$6.69	$2.08	$4.95	$7.51
126	$7.39	$2.46	$4.15	$7.46	$2.14	$5.02	$7.81	$3.23	$5.29	$7.21
127	$7.20	$2.14	$4.91	$8.89	$2.69	$5.65	$7.19	$2.82	$4.82	$7.03
128	$7.23	$2.10	$4.65	$7.96	$2.10	$5.14	$8.47	$2.10	$5.81	$7.34
129	$8.13	$3.55	$5.57	$7.81	$2.83	$4.84	$8.56	$2.57	$4.62	$8.15
130	$8.14	$2.08	$5.28	$5.52	$3.15	$4.75	$8.52	$3.29	$5.09	$7.10
131	$6.76	$2.21	$4.78	$7.59	$2.44	$5.03	$7.09	$2.52	$5.10	$6.70
132	$6.63	$3.06	$4.89	$8.07	$3.77	$5.45	$6.52	$3.54	$4.07	$5.73
133	$5.78	$2.08	$4.08	$7.88	$2.25	$5.08	$6.27	$3.18	$4.42	$7.30
134	$6.88	$2.72	$4.67	$7.27	$2.14	$4.79	$7.45	$2.19	$4.38	$5.45
135	$7.33	$2.12	$5.17	$6.28	$3.29	$4.39	$8.37	$2.12	$5.00	$7.52
136	$7.34	$2.42	$5.23	$9.53	$3.96	$5.25	$7.38	$2.74	$4.49	$6.34
137	$7.65	$2.59	$4.98	$7.81	$2.93	$5.10	$6.78	$2.12	$5.32	$9.09
138	$7.95	$2.12	$5.23	$7.78	$2.40	$5.38	$6.65	$3.07	$4.28	$8.27
139	$7.68	$3.48	$5.43	$6.92	$3.76	$5.30	$7.37	$3.09	$4.52	$6.58
140	$7.40	$2.20	$4.93	$6.83	$3.09	$4.63	$7.40	$2.60	$4.93	$6.61
141	$8.03	$2.10	$5.39	$8.70	$2.69	$5.42	$6.48	$2.95	$4.68	$6.78
142	$7.13	$2.64	$5.13	$7.78	$2.92	$5.16	$7.04	$2.08	$4.44	$7.40
143	$7.64	$2.12	$5.12	$7.43	$2.12	$4.93	$6.68	$3.65	$4.84	$5.75
144	$7.60	$2.86	$5.49	$8.24	$3.87	$5.14	$7.82	$3.17	$5.61	$8.03
145	$6.47	$2.08	$4.43	$7.15	$2.56	$4.86	$7.49	$2.52	$5.37	$5.73
146	$7.06	$2.10	$4.97	$6.84	$2.10	$4.32	$7.00	$2.10	$4.67	$6.51
147	$8.16	$2.63	$4.93	$6.87	$2.14	$4.53	$6.78	$2.29	$4.63	$8.23
148	$7.64	$2.21	$5.31	$6.92	$3.35	$4.59	$6.25	$2.10	$4.49	$6.58
149	$7.65	$3.15	$5.01	$6.83	$2.08	$5.19	$7.28	$2.94	$4.61	$5.86
150	$6.76	$2.19	$4.40	$8.03	$3.51	$4.77	$6.56	$2.81	$4.28	$6.68
151	$6.96	$2.12	$4.48	$7.65	$2.78	$4.42	$7.81	$2.12	$4.80	$7.12
152	$7.84	$3.04	$5.34	$6.57	$2.56	$4.63	$6.48	$2.12	$4.28	$7.79
153	$7.85	$2.81	$4.94	$8.47	$3.55	$5.52	$9.30	$3.43	$5.21	$7.13
154	$6.61	$2.14	$4.77	$8.82	$2.93	$5.36	$7.14	$3.25	$5.45	$6.63
155	$8.42	$3.54	$4.71	$7.02	$2.14	$4.67	$7.20	$2.65	$4.63	$7.07
156	$7.78	$2.14	$5.20	$8.09	$2.68	$5.09	$6.76	$2.64	$4.84	$7.69

	2025			2026			2027			
Draw	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**
157	$8.68	$2.12	$5.45	$8.21	$2.18	$5.21	$7.28	$2.71	$5.13	$6.28
158	$8.49	$2.41	$5.46	$8.12	$2.57	$5.12	$8.65	$2.08	$5.82	$7.75
159	$9.18	$2.50	$5.70	$8.35	$3.39	$5.24	$7.74	$2.62	$4.35	$7.25
160	$7.09	$2.55	$5.12	$6.12	$2.27	$4.28	$6.72	$2.14	$4.86	$7.58
161	$7.94	$2.75	$5.47	$7.62	$2.32	$5.33	$7.55	$4.07	$4.48	$7.08
162	$9.17	$2.70	$5.40	$7.70	$2.12	$5.21	$8.01	$2.87	$4.20	$6.47
163	$6.33	$2.08	$4.53	$6.92	$2.60	$4.02	$7.62	$2.24	$5.14	$6.09
164	$7.27	$2.10	$4.94	$7.93	$3.23	$4.85	$6.73	$2.10	$4.49	$7.27
165	$7.57	$2.78	$5.53	$7.31	$2.08	$6.10	$8.19	$3.75	$5.76	$6.76
166	$7.96	$2.35	$5.06	$7.98	$2.14	$5.20	$5.98	$2.68	$4.07	$8.23
167	$7.63	$2.08	$5.24	$7.88	$2.86	$5.25	$7.68	$2.58	$4.96	$7.77
168	$8.82	$2.51	$4.63	$7.46	$2.08	$4.58	$6.46	$2.08	$5.16	$8.61
169	$7.49	$2.24	$4.86	$7.25	$3.14	$5.40	$6.15	$3.15	$4.35	$6.78
170	$8.80	$2.28	$5.98	$8.38	$4.31	$5.05	$6.59	$2.14	$4.86	$7.82
171	$8.06	$3.05	$5.55	$7.30	$2.47	$5.41	$8.23	$4.21	$4.86	$6.16
172	$8.83	$2.65	$4.90	$9.31	$2.56	$5.35	$6.43	$3.31	$4.69	$7.99
173	$6.67	$3.05	$4.92	$7.11	$2.76	$4.57	$8.45	$2.60	$4.87	$6.53
174	$8.91	$3.50	$5.95	$8.58	$3.65	$5.70	$7.64	$3.33	$5.09	$6.78
175	$6.16	$2.40	$4.60	$7.90	$2.98	$5.41	$8.03	$3.61	$4.83	$8.36
176	$7.89	$2.10	$5.38	$7.96	$2.86	$4.84	$8.84	$2.59	$5.31	$5.72
177	$7.50	$2.10	$4.74	$8.50	$2.59	$5.50	$5.50	$3.95	$4.66	$7.98
178	$6.81	$2.08	$4.38	$7.57	$2.08	$5.07	$9.18	$2.61	$5.15	$6.70
179	$7.83	$2.10	$4.65	$8.03	$2.10	$5.56	$7.28	$2.92	$5.42	$7.35
180	$6.22	$2.23	$4.38	$6.04	$2.31	$5.17	$8.26	$4.43	$4.59	$6.73
181	$7.46	$2.10	$4.91	$7.70	$2.68	$5.02	$8.04	$2.44	$4.83	$6.63
182	$7.47	$2.10	$4.76	$7.94	$2.35	$4.63	$7.69	$2.38	$5.10	$6.14
183	$8.10	$3.98	$5.24	$7.49	$2.70	$5.14	$7.46	$2.80	$4.15	$7.31
184	$7.79	$2.41	$4.72	$8.05	$2.40	$5.44	$7.61	$3.88	$5.09	$7.33
185	$6.47	$2.74	$4.58	$8.41	$2.12	$4.95	$6.63	$2.12	$4.55	$6.29
186	$8.96	$2.76	$4.94	$6.56	$3.15	$4.24	$7.40	$2.12	$4.60	$7.11
187	$7.66	$3.43	$4.96	$5.48	$2.85	$3.72	$8.01	$2.39	$4.45	$7.37
188	$9.70	$3.21	$5.55	$7.85	$4.16	$4.79	$6.75	$3.08	$4.68	$7.17
189	$8.13	$2.14	$5.68	$7.04	$2.14	$5.27	$8.16	$2.15	$5.37	$6.57
190	$7.20	$2.10	$5.03	$8.16	$2.86	$4.53	$8.41	$2.21	$5.33	$8.06
191	$7.56	$2.51	$4.37	$8.24	$2.10	$5.18	$7.47	$2.72	$3.65	$7.26
192	$6.95	$2.10	$4.73	$7.27	$3.09	$5.45	$7.41	$4.38	$4.69	$8.92
193	$6.97	$2.54	$4.32	$7.08	$2.08	$5.25	$7.14	$2.66	$4.22	$7.25
194	$6.90	$2.12	$4.85	$6.25	$3.48	$4.62	$6.36	$2.38	$4.97	$5.88
195	$7.06	$2.90	$4.45	$7.86	$2.12	$5.86	$7.80	$3.35	$4.63	$5.83
196	$6.81	$2.12	$4.31	$6.23	$2.59	$4.69	$6.68	$2.82	$4.80	$6.94
197	$6.49	$2.27	$4.98	$8.50	$3.18	$5.27	$6.99	$2.46	$4.61	$6.48
198	$6.57	$3.16	$4.39	$7.93	$2.70	$5.36	$6.44	$2.52	$4.31	$6.46
199	$5.86	$2.81	$4.18	$7.91	$2.56	$5.14	$6.10	$2.63	$4.99	$6.27
200	$7.30	$2.10	$4.83	$7.20	$3.25	$4.96	$7.00	$3.24	$4.61	$6.77
average	$7.50	$2.61	$4.93	$7.63	$2.67	$5.12	$7.25	$2.88	$4.78	$7.12
Max	$9.70			$10.60			$10.02			$10.35
Avg			$4.93			$5.12			$4.78	
Min	$2.08			$2.08			2.076151			$2.08
Range	7.63			8.52			7.945171			8.27

Draw	2028			2029			2030			2031	
	min	avg	max	min	avg	max	min	avg	max	min	
1	$2.57	$5.32	$6.81	$2.43	$4.40	$7.05	$2.08	$5.07	$6.02	$2.98	
2	$2.90	$5.27	$6.85	$3.02	$4.58	$6.85	$2.30	$4.07	$8.80	$2.42	
3	$2.24	$4.45	$6.98	$2.28	$4.84	$7.75	$2.10	$5.16	$7.61	$2.64	
4	$2.12	$4.79	$6.36	$2.12	$4.55	$6.18	$2.12	$4.78	$6.05	$3.65	
5	$2.42	$4.64	$5.66	$2.50	$4.54	$7.58	$2.15	$5.42	$7.01	$3.69	
6	$2.22	$4.58	$6.93	$2.12	$5.08	$9.24	$3.10	$5.50	$7.74	$2.12	
7	$2.80	$4.33	$7.91	$2.12	$5.55	$7.68	$3.25	$5.20	$7.44	$2.12	
8	$2.08	$4.14	$7.58	$2.08	$5.07	$7.76	$2.08	$4.39	$6.91	$2.08	
9	$3.41	$4.01	$7.43	$2.63	$5.02	$8.17	$2.39	$4.97	$8.32	$3.53	
10	$2.12	$5.39	$7.80	$3.24	$5.43	$7.56	$2.98	$5.15	$6.28	$2.12	
11	$2.10	$5.00	$7.57	$3.42	$4.66	$7.54	$2.26	$5.36	$7.74	$3.62	
12	$2.10	$4.16	$7.67	$2.77	$4.94	$7.01	$2.83	$5.18	$7.30	$2.10	
13	$2.31	$4.23	$7.81	$2.73	$5.09	$8.61	$2.86	$6.00	$7.02	$4.81	
14	$2.37	$4.41	$6.64	$2.13	$4.73	$7.56	$3.26	$5.27	$6.11	$2.49	
15	$2.37	$4.83	$8.13	$2.10	$5.29	$8.37	$2.10	$4.91	$6.67	$2.55	
16	$3.36	$5.72	$7.53	$4.51	$5.29	$7.47	$4.45	$4.56	$7.54	$2.97	
17	$2.52	$4.60	$7.32	$2.08	$4.53	$10.36	$2.08	$5.36	$6.56	$2.79	
18	$2.63	$4.85	$7.35	$2.17	$5.16	$7.62	$2.12	$5.64	$9.04	$3.38	
19	$2.08	$4.58	$6.29	$2.34	$4.42	$8.13	$2.49	$4.63	$8.31	$2.08	
20	$2.55	$4.58	$7.24	$3.65	$4.34	$7.74	$2.10	$6.03	$7.72	$3.23	
21	$4.12	$5.38	$6.01	$2.10	$4.43	$6.28	$2.88	$4.81	$7.46	$3.40	
22	$3.84	$4.73	$7.37	$2.98	$5.42	$7.17	$2.12	$4.71	$7.53	$2.79	
23	$2.60	$4.78	$6.20	$2.08	$4.88	$7.57	$2.98	$5.36	$6.20	$3.29	
24	$2.58	$4.02	$7.17	$2.66	$5.07	$7.89	$2.12	$4.66	$7.09	$2.12	
25	$2.10	$4.55	$6.70	$2.22	$4.34	$7.18	$2.10	$5.01	$7.61	$3.76	
26	$2.43	$5.16	$6.40	$2.68	$4.56	$7.56	$2.57	$4.86	$7.92	$2.90	
27	$2.71	$3.81	$8.22	$2.10	$5.36	$7.37	$2.10	$4.65	$8.65	$3.01	
28	$3.18	$4.63	$6.99	$2.20	$4.60	$9.35	$2.14	$5.24	$7.36	$2.39	
29	$2.14	$4.75	$7.35	$2.58	$5.20	$7.87	$3.87	$4.31	$7.06	$2.14	
30	$2.12	$4.47	$6.83	$2.12	$4.40	$8.91	$2.12	$5.51	$6.19	$3.58	
31	$2.99	$4.79	$7.38	$2.12	$4.64	$7.59	$2.12	$5.00	$7.11	$2.12	
32	$2.71	$4.94	$7.13	$3.35	$4.40	$7.27	$2.27	$4.59	$6.52	$2.10	
33	$2.73	$4.46	$8.34	$2.75	$5.59	$7.37	$2.95	$4.94	$7.32	$3.07	
34	$3.24	$4.16	$8.64	$2.08	$5.43	$8.69	$2.08	$5.58	$6.45	$3.18	
35	$3.05	$5.17	$8.10	$2.64	$5.55	$6.69	$3.08	$5.01	$7.42	$3.24	
36	$2.08	$5.20	$9.24	$2.92	$4.73	$8.26	$2.31	$5.79	$7.22	$3.82	
37	$2.80	$4.31	$6.86	$2.71	$5.10	$7.89	$2.37	$4.50	$7.29	$2.14	
38	$3.12	$4.67	$6.18	$2.33	$4.84	$6.77	$3.18	$4.76	$8.54	$2.60	
39	$2.65	$4.64	$8.44	$2.39	$5.00	$8.03	$2.08	$5.51	$7.10	$2.71	
40	$3.54	$4.93	$7.32	$2.94	$4.83	$8.24	$3.04	$5.43	$8.11	$3.76	
41	$2.71	$5.25	$6.16	$3.41	$4.38	$7.51	$2.98	$5.44	$8.99	$3.76	
42	$2.08	$4.18	$6.74	$2.18	$4.82	$8.89	$2.90	$4.87	$6.71	$2.17	
43	$3.69	$4.40	$7.97	$2.33	$5.64	$10.09	$3.78	$4.36	$6.63	$2.08	
44	$2.14	$4.74	$7.18	$2.93	$4.83	$8.64	$3.01	$4.88	$6.65	$2.14	
45	$2.53	$4.96	$7.30	$3.33	$4.29	$6.55	$2.08	$4.56	$6.54	$2.08	
46	$2.08	$4.93	$6.55	$2.54	$4.36	$8.17	$2.39	$4.93	$6.47	$2.08	
47	$2.14	$4.28	$7.73	$2.63	$4.82	$6.96	$2.70	$4.30	$8.27	$2.83	
48	$2.52	$4.93	$8.08	$2.22	$5.14	$10.47	$2.72	$5.65	$7.62	$2.29	
49	$3.22	$4.57	$5.59	$2.46	$4.11	$5.70	$2.68	$4.17	$6.85	$2.39	
50	$2.94	$4.24	$6.92	$2.10	$4.79	$8.14	$2.10	$5.11	$6.29	$2.70	
51	$2.57	$4.65	$7.43	$2.14	$4.70	$7.12	$2.23	$4.70	$7.62	$2.66	
52	$2.88	$4.69	$6.95	$2.08	$4.44	$7.00	$2.08	$4.65	$6.73	$2.08	

Draw	2028		2029			2030			2031	
	min	avg	max	min	avg	max	min	avg	max	min
53	$2.12	$4.77	$6.50	$2.73	$4.88	$5.96	$2.88	$4.43	$7.84	$2.12
54	$3.25	$4.80	$6.76	$2.91	$4.35	$6.92	$2.12	$4.66	$6.31	$2.93
55	$2.73	$4.60	$6.39	$2.26	$4.64	$8.00	$2.96	$5.96	$6.75	$3.93
56	$2.11	$4.40	$7.43	$2.08	$5.32	$6.81	$4.26	$4.54	$6.44	$2.80
57	$2.08	$4.96	$8.14	$2.39	$5.88	$8.29	$3.67	$4.73	$7.87	$2.69
58	$2.14	$4.80	$7.82	$3.27	$5.50	$7.16	$3.74	$4.56	$7.32	$2.48
59	$2.87	$4.53	$6.53	$2.13	$4.25	$6.92	$2.08	$5.43	$7.65	$3.76
60	$2.10	$4.98	$7.32	$3.00	$5.24	$5.38	$2.70	$3.67	$6.63	$2.10
61	$2.89	$4.70	$7.59	$3.44	$4.81	$7.47	$2.64	$5.22	$6.34	$2.56
62	$2.53	$4.75	$6.77	$2.12	$5.07	$6.98	$2.12	$5.15	$7.87	$3.54
63	$2.08	$4.66	$7.52	$2.42	$4.49	$8.39	$2.88	$5.19	$6.91	$2.98
64	$2.85	$4.72	$6.11	$2.10	$4.60	$8.40	$2.99	$4.98	$6.08	$3.28
65	$2.49	$5.06	$6.20	$2.74	$4.64	$7.11	$3.21	$5.17	$6.17	$3.44
66	$2.08	$4.77	$6.84	$2.08	$5.16	$7.84	$3.57	$5.12	$7.36	$3.25
67	$2.39	$4.31	$7.01	$2.14	$5.08	$8.45	$3.39	$5.13	$6.47	$2.62
68	$2.93	$4.98	$7.28	$3.58	$5.17	$7.44	$3.47	$5.38	$7.56	$3.82
69	$2.45	$4.96	$7.02	$2.10	$5.26	$6.36	$3.13	$4.79	$8.22	$2.89
70	$2.35	$4.27	$7.24	$2.10	$4.95	$7.34	$2.10	$4.23	$6.90	$2.25
71	$2.35	$4.28	$6.83	$2.10	$4.58	$6.84	$2.10	$5.02	$7.32	$2.31
72	$2.66	$5.20	$6.22	$3.24	$4.06	$7.62	$2.10	$5.63	$7.37	$2.10
73	$3.41	$5.15	$7.88	$3.17	$5.10	$6.61	$2.52	$4.49	$7.20	$2.12
74	$2.12	$4.17	$9.01	$2.73	$4.99	$7.48	$2.12	$4.27	$6.93	$2.29
75	$3.06	$4.76	$7.55	$3.07	$5.36	$9.32	$2.10	$5.26	$8.89	$3.86
76	$2.08	$4.89	$7.98	$2.48	$5.42	$6.95	$2.76	$4.70	$6.53	$2.91
77	$2.10	$5.08	$7.99	$2.61	$4.80	$7.68	$2.10	$4.86	$8.37	$3.23
78	$3.20	$4.71	$8.30	$2.83	$5.91	$6.76	$3.70	$4.83	$7.29	$2.14
79	$2.12	$4.63	$7.42	$3.24	$5.58	$6.87	$3.94	$4.83	$8.04	$2.31
80	$2.14	$4.83	$8.12	$2.57	$4.80	$8.11	$2.14	$6.07	$7.97	$4.41
81	$2.62	$4.93	$7.27	$2.10	$4.80	$8.20	$3.57	$4.66	$6.42	$2.51
82	$2.08	$4.51	$7.57	$2.08	$4.76	$6.99	$2.45	$4.68	$6.29	$2.45
83	$2.31	$4.57	$7.44	$2.09	$4.28	$9.62	$2.08	$5.44	$6.93	$2.08
84	$3.01	$4.45	$7.80	$2.14	$4.58	$7.72	$2.14	$4.97	$7.46	$2.14
85	$2.10	$4.42	$7.20	$2.49	$4.74	$6.08	$2.10	$4.27	$6.35	$2.58
86	$2.78	$4.80	$8.05	$3.08	$4.20	$7.25	$2.12	$5.11	$7.29	$3.06
87	$2.79	$4.00	$6.72	$2.10	$4.70	$8.18	$2.65	$5.58	$8.10	$4.12
88	$2.37	$4.37	$8.35	$2.76	$4.64	$6.84	$3.14	$4.37	$8.27	$2.12
89	$3.80	$4.66	$8.02	$2.14	$4.96	$8.44	$2.14	$5.81	$6.88	$3.30
90	$3.77	$4.83	$8.33	$2.14	$4.70	$6.62	$2.72	$4.98	$6.56	$2.31
91	$2.89	$4.69	$8.25	$2.71	$4.91	$7.19	$2.12	$5.28	$7.69	$2.12
92	$2.08	$5.22	$7.20	$3.19	$4.57	$8.14	$2.79	$5.08	$7.30	$2.08
93	$2.21	$4.17	$7.62	$2.12	$5.22	$8.07	$2.78	$4.96	$6.80	$2.42
94	$2.45	$4.47	$7.39	$2.10	$4.94	$7.28	$2.24	$5.15	$7.79	$3.68
95	$2.14	$5.02	$7.96	$2.18	$5.51	$7.42	$4.10	$5.08	$8.10	$2.42
96	$3.47	$5.35	$6.62	$2.99	$5.06	$8.30	$2.84	$4.88	$8.69	$2.39
97	$3.49	$5.02	$7.16	$2.12	$5.13	$7.57	$2.57	$4.84	$6.32	$2.12
98	$2.34	$5.44	$5.55	$3.40	$4.33	$9.27	$2.54	$4.75	$8.72	$2.81
99	$2.10	$4.56	$7.13	$2.10	$4.81	$5.66	$2.10	$4.27	$7.04	$2.10
100	$2.80	$4.60	$6.80	$3.01	$4.27	$9.00	$2.26	$5.20	$8.23	$2.55
101	$2.08	$4.73	$7.31	$3.08	$5.05	$6.93	$3.18	$5.21	$7.46	$3.07
102	$2.75	$4.83	$5.92	$2.82	$4.08	$6.88	$2.12	$4.29	$7.45	$2.12
103	$2.14	$4.57	$7.61	$2.14	$4.84	$8.60	$3.35	$5.35	$7.43	$2.14
104	$2.99	$4.18	$8.61	$2.90	$5.53	$9.19	$3.71	$5.60	$7.06	$3.74

	2028		2029			2030			2031	
Draw	min	avg	max	min	avg	max	min	avg	max	min
105	$2.89	$4.84	$8.65	$2.36	$4.74	$6.70	$2.69	$4.85	$6.70	$2.89
106	$2.46	$4.94	$6.49	$2.77	$4.38	$6.91	$2.59	$4.97	$6.90	$2.47
107	$2.42	$4.51	$9.04	$2.41	$4.72	$7.55	$2.10	$4.92	$6.45	$2.89
108	$2.10	$4.72	$8.00	$2.99	$5.05	$6.99	$2.08	$4.94	$8.37	$3.15
109	$2.10	$3.78	$6.88	$2.10	$4.26	$6.71	$2.10	$4.73	$8.81	$2.10
110	$2.84	$4.54	$8.59	$2.10	$5.07	$6.92	$2.64	$4.35	$7.63	$3.18
111	$2.92	$5.34	$6.69	$2.14	$4.62	$7.09	$2.14	$5.04	$8.54	$3.07
112	$2.14	$5.55	$7.18	$4.29	$4.10	$7.84	$2.14	$4.50	$7.10	$2.14
113	$2.08	$4.33	$8.42	$2.08	$4.53	$6.95	$2.08	$4.69	$6.45	$2.72
114	$2.08	$4.72	$7.93	$2.08	$5.50	$7.14	$3.38	$4.90	$6.88	$2.69
115	$2.12	$4.80	$6.98	$3.29	$5.02	$6.20	$3.35	$4.32	$6.72	$2.12
116	$2.14	$4.88	$7.27	$2.27	$4.76	$7.65	$3.10	$5.05	$7.39	$2.14
117	$2.12	$4.74	$7.03	$2.50	$4.59	$6.65	$2.77	$4.90	$8.29	$2.74
118	$2.42	$4.58	$6.80	$2.99	$4.44	$7.13	$2.12	$5.25	$7.96	$3.64
119	$2.08	$4.76	$8.29	$2.08	$5.08	$7.59	$3.06	$4.97	$7.70	$2.08
120	$3.13	$4.52	$8.69	$2.37	$4.68	$6.70	$3.33	$4.44	$8.57	$2.68
121	$3.19	$4.43	$6.98	$2.73	$4.46	$6.70	$2.12	$5.01	$7.27	$2.49
122	$2.33	$4.85	$6.82	$2.08	$4.58	$8.25	$2.31	$5.61	$6.68	$3.66
123	$2.14	$4.54	$8.33	$2.14	$5.32	$7.61	$2.29	$4.57	$6.75	$2.54
124	$2.81	$4.16	$7.00	$2.89	$4.56	$7.85	$2.14	$5.21	$8.88	$2.62
125	$2.32	$4.34	$6.50	$2.12	$4.68	$6.09	$2.08	$4.50	$7.02	$2.29
126	$2.14	$3.94	$6.63	$2.14	$4.90	$6.18	$2.98	$3.75	$6.14	$2.14
127	$2.56	$4.74	$7.47	$2.29	$4.60	$8.92	$2.62	$5.53	$8.61	$3.24
128	$4.02	$5.71	$7.57	$4.08	$4.38	$7.63	$2.63	$5.30	$7.02	$2.32
129	$2.80	$5.07	$8.65	$3.01	$5.11	$6.81	$2.44	$5.11	$8.25	$2.12
130	$2.90	$4.88	$8.71	$3.15	$5.34	$6.74	$2.87	$4.95	$7.74	$2.86
131	$2.08	$4.72	$7.09	$2.31	$4.97	$7.46	$2.98	$4.52	$5.31	$2.08
132	$2.14	$4.05	$8.36	$2.14	$4.61	$7.67	$2.14	$5.10	$6.69	$3.48
133	$2.08	$4.06	$7.51	$2.25	$5.29	$8.96	$2.85	$5.06	$7.13	$2.21
134	$2.38	$3.50	$7.13	$2.14	$4.79	$6.91	$2.14	$4.62	$8.00	$2.14
135	$3.01	$5.44	$7.70	$3.21	$4.67	$7.76	$2.23	$4.77	$8.80	$2.12
136	$2.10	$5.20	$7.01	$3.78	$4.60	$7.14	$2.59	$4.97	$7.36	$2.86
137	$4.10	$4.83	$7.08	$2.12	$5.66	$8.80	$4.20	$4.78	$6.94	$2.12
138	$2.12	$5.31	$7.07	$2.66	$4.85	$6.64	$2.12	$4.79	$7.15	$2.88
139	$2.12	$4.16	$6.97	$2.45	$5.25	$6.02	$3.58	$4.32	$6.76	$2.36
140	$2.31	$4.40	$6.31	$2.12	$4.90	$7.41	$2.69	$5.24	$6.72	$2.12
141	$2.86	$4.90	$8.93	$2.87	$5.87	$7.85	$3.52	$5.11	$8.08	$2.10
142	$2.08	$5.16	$8.00	$2.96	$4.30	$6.86	$2.17	$4.83	$7.61	$2.28
143	$2.71	$4.56	$6.53	$2.12	$5.11	$6.64	$3.47	$4.90	$6.79	$2.12
144	$2.31	$4.58	$6.43	$2.10	$5.11	$8.14	$2.61	$5.57	$7.68	$3.78
145	$2.53	$4.76	$7.74	$3.54	$5.11	$8.03	$2.86	$5.16	$8.78	$2.17
146	$2.94	$5.15	$6.74	$2.99	$5.22	$6.47	$2.85	$4.83	$6.86	$2.81
147	$2.26	$4.87	$5.51	$2.56	$4.10	$7.06	$2.14	$4.70	$7.38	$2.29
148	$2.86	$4.82	$7.38	$3.21	$5.11	$7.73	$2.80	$5.11	$6.78	$2.20
149	$2.08	$4.31	$8.16	$2.08	$5.50	$6.48	$2.83	$4.68	$6.57	$2.08
150	$3.00	$4.04	$5.93	$2.12	$4.52	$8.23	$3.63	$4.80	$7.81	$2.12
151	$2.12	$4.65	$7.03	$3.49	$3.74	$8.00	$2.12	$4.69	$7.87	$2.51
152	$2.72	$4.77	$6.76	$2.12	$4.99	$6.62	$2.74	$4.47	$6.34	$2.12
153	$2.10	$4.62	$9.51	$2.24	$4.62	$7.29	$2.10	$4.55	$6.57	$2.10
154	$3.86	$4.46	$6.65	$2.33	$4.25	$7.24	$2.14	$5.26	$7.27	$3.17
155	$2.14	$4.66	$8.65	$2.14	$4.86	$7.44	$2.16	$5.21	$7.77	$2.74
156	$2.14	$4.86	$7.08	$2.28	$4.83	$7.71	$2.86	$5.09	$6.24	$2.25

	2028		2029			2030			2031	
Draw	min	avg	max	min	avg	max	min	avg	max	min
157	$2.12	$5.28	$6.14	$3.71	$4.58	$7.02	$2.44	$5.06	$7.47	$2.29
158	$3.06	$5.09	$8.78	$3.36	$4.53	$7.09	$2.08	$4.82	$6.24	$2.99
159	$2.59	$4.22	$6.74	$2.12	$5.34	$7.76	$2.99	$4.78	$7.07	$2.12
160	$2.14	$4.65	$7.21	$2.14	$5.18	$8.31	$2.81	$4.55	$7.69	$2.46
161	$2.48	$4.36	$6.96	$2.10	$4.75	$8.03	$2.10	$5.27	$6.78	$2.10
162	$2.12	$4.51	$6.19	$2.61	$4.66	$6.64	$3.60	$5.08	$8.22	$3.37
163	$2.77	$4.49	$6.62	$2.61	$5.06	$8.30	$2.60	$5.50	$9.03	$2.08
164	$2.10	$5.20	$8.17	$2.64	$4.83	$7.43	$2.26	$4.77	$7.62	$2.33
165	$2.08	$4.53	$6.51	$2.32	$5.06	$7.17	$2.49	$4.43	$8.47	$2.68
166	$2.47	$5.26	$7.83	$3.12	$5.16	$9.00	$2.14	$5.17	$7.21	$3.25
167	$2.38	$4.98	$7.37	$2.09	$4.94	$7.63	$2.40	$4.95	$7.06	$2.47
168	$3.69	$5.07	$6.99	$2.08	$4.44	$6.53	$2.08	$4.27	$7.38	$2.24
169	$2.10	$4.62	$7.64	$2.73	$4.84	$7.77	$2.78	$5.23	$7.09	$2.66
170	$2.75	$4.43	$6.99	$2.14	$4.63	$8.33	$2.14	$5.34	$6.78	$2.55
171	$3.18	$4.20	$6.48	$2.14	$4.25	$6.40	$2.80	$4.66	$6.37	$2.14
172	$2.79	$5.24	$8.25	$3.99	$5.30	$6.82	$2.96	$4.25	$6.76	$2.08
173	$2.27	$4.76	$7.60	$2.10	$5.23	$8.65	$2.10	$4.53	$7.07	$2.68
174	$2.08	$4.24	$7.90	$2.08	$5.17	$7.06	$2.55	$5.35	$6.43	$3.85
175	$2.08	$4.37	$5.95	$2.39	$4.47	$6.78	$2.39	$4.44	$6.63	$2.73
176	$3.35	$4.21	$5.93	$2.10	$4.21	$7.60	$3.13	$4.53	$6.41	$2.10
177	$3.57	$4.57	$7.79	$2.26	$5.32	$6.49	$2.76	$4.93	$8.49	$3.08
178	$2.27	$4.25	$6.57	$3.05	$4.62	$8.14	$2.69	$5.68	$8.49	$2.80
179	$2.74	$4.32	$8.26	$2.10	$4.63	$6.58	$2.10	$4.75	$7.10	$2.91
180	$2.48	$4.43	$6.86	$2.12	$4.72	$7.79	$2.93	$4.95	$6.48	$3.47
181	$2.40	$4.13	$7.81	$2.32	$5.20	$6.75	$2.10	$5.28	$6.48	$3.40
182	$3.48	$4.60	$6.83	$2.95	$4.81	$6.42	$2.24	$5.31	$8.36	$3.65
183	$2.14	$4.93	$6.53	$3.34	$4.20	$6.75	$2.14	$4.48	$7.87	$3.41
184	$2.14	$5.64	$7.81	$3.93	$5.03	$9.14	$2.28	$5.68	$7.12	$3.07
185	$2.62	$4.34	$8.28	$2.59	$5.14	$7.27	$2.12	$4.53	$6.75	$2.40
186	$2.30	$4.79	$7.61	$2.12	$4.35	$8.15	$2.46	$5.11	$7.22	$2.78
187	$2.08	$4.43	$6.94	$2.46	$5.30	$8.03	$2.32	$4.80	$6.08	$2.08
188	$3.14	$4.85	$6.87	$2.37	$5.19	$7.50	$2.76	$4.45	$6.64	$2.29
189	$4.29	$4.50	$8.57	$3.09	$4.34	$8.55	$2.14	$4.82	$6.94	$2.20
190	$3.04	$4.92	$6.55	$2.10	$5.05	$7.69	$4.13	$5.15	$6.43	$2.77
191	$2.10	$4.48	$8.64	$2.10	$5.68	$8.07	$3.44	$5.75	$6.07	$3.81
192	$2.67	$5.44	$8.23	$3.45	$5.95	$7.88	$3.57	$5.73	$7.02	$3.80
193	$2.08	$4.05	$7.73	$2.08	$4.91	$6.96	$2.94	$4.74	$8.39	$3.00
194	$2.37	$4.66	$8.62	$3.08	$4.25	$8.26	$2.12	$6.15	$8.37	$3.96
195	$2.12	$3.83	$7.43	$2.12	$5.01	$7.58	$2.23	$5.01	$7.67	$3.71
196	$2.12	$4.82	$7.06	$3.27	$5.33	$7.95	$2.29	$5.53	$8.77	$2.12
197	$2.08	$4.15	$7.42	$2.08	$4.84	$7.23	$3.40	$5.19	$7.81	$3.61
198	$2.08	$3.78	$7.29	$2.08	$4.15	$6.87	$2.08	$5.35	$7.10	$3.59
199	$3.89	$4.22	$7.86	$2.25	$4.81	$6.36	$2.12	$4.53	$7.43	$2.12
200	$2.43	$4.78	$7.87	$2.36	$5.39	$7.41	$2.64	$4.90	$7.26	$2.10
average	$2.57	$4.67	$7.34	$2.56	$4.86	$7.52	$2.63	$4.96	$7.30	$2.72
Max			$9.51			$10.47			$9.04	
Avg		$4.67			$4.86			$4.96		
Min			$2.08			$2.08			$2.08	
Range			7.43			8.39			6.97	

Draw		2032			2033			2034		
	avg	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**
1	$4.59	$5.78	$2.48	$3.94	$7.95	$2.08	$5.31	$7.33	$3.25	$5.37
2	$4.87	$8.06	$2.10	$4.95	$8.02	$2.24	$5.93	$7.60	$4.49	$5.15
3	$4.82	$8.05	$2.10	$4.91	$7.20	$2.10	$4.44	$8.61	$2.39	$6.13
4	$4.83	$7.49	$3.04	$5.48	$7.44	$2.12	$4.71	$7.04	$2.50	$5.15
5	$4.04	$7.18	$2.12	$4.19	$6.56	$2.34	$5.07	$7.73	$3.09	$4.59
6	$5.51	$8.01	$3.53	$5.00	$6.85	$3.52	$4.71	$7.93	$2.76	$5.38
7	$4.93	$6.51	$3.06	$4.54	$8.04	$2.21	$5.33	$7.03	$2.85	$5.17
8	$4.73	$6.84	$2.08	$4.82	$7.96	$2.59	$5.03	$8.38	$2.22	$5.17
9	$5.04	$7.73	$3.45	$4.70	$7.31	$2.10	$5.49	$8.00	$2.44	$4.72
10	$3.88	$8.02	$2.14	$4.77	$8.95	$2.71	$6.19	$7.50	$4.61	$5.04
11	$4.89	$7.36	$2.10	$5.28	$6.31	$2.10	$4.77	$6.90	$3.14	$5.04
12	$5.00	$8.87	$2.22	$6.12	$7.76	$2.66	$4.71	$8.10	$2.36	$5.58
13	$5.47	$7.20	$3.65	$5.28	$7.94	$3.13	$5.34	$7.71	$2.71	$5.32
14	$4.56	$7.08	$2.80	$4.82	$7.29	$3.35	$4.98	$7.16	$2.95	$5.15
15	$4.53	$8.35	$2.94	$4.86	$7.20	$2.73	$5.19	$8.69	$2.10	$5.52
16	$4.71	$7.00	$2.93	$4.65	$7.88	$2.97	$5.26	$8.63	$3.68	$5.66
17	$4.24	$6.15	$2.08	$4.49	$8.61	$2.52	$5.40	$8.15	$3.55	$6.26
18	$4.94	$6.67	$2.12	$4.56	$8.24	$2.66	$4.82	$7.32	$2.95	$5.40
19	$4.56	$8.43	$2.08	$4.99	$6.07	$2.08	$4.69	$7.91	$3.20	$5.88
20	$5.17	$10.01	$3.06	$5.04	$7.81	$2.24	$5.37	$7.94	$3.42	$5.81
21	$5.22	$7.24	$2.10	$4.87	$6.73	$2.89	$4.68	$6.95	$3.04	$4.82
22	$5.74	$7.32	$3.81	$5.48	$7.09	$3.43	$5.08	$7.59	$2.12	$5.54
23	$4.30	$7.73	$2.08	$5.16	$8.03	$2.08	$5.33	$9.78	$3.10	$5.54
24	$5.16	$6.12	$2.72	$4.08	$8.81	$2.12	$5.44	$6.83	$3.68	$4.78
25	$5.24	$7.70	$2.10	$4.97	$7.79	$2.74	$5.74	$6.88	$3.91	$5.02
26	$5.31	$7.57	$3.42	$5.12	$8.23	$2.12	$5.90	$6.83	$2.95	$5.26
27	$5.71	$6.75	$3.08	$4.54	$7.89	$2.10	$4.44	$9.79	$2.10	$5.40
28	$5.38	$6.75	$4.11	$5.82	$7.80	$3.95	$4.90	$8.55	$2.14	$5.34
29	$4.81	$6.96	$2.53	$4.44	$7.09	$2.40	$5.24	$5.87	$3.09	$4.69
30	$4.56	$8.72	$2.12	$5.68	$7.30	$2.12	$5.25	$7.08	$3.18	$5.07
31	$4.94	$7.05	$3.39	$5.25	$7.50	$2.12	$6.01	$6.87	$3.72	$5.21
32	$4.84	$6.53	$2.82	$4.48	$9.53	$3.11	$5.17	$7.60	$2.74	$5.15
33	$5.86	$9.09	$3.09	$5.71	$7.40	$4.07	$5.12	$7.10	$2.40	$5.17
34	$4.56	$6.64	$2.08	$4.67	$7.07	$2.08	$4.85	$8.09	$2.99	$5.28
35	$4.36	$9.20	$2.29	$5.85	$9.49	$3.11	$5.33	$8.98	$2.94	$5.08
36	$5.19	$7.66	$3.09	$4.90	$7.83	$2.29	$5.40	$9.62	$3.59	$5.90
37	$5.13	$7.86	$3.86	$5.22	$6.65	$2.63	$5.41	$7.64	$2.87	$5.22
38	$4.82	$6.88	$3.39	$4.86	$8.11	$3.40	$5.38	$7.90	$3.50	$5.87
39	$5.38	$8.75	$3.35	$6.03	$7.85	$3.17	$5.38	$6.92	$2.51	$5.05
40	$4.84	$7.20	$3.05	$5.06	$6.38	$3.39	$4.64	$8.80	$2.15	$6.11
41	$5.28	$6.95	$3.96	$4.40	$8.57	$2.38	$5.26	$8.92	$3.15	$4.80
42	$4.67	$8.59	$2.08	$5.18	$6.43	$2.08	$4.30	$6.40	$2.28	$4.78
43	$4.88	$6.82	$3.47	$5.33	$7.08	$3.44	$4.83	$7.19	$2.95	$5.49
44	$5.30	$7.31	$2.14	$4.98	$6.95	$2.91	$4.71	$6.39	$2.94	$4.70
45	$4.28	$6.38	$2.08	$4.39	$7.03	$2.60	$4.92	$6.83	$2.08	$4.88
46	$4.50	$7.53	$3.18	$4.62	$7.72	$2.08	$5.30	$9.48	$2.17	$6.37
47	$5.25	$6.48	$3.14	$4.67	$8.47	$2.14	$5.12	$11.00	$3.00	$5.72
48	$4.81	$7.58	$2.10	$4.87	$7.92	$3.04	$5.57	$7.11	$2.84	$5.00
49	$4.68	$6.21	$3.61	$4.86	$7.83	$3.70	$4.89	$9.35	$2.20	$5.47
50	$4.33	$7.67	$2.14	$4.76	$6.79	$2.15	$4.72	$8.40	$2.84	$5.29
51	$4.69	$7.22	$3.85	$4.94	$8.09	$3.35	$5.13	$8.83	$3.62	$5.06
52	$4.46	$8.17	$2.94	$4.73	$7.64	$2.08	$4.79	$7.54	$2.57	$5.25

Draw		2032			2033			2034		
	avg	max	min	avg	max	min	avg	max	min	avg
53	$5.48	$6.77	$2.41	$4.44	$7.17	$2.12	$5.52	$7.93	$3.09	$5.49
54	$4.15	$8.32	$2.12	$5.41	$7.58	$3.27	$5.18	$6.70	$3.42	$4.49
55	$4.02	$7.84	$2.08	$4.86	$7.09	$2.08	$4.80	$6.37	$2.14	$4.45
56	$4.22	$7.42	$2.64	$4.64	$7.80	$2.11	$5.17	$6.85	$3.42	$4.93
57	$5.19	$6.99	$2.08	$5.30	$7.28	$2.08	$5.48	$6.32	$2.55	$5.19
58	$4.49	$7.99	$2.12	$5.17	$7.89	$2.75	$5.15	$6.38	$3.27	$5.24
59	$4.98	$8.57	$2.67	$4.77	$7.72	$2.50	$5.03	$7.82	$3.17	$5.28
60	$5.18	$7.72	$3.41	$4.31	$7.41	$2.10	$5.03	$7.01	$3.46	$5.00
61	$4.70	$7.01	$2.12	$5.42	$7.99	$3.18	$5.15	$8.12	$3.13	$5.35
62	$5.12	$7.33	$2.12	$5.26	$7.59	$2.59	$5.70	$5.94	$4.07	$4.52
63	$4.86	$8.69	$3.65	$5.29	$9.49	$2.08	$6.22	$7.75	$3.43	$5.52
64	$3.86	$10.38	$2.10	$5.20	$8.45	$2.30	$5.36	$8.02	$2.93	$5.55
65	$3.98	$7.44	$2.79	$5.01	$7.26	$2.82	$5.07	$7.41	$3.64	$4.98
66	$4.88	$6.98	$2.56	$5.08	$6.24	$2.67	$4.79	$8.32	$2.59	$5.25
67	$4.60	$8.31	$2.82	$5.28	$8.47	$2.38	$5.34	$7.34	$2.92	$5.65
68	$4.80	$6.45	$2.14	$4.95	$7.50	$2.55	$5.66	$7.24	$3.42	$5.79
69	$5.16	$6.85	$2.50	$5.38	$7.36	$3.34	$4.64	$7.32	$2.41	$5.30
70	$4.72	$8.24	$2.29	$5.79	$6.25	$3.97	$4.03	$7.43	$2.10	$4.89
71	$4.96	$7.08	$2.55	$5.33	$8.75	$3.09	$5.12	$6.81	$2.47	$5.08
72	$4.95	$6.00	$2.10	$4.39	$8.00	$2.81	$5.55	$7.39	$2.41	$5.27
73	$4.62	$10.04	$2.48	$4.93	$7.85	$2.12	$5.00	$7.88	$3.52	$5.41
74	$5.03	$6.28	$3.00	$4.81	$8.11	$2.71	$4.76	$7.86	$2.12	$5.28
75	$5.23	$6.89	$3.12	$4.53	$7.00	$2.87	$4.80	$7.74	$3.40	$5.69
76	$4.85	$7.32	$2.56	$4.94	$7.72	$2.55	$5.45	$7.05	$2.60	$5.75
77	$4.45	$7.02	$2.45	$4.92	$7.54	$3.08	$5.23	$7.91	$3.32	$4.65
78	$4.73	$7.19	$2.14	$5.58	$8.09	$3.92	$5.61	$9.10	$3.33	$6.24
79	$5.63	$6.78	$3.83	$4.55	$7.07	$2.12	$5.49	$6.46	$3.86	$4.49
80	$5.03	$6.69	$3.21	$5.15	$8.08	$3.34	$5.36	$9.19	$3.68	$4.74
81	$4.35	$8.20	$2.10	$5.05	$6.93	$2.62	$5.21	$10.17	$2.90	$5.96
82	$4.80	$8.46	$2.60	$5.15	$9.30	$2.57	$4.94	$7.77	$2.08	$5.65
83	$5.29	$7.63	$3.42	$5.31	$9.29	$2.48	$5.79	$7.11	$3.79	$5.16
84	$4.33	$6.44	$2.48	$4.56	$6.91	$2.14	$4.98	$6.89	$2.28	$4.66
85	$4.54	$7.66	$2.20	$4.68	$7.94	$2.46	$5.28	$7.31	$2.37	$5.09
86	$4.57	$8.88	$3.07	$5.50	$7.99	$2.42	$4.74	$9.70	$2.12	$5.96
87	$5.65	$7.64	$3.22	$5.32	$6.77	$3.43	$5.04	$8.48	$2.80	$5.35
88	$5.51	$6.25	$3.85	$4.47	$8.16	$2.19	$4.98	$9.28	$2.60	$5.09
89	$4.54	$7.79	$2.55	$5.04	$7.88	$2.14	$5.75	$6.39	$3.09	$5.52
90	$4.72	$6.72	$2.40	$4.12	$7.99	$2.14	$5.48	$6.94	$3.26	$5.23
91	$5.10	$8.24	$3.36	$5.40	$7.88	$2.93	$5.43	$8.87	$2.12	$5.24
92	$4.72	$9.13	$2.60	$5.16	$9.04	$2.61	$5.72	$6.38	$2.90	$5.30
93	$5.36	$6.98	$3.76	$4.94	$6.15	$2.60	$4.88	$7.79	$2.57	$4.95
94	$4.34	$9.61	$2.10	$5.04	$8.46	$2.61	$4.81	$8.32	$2.50	$6.09
95	$5.47	$5.79	$2.14	$4.16	$6.88	$2.45	$4.58	$6.94	$2.85	$5.58
96	$5.32	$6.88	$3.02	$5.15	$8.13	$3.06	$5.62	$7.34	$3.95	$5.39
97	$4.05	$6.76	$2.93	$4.46	$8.67	$2.35	$5.64	$7.09	$3.06	$5.49
98	$4.77	$8.41	$2.35	$4.65	$8.53	$2.91	$5.40	$8.46	$3.02	$5.72
99	$4.45	$6.10	$2.51	$4.70	$8.02	$3.38	$5.32	$6.81	$2.10	$5.39
100	$4.75	$7.26	$2.28	$4.62	$7.46	$2.08	$4.35	$8.87	$2.08	$5.20
101	$5.07	$6.20	$2.23	$4.59	$6.65	$2.41	$4.71	$8.02	$3.25	$5.05
102	$4.76	$7.06	$2.75	$4.83	$7.25	$2.12	$5.45	$6.76	$3.32	$4.26
103	$5.13	$7.71	$2.46	$4.82	$7.15	$2.14	$4.32	$8.75	$2.22	$6.02
104	$5.16	$6.96	$2.80	$5.20	$7.69	$3.36	$4.98	$8.11	$2.83	$5.31

Draw		2032			2033			2034		
	avg	max	min	avg	max	min	avg	max	min	avg
105	$4.32	$7.55	$2.08	$5.30	$6.64	$2.76	$4.74	$7.94	$2.99	$5.27
106	$5.30	$7.22	$4.11	$4.48	$8.04	$2.47	$5.48	$7.58	$2.81	$5.01
107	$4.78	$7.55	$2.34	$4.81	$8.47	$3.08	$4.46	$8.39	$2.15	$5.73
108	$5.05	$7.04	$3.04	$5.05	$6.57	$2.96	$4.38	$10.36	$2.25	$6.11
109	$4.39	$6.67	$2.10	$4.49	$6.68	$2.46	$4.68	$7.17	$3.65	$5.47
110	$4.33	$7.24	$2.76	$5.05	$8.23	$2.71	$5.38	$8.30	$2.50	$4.94
111	$4.96	$8.27	$2.14	$5.24	$7.69	$2.49	$5.39	$6.80	$2.14	$5.22
112	$5.10	$8.56	$3.35	$4.26	$7.80	$2.14	$4.94	$8.61	$2.46	$5.21
113	$3.90	$6.12	$2.08	$4.04	$8.28	$2.33	$5.45	$7.66	$2.51	$5.78
114	$4.58	$9.04	$2.08	$5.74	$6.80	$2.30	$5.01	$7.48	$3.14	$5.36
115	$4.97	$7.19	$2.91	$4.55	$6.73	$2.35	$4.75	$8.26	$2.21	$5.43
116	$4.55	$6.47	$2.14	$4.27	$7.61	$2.14	$5.13	$7.77	$3.25	$5.04
117	$4.72	$7.09	$2.39	$4.41	$8.16	$2.12	$5.47	$7.86	$2.12	$5.60
118	$4.46	$8.63	$2.57	$5.91	$9.24	$3.75	$5.73	$8.07	$3.75	$5.67
119	$4.60	$6.86	$2.82	$4.39	$8.35	$2.08	$6.09	$6.86	$3.90	$4.96
120	$4.73	$8.19	$2.18	$5.92	$9.25	$3.87	$6.02	$6.62	$3.67	$4.80
121	$5.03	$7.22	$2.70	$5.09	$7.48	$3.65	$4.23	$8.51	$2.12	$5.23
122	$4.47	$8.00	$2.23	$4.48	$9.02	$2.45	$6.09	$7.27	$2.73	$5.45
123	$4.81	$8.24	$3.69	$5.52	$7.68	$3.47	$4.86	$6.30	$2.14	$4.19
124	$4.38	$6.81	$2.16	$4.83	$8.78	$2.29	$5.81	$9.62	$3.84	$5.87
125	$5.13	$9.16	$2.67	$5.16	$7.38	$3.42	$5.54	$9.06	$2.89	$5.62
126	$4.11	$6.03	$2.14	$4.70	$7.55	$2.89	$4.74	$8.63	$2.22	$5.60
127	$4.81	$9.91	$2.93	$4.55	$6.94	$2.14	$4.71	$9.03	$2.14	$5.53
128	$4.63	$7.45	$2.10	$5.01	$6.85	$2.10	$5.29	$7.81	$3.08	$5.57
129	$4.68	$7.75	$2.48	$4.50	$7.33	$2.67	$5.42	$6.99	$3.01	$4.93
130	$4.56	$7.99	$2.58	$5.80	$6.87	$4.09	$4.83	$8.14	$2.08	$5.30
131	$4.08	$6.56	$3.20	$4.70	$7.27	$2.35	$4.89	$7.64	$2.85	$5.12
132	$4.13	$7.88	$2.14	$5.33	$7.58	$3.33	$5.69	$7.69	$3.67	$5.51
133	$4.74	$9.04	$3.54	$5.20	$8.02	$2.28	$5.39	$8.74	$2.42	$5.25
134	$4.74	$6.35	$2.34	$4.51	$7.28	$2.30	$5.04	$6.93	$2.17	$4.74
135	$5.40	$7.00	$3.57	$5.39	$7.21	$3.97	$5.59	$7.61	$3.25	$5.44
136	$5.15	$8.78	$4.03	$5.24	$9.08	$3.85	$5.38	$7.22	$3.45	$4.83
137	$4.82	$7.24	$2.12	$4.95	$8.09	$2.94	$5.89	$8.94	$3.84	$5.37
138	$4.48	$7.82	$2.83	$5.30	$8.04	$2.66	$4.71	$7.40	$2.12	$5.26
139	$4.50	$8.69	$2.17	$5.34	$6.19	$3.16	$4.61	$7.07	$2.54	$5.55
140	$4.80	$6.62	$2.22	$4.95	$7.12	$3.04	$4.58	$7.57	$2.84	$5.08
141	$5.76	$6.85	$4.46	$5.26	$8.01	$2.99	$5.14	$8.22	$2.43	$5.40
142	$4.13	$7.32	$2.25	$4.71	$8.27	$2.89	$5.26	$7.67	$2.28	$4.73
143	$4.46	$6.65	$2.12	$5.00	$7.26	$3.42	$5.20	$7.28	$2.42	$5.18
144	$5.06	$7.05	$3.16	$4.71	$7.49	$2.92	$4.90	$7.10	$2.10	$4.96
145	$5.02	$7.07	$2.08	$4.81	$6.74	$3.43	$5.05	$6.79	$2.82	$5.02
146	$4.49	$7.08	$2.10	$4.80	$7.30	$2.96	$4.83	$7.37	$2.86	$5.23
147	$4.66	$8.14	$2.14	$5.35	$8.49	$4.04	$5.53	$7.77	$3.07	$5.10
148	$5.17	$7.61	$3.26	$5.33	$9.29	$2.82	$5.85	$6.64	$2.41	$5.33
149	$5.08	$6.46	$3.43	$5.11	$7.93	$3.33	$5.29	$7.05	$2.30	$5.25
150	$4.83	$7.18	$2.58	$4.75	$7.14	$2.53	$4.49	$7.13	$2.73	$5.25
151	$4.43	$9.01	$2.12	$5.05	$6.82	$2.87	$4.69	$8.15	$2.30	$5.88
152	$3.89	$6.58	$2.12	$4.66	$7.06	$2.81	$5.27	$6.23	$3.42	$4.48
153	$4.92	$7.81	$2.98	$5.14	$8.66	$2.10	$5.64	$6.52	$2.83	$4.66
154	$5.25	$6.16	$2.14	$4.22	$7.76	$2.14	$4.73	$7.15	$2.14	$5.27
155	$5.30	$8.84	$2.54	$5.42	$7.68	$2.43	$4.66	$8.29	$2.14	$5.39
156	$4.86	$7.13	$3.84	$4.72	$6.16	$2.59	$4.30	$8.01	$2.14	$5.17

		2032			2033			2034		
Draw	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**	**max**	**min**	**avg**
157	$5.05	$6.94	$2.12	$5.17	$8.24	$4.13	$5.37	$8.99	$2.43	$6.10
158	$4.54	$8.26	$3.29	$4.94	$7.78	$2.08	$5.31	$6.91	$3.52	$5.31
159	$4.84	$7.41	$2.12	$4.98	$6.92	$2.44	$4.80	$8.51	$2.51	$5.57
160	$4.69	$6.62	$2.83	$4.93	$8.69	$2.48	$5.26	$7.01	$2.14	$5.00
161	$4.58	$7.53	$2.10	$4.37	$5.93	$2.65	$4.78	$7.54	$2.85	$5.41
162	$4.79	$7.14	$2.74	$4.59	$7.62	$2.21	$4.80	$6.90	$3.26	$4.62
163	$5.37	$7.02	$2.08	$4.84	$7.92	$3.39	$5.28	$7.20	$3.49	$4.58
164	$4.88	$7.73	$2.10	$5.09	$8.92	$3.13	$6.03	$9.89	$4.11	$5.79
165	$5.23	$6.57	$2.45	$5.06	$6.42	$3.42	$4.47	$9.23	$2.79	$5.77
166	$5.10	$7.78	$2.90	$4.95	$6.72	$2.86	$4.78	$7.33	$2.99	$4.99
167	$5.31	$7.13	$2.32	$4.97	$7.62	$3.17	$5.24	$6.98	$3.39	$4.96
168	$4.44	$8.63	$2.98	$4.83	$6.05	$2.59	$4.66	$7.19	$2.96	$4.58
169	$4.43	$8.20	$2.10	$5.06	$8.45	$3.32	$5.36	$6.90	$3.37	$4.94
170	$4.95	$8.19	$3.75	$5.51	$8.49	$3.33	$5.57	$7.30	$2.59	$5.68
171	$4.47	$7.92	$2.14	$4.42	$8.42	$2.14	$5.69	$6.98	$3.32	$4.83
172	$4.50	$7.92	$3.08	$4.80	$7.81	$2.60	$5.67	$6.48	$2.98	$4.69
173	$5.18	$7.38	$2.83	$4.62	$9.76	$2.48	$6.20	$7.09	$3.81	$4.70
174	$4.76	$7.72	$2.08	$5.49	$6.13	$4.28	$4.42	$8.49	$2.08	$5.33
175	$4.31	$7.07	$2.49	$4.40	$7.85	$2.21	$5.42	$8.26	$2.08	$5.62
176	$4.45	$7.24	$2.33	$4.66	$9.66	$2.22	$4.92	$7.64	$2.90	$5.30
177	$4.89	$6.97	$3.08	$4.73	$8.62	$2.91	$5.44	$7.58	$2.71	$5.57
178	$4.60	$7.07	$3.05	$5.18	$6.51	$2.76	$4.52	$7.02	$2.08	$5.11
179	$4.97	$7.08	$3.07	$5.35	$9.19	$2.90	$5.05	$6.42	$3.02	$4.94
180	$5.08	$8.02	$3.39	$4.79	$7.52	$2.95	$4.87	$7.44	$2.97	$4.57
181	$4.90	$7.09	$3.64	$5.32	$6.91	$3.61	$5.04	$6.73	$2.36	$5.24
182	$5.91	$6.32	$3.03	$4.71	$7.24	$3.31	$5.28	$6.82	$2.86	$5.47
183	$5.24	$7.57	$3.98	$4.91	$7.29	$2.58	$5.38	$7.11	$2.62	$4.90
184	$4.72	$7.74	$3.09	$4.83	$7.13	$2.54	$4.55	$7.57	$2.34	$5.24
185	$5.02	$7.11	$2.41	$4.92	$7.36	$2.90	$4.87	$7.01	$3.16	$5.50
186	$4.65	$8.31	$3.27	$5.39	$7.25	$3.82	$5.28	$7.40	$3.47	$4.92
187	$4.59	$7.32	$2.86	$4.58	$8.48	$2.40	$5.29	$7.36	$3.99	$5.39
188	$4.77	$6.71	$2.14	$4.33	$7.10	$2.93	$4.94	$6.05	$2.53	$4.67
189	$4.51	$7.59	$2.64	$4.48	$7.56	$2.14	$4.48	$6.19	$2.14	$4.55
190	$4.74	$7.42	$3.03	$4.87	$7.65	$2.10	$4.71	$7.47	$2.10	$5.51
191	$4.48	$7.14	$2.99	$4.54	$8.65	$2.64	$4.83	$6.67	$2.55	$4.79
192	$4.77	$7.82	$3.16	$4.69	$7.81	$2.61	$5.31	$8.76	$3.63	$5.42
193	$5.07	$8.02	$2.74	$5.50	$7.58	$4.27	$5.42	$8.36	$2.54	$5.33
194	$5.33	$7.29	$2.12	$4.41	$7.96	$2.12	$5.02	$8.49	$2.12	$5.25
195	$4.69	$9.09	$2.93	$4.83	$8.27	$2.69	$5.68	$7.27	$2.22	$4.56
196	$5.00	$6.57	$2.12	$4.59	$8.64	$2.72	$5.63	$7.68	$2.32	$5.84
197	$5.07	$7.13	$2.39	$4.85	$7.57	$3.27	$5.18	$6.88	$2.08	$5.09
198	$4.90	$7.55	$2.08	$5.06	$6.75	$3.47	$4.81	$7.29	$2.08	$4.86
199	$5.18	$7.42	$2.79	$5.14	$7.10	$2.77	$5.21	$8.45	$2.12	$5.79
200	$4.99	$6.27	$2.67	$4.22	$7.34	$2.10	$5.66	$9.26	$3.77	$5.09
average	$4.82	$7.47	$2.70	$4.93	$7.68	$2.74	$5.15	$7.68	$2.84	$5.25
Max		$10.38			$9.76			$11.00		
Avg	$4.82			$4.93			$5.15			$5.25
Min		$2.08			$2.08			$2.08		
Range		8.31			7.69			8.92		

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	0	3.781925936	4.184624979	4.613066442	4.909246221
First of Month Value by Index	2014 IRP Basecase	1	6.365200565	5.284077296	6.879236431	7.099345599
First of Month Value by Index	2014 IRP Basecase	2	5.928689385	7.190751924	7.07859838	6.990718495
First of Month Value by Index	2014 IRP Basecase	3	5.632248093	5.595006486	5.413156844	7.273347771
First of Month Value by Index	2014 IRP Basecase	4	5.725421344	5.909733357	7.007835166	7.006493805
First of Month Value by Index	2014 IRP Basecase	5	4.811003515	5.062113954	8.525239014	9.237010139
First of Month Value by Index	2014 IRP Basecase	6	5.012582977	5.47064658	7.395479698	6.967594321
First of Month Value by Index	2014 IRP Basecase	7	6.090683711	5.198972036	6.34064058	7.707221741
First of Month Value by Index	2014 IRP Basecase	8	4.589073549	6.732193702	6.811131177	7.755729739
First of Month Value by Index	2014 IRP Basecase	9	7.187019051	6.128941405	7.222153092	5.093136894
First of Month Value by Index	2014 IRP Basecase	10	5.109934545	6.180093457	7.410367505	7.952003193
First of Month Value by Index	2014 IRP Basecase	11	8.587644107	8.79689229	6.754112434	6.242834002
First of Month Value by Index	2014 IRP Basecase	12	5.105628985	6.27265701	5.875188644	6.388954666
First of Month Value by Index	2014 IRP Basecase	13	5.546115361	7.061175266	8.057986398	6.672845608
First of Month Value by Index	2014 IRP Basecase	14	5.225849482	5.237559188	6.117996976	6.71540397
First of Month Value by Index	2014 IRP Basecase	15	5.216153158	5.741520777	7.114456896	7.564766398
First of Month Value by Index	2014 IRP Basecase	16	6.555404938	5.582439774	7.053197261	6.3850933
First of Month Value by Index	2014 IRP Basecase	17	6.909304885	6.072260163	7.195926667	6.620318805
First of Month Value by Index	2014 IRP Basecase	18	5.250970087	5.175530196	6.655585381	7.486434326
First of Month Value by Index	2014 IRP Basecase	19	6.417489616	6.813001004	6.554886924	6.944748808
First of Month Value by Index	2014 IRP Basecase	20	5.511342112	6.4005506	8.918343231	7.146518188
First of Month Value by Index	2014 IRP Basecase	21	5.770357642	7.637761227	5.493453853	6.853702412
First of Month Value by Index	2014 IRP Basecase	22	5.536801925	6.574483057	5.992173392	7.063306164
First of Month Value by Index	2014 IRP Basecase	23	5.258399166	6.602779762	6.19586984	7.570248783
First of Month Value by Index	2014 IRP Basecase	24	5.093506895	6.704519962	7.288479691	7.270321825
First of Month Value by Index	2014 IRP Basecase	25	5.64104489	5.337604499	5.023258151	6.58064317
First of Month Value by Index	2014 IRP Basecase	26	6.002483577	7.140084622	6.282358844	6.730042667
First of Month Value by Index	2014 IRP Basecase	27	5.390422946	6.792167835	7.956007491	7.370316458
First of Month Value by Index	2014 IRP Basecase	28	5.76036307	7.337219574	6.575850137	6.114156105
First of Month Value by Index	2014 IRP Basecase	29	6.280722305	5.498914226	4.929396208	5.553912799
First of Month Value by Index	2014 IRP Basecase	30	6.246866292	6.43241765	7.998852051	8.830900001
First of Month Value by Index	2014 IRP Basecase	31	5.605167597	5.975024644	5.868107126	6.9732927
First of Month Value by Index	2014 IRP Basecase	32	4.411466336	6.657540021	8.884772175	7.610367144
First of Month Value by Index	2014 IRP Basecase	33	5.854521429	5.729730589	6.914467253	6.595332714
First of Month Value by Index	2014 IRP Basecase	34	7.202777521	5.768549678	5.166566441	6.062706813
First of Month Value by Index	2014 IRP Basecase	35	5.161450382	6.176703329	6.786826409	7.529396302
First of Month Value by Index	2014 IRP Basecase	36	6.951750961	6.226479794	6.735006083	6.455721072
First of Month Value by Index	2014 IRP Basecase	37	5.820412715	5.577619787	7.45721465	6.532935455
First of Month Value by Index	2014 IRP Basecase	38	6.083152763	4.886333997	5.208223423	8.161560065
First of Month Value by Index	2014 IRP Basecase	39	5.892238191	5.904895042	7.293516458	7.690121887
First of Month Value by Index	2014 IRP Basecase	40	5.764731568	6.15333665	6.326507725	7.296503819
First of Month Value by Index	2014 IRP Basecase	41	6.077709039	6.416694191	6.794051876	6.776716993
First of Month Value by Index	2014 IRP Basecase	42	6.781346901	5.793717453	6.591030636	7.934949337
First of Month Value by Index	2014 IRP Basecase	43	5.381148877	5.213224862	8.389780763	7.002909274
First of Month Value by Index	2014 IRP Basecase	44	5.824648701	6.949964318	5.956775347	6.804008183
First of Month Value by Index	2014 IRP Basecase	45	7.231236601	6.875563115	7.393923753	8.20095854
First of Month Value by Index	2014 IRP Basecase	46	4.88659153	6.971354036	6.254058341	8.596770419
First of Month Value by Index	2014 IRP Basecase	47	7.966376138	6.460067883	8.464877592	6.02149321
First of Month Value by Index	2014 IRP Basecase	48	6.029456784	5.644515974	7.323132323	7.758949512
First of Month Value by Index	2014 IRP Basecase	49	9.776759793	6.006962271	8.731875129	7.144745801
First of Month Value by Index	2014 IRP Basecase	50	6.220780559	5.134207179	7.651867816	6.655989594
First of Month Value by Index	2014 IRP Basecase	51	5.884179307	7.39030393	6.785250446	6.150998048
First of Month Value by Index	2014 IRP Basecase	52	7.025818507	6.825328832	6.34795154	8.23715498

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	53	6.58896649	5.785295594	9.002806357	5.935396698
First of Month Value by Index	2014 IRP Basecase	54	4.770559198	5.915411941	7.089056928	7.564366376
First of Month Value by Index	2014 IRP Basecase	55	5.363952398	5.135446995	7.143630646	7.159984362
First of Month Value by Index	2014 IRP Basecase	56	7.368842336	5.885182805	6.253635556	6.596805552
First of Month Value by Index	2014 IRP Basecase	57	4.946519891	7.181919125	5.128379276	7.581500398
First of Month Value by Index	2014 IRP Basecase	58	6.949624864	6.904257267	7.580762909	6.3452633
First of Month Value by Index	2014 IRP Basecase	59	4.564794453	5.807846095	6.629007444	8.483915766
First of Month Value by Index	2014 IRP Basecase	60	6.155759004	4.644385092	7.584241591	6.419838002
First of Month Value by Index	2014 IRP Basecase	61	4.813755812	6.750844313	9.035507936	9.435015368
First of Month Value by Index	2014 IRP Basecase	62	6.015715803	4.978107982	5.824531959	6.277448008
First of Month Value by Index	2014 IRP Basecase	63	7.307670447	6.482318902	7.354896872	7.09481337
First of Month Value by Index	2014 IRP Basecase	64	7.233549161	6.397550077	6.786860648	7.503817683
First of Month Value by Index	2014 IRP Basecase	65	7.4684023	5.650536915	5.731581289	7.240978928
First of Month Value by Index	2014 IRP Basecase	66	6.087834522	5.439991654	7.009415221	7.675845576
First of Month Value by Index	2014 IRP Basecase	67	4.897602487	6.779195402	6.905164058	7.229760205
First of Month Value by Index	2014 IRP Basecase	68	5.315994477	6.569657764	6.627180848	7.577388953
First of Month Value by Index	2014 IRP Basecase	69	5.429180123	7.020891745	5.971013088	6.491955717
First of Month Value by Index	2014 IRP Basecase	70	6.610544035	6.274576694	6.962664947	5.752613956
First of Month Value by Index	2014 IRP Basecase	71	6.620523568	6.668236828	6.993763252	7.294138116
First of Month Value by Index	2014 IRP Basecase	72	5.033248318	5.405633178	7.204058862	7.308384344
First of Month Value by Index	2014 IRP Basecase	73	6.870515497	5.622742448	5.655666461	6.170987185
First of Month Value by Index	2014 IRP Basecase	74	5.744474977	6.375123404	4.815414562	7.72560749
First of Month Value by Index	2014 IRP Basecase	75	6.885539251	7.007541323	6.288841277	6.681409166
First of Month Value by Index	2014 IRP Basecase	76	6.137034286	6.331912788	5.384084395	5.224051369
First of Month Value by Index	2014 IRP Basecase	77	5.33444049	6.231921581	6.298237503	7.651978283
First of Month Value by Index	2014 IRP Basecase	78	6.521087183	6.847078585	6.228962969	5.429668288
First of Month Value by Index	2014 IRP Basecase	79	5.43578185	5.672446521	6.207262302	6.225095883
First of Month Value by Index	2014 IRP Basecase	80	4.139023367	6.592962414	7.497134081	7.202981281
First of Month Value by Index	2014 IRP Basecase	81	6.392590591	6.635290687	6.476510968	7.057547919
First of Month Value by Index	2014 IRP Basecase	82	4.999569475	6.51642472	8.346673532	6.43221726
First of Month Value by Index	2014 IRP Basecase	83	5.311322314	7.283062303	5.970597982	7.616181816
First of Month Value by Index	2014 IRP Basecase	84	7.309140729	6.44967057	7.15179077	7.996532092
First of Month Value by Index	2014 IRP Basecase	85	5.161772088	6.909631753	6.13654637	8.164363482
First of Month Value by Index	2014 IRP Basecase	86	5.822324271	5.514643749	7.862447968	6.313661862
First of Month Value by Index	2014 IRP Basecase	87	5.152821957	5.17895043	7.065158794	6.910073258
First of Month Value by Index	2014 IRP Basecase	88	6.562765706	5.315619384	5.654231502	5.320479493
First of Month Value by Index	2014 IRP Basecase	89	5.309813545	7.183928599	5.439579917	6.144090563
First of Month Value by Index	2014 IRP Basecase	90	5.709805878	7.515099607	9.536963847	7.21676788
First of Month Value by Index	2014 IRP Basecase	91	5.600731429	6.530452055	6.873652535	6.363728935
First of Month Value by Index	2014 IRP Basecase	92	5.512017053	6.923718246	6.814606034	5.985114307
First of Month Value by Index	2014 IRP Basecase	93	5.332504735	5.477881719	6.413964636	7.979918906
First of Month Value by Index	2014 IRP Basecase	94	7.250467598	5.443133651	6.461607487	6.368747726
First of Month Value by Index	2014 IRP Basecase	95	5.600298799	6.363050947	5.620278551	6.121324535
First of Month Value by Index	2014 IRP Basecase	96	6.836074717	5.173901765	5.743681826	6.344542313
First of Month Value by Index	2014 IRP Basecase	97	6.426305934	5.804943041	7.066200746	7.543743024
First of Month Value by Index	2014 IRP Basecase	98	5.25886162	6.004753938	5.304839256	6.276360473
First of Month Value by Index	2014 IRP Basecase	99	6.337102123	7.108963667	6.326471591	6.767502471
First of Month Value by Index	2014 IRP Basecase	100	5.70720875	6.611947108	7.086081254	7.452678104
First of Month Value by Index	2014 IRP Basecase	101	6.488515135	5.980923869	6.842514544	8.042185173
First of Month Value by Index	2014 IRP Basecase	102	5.517346898	6.84495081	7.023937477	5.826827203
First of Month Value by Index	2014 IRP Basecase	103	7.358188472	5.266874507	6.781508272	6.717940806
First of Month Value by Index	2014 IRP Basecase	104	7.196367252	5.239001801	5.761099215	8.967426295
First of Month Value by Index	2014 IRP Basecase	105	5.005672803	6.205180125	5.889287659	6.621633893

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	106	6.739458533	5.515528985	5.367825851	7.436373395
First of Month Value by Index	2014 IRP Basecase	107	5.129344126	5.58321754	7.057577968	7.847857072
First of Month Value by Index	2014 IRP Basecase	108	5.940555064	6.84737739	5.872404445	7.403324753
First of Month Value by Index	2014 IRP Basecase	109	5.563907767	5.59437274	6.522675717	7.229395545
First of Month Value by Index	2014 IRP Basecase	110	4.143130863	7.657545727	5.764808842	7.476780594
First of Month Value by Index	2014 IRP Basecase	111	3.887592418	7.443907937	6.550664506	6.27000416
First of Month Value by Index	2014 IRP Basecase	112	5.911788419	6.347281667	7.332062386	7.054139779
First of Month Value by Index	2014 IRP Basecase	113	6.566127393	6.9263542	7.054773245	7.314202807
First of Month Value by Index	2014 IRP Basecase	114	5.001698688	5.65778577	6.329489394	6.329409601
First of Month Value by Index	2014 IRP Basecase	115	6.871027776	5.890549374	5.859982687	6.089007704
First of Month Value by Index	2014 IRP Basecase	116	3.901641586	4.854980567	7.290242665	6.712185334
First of Month Value by Index	2014 IRP Basecase	117	5.890701079	5.873606617	8.932182607	5.912101818
First of Month Value by Index	2014 IRP Basecase	118	5.142249642	5.696461693	6.398855669	5.780384147
First of Month Value by Index	2014 IRP Basecase	119	7.502783585	5.526200719	6.47212016	6.294208625
First of Month Value by Index	2014 IRP Basecase	120	5.466336815	5.935107438	8.401149072	7.208303966
First of Month Value by Index	2014 IRP Basecase	121	6.052664486	5.612127207	4.435725497	6.927747834
First of Month Value by Index	2014 IRP Basecase	122	6.586527009	6.528489919	7.11147016	7.259430377
First of Month Value by Index	2014 IRP Basecase	123	4.91405224	4.840311049	6.745081582	7.294124499
First of Month Value by Index	2014 IRP Basecase	124	4.710175213	5.660862208	5.726564705	7.035048878
First of Month Value by Index	2014 IRP Basecase	125	6.006098143	6.27033604	6.192861751	6.346785391
First of Month Value by Index	2014 IRP Basecase	126	6.558146032	5.708129787	9.541700264	6.992131354
First of Month Value by Index	2014 IRP Basecase	127	5.789086997	7.018394412	6.718376591	7.229304044
First of Month Value by Index	2014 IRP Basecase	128	6.153780689	5.623241882	5.169685138	5.710723837
First of Month Value by Index	2014 IRP Basecase	129	4.774644349	5.461763271	6.429957792	7.485465401
First of Month Value by Index	2014 IRP Basecase	130	5.639585509	4.475782335	7.113415871	6.457147639
First of Month Value by Index	2014 IRP Basecase	131	5.654172348	4.940367169	7.985063795	7.766079308
First of Month Value by Index	2014 IRP Basecase	132	4.96349016	5.955200788	6.028690425	6.473628774
First of Month Value by Index	2014 IRP Basecase	133	5.932259287	6.104719855	7.409472506	7.713352795
First of Month Value by Index	2014 IRP Basecase	134	5.608141187	7.068381992	6.370230355	6.666688794
First of Month Value by Index	2014 IRP Basecase	135	5.534710633	5.914163577	6.250939082	6.363676368
First of Month Value by Index	2014 IRP Basecase	136	5.335238544	6.223480563	6.744499076	8.216526385
First of Month Value by Index	2014 IRP Basecase	137	6.142348246	4.798167222	6.504757802	7.755409531
First of Month Value by Index	2014 IRP Basecase	138	6.465941516	6.881545286	6.849006565	6.375301698
First of Month Value by Index	2014 IRP Basecase	139	5.764782643	6.901771136	6.984837716	7.806196068
First of Month Value by Index	2014 IRP Basecase	140	6.218849441	5.731556149	7.286740518	6.663495175
First of Month Value by Index	2014 IRP Basecase	141	4.467378389	5.410926088	6.480631636	5.469868022
First of Month Value by Index	2014 IRP Basecase	142	6.723958122	5.392732639	7.13773691	7.020917028
First of Month Value by Index	2014 IRP Basecase	143	6.243871287	7.206544557	6.226347378	5.879705726
First of Month Value by Index	2014 IRP Basecase	144	5.09560288	7.992221345	8.756650272	5.586758408
First of Month Value by Index	2014 IRP Basecase	145	5.888834593	6.441601877	5.975948688	7.980066308
First of Month Value by Index	2014 IRP Basecase	146	5.739868839	5.497132622	6.92871685	6.826373031
First of Month Value by Index	2014 IRP Basecase	147	5.631111242	6.213690526	7.190776653	7.477865644
First of Month Value by Index	2014 IRP Basecase	148	5.295603375	5.288195964	7.040812711	6.980454882
First of Month Value by Index	2014 IRP Basecase	149	6.924656308	5.73418525	6.345710926	7.00385373
First of Month Value by Index	2014 IRP Basecase	150	5.575521395	5.675243656	6.524851924	6.53830625
First of Month Value by Index	2014 IRP Basecase	151	5.621159041	8.526109531	7.363163056	7.368530404
First of Month Value by Index	2014 IRP Basecase	152	5.411226073	6.669302428	7.395892136	7.599040367
First of Month Value by Index	2014 IRP Basecase	153	5.537121016	5.520343679	6.482554563	7.96140493
First of Month Value by Index	2014 IRP Basecase	154	7.445222169	6.119935043	6.204356672	5.650340427
First of Month Value by Index	2014 IRP Basecase	155	5.173239974	6.917110261	7.111962512	6.820344864
First of Month Value by Index	2014 IRP Basecase	156	5.317681322	6.961594596	5.884234236	7.31763307
First of Month Value by Index	2014 IRP Basecase	157	5.491363315	6.113493349	6.884451527	7.963293484
First of Month Value by Index	2014 IRP Basecase	158	6.006104684	7.118261387	6.606106423	7.613394851

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	159	5.566052801	5.316725972	6.602915864	7.368857223
First of Month Value by Index	2014 IRP Basecase	160	5.933485085	4.810181157	6.731696297	7.077945036
First of Month Value by Index	2014 IRP Basecase	161	6.708751448	7.837919878	6.613995608	7.339218869
First of Month Value by Index	2014 IRP Basecase	162	6.534227935	4.582757785	8.407019666	5.122536787
First of Month Value by Index	2014 IRP Basecase	163	5.788544307	7.407438185	7.365214715	7.037581033
First of Month Value by Index	2014 IRP Basecase	164	5.38882437	5.68208839	8.64865956	7.49827256
First of Month Value by Index	2014 IRP Basecase	165	7.974840543	6.875193648	6.843949962	6.742203727
First of Month Value by Index	2014 IRP Basecase	166	5.849065639	6.334289875	5.548219776	7.287832896
First of Month Value by Index	2014 IRP Basecase	167	4.927874584	7.073164665	5.976441622	7.357856957
First of Month Value by Index	2014 IRP Basecase	168	6.457720978	4.744187799	7.215990241	8.034592014
First of Month Value by Index	2014 IRP Basecase	169	5.032122831	5.144637265	7.657164193	6.448242536
First of Month Value by Index	2014 IRP Basecase	170	5.025833221	6.924194742	5.777960066	5.643829075
First of Month Value by Index	2014 IRP Basecase	171	6.026286665	4.938304224	6.108644197	5.577657649
First of Month Value by Index	2014 IRP Basecase	172	5.434714587	6.507894335	5.759458136	6.865942395
First of Month Value by Index	2014 IRP Basecase	173	5.294298127	5.823798172	6.709559705	5.82485888
First of Month Value by Index	2014 IRP Basecase	174	6.270799585	5.72146238	7.371563229	8.725184908
First of Month Value by Index	2014 IRP Basecase	175	7.835050965	7.305757761	5.700136736	4.58478872
First of Month Value by Index	2014 IRP Basecase	176	4.206705025	5.535844315	6.970191059	6.482691451
First of Month Value by Index	2014 IRP Basecase	177	7.087264123	5.74448957	7.574484797	7.624543082
First of Month Value by Index	2014 IRP Basecase	178	5.647701876	5.517023013	5.444054632	7.082844972
First of Month Value by Index	2014 IRP Basecase	179	5.548950105	6.40793703	6.096692323	7.048739813
First of Month Value by Index	2014 IRP Basecase	180	5.52256518	7.177223672	7.73960771	6.209458864
First of Month Value by Index	2014 IRP Basecase	181	6.161327374	6.319607344	7.908822871	6.647008922
First of Month Value by Index	2014 IRP Basecase	182	5.646497697	5.646245246	6.580953403	5.584985954
First of Month Value by Index	2014 IRP Basecase	183	5.764418169	8.794540218	4.788949763	5.490284835
First of Month Value by Index	2014 IRP Basecase	184	4.367223573	8.798778759	7.059852232	8.541720992
First of Month Value by Index	2014 IRP Basecase	185	6.328890527	5.679420818	6.386512069	6.141911156
First of Month Value by Index	2014 IRP Basecase	186	5.032519533	7.042033855	7.136531369	7.605740113
First of Month Value by Index	2014 IRP Basecase	187	5.76626173	6.146763621	5.238418776	6.49867398
First of Month Value by Index	2014 IRP Basecase	188	5.247432283	6.422908681	6.610398106	7.57557787
First of Month Value by Index	2014 IRP Basecase	189	7.865873115	6.095590722	7.131617304	6.048227942
First of Month Value by Index	2014 IRP Basecase	190	4.765414505	6.153518699	6.074971489	7.771774837
First of Month Value by Index	2014 IRP Basecase	191	6.345787639	5.910163055	9.494337484	8.713513855
First of Month Value by Index	2014 IRP Basecase	192	4.134475537	5.965379237	5.809970469	8.106071463
First of Month Value by Index	2014 IRP Basecase	193	5.548382946	6.684085397	6.815126392	6.810280111
First of Month Value by Index	2014 IRP Basecase	194	5.414198304	6.513144484	6.053832727	6.385937326
First of Month Value by Index	2014 IRP Basecase	195	4.78849596	5.299126523	6.161968364	7.479945533
First of Month Value by Index	2014 IRP Basecase	196	4.755876147	6.306149332	7.396912245	7.727865905
First of Month Value by Index	2014 IRP Basecase	197	7.273655926	5.533516986	7.065151073	7.984776164
First of Month Value by Index	2014 IRP Basecase	198	5.026280342	5.594809879	6.065554163	5.813808812
First of Month Value by Index	2014 IRP Basecase	199	5.451389374	8.545778263	8.10436102	6.705610788
First of Month Value by Index	2014 IRP Basecase	200	7.652052721	7.282864096	6.420752844	6.944755897
	Average Max Price		5.739868839	6.192789175	6.754012047	6.973662491
	NYMEX Absolute	Max	9.776759793	8.798778759	9.541700264	9.435015368
	Minimum Max		3.781925936	4.184624979	4.435725497	4.58478872

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	0	5.068198962	5.060879382	4.872521273	5.038530727
First of Month Value by Index	2014 IRP Basecase	1	6.807915209	7.067414317	6.344304216	7.836044724
First of Month Value by Index	2014 IRP Basecase	2	7.1434849	8.486442558	7.049517999	7.307667267
First of Month Value by Index	2014 IRP Basecase	3	7.977647969	8.760439545	7.1797813	6.790834328
First of Month Value by Index	2014 IRP Basecase	4	6.617544369	7.807770199	7.316426042	5.75311186
First of Month Value by Index	2014 IRP Basecase	5	6.501683066	6.913324211	8.904927552	6.663498039
First of Month Value by Index	2014 IRP Basecase	6	8.089867465	6.915610716	6.397752313	7.051675675
First of Month Value by Index	2014 IRP Basecase	7	7.743142026	7.396777723	6.987271063	7.602345844
First of Month Value by Index	2014 IRP Basecase	8	6.857485009	7.245393278	7.62862047	7.521456846
First of Month Value by Index	2014 IRP Basecase	9	7.427288538	7.605447485	6.332157672	7.656947512
First of Month Value by Index	2014 IRP Basecase	10	6.370047674	6.184055696	7.299508476	6.900309916
First of Month Value by Index	2014 IRP Basecase	11	6.473684352	7.797387752	6.729956696	7.061979114
First of Month Value by Index	2014 IRP Basecase	12	7.115818178	8.499028614	7.260407964	8.569759287
First of Month Value by Index	2014 IRP Basecase	13	7.813107442	6.304013156	6.289226537	7.961332703
First of Month Value by Index	2014 IRP Basecase	14	6.939406055	5.988049179	6.465738649	7.092401495
First of Month Value by Index	2014 IRP Basecase	15	7.771345011	6.66707569	8.106168791	6.232172586
First of Month Value by Index	2014 IRP Basecase	16	7.003103943	7.670724326	7.010511698	6.564991201
First of Month Value by Index	2014 IRP Basecase	17	7.406546344	7.984637606	7.124897743	7.936392441
First of Month Value by Index	2014 IRP Basecase	18	6.400723945	8.437602021	6.835980619	8.30697611
First of Month Value by Index	2014 IRP Basecase	19	6.276360473	7.328068638	7.549690281	7.657256306
First of Month Value by Index	2014 IRP Basecase	20	6.368121294	8.215804801	7.626148476	5.781235052
First of Month Value by Index	2014 IRP Basecase	21	6.139609012	5.815085513	6.781212484	6.289298764
First of Month Value by Index	2014 IRP Basecase	22	8.001548251	6.748098867	7.306996762	8.806198503
First of Month Value by Index	2014 IRP Basecase	23	7.896560764	7.767810696	6.778544207	7.788799908
First of Month Value by Index	2014 IRP Basecase	24	9.385849661	6.006721388	6.389197529	6.464160054
First of Month Value by Index	2014 IRP Basecase	25	8.800339876	5.313938755	5.834899142	6.282627039
First of Month Value by Index	2014 IRP Basecase	26	6.407271417	7.229628336	7.027748292	7.839204363
First of Month Value by Index	2014 IRP Basecase	27	9.750750253	6.151478496	6.773054697	8.179776091
First of Month Value by Index	2014 IRP Basecase	28	7.03109853	5.683461328	7.689147045	7.057057609
First of Month Value by Index	2014 IRP Basecase	29	7.271056381	7.600470689	7.069758604	6.522427393
First of Month Value by Index	2014 IRP Basecase	30	7.743605319	8.135182475	7.416294308	8.165786427
First of Month Value by Index	2014 IRP Basecase	31	5.58794314	6.485966436	7.631125271	6.964860695
First of Month Value by Index	2014 IRP Basecase	32	7.572683379	7.255093757	6.722397763	6.560909349
First of Month Value by Index	2014 IRP Basecase	33	7.324580635	6.871918508	6.973856367	6.127766102
First of Month Value by Index	2014 IRP Basecase	34	6.270306553	6.51490816	8.660614138	7.57958534
First of Month Value by Index	2014 IRP Basecase	35	7.405825357	6.619909749	8.393343696	7.629082513
First of Month Value by Index	2014 IRP Basecase	36	7.863913744	7.299411352	8.642744963	8.42909955
First of Month Value by Index	2014 IRP Basecase	37	7.356673464	7.326507563	8.243033843	8.954515511
First of Month Value by Index	2014 IRP Basecase	38	6.912832504	7.098857087	5.828663468	5.677847224
First of Month Value by Index	2014 IRP Basecase	39	7.525592549	6.690731657	7.324192679	6.830261386
First of Month Value by Index	2014 IRP Basecase	40	6.326420168	6.73066182	6.933941386	6.125130092
First of Month Value by Index	2014 IRP Basecase	41	7.221044949	8.500240486	6.988124298	6.691741897
First of Month Value by Index	2014 IRP Basecase	42	7.235821951	6.905779301	5.656643489	5.571806312
First of Month Value by Index	2014 IRP Basecase	43	6.805310904	7.206392438	6.807734297	6.869815946
First of Month Value by Index	2014 IRP Basecase	44	7.285807272	6.411585337	6.799432287	6.563669767
First of Month Value by Index	2014 IRP Basecase	45	7.312442998	6.39316605	6.075039898	9.130322927
First of Month Value by Index	2014 IRP Basecase	46	8.27682587	7.092626873	7.206465718	7.478473615
First of Month Value by Index	2014 IRP Basecase	47	7.093598325	6.938005304	6.211413434	7.404578003
First of Month Value by Index	2014 IRP Basecase	48	8.923367735	6.737169045	7.39968527	7.313163985
First of Month Value by Index	2014 IRP Basecase	49	7.180464791	6.243800498	7.723044781	6.499260325
First of Month Value by Index	2014 IRP Basecase	50	6.447041754	7.243997413	6.879955544	6.177184815
First of Month Value by Index	2014 IRP Basecase	51	7.56812614	7.184702096	6.752431001	7.341531317
First of Month Value by Index	2014 IRP Basecase	52	8.320103905	7.972632315	7.292623101	6.286884145

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	53	9.050411621	8.072267426	6.794159718	6.176683556
First of Month Value by Index	2014 IRP Basecase	54	7.32988712	7.25039092	7.457423856	5.571539426
First of Month Value by Index	2014 IRP Basecase	55	7.326589091	7.511183758	7.8789297	7.210117422
First of Month Value by Index	2014 IRP Basecase	56	6.96336261	7.486578036	7.901602865	7.404628674
First of Month Value by Index	2014 IRP Basecase	57	7.838569235	6.376474192	6.289767897	6.22723156
First of Month Value by Index	2014 IRP Basecase	58	8.173602859	8.734179877	6.750951453	8.23061897
First of Month Value by Index	2014 IRP Basecase	59	7.689757762	6.843989073	7.429191594	7.22320193
First of Month Value by Index	2014 IRP Basecase	60	7.22792301	6.547816959	8.25244667	7.349244686
First of Month Value by Index	2014 IRP Basecase	61	7.962180786	6.164434195	7.098727927	6.527936143
First of Month Value by Index	2014 IRP Basecase	62	7.659154504	7.245075893	5.902701948	7.184933265
First of Month Value by Index	2014 IRP Basecase	63	7.589906755	6.908397448	7.574890799	6.499431179
First of Month Value by Index	2014 IRP Basecase	64	6.155022975	7.495522566	6.881818724	7.398220202
First of Month Value by Index	2014 IRP Basecase	65	7.313468168	9.586331628	6.287329371	8.52192138
First of Month Value by Index	2014 IRP Basecase	66	7.305461959	7.177108109	6.720789996	7.185302108
First of Month Value by Index	2014 IRP Basecase	67	7.168185324	7.091103014	5.839668535	6.307706484
First of Month Value by Index	2014 IRP Basecase	68	7.472152609	8.318661089	7.581644853	7.020111719
First of Month Value by Index	2014 IRP Basecase	69	7.793663603	7.755627729	8.003806666	6.77371068
First of Month Value by Index	2014 IRP Basecase	70	8.42729974	5.723883446	7.090849095	7.644727056
First of Month Value by Index	2014 IRP Basecase	71	7.009883666	7.384443388	7.453038551	7.216454713
First of Month Value by Index	2014 IRP Basecase	72	6.798534473	8.185571102	6.745852083	6.697822433
First of Month Value by Index	2014 IRP Basecase	73	8.746296997	7.526571196	7.785338914	5.838067682
First of Month Value by Index	2014 IRP Basecase	74	8.127167535	7.839641454	6.857841147	7.209823775
First of Month Value by Index	2014 IRP Basecase	75	6.337599002	6.671075727	6.646343815	7.010158003
First of Month Value by Index	2014 IRP Basecase	76	7.848667279	8.290819239	7.225831862	6.765092071
First of Month Value by Index	2014 IRP Basecase	77	6.841858211	6.068884923	7.517055868	6.572244493
First of Month Value by Index	2014 IRP Basecase	78	7.778944993	8.398590771	8.332720108	7.686697436
First of Month Value by Index	2014 IRP Basecase	79	5.856582255	7.392213051	7.117128656	7.786862521
First of Month Value by Index	2014 IRP Basecase	80	7.688849293	6.495758895	7.334261187	6.41861186
First of Month Value by Index	2014 IRP Basecase	81	7.424892154	8.172165279	8.83649018	7.350282694
First of Month Value by Index	2014 IRP Basecase	82	6.641362963	8.059996994	5.522947886	8.526923458
First of Month Value by Index	2014 IRP Basecase	83	9.627335442	6.730419961	8.961906427	6.407767419
First of Month Value by Index	2014 IRP Basecase	84	7.173494687	6.176799119	6.763606255	8.039665463
First of Month Value by Index	2014 IRP Basecase	85	6.900770064	7.811150921	7.004032438	7.108178524
First of Month Value by Index	2014 IRP Basecase	86	8.074704907	6.543697042	5.742383685	7.063648748
First of Month Value by Index	2014 IRP Basecase	87	7.099118193	7.235258313	8.040419152	7.358356132
First of Month Value by Index	2014 IRP Basecase	88	7.986246622	6.39213031	6.894134915	7.547087794
First of Month Value by Index	2014 IRP Basecase	89	7.47479347	7.583429011	6.211729998	6.528303947
First of Month Value by Index	2014 IRP Basecase	90	7.265208444	6.051827508	7.811806665	6.485791287
First of Month Value by Index	2014 IRP Basecase	91	6.996747785	7.210466927	6.859885014	6.547787647
First of Month Value by Index	2014 IRP Basecase	92	7.036674305	8.189213611	8.404345661	7.945089657
First of Month Value by Index	2014 IRP Basecase	93	6.952931548	7.959310651	7.471849634	7.1159726
First of Month Value by Index	2014 IRP Basecase	94	7.68276293	7.706953679	7.896913462	7.470068901
First of Month Value by Index	2014 IRP Basecase	95	7.566281105	7.678947216	6.349547908	7.489391512
First of Month Value by Index	2014 IRP Basecase	96	7.221595082	7.175833317	6.258325871	7.713900935
First of Month Value by Index	2014 IRP Basecase	97	7.035514487	8.01637947	8.546404218	7.716131245
First of Month Value by Index	2014 IRP Basecase	98	7.207293024	7.357409338	5.992324887	6.176785565
First of Month Value by Index	2014 IRP Basecase	99	8.027415091	7.04975359	8.585417264	6.512080625
First of Month Value by Index	2014 IRP Basecase	100	6.5791718	6.966722092	6.786557294	7.614607952
First of Month Value by Index	2014 IRP Basecase	101	7.504160232	6.417629339	8.387817041	9.571618753
First of Month Value by Index	2014 IRP Basecase	102	6.351056347	6.56412145	6.082277888	8.429412226
First of Month Value by Index	2014 IRP Basecase	103	6.342840413	6.185418227	6.313360726	6.161118259
First of Month Value by Index	2014 IRP Basecase	104	7.885415039	7.835366322	7.311428133	7.623321004
First of Month Value by Index	2014 IRP Basecase	105	7.929338739	7.381464688	8.574341303	7.725461562

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	106	7.551632917	7.889315587	6.073868077	6.945718659
First of Month Value by Index	2014 IRP Basecase	107	7.854547293	6.88663881	7.73025536	7.642388517
First of Month Value by Index	2014 IRP Basecase	108	6.78024688	5.989848962	9.63671629	7.885255178
First of Month Value by Index	2014 IRP Basecase	109	7.99316849	6.170095477	6.742072721	6.612737129
First of Month Value by Index	2014 IRP Basecase	110	7.612795773	5.657903172	8.216988231	7.587624363
First of Month Value by Index	2014 IRP Basecase	111	6.558395444	8.299232552	6.488407237	7.044732062
First of Month Value by Index	2014 IRP Basecase	112	6.584348508	6.830079323	7.186463428	7.454694308
First of Month Value by Index	2014 IRP Basecase	113	5.828069022	8.152072231	8.22096248	7.674400134
First of Month Value by Index	2014 IRP Basecase	114	7.124922956	6.216347272	6.608946586	7.589507295
First of Month Value by Index	2014 IRP Basecase	115	6.409503959	6.669794773	6.858935167	6.19332225
First of Month Value by Index	2014 IRP Basecase	116	7.266801169	7.485641203	7.984342212	6.197831668
First of Month Value by Index	2014 IRP Basecase	117	7.210887663	7.706079499	6.561104903	9.105820653
First of Month Value by Index	2014 IRP Basecase	118	7.856962396	6.743214809	7.170291929	7.48830948
First of Month Value by Index	2014 IRP Basecase	119	7.751293012	7.334624871	6.781213769	6.440987272
First of Month Value by Index	2014 IRP Basecase	120	6.931286129	7.644098469	7.132242311	7.541290108
First of Month Value by Index	2014 IRP Basecase	121	7.327317876	6.885754768	7.409497641	7.017391268
First of Month Value by Index	2014 IRP Basecase	122	6.21656184	6.28692779	9.142617526	7.517941735
First of Month Value by Index	2014 IRP Basecase	123	7.813874355	6.811168379	6.183894114	9.527163604
First of Month Value by Index	2014 IRP Basecase	124	7.327617826	7.421176653	6.720416956	6.84000384
First of Month Value by Index	2014 IRP Basecase	125	7.011795278	5.937625421	6.997312013	8.143675322
First of Month Value by Index	2014 IRP Basecase	126	8.94311264	7.045192288	7.400701518	6.603344903
First of Month Value by Index	2014 IRP Basecase	127	6.871927696	7.925539352	7.447624884	7.512372642
First of Month Value by Index	2014 IRP Basecase	128	8.400339131	7.22997092	6.596706553	8.271804755
First of Month Value by Index	2014 IRP Basecase	129	7.01788475	6.990298749	6.597982447	7.095916754
First of Month Value by Index	2014 IRP Basecase	130	7.296503819	6.488742514	5.791800927	7.578055177
First of Month Value by Index	2014 IRP Basecase	131	8.259587528	8.845420629	7.335900547	8.911130146
First of Month Value by Index	2014 IRP Basecase	132	6.057027982	7.349648625	6.563108445	6.969874888
First of Month Value by Index	2014 IRP Basecase	133	6.438231164	7.003998184	6.043366668	8.579192013
First of Month Value by Index	2014 IRP Basecase	134	7.408920758	8.39834157	8.992009499	7.652393663
First of Month Value by Index	2014 IRP Basecase	135	6.42642069	7.012591897	6.319549028	6.236125966
First of Month Value by Index	2014 IRP Basecase	136	7.216238031	7.697556371	6.442652842	5.953111612
First of Month Value by Index	2014 IRP Basecase	137	8.509491444	6.506652786	6.48142664	6.335149463
First of Month Value by Index	2014 IRP Basecase	138	8.552388971	5.039961934	8.820591782	8.052121496
First of Month Value by Index	2014 IRP Basecase	139	8.065305037	7.790967403	7.520492006	8.154856395
First of Month Value by Index	2014 IRP Basecase	140	8.031859652	7.494551507	6.246035195	6.479721363
First of Month Value by Index	2014 IRP Basecase	141	7.568274307	7.828751978	6.094620688	6.589580084
First of Month Value by Index	2014 IRP Basecase	142	7.227405277	6.392067664	6.73842812	5.97449151
First of Month Value by Index	2014 IRP Basecase	143	7.240092093	6.812162102	6.621786771	7.071000757
First of Month Value by Index	2014 IRP Basecase	144	7.732529358	5.767034108	9.015394421	7.109837847
First of Month Value by Index	2014 IRP Basecase	145	7.349745026	6.897384723	7.083191016	8.245766788
First of Month Value by Index	2014 IRP Basecase	146	6.806082702	8.198998573	7.151293435	6.197788331
First of Month Value by Index	2014 IRP Basecase	147	6.88500536	7.101574828	7.236856653	7.406385079
First of Month Value by Index	2014 IRP Basecase	148	7.828326736	6.496691825	7.372397962	6.057490173
First of Month Value by Index	2014 IRP Basecase	149	5.766188759	7.524663128	7.187321717	6.103544272
First of Month Value by Index	2014 IRP Basecase	150	6.004947646	7.81254984	7.215010844	7.398469228
First of Month Value by Index	2014 IRP Basecase	151	7.896621886	5.460754305	7.010165092	7.41996436
First of Month Value by Index	2014 IRP Basecase	152	7.193757065	6.711928096	6.104807833	7.344595546
First of Month Value by Index	2014 IRP Basecase	153	7.870305848	6.567407028	6.768049257	7.113677531
First of Month Value by Index	2014 IRP Basecase	154	6.664296391	5.707743772	6.231935738	7.504680323
First of Month Value by Index	2014 IRP Basecase	155	8.444338821	7.639340805	6.292044955	6.870366621
First of Month Value by Index	2014 IRP Basecase	156	7.515863277	7.236252226	9.8588849	7.631564305
First of Month Value by Index	2014 IRP Basecase	157	7.652450834	7.926569575	8.150994853	8.120682757
First of Month Value by Index	2014 IRP Basecase	158	8.410176091	5.892369527	5.877009527	7.560713331

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	159	6.485336839	7.570207574	6.602254427	6.71773784
First of Month Value by Index	2014 IRP Basecase	160	5.990583061	6.843150368	7.276754759	8.024446169
First of Month Value by Index	2014 IRP Basecase	161	7.550124233	8.414953648	7.417695396	6.411320013
First of Month Value by Index	2014 IRP Basecase	162	7.715805079	6.029085639	6.198624791	8.113813863
First of Month Value by Index	2014 IRP Basecase	163	5.954613789	6.139855005	7.687065612	8.678575256
First of Month Value by Index	2014 IRP Basecase	164	7.792529791	6.788101313	7.919271256	9.810970008
First of Month Value by Index	2014 IRP Basecase	165	6.707449057	7.084434811	6.260638102	6.341298078
First of Month Value by Index	2014 IRP Basecase	166	6.87388562	7.180575567	7.376145947	6.72308397
First of Month Value by Index	2014 IRP Basecase	167	6.716227422	7.975899608	6.111023686	6.398906944
First of Month Value by Index	2014 IRP Basecase	168	5.38240279	7.922342763	7.274397283	8.785100564
First of Month Value by Index	2014 IRP Basecase	169	7.995594515	6.03548359	8.170291373	7.209544981
First of Month Value by Index	2014 IRP Basecase	170	7.030945793	7.748984859	6.230412307	7.067132975
First of Month Value by Index	2014 IRP Basecase	171	6.839543825	7.312819499	6.22326457	6.498560101
First of Month Value by Index	2014 IRP Basecase	172	6.624604016	8.127930531	6.09432191	7.769934413
First of Month Value by Index	2014 IRP Basecase	173	6.956998941	7.287429933	5.848906396	7.729798575
First of Month Value by Index	2014 IRP Basecase	174	8.444115506	7.77701318	6.19588995	7.749954542
First of Month Value by Index	2014 IRP Basecase	175	7.88554634	7.833884928	5.683537735	6.370867856
First of Month Value by Index	2014 IRP Basecase	176	7.108491621	5.980160338	6.712610442	8.622685832
First of Month Value by Index	2014 IRP Basecase	177	6.41745791	7.949522018	7.088466989	5.547469287
First of Month Value by Index	2014 IRP Basecase	178	7.121029203	6.412609938	6.211340434	8.532590728
First of Month Value by Index	2014 IRP Basecase	179	6.635894195	6.95940101	7.895334966	7.245089685
First of Month Value by Index	2014 IRP Basecase	180	7.212761498	7.242421408	7.254683516	8.296373164
First of Month Value by Index	2014 IRP Basecase	181	7.192068073	8.951161876	6.591469677	5.826618471
First of Month Value by Index	2014 IRP Basecase	182	7.288295283	7.520912131	7.014464243	6.951365223
First of Month Value by Index	2014 IRP Basecase	183	8.305031943	7.514808445	7.156690572	7.790093223
First of Month Value by Index	2014 IRP Basecase	184	6.376061571	8.91415016	7.657405182	6.447811482
First of Month Value by Index	2014 IRP Basecase	185	7.827619043	6.649256738	6.86051511	6.605180821
First of Month Value by Index	2014 IRP Basecase	186	9.243538456	9.136641666	7.604105309	6.10940624
First of Month Value by Index	2014 IRP Basecase	187	7.772824342	6.974542124	6.845920191	6.491918888
First of Month Value by Index	2014 IRP Basecase	188	6.266882101	7.221475111	7.449666729	7.114224731
First of Month Value by Index	2014 IRP Basecase	189	5.880113631	6.986877933	6.222900689	8.543227992
First of Month Value by Index	2014 IRP Basecase	190	6.398633386	6.556648017	6.551900257	7.27147016
First of Month Value by Index	2014 IRP Basecase	191	8.482604495	7.096467337	7.235282711	6.755997064
First of Month Value by Index	2014 IRP Basecase	192	6.815878235	5.924994499	7.304281926	7.942308842
First of Month Value by Index	2014 IRP Basecase	193	8.365169903	7.905170936	7.338453121	7.826447938
First of Month Value by Index	2014 IRP Basecase	194	7.318156742	6.388022283	6.63178275	7.157972039
First of Month Value by Index	2014 IRP Basecase	195	6.994758724	7.087585011	8.727339432	7.561054034
First of Month Value by Index	2014 IRP Basecase	196	6.871335349	6.577163969	5.547061382	8.09896862
First of Month Value by Index	2014 IRP Basecase	197	6.295996419	6.858824967	10.13974677	8.433007798
First of Month Value by Index	2014 IRP Basecase	198	7.202439893	8.649517877	7.178897279	6.181941693
First of Month Value by Index	2014 IRP Basecase	199	6.360944034	8.002203539	6.507526966	8.188811834
First of Month Value by Index	2014 IRP Basecase	200	7.612802526	7.702973408	8.294103406	7.776939451
	Average Max Price		7.298468099	7.177462256	7.120319297	7.240078285
	NYMEX Absolute	Max	9.750750253	9.586331628	10.13974677	9.810970008
	Minimum Max		5.068198962	5.039961934	4.872521273	5.038530727

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	0	5.138185604	4.973190419	4.960269198	5.221518828
First of Month Value by Index	2014 IRP Basecase	1	6.996302209	6.521129368	6.870529964	7.486722546
First of Month Value by Index	2014 IRP Basecase	2	7.370648085	6.627039664	9.003344039	6.927899819
First of Month Value by Index	2014 IRP Basecase	3	7.88955381	8.166514679	7.942527187	7.98289444
First of Month Value by Index	2014 IRP Basecase	4	7.137653508	7.198617356	7.122390878	7.242060272
First of Month Value by Index	2014 IRP Basecase	5	6.803818209	6.897059342	10.55985948	7.135965456
First of Month Value by Index	2014 IRP Basecase	6	6.380592516	8.033101734	7.294859012	7.563180152
First of Month Value by Index	2014 IRP Basecase	7	7.689477936	7.578687667	6.831118699	8.263194071
First of Month Value by Index	2014 IRP Basecase	8	9.909448824	8.301409074	6.948442093	6.763717452
First of Month Value by Index	2014 IRP Basecase	9	8.909110537	6.332835919	6.718387927	7.128867934
First of Month Value by Index	2014 IRP Basecase	10	7.042174933	7.19450667	7.430631708	6.589446096
First of Month Value by Index	2014 IRP Basecase	11	6.504103988	6.540786821	5.744502411	7.745572312
First of Month Value by Index	2014 IRP Basecase	12	6.821384064	6.990556352	7.719959397	8.63887064
First of Month Value by Index	2014 IRP Basecase	13	7.333087815	6.839457152	8.11078445	6.480902969
First of Month Value by Index	2014 IRP Basecase	14	6.151456259	6.974396196	6.671531657	8.293154766
First of Month Value by Index	2014 IRP Basecase	15	9.560726069	6.069975153	6.067039979	6.633823683
First of Month Value by Index	2014 IRP Basecase	16	6.596410703	8.851984358	7.664954408	6.440604342
First of Month Value by Index	2014 IRP Basecase	17	7.559577091	6.655153043	6.543401465	7.054618872
First of Month Value by Index	2014 IRP Basecase	18	8.771055547	8.364968327	6.770458205	7.371243703
First of Month Value by Index	2014 IRP Basecase	19	8.098075741	5.546747433	8.970051826	8.780491776
First of Month Value by Index	2014 IRP Basecase	20	7.695248542	6.030340328	6.473026081	7.191923619
First of Month Value by Index	2014 IRP Basecase	21	7.623912873	7.311088111	6.607171862	7.997686351
First of Month Value by Index	2014 IRP Basecase	22	8.177881802	7.543954504	6.54778512	6.663509768
First of Month Value by Index	2014 IRP Basecase	23	6.837141756	7.71292012	6.143525787	7.968978463
First of Month Value by Index	2014 IRP Basecase	24	8.803443272	7.277343793	7.237429339	6.56185132
First of Month Value by Index	2014 IRP Basecase	25	5.275320957	6.475370368	7.133152724	6.520674681
First of Month Value by Index	2014 IRP Basecase	26	7.030006707	6.703300951	8.650777178	6.889828639
First of Month Value by Index	2014 IRP Basecase	27	7.581990378	6.495008399	6.972334437	7.492876111
First of Month Value by Index	2014 IRP Basecase	28	7.936318003	7.260659537	6.42383813	7.038881929
First of Month Value by Index	2014 IRP Basecase	29	8.312818943	7.152231012	7.634083145	7.354365936
First of Month Value by Index	2014 IRP Basecase	30	8.350790901	6.388924056	8.753735875	9.212203802
First of Month Value by Index	2014 IRP Basecase	31	6.871309329	7.92050785	6.797528255	7.355808415
First of Month Value by Index	2014 IRP Basecase	32	6.39736011	7.578644751	7.260378483	7.325133043
First of Month Value by Index	2014 IRP Basecase	33	8.033795171	6.528046343	8.25577611	8.417993112
First of Month Value by Index	2014 IRP Basecase	34	5.971391807	7.816033028	7.138860214	8.630302042
First of Month Value by Index	2014 IRP Basecase	35	6.211396489	6.835249517	7.407051815	5.794788608
First of Month Value by Index	2014 IRP Basecase	36	6.537186939	7.413534318	7.360992297	6.947142173
First of Month Value by Index	2014 IRP Basecase	37	7.858784598	7.858412407	7.770992193	7.458775725
First of Month Value by Index	2014 IRP Basecase	38	7.400264427	6.244876802	8.212347296	7.03224358
First of Month Value by Index	2014 IRP Basecase	39	6.967736305	5.241654216	6.152469419	6.311045576
First of Month Value by Index	2014 IRP Basecase	40	7.277216957	6.631718237	8.071061563	7.101757586
First of Month Value by Index	2014 IRP Basecase	41	6.692656423	8.676866013	6.593088605	9.06550073
First of Month Value by Index	2014 IRP Basecase	42	7.621628684	6.290781688	6.772989377	7.205379215
First of Month Value by Index	2014 IRP Basecase	43	6.455765854	6.803313307	7.209429418	7.857250617
First of Month Value by Index	2014 IRP Basecase	44	7.626219173	7.421540779	7.97619077	6.423462514
First of Month Value by Index	2014 IRP Basecase	45	7.140634686	6.385978156	7.481671495	6.978460802
First of Month Value by Index	2014 IRP Basecase	46	7.680803714	7.007940706	8.714753376	7.239247302
First of Month Value by Index	2014 IRP Basecase	47	8.303985106	6.669169365	7.435048879	7.630681295
First of Month Value by Index	2014 IRP Basecase	48	5.816190297	6.169716064	6.905402197	8.075552162
First of Month Value by Index	2014 IRP Basecase	49	8.296333716	7.701115289	5.76591616	6.773772785
First of Month Value by Index	2014 IRP Basecase	50	8.792937091	7.458264688	6.962541256	7.673217132
First of Month Value by Index	2014 IRP Basecase	51	8.182448952	7.884802519	9.621023041	8.281317051
First of Month Value by Index	2014 IRP Basecase	52	6.938939554	6.563698763	6.817313653	7.131443531

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	53	8.633361006	6.646706256	6.917659216	6.502996224
First of Month Value by Index	2014 IRP Basecase	54	7.570475151	8.012450607	8.138750567	7.165256229
First of Month Value by Index	2014 IRP Basecase	55	8.895120213	7.664838367	7.287138266	7.710481741
First of Month Value by Index	2014 IRP Basecase	56	8.496746854	7.954753862	8.483291264	6.84816986
First of Month Value by Index	2014 IRP Basecase	57	7.624201094	6.252916913	8.297455195	7.663944604
First of Month Value by Index	2014 IRP Basecase	58	6.736240339	8.577848329	8.809334804	7.157940502
First of Month Value by Index	2014 IRP Basecase	59	6.319366965	6.879934003	7.659008576	8.030839543
First of Month Value by Index	2014 IRP Basecase	60	8.490617442	6.305578078	6.181559233	5.953457614
First of Month Value by Index	2014 IRP Basecase	61	7.124576686	6.89962945	6.537614161	7.567162809
First of Month Value by Index	2014 IRP Basecase	62	7.751474331	8.445442801	8.327838458	6.672216825
First of Month Value by Index	2014 IRP Basecase	63	7.498620718	7.48999723	7.798199707	8.221326957
First of Month Value by Index	2014 IRP Basecase	64	9.013914206	6.570869804	6.726913483	7.820103846
First of Month Value by Index	2014 IRP Basecase	65	6.076200446	6.163642771	7.998623928	7.606601743
First of Month Value by Index	2014 IRP Basecase	66	6.723055177	7.657669095	6.401618186	8.422022279
First of Month Value by Index	2014 IRP Basecase	67	6.020153955	7.83698494	6.774691207	8.85761364
First of Month Value by Index	2014 IRP Basecase	68	7.630476602	7.134522977	7.856240813	7.888482328
First of Month Value by Index	2014 IRP Basecase	69	8.612741304	7.354431811	6.933730137	8.502641846
First of Month Value by Index	2014 IRP Basecase	70	7.68764458	8.66221657	7.438955589	6.947443232
First of Month Value by Index	2014 IRP Basecase	71	6.662480667	6.370047351	6.591123675	8.182264572
First of Month Value by Index	2014 IRP Basecase	72	8.986257375	7.710407302	5.962485805	8.563724213
First of Month Value by Index	2014 IRP Basecase	73	7.41971127	8.274924583	8.455340786	7.749359745
First of Month Value by Index	2014 IRP Basecase	74	8.686408014	8.346054484	5.960149071	9.194424171
First of Month Value by Index	2014 IRP Basecase	75	7.715239405	6.426045754	8.423598922	8.335806517
First of Month Value by Index	2014 IRP Basecase	76	6.033816862	6.694779964	6.961146156	7.372614643
First of Month Value by Index	2014 IRP Basecase	77	7.924275321	7.207946663	6.90927511	6.798794652
First of Month Value by Index	2014 IRP Basecase	78	6.348112069	8.339496743	6.600794632	7.081573612
First of Month Value by Index	2014 IRP Basecase	79	6.68412509	6.144274465	7.724596254	6.932352775
First of Month Value by Index	2014 IRP Basecase	80	8.186983301	7.683050912	6.740023926	7.518691381
First of Month Value by Index	2014 IRP Basecase	81	6.842389603	6.176401863	6.718438254	9.105428598
First of Month Value by Index	2014 IRP Basecase	82	7.223997474	6.39328268	7.355029752	7.981464525
First of Month Value by Index	2014 IRP Basecase	83	7.477075399	8.683104685	6.585366911	6.674828914
First of Month Value by Index	2014 IRP Basecase	84	8.754754222	8.488669373	7.002512369	8.071906978
First of Month Value by Index	2014 IRP Basecase	85	7.617580033	7.829256845	7.212979499	8.934305686
First of Month Value by Index	2014 IRP Basecase	86	8.198211009	7.65594825	5.902410091	7.129781387
First of Month Value by Index	2014 IRP Basecase	87	7.048347905	6.550641722	7.573566389	8.259677359
First of Month Value by Index	2014 IRP Basecase	88	9.04854795	6.848135523	6.982527879	7.70236319
First of Month Value by Index	2014 IRP Basecase	89	6.927767157	5.629537342	6.880934619	7.455730835
First of Month Value by Index	2014 IRP Basecase	90	8.061515765	6.615877368	6.43966056	8.225098653
First of Month Value by Index	2014 IRP Basecase	91	6.661642636	7.819683279	8.66132899	6.361565265
First of Month Value by Index	2014 IRP Basecase	92	8.577030926	7.061636621	7.849194832	7.595407383
First of Month Value by Index	2014 IRP Basecase	93	7.077015559	8.33276296	6.613857682	8.267331754
First of Month Value by Index	2014 IRP Basecase	94	7.797161019	7.027143037	6.657119496	7.701561974
First of Month Value by Index	2014 IRP Basecase	95	7.306976666	5.71460206	7.089586678	7.815776407
First of Month Value by Index	2014 IRP Basecase	96	7.675765894	8.159032823	6.427554368	7.737168896
First of Month Value by Index	2014 IRP Basecase	97	7.586413123	8.606394312	8.478310994	7.160668485
First of Month Value by Index	2014 IRP Basecase	98	8.601859254	8.025894797	6.499639606	8.180962315
First of Month Value by Index	2014 IRP Basecase	99	7.602902604	6.583248486	7.422487924	6.398353111
First of Month Value by Index	2014 IRP Basecase	100	8.187313595	6.322384306	7.397787527	7.502880105
First of Month Value by Index	2014 IRP Basecase	101	7.66107847	8.075820988	7.50636846	5.898940078
First of Month Value by Index	2014 IRP Basecase	102	6.511111939	7.641520802	6.033392589	6.259588464
First of Month Value by Index	2014 IRP Basecase	103	7.485424521	5.67622949	5.76546752	7.736867206
First of Month Value by Index	2014 IRP Basecase	104	6.605290797	6.619576893	7.121839214	8.307444148
First of Month Value by Index	2014 IRP Basecase	105	7.6099704	5.752308202	8.89574986	7.20726586

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	106	7.300351196	6.269676674	6.554108485	7.838530559
First of Month Value by Index	2014 IRP Basecase	107	6.855834159	8.331123292	6.564714183	5.75883177
First of Month Value by Index	2014 IRP Basecase	108	7.674966187	6.353220255	6.678753025	7.442453005
First of Month Value by Index	2014 IRP Basecase	109	6.872085838	8.434658697	6.741853829	6.994550984
First of Month Value by Index	2014 IRP Basecase	110	6.640074947	6.552467405	8.100109388	7.142984434
First of Month Value by Index	2014 IRP Basecase	111	7.811803464	7.782291202	5.976609921	7.708176992
First of Month Value by Index	2014 IRP Basecase	112	6.913189681	7.404854916	7.0785932	6.190052915
First of Month Value by Index	2014 IRP Basecase	113	7.318361659	8.334529683	7.799374876	7.95923695
First of Month Value by Index	2014 IRP Basecase	114	8.662861329	7.837054528	6.817233888	8.325657493
First of Month Value by Index	2014 IRP Basecase	115	7.207010405	7.540593182	8.283965759	8.087008828
First of Month Value by Index	2014 IRP Basecase	116	7.391079344	8.520262219	7.520046781	7.340444667
First of Month Value by Index	2014 IRP Basecase	117	6.428395587	6.80955346	6.12571311	8.524064126
First of Month Value by Index	2014 IRP Basecase	118	6.973206027	7.672166806	6.541181003	6.996078649
First of Month Value by Index	2014 IRP Basecase	119	7.112074523	8.152639646	8.321162044	7.651829407
First of Month Value by Index	2014 IRP Basecase	120	7.889039825	6.74249173	8.857431093	9.396896022
First of Month Value by Index	2014 IRP Basecase	121	7.877666378	6.529448912	6.912025069	7.015280059
First of Month Value by Index	2014 IRP Basecase	122	7.503587251	8.930360588	6.393165011	7.212781951
First of Month Value by Index	2014 IRP Basecase	123	7.409435964	6.288429764	7.19373226	7.326273657
First of Month Value by Index	2014 IRP Basecase	124	7.27551168	7.39552801	7.358877066	7.365507772
First of Month Value by Index	2014 IRP Basecase	125	5.985324924	7.437169901	7.173639142	7.178781715
First of Month Value by Index	2014 IRP Basecase	126	6.3272874	7.371773656	7.809621215	7.391156414
First of Month Value by Index	2014 IRP Basecase	127	7.796935676	7.813512707	7.388148058	7.197123349
First of Month Value by Index	2014 IRP Basecase	128	7.758469857	6.804489051	6.778563839	7.23229535
First of Month Value by Index	2014 IRP Basecase	129	7.142734552	7.749178756	8.107175577	8.127342326
First of Month Value by Index	2014 IRP Basecase	130	7.389116197	6.823149811	8.892106516	8.137732746
First of Month Value by Index	2014 IRP Basecase	131	7.870738523	7.482178426	6.713468914	6.757128511
First of Month Value by Index	2014 IRP Basecase	132	7.84525528	7.471189889	7.744453914	6.625737905
First of Month Value by Index	2014 IRP Basecase	133	6.484213724	6.079770531	5.83151616	5.775695573
First of Month Value by Index	2014 IRP Basecase	134	8.445078647	6.544621388	6.652660301	6.877858121
First of Month Value by Index	2014 IRP Basecase	135	7.300657218	6.574774219	6.50079411	7.33126117
First of Month Value by Index	2014 IRP Basecase	136	7.49653237	6.302260444	7.608332444	7.33719926
First of Month Value by Index	2014 IRP Basecase	137	7.053243362	8.08825748	7.73362243	7.646840237
First of Month Value by Index	2014 IRP Basecase	138	7.644370763	8.751554131	7.504086531	7.947976112
First of Month Value by Index	2014 IRP Basecase	139	7.168370399	6.660070028	7.017037152	7.683345253
First of Month Value by Index	2014 IRP Basecase	140	7.192037196	6.299780603	8.174602584	7.403469987
First of Month Value by Index	2014 IRP Basecase	141	7.888221714	7.363728078	7.421517637	8.028422151
First of Month Value by Index	2014 IRP Basecase	142	8.331438445	7.390372627	6.653551032	7.134947495
First of Month Value by Index	2014 IRP Basecase	143	7.062140822	7.721381128	6.741569616	7.638679368
First of Month Value by Index	2014 IRP Basecase	144	7.160260952	7.374178694	6.555333785	7.603339694
First of Month Value by Index	2014 IRP Basecase	145	7.158102301	6.879241598	6.431452171	6.473441489
First of Month Value by Index	2014 IRP Basecase	146	5.945126727	6.275428399	6.740762525	7.063266414
First of Month Value by Index	2014 IRP Basecase	147	7.111208183	6.412043969	8.626658698	8.157552594
First of Month Value by Index	2014 IRP Basecase	148	8.235712669	6.906010695	6.463086936	7.636679195
First of Month Value by Index	2014 IRP Basecase	149	6.767832575	7.861289835	6.46822951	7.650816458
First of Month Value by Index	2014 IRP Basecase	150	6.374587849	6.654228381	7.110805796	6.763651472
First of Month Value by Index	2014 IRP Basecase	151	6.834201711	6.9488819	8.4453051	6.96036665
First of Month Value by Index	2014 IRP Basecase	152	6.874986337	6.776071939	7.814429901	7.838840237
First of Month Value by Index	2014 IRP Basecase	153	8.004393847	7.22337889	7.054185741	7.847080345
First of Month Value by Index	2014 IRP Basecase	154	7.866893223	6.450320277	7.842992941	6.611374436
First of Month Value by Index	2014 IRP Basecase	155	7.86592074	8.468498623	6.998769668	8.423747799
First of Month Value by Index	2014 IRP Basecase	156	6.762870942	6.146526914	5.645692641	7.782961974
First of Month Value by Index	2014 IRP Basecase	157	6.670439279	7.723931399	7.639553549	8.677372965
First of Month Value by Index	2014 IRP Basecase	158	6.434967921	7.724878543	5.661918799	8.494626906

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	159	7.787123304	7.288744004	9.148238428	9.180575088
First of Month Value by Index	2014 IRP Basecase	160	6.135656467	6.366087239	7.663006338	7.093914117
First of Month Value by Index	2014 IRP Basecase	161	6.907856959	6.70448867	5.080398775	7.935510462
First of Month Value by Index	2014 IRP Basecase	162	7.397427079	6.618748843	7.500932036	9.173031323
First of Month Value by Index	2014 IRP Basecase	163	6.570326823	5.983761659	6.925294209	6.326180892
First of Month Value by Index	2014 IRP Basecase	164	6.994707484	6.436435073	6.687252828	7.265545287
First of Month Value by Index	2014 IRP Basecase	165	7.160398268	6.453267721	7.377492468	7.571947069
First of Month Value by Index	2014 IRP Basecase	166	8.218540912	7.403615915	6.45730816	7.961836286
First of Month Value by Index	2014 IRP Basecase	167	7.15879611	6.501406314	7.30889105	7.630591464
First of Month Value by Index	2014 IRP Basecase	168	7.810242389	8.007533376	7.279347777	8.81669426
First of Month Value by Index	2014 IRP Basecase	169	8.381918321	7.245811269	6.56905931	7.489175518
First of Month Value by Index	2014 IRP Basecase	170	6.9600428	7.338281292	6.367436167	8.801710129
First of Month Value by Index	2014 IRP Basecase	171	9.822410565	8.174258364	6.937113085	8.060006006
First of Month Value by Index	2014 IRP Basecase	172	6.722795047	7.690077428	6.194559026	8.832368529
First of Month Value by Index	2014 IRP Basecase	173	8.204841406	7.393603855	8.73463036	6.665733641
First of Month Value by Index	2014 IRP Basecase	174	7.102120365	7.602023875	8.078450998	8.910061731
First of Month Value by Index	2014 IRP Basecase	175	8.061370531	7.61528914	6.862052917	6.16411311
First of Month Value by Index	2014 IRP Basecase	176	6.876813038	7.334746288	7.490761764	7.888843464
First of Month Value by Index	2014 IRP Basecase	177	7.306559671	5.834813305	8.10880558	7.500599889
First of Month Value by Index	2014 IRP Basecase	178	7.230746397	5.76954888	6.953248112	6.813597008
First of Month Value by Index	2014 IRP Basecase	179	7.358044018	7.222296858	7.75468255	7.83359244
First of Month Value by Index	2014 IRP Basecase	180	6.737076876	5.858492659	6.966447629	6.224663713
First of Month Value by Index	2014 IRP Basecase	181	6.734473259	7.245811269	8.123768141	7.455707517
First of Month Value by Index	2014 IRP Basecase	182	8.3211856	6.268727782	6.461146433	7.47236929
First of Month Value by Index	2014 IRP Basecase	183	8.129717806	8.144145255	10.27858626	8.09940571
First of Month Value by Index	2014 IRP Basecase	184	9.449824413	6.789108471	5.763693293	7.79359092
First of Month Value by Index	2014 IRP Basecase	185	8.252787513	6.632351982	8.043736829	6.467473111
First of Month Value by Index	2014 IRP Basecase	186	7.994598854	7.657181867	7.265788683	8.956819551
First of Month Value by Index	2014 IRP Basecase	187	7.153323797	7.131654134	8.814869426	7.660757631
First of Month Value by Index	2014 IRP Basecase	188	9.316400806	7.217933917	6.718660951	9.70236806
First of Month Value by Index	2014 IRP Basecase	189	8.219342128	6.013886834	6.5795836	8.132268078
First of Month Value by Index	2014 IRP Basecase	190	6.375802164	7.985365072	5.701003974	7.195123457
First of Month Value by Index	2014 IRP Basecase	191	6.997188118	6.362124664	7.606618217	7.556049878
First of Month Value by Index	2014 IRP Basecase	192	9.009158711	7.800846794	7.543242915	6.949648687
First of Month Value by Index	2014 IRP Basecase	193	8.330677371	7.048872953	6.495580952	6.967056871
First of Month Value by Index	2014 IRP Basecase	194	6.662314889	7.097491769	7.337704162	6.902677927
First of Month Value by Index	2014 IRP Basecase	195	8.493140241	6.112582255	6.886337267	7.057091673
First of Month Value by Index	2014 IRP Basecase	196	8.014372572	7.676860476	7.605088054	6.810668074
First of Month Value by Index	2014 IRP Basecase	197	8.509994648	6.325481103	8.043730792	6.490303617
First of Month Value by Index	2014 IRP Basecase	198	7.414016626	7.045652618	6.89530663	6.569751315
First of Month Value by Index	2014 IRP Basecase	199	7.865873115	7.526248532	6.871284621	5.859172219
First of Month Value by Index	2014 IRP Basecase	200	8.283770676	6.644232606	7.667291992	7.295746866
	Average Max Price		7.478620218	7.145699277	7.245637286	7.501580282
	NYMEX Absolute	Max	9.909448824	8.930360588	10.55985948	9.70236806
	Minimum Max		5.138185604	4.973190419	4.960269198	5.221518828

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	0	5.449349184	5.380063055	4.980126051	5.105187831
First of Month Value by Index	2014 IRP Basecase	1	8.827749051	6.954993778	10.34859298	6.813130009
First of Month Value by Index	2014 IRP Basecase	2	7.06092624	5.292134387	7.706710732	6.853930506
First of Month Value by Index	2014 IRP Basecase	3	7.404490095	6.485674544	7.469923668	6.975052179
First of Month Value by Index	2014 IRP Basecase	4	6.434552394	6.416613919	7.281948236	6.356862111
First of Month Value by Index	2014 IRP Basecase	5	7.709746252	6.152426237	5.718403272	5.655773384
First of Month Value by Index	2014 IRP Basecase	6	6.367833073	6.684638584	7.470421909	6.928529059
First of Month Value by Index	2014 IRP Basecase	7	10.59960299	8.121099176	7.321907739	7.908101976
First of Month Value by Index	2014 IRP Basecase	8	8.182101602	8.151557024	6.12925978	7.581368186
First of Month Value by Index	2014 IRP Basecase	9	7.945609195	7.187040375	6.658535001	7.431327756
First of Month Value by Index	2014 IRP Basecase	10	8.914744957	7.552514678	7.897142245	7.798422313
First of Month Value by Index	2014 IRP Basecase	11	7.096880484	8.268508867	8.083549084	7.574523101
First of Month Value by Index	2014 IRP Basecase	12	8.608841269	6.928481006	5.534812372	7.668217658
First of Month Value by Index	2014 IRP Basecase	13	8.94820469	7.468762748	7.002707038	7.81173719
First of Month Value by Index	2014 IRP Basecase	14	6.950525794	7.904928403	6.363159365	6.641591331
First of Month Value by Index	2014 IRP Basecase	15	7.76434792	6.373675218	6.612106008	8.133216829
First of Month Value by Index	2014 IRP Basecase	16	7.623551738	7.554380133	7.495017663	7.529351015
First of Month Value by Index	2014 IRP Basecase	17	8.507748819	7.761030945	6.620013962	7.318702187
First of Month Value by Index	2014 IRP Basecase	18	8.004827209	7.560654953	6.866303643	7.354365936
First of Month Value by Index	2014 IRP Basecase	19	7.197212675	8.480095384	6.953765754	6.292342707
First of Month Value by Index	2014 IRP Basecase	20	7.19342388	6.22521883	6.052960498	7.236795256
First of Month Value by Index	2014 IRP Basecase	21	6.846937134	7.738381912	8.165386805	6.009437101
First of Month Value by Index	2014 IRP Basecase	22	6.777776521	7.106252874	6.939435241	7.365069987
First of Month Value by Index	2014 IRP Basecase	23	8.593761951	7.595926569	6.732092514	6.197636998
First of Month Value by Index	2014 IRP Basecase	24	6.999580185	6.595523635	7.087923334	7.167059451
First of Month Value by Index	2014 IRP Basecase	25	8.710827728	7.180058416	6.371590949	6.699923226
First of Month Value by Index	2014 IRP Basecase	26	7.717883712	6.714916152	8.001839413	6.399628247
First of Month Value by Index	2014 IRP Basecase	27	7.902669988	5.286487918	6.524089137	8.224733832
First of Month Value by Index	2014 IRP Basecase	28	8.248534471	7.551920591	7.098403417	6.990681427
First of Month Value by Index	2014 IRP Basecase	29	6.859876802	6.783571217	7.081724924	7.350254491
First of Month Value by Index	2014 IRP Basecase	30	7.207361061	5.825042013	5.783078929	6.831937477
First of Month Value by Index	2014 IRP Basecase	31	7.376437179	7.339074415	7.432553554	7.382135558
First of Month Value by Index	2014 IRP Basecase	32	8.78629406	7.613237278	8.31487814	7.130413118
First of Month Value by Index	2014 IRP Basecase	33	8.097386656	7.714292127	7.654822293	8.340638458
First of Month Value by Index	2014 IRP Basecase	34	7.402814699	7.201815784	6.032430852	8.638316982
First of Month Value by Index	2014 IRP Basecase	35	8.591452086	7.294460857	8.364500669	8.102090441
First of Month Value by Index	2014 IRP Basecase	36	7.343255448	7.797530473	7.084309077	9.236104562
First of Month Value by Index	2014 IRP Basecase	37	7.78102788	7.585966494	6.836394447	6.858658556
First of Month Value by Index	2014 IRP Basecase	38	8.028945254	7.274666686	6.938954372	6.184581297
First of Month Value by Index	2014 IRP Basecase	39	6.364900777	7.220112418	5.978131612	8.44158126
First of Month Value by Index	2014 IRP Basecase	40	8.101737784	6.961674025	7.889262648	7.32142421
First of Month Value by Index	2014 IRP Basecase	41	7.296854223	6.856324742	8.827324034	6.157695359
First of Month Value by Index	2014 IRP Basecase	42	8.769328666	6.784261994	5.781359407	6.740193025
First of Month Value by Index	2014 IRP Basecase	43	7.793776703	7.09402968	6.232107237	7.969483366
First of Month Value by Index	2014 IRP Basecase	44	7.317561973	7.696679629	6.20261526	7.181471984
First of Month Value by Index	2014 IRP Basecase	45	6.906501755	8.066333878	6.646448028	7.295576013
First of Month Value by Index	2014 IRP Basecase	46	7.761175905	8.209333837	7.910512748	6.55204766
First of Month Value by Index	2014 IRP Basecase	47	7.396334701	9.216861275	6.511139994	7.728202698
First of Month Value by Index	2014 IRP Basecase	48	10.18687808	7.48055634	7.114378563	8.077484719
First of Month Value by Index	2014 IRP Basecase	49	7.60856522	7.425130371	7.103488609	5.585997629
First of Month Value by Index	2014 IRP Basecase	50	6.359020559	7.070046663	7.219223645	6.919812743
First of Month Value by Index	2014 IRP Basecase	51	7.777385371	7.998463969	8.889321833	7.429970271
First of Month Value by Index	2014 IRP Basecase	52	7.007933687	6.773918398	7.988530011	6.946660631

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	53	8.858115412	6.013715012	8.073638367	6.503176448
First of Month Value by Index	2014 IRP Basecase	54	7.940394717	6.876356723	7.408405551	6.763937854
First of Month Value by Index	2014 IRP Basecase	55	7.263038015	8.03749085	6.602292001	6.385970358
First of Month Value by Index	2014 IRP Basecase	56	8.690692376	6.862509492	7.145266159	7.434021127
First of Month Value by Index	2014 IRP Basecase	57	7.524158226	6.057706166	7.14551595	8.137905404
First of Month Value by Index	2014 IRP Basecase	58	7.916693259	7.147949479	7.23596449	7.821318792
First of Month Value by Index	2014 IRP Basecase	59	8.436042932	7.017146251	8.224442671	6.52609322
First of Month Value by Index	2014 IRP Basecase	60	6.735540157	8.463352034	6.823386954	7.321113928
First of Month Value by Index	2014 IRP Basecase	61	7.634802946	10.0213223	6.737934673	7.58571094
First of Month Value by Index	2014 IRP Basecase	62	7.304082364	6.662773177	8.592776222	6.771509942
First of Month Value by Index	2014 IRP Basecase	63	8.024259284	5.229349712	7.047007035	7.523077563
First of Month Value by Index	2014 IRP Basecase	64	7.655072357	7.267522065	6.253342022	6.110685131
First of Month Value by Index	2014 IRP Basecase	65	8.343545752	6.434826857	7.538078807	6.19519916
First of Month Value by Index	2014 IRP Basecase	66	7.733621111	7.894397388	6.832345185	6.84263102
First of Month Value by Index	2014 IRP Basecase	67	6.443088535	6.51976584	5.814232152	7.005858121
First of Month Value by Index	2014 IRP Basecase	68	7.028067713	7.512112112	8.011174257	7.277909018
First of Month Value by Index	2014 IRP Basecase	69	7.630226643	7.362228553	7.601809531	7.018952982
First of Month Value by Index	2014 IRP Basecase	70	5.818294912	6.481353676	8.31785557	7.239093526
First of Month Value by Index	2014 IRP Basecase	71	7.705346586	8.718401261	7.686304068	6.825572341
First of Month Value by Index	2014 IRP Basecase	72	7.707210714	8.295292999	6.923316989	6.21891262
First of Month Value by Index	2014 IRP Basecase	73	7.312703177	8.745627762	6.973769778	7.880193732
First of Month Value by Index	2014 IRP Basecase	74	7.56974838	6.840754328	6.628315327	9.009419698
First of Month Value by Index	2014 IRP Basecase	75	8.597324905	5.765083515	8.151375614	7.549318799
First of Month Value by Index	2014 IRP Basecase	76	6.912797984	8.188395626	7.4474124	7.978138931
First of Month Value by Index	2014 IRP Basecase	77	6.296200733	8.864864987	7.524935682	7.991178951
First of Month Value by Index	2014 IRP Basecase	78	7.050314372	6.253926444	6.682228204	8.299785472
First of Month Value by Index	2014 IRP Basecase	79	7.352887504	6.325458642	5.763542936	7.419077482
First of Month Value by Index	2014 IRP Basecase	80	8.817363495	6.000070713	6.574771847	8.119411145
First of Month Value by Index	2014 IRP Basecase	81	7.841695498	8.133083297	8.182690509	7.265089042
First of Month Value by Index	2014 IRP Basecase	82	7.607570008	6.985315847	7.612206866	7.565175685
First of Month Value by Index	2014 IRP Basecase	83	7.836764538	7.173580251	6.246168103	7.441231355
First of Month Value by Index	2014 IRP Basecase	84	6.944498828	8.333303253	6.308989951	7.797022798
First of Month Value by Index	2014 IRP Basecase	85	7.522487259	8.063529737	6.39331918	7.196721018
First of Month Value by Index	2014 IRP Basecase	86	6.753330745	7.508468901	6.592414871	8.046505993
First of Month Value by Index	2014 IRP Basecase	87	7.409656366	5.508831302	6.446731479	6.717871106
First of Month Value by Index	2014 IRP Basecase	88	6.578971396	8.329441585	6.331929311	8.347293485
First of Month Value by Index	2014 IRP Basecase	89	8.064486449	7.124973971	7.073402096	8.020326105
First of Month Value by Index	2014 IRP Basecase	90	7.508323668	7.35938712	8.28251659	8.330898784
First of Month Value by Index	2014 IRP Basecase	91	7.010351542	7.284960417	6.615077647	8.251285139
First of Month Value by Index	2014 IRP Basecase	92	9.180797693	7.853060656	7.679855032	7.201680385
First of Month Value by Index	2014 IRP Basecase	93	8.119466828	8.014658835	7.960046259	7.622658395
First of Month Value by Index	2014 IRP Basecase	94	7.465915503	7.03402877	6.727674458	7.386638195
First of Month Value by Index	2014 IRP Basecase	95	8.465732779	6.080708109	7.970926533	7.956212141
First of Month Value by Index	2014 IRP Basecase	96	8.721616837	6.861639629	7.483604053	6.618534415
First of Month Value by Index	2014 IRP Basecase	97	7.68758597	7.955645702	9.632173883	7.159783734
First of Month Value by Index	2014 IRP Basecase	98	9.062898938	8.821674529	8.597770825	5.55340079
First of Month Value by Index	2014 IRP Basecase	99	7.67380015	7.502202321	7.095476414	7.133555371
First of Month Value by Index	2014 IRP Basecase	100	6.661694423	7.014485568	6.638187579	6.79789627
First of Month Value by Index	2014 IRP Basecase	101	6.823334689	7.173970516	7.024088986	7.308197213
First of Month Value by Index	2014 IRP Basecase	102	6.06794564	7.629862517	7.110705078	5.915234413
First of Month Value by Index	2014 IRP Basecase	103	8.444887333	8.077749812	7.866122176	7.610640961
First of Month Value by Index	2014 IRP Basecase	104	7.720916108	7.251907059	6.106649661	8.612006208
First of Month Value by Index	2014 IRP Basecase	105	7.191752983	6.455122015	8.229543214	8.653837503

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	106	7.456393443	6.53587762	7.411938294	6.494631632
First of Month Value by Index	2014 IRP Basecase	107	7.65480339	7.857371691	6.910152063	9.042307916
First of Month Value by Index	2014 IRP Basecase	108	7.076953938	7.591098391	7.628113462	7.997831943
First of Month Value by Index	2014 IRP Basecase	109	7.667023516	7.106136826	6.198039365	6.877354546
First of Month Value by Index	2014 IRP Basecase	110	6.991513064	5.766891777	7.688531809	8.589116025
First of Month Value by Index	2014 IRP Basecase	111	8.477121401	6.599853264	8.049310926	6.69446279
First of Month Value by Index	2014 IRP Basecase	112	7.436478282	6.763145468	7.542205448	7.176720974
First of Month Value by Index	2014 IRP Basecase	113	6.27501264	6.684721017	8.298465238	8.422335867
First of Month Value by Index	2014 IRP Basecase	114	7.005058204	7.066851633	6.154582733	7.934645112
First of Month Value by Index	2014 IRP Basecase	115	7.880041872	7.084743655	6.994126297	6.984101533
First of Month Value by Index	2014 IRP Basecase	116	7.671806358	6.364789214	6.452202648	7.270263258
First of Month Value by Index	2014 IRP Basecase	117	6.887453481	7.089071549	7.504753288	7.027799019
First of Month Value by Index	2014 IRP Basecase	118	7.143734347	5.835353829	7.300196943	6.802620614
First of Month Value by Index	2014 IRP Basecase	119	8.134649707	8.057413346	7.486949518	8.290683503
First of Month Value by Index	2014 IRP Basecase	120	8.076889922	6.669351597	6.675662538	8.686158026
First of Month Value by Index	2014 IRP Basecase	121	7.869191767	5.902451403	6.407699221	6.976237582
First of Month Value by Index	2014 IRP Basecase	122	6.916359106	6.232759191	6.820031114	6.823200539
First of Month Value by Index	2014 IRP Basecase	123	7.244075782	6.430620401	7.066181486	8.327758299
First of Month Value by Index	2014 IRP Basecase	124	9.673659091	8.051897697	5.946843881	6.998828075
First of Month Value by Index	2014 IRP Basecase	125	7.756269484	6.690531632	7.514781077	6.503515572
First of Month Value by Index	2014 IRP Basecase	126	7.462709943	7.810568359	7.214035545	6.633605576
First of Month Value by Index	2014 IRP Basecase	127	8.888652598	7.192410348	7.033767671	7.474237601
First of Month Value by Index	2014 IRP Basecase	128	7.95564267	8.466938046	7.337089965	7.568510074
First of Month Value by Index	2014 IRP Basecase	129	7.806293662	8.563134604	8.154942365	8.649837375
First of Month Value by Index	2014 IRP Basecase	130	5.521405443	8.523044018	7.102063341	8.711619567
First of Month Value by Index	2014 IRP Basecase	131	7.590660866	7.085756575	6.695689339	7.086145914
First of Month Value by Index	2014 IRP Basecase	132	8.067523471	6.515436099	5.731133673	8.358256368
First of Month Value by Index	2014 IRP Basecase	133	7.882423501	6.270090468	7.303586804	7.509876509
First of Month Value by Index	2014 IRP Basecase	134	7.271109375	7.453081102	5.450833386	7.134204166
First of Month Value by Index	2014 IRP Basecase	135	6.283765315	8.369589946	7.519034808	7.695149466
First of Month Value by Index	2014 IRP Basecase	136	9.526825393	7.378168568	6.338700077	7.006515129
First of Month Value by Index	2014 IRP Basecase	137	7.811952594	6.782345468	9.09321453	7.078338173
First of Month Value by Index	2014 IRP Basecase	138	7.778692921	6.653793895	8.265932835	7.0657105
First of Month Value by Index	2014 IRP Basecase	139	6.921984296	7.368713331	6.584020517	6.972093308
First of Month Value by Index	2014 IRP Basecase	140	6.825269942	7.395673939	6.60545739	6.306076368
First of Month Value by Index	2014 IRP Basecase	141	8.704221695	6.481850295	6.779987311	8.931173112
First of Month Value by Index	2014 IRP Basecase	142	7.781563757	7.04223913	7.396702505	7.996111406
First of Month Value by Index	2014 IRP Basecase	143	7.42992054	6.678803752	5.749568223	6.529007617
First of Month Value by Index	2014 IRP Basecase	144	8.235007882	7.824630987	8.026249054	6.426836238
First of Month Value by Index	2014 IRP Basecase	145	7.146208334	7.494518713	5.733432494	7.736813804
First of Month Value by Index	2014 IRP Basecase	146	6.84353214	6.999230504	6.514342079	6.73502081
First of Month Value by Index	2014 IRP Basecase	147	6.865724752	6.780050224	8.228450141	5.510271806
First of Month Value by Index	2014 IRP Basecase	148	6.919909952	6.247853446	6.579438697	7.376942082
First of Month Value by Index	2014 IRP Basecase	149	6.833116984	7.276538078	5.861392064	8.161996256
First of Month Value by Index	2014 IRP Basecase	150	8.031660644	6.56429469	6.683654104	5.928968747
First of Month Value by Index	2014 IRP Basecase	151	7.647740978	7.812918619	7.120883043	7.030496644
First of Month Value by Index	2014 IRP Basecase	152	6.571764621	6.479867291	7.786376915	6.760959323
First of Month Value by Index	2014 IRP Basecase	153	8.472873637	9.301709851	7.129387282	9.509730944
First of Month Value by Index	2014 IRP Basecase	154	8.824997547	7.136259215	6.629015088	6.651107943
First of Month Value by Index	2014 IRP Basecase	155	7.017413245	7.19577779	7.066646666	8.648394468
First of Month Value by Index	2014 IRP Basecase	156	8.08973156	6.756084818	7.685145766	7.0819395
First of Month Value by Index	2014 IRP Basecase	157	8.212930314	7.280677543	6.281775825	6.137043404
First of Month Value by Index	2014 IRP Basecase	158	8.121046883	8.651287232	7.747102735	8.784922151

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	159	8.354910902	7.742074728	7.247063579	6.738395502
First of Month Value by Index	2014 IRP Basecase	160	6.123214135	6.718200824	7.582437976	7.21429065
First of Month Value by Index	2014 IRP Basecase	161	7.619584747	7.55300988	7.08196293	6.955671337
First of Month Value by Index	2014 IRP Basecase	162	7.699792662	8.005475878	6.472420061	6.186831815
First of Month Value by Index	2014 IRP Basecase	163	6.91750372	7.620459025	6.089587957	6.616683385
First of Month Value by Index	2014 IRP Basecase	164	7.929428683	6.726018947	7.266067512	8.169147742
First of Month Value by Index	2014 IRP Basecase	165	7.306195349	8.192552429	6.763194525	6.513289261
First of Month Value by Index	2014 IRP Basecase	166	7.979907078	5.975406921	8.231729359	7.833083712
First of Month Value by Index	2014 IRP Basecase	167	7.876001236	7.676423386	7.774208576	7.371992549
First of Month Value by Index	2014 IRP Basecase	168	7.459593127	6.460917567	8.606394312	6.990443933
First of Month Value by Index	2014 IRP Basecase	169	7.248408007	6.152953151	6.777454609	7.637833454
First of Month Value by Index	2014 IRP Basecase	170	8.384154612	6.585136388	7.819166269	6.987228414
First of Month Value by Index	2014 IRP Basecase	171	7.297311296	8.228066909	6.161269593	6.476185503
First of Month Value by Index	2014 IRP Basecase	172	9.310628831	6.43059092	7.994565787	8.254083089
First of Month Value by Index	2014 IRP Basecase	173	7.1067678	8.445464463	6.531638764	7.600903365
First of Month Value by Index	2014 IRP Basecase	174	8.579855324	7.635996049	6.783057709	7.902123223
First of Month Value by Index	2014 IRP Basecase	175	7.899973788	8.033389815	8.362449186	5.946967572
First of Month Value by Index	2014 IRP Basecase	176	7.960034678	8.838929127	5.724339656	5.930895914
First of Month Value by Index	2014 IRP Basecase	177	8.501111683	5.497462077	7.975170661	7.785648663
First of Month Value by Index	2014 IRP Basecase	178	7.572314873	9.182341747	6.695894116	6.574186792
First of Month Value by Index	2014 IRP Basecase	179	8.027475582	7.282525365	7.347802207	8.264564323
First of Month Value by Index	2014 IRP Basecase	180	6.043395559	8.256918563	6.734819261	6.856897603
First of Month Value by Index	2014 IRP Basecase	181	7.7023894	8.035914466	6.625507241	7.814477694
First of Month Value by Index	2014 IRP Basecase	182	7.937314078	7.692940024	6.137798518	6.83092403
First of Month Value by Index	2014 IRP Basecase	183	7.490762929	7.463074069	7.313627467	6.529306423
First of Month Value by Index	2014 IRP Basecase	184	8.054885992	7.606632663	7.329875005	7.812769743
First of Month Value by Index	2014 IRP Basecase	185	8.408645928	6.633641711	6.287073024	8.282006536
First of Month Value by Index	2014 IRP Basecase	186	6.563874095	7.4038928	7.111011121	7.606558225
First of Month Value by Index	2014 IRP Basecase	187	5.480054564	8.014299608	7.374688749	6.942218997
First of Month Value by Index	2014 IRP Basecase	188	7.851299738	6.750576174	7.172247228	6.865586467
First of Month Value by Index	2014 IRP Basecase	189	7.036324014	8.160248099	6.56893778	8.567783562
First of Month Value by Index	2014 IRP Basecase	190	8.158254707	8.414755174	8.056316848	6.546674492
First of Month Value by Index	2014 IRP Basecase	191	8.241638588	7.467154504	7.2631175	8.640211271
First of Month Value by Index	2014 IRP Basecase	192	7.274223075	7.405166911	8.917009773	8.230898803
First of Month Value by Index	2014 IRP Basecase	193	7.077232486	7.144916654	7.252274252	7.733303073
First of Month Value by Index	2014 IRP Basecase	194	6.254922077	6.356392979	5.880275682	8.622469151
First of Month Value by Index	2014 IRP Basecase	195	7.856710184	7.803055022	5.825993457	7.43276695
First of Month Value by Index	2014 IRP Basecase	196	6.228110331	6.677536261	6.944244622	7.061222168
First of Month Value by Index	2014 IRP Basecase	197	8.503959574	6.993102904	6.475656736	7.420844205
First of Month Value by Index	2014 IRP Basecase	198	7.929668317	6.44038766	6.462459592	7.291469151
First of Month Value by Index	2014 IRP Basecase	199	7.905730314	6.103117844	6.266328268	7.858149336
First of Month Value by Index	2014 IRP Basecase	200	7.197740832	6.997200795	6.772471889	7.87038136
	Average Max Price		7.634609432	7.254936081	7.119173164	7.337304841
	NYMEX Absolute	Max	10.59960299	10.0213223	10.34859298	9.509730944
	Minimum Max		5.449349184	5.229349712	4.980126051	5.105187831

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	0	5.174091416	5.131577767	5.247338107	5.466780216
First of Month Value by Index	2014 IRP Basecase	1	7.049186934	6.018042451	5.779093001	7.945103605
First of Month Value by Index	2014 IRP Basecase	2	6.853238417	8.802706962	8.059996994	8.023858848
First of Month Value by Index	2014 IRP Basecase	3	7.745280715	7.605015785	8.053063734	7.198763102
First of Month Value by Index	2014 IRP Basecase	4	6.184790882	6.048228588	7.489031064	7.444743434
First of Month Value by Index	2014 IRP Basecase	5	7.57948079	7.007330264	7.182633142	6.560540633
First of Month Value by Index	2014 IRP Basecase	6	9.241337578	7.737732556	8.012544509	6.85175503
First of Month Value by Index	2014 IRP Basecase	7	7.683708018	7.442580059	6.505022712	8.041252397
First of Month Value by Index	2014 IRP Basecase	8	7.758232069	6.91335612	6.837362481	7.960119961
First of Month Value by Index	2014 IRP Basecase	9	8.167334187	8.316424798	7.729293672	7.306976666
First of Month Value by Index	2014 IRP Basecase	10	7.5555631	6.28090971	8.020244584	8.954589949
First of Month Value by Index	2014 IRP Basecase	11	7.538384955	7.742481074	7.362109979	6.308729175
First of Month Value by Index	2014 IRP Basecase	12	7.012585285	7.297730944	8.870125995	7.764267143
First of Month Value by Index	2014 IRP Basecase	13	8.61338091	7.018200107	7.196236612	7.942579093
First of Month Value by Index	2014 IRP Basecase	14	7.558819042	6.105354717	7.078732179	7.289217826
First of Month Value by Index	2014 IRP Basecase	15	8.370233343	6.672672951	8.354581374	7.198696462
First of Month Value by Index	2014 IRP Basecase	16	7.465733334	7.539593514	6.999143832	7.883938208
First of Month Value by Index	2014 IRP Basecase	17	10.36476693	6.564037859	6.152551325	8.612118255
First of Month Value by Index	2014 IRP Basecase	18	7.623984413	9.042044964	6.665964768	8.238092726
First of Month Value by Index	2014 IRP Basecase	19	8.129371684	8.306220526	8.429397303	6.068178824
First of Month Value by Index	2014 IRP Basecase	20	7.740977963	7.718546271	10.01189404	7.810005801
First of Month Value by Index	2014 IRP Basecase	21	6.275420832	7.464579075	7.244584783	6.731458291
First of Month Value by Index	2014 IRP Basecase	22	7.170126403	7.534336436	7.315667685	7.087993069
First of Month Value by Index	2014 IRP Basecase	23	7.570176556	6.200320409	7.725830896	8.031298119
First of Month Value by Index	2014 IRP Basecase	24	7.894173547	7.090955611	6.122673	8.811391769
First of Month Value by Index	2014 IRP Basecase	25	7.180116198	7.612011214	7.698638403	7.789088817
First of Month Value by Index	2014 IRP Basecase	26	7.560713331	7.924092268	7.565085622	8.228887231
First of Month Value by Index	2014 IRP Basecase	27	7.370462386	8.654347558	6.747049572	7.888023647
First of Month Value by Index	2014 IRP Basecase	28	9.351178919	7.358390505	6.750750825	7.800132265
First of Month Value by Index	2014 IRP Basecase	29	7.873551943	7.055253327	6.959877021	7.093575681
First of Month Value by Index	2014 IRP Basecase	30	8.911707472	6.186490179	8.72072758	7.302115111
First of Month Value by Index	2014 IRP Basecase	31	7.587631452	7.107662041	7.050204305	7.501436938
First of Month Value by Index	2014 IRP Basecase	32	7.270175125	6.524344438	6.527744519	9.533125679
First of Month Value by Index	2014 IRP Basecase	33	7.366894238	7.316352074	9.091591728	7.399941146
First of Month Value by Index	2014 IRP Basecase	34	8.685752031	6.445008486	6.638043188	7.070483753
First of Month Value by Index	2014 IRP Basecase	35	6.694871136	7.417280332	9.199753911	9.491527525
First of Month Value by Index	2014 IRP Basecase	36	8.257009082	7.224717233	7.656141151	7.828083452
First of Month Value by Index	2014 IRP Basecase	37	7.893425298	7.28704894	7.859379395	6.652016005
First of Month Value by Index	2014 IRP Basecase	38	6.767189073	8.535577177	6.876567227	8.110189815
First of Month Value by Index	2014 IRP Basecase	39	8.026613875	7.102099476	8.754245929	7.853922974
First of Month Value by Index	2014 IRP Basecase	40	8.238360065	8.11325014	7.20497826	6.381659604
First of Month Value by Index	2014 IRP Basecase	41	7.514528514	8.993542392	6.949699302	8.565805647
First of Month Value by Index	2014 IRP Basecase	42	8.88773492	6.714121885	8.588549859	6.433168138
First of Month Value by Index	2014 IRP Basecase	43	10.0909477	6.63181164	6.815228724	7.084854768
First of Month Value by Index	2014 IRP Basecase	44	8.636276765	6.64843398	7.30845396	6.952791853
First of Month Value by Index	2014 IRP Basecase	45	6.549401183	6.544791687	6.375035742	7.026348664
First of Month Value by Index	2014 IRP Basecase	46	8.171576371	6.472845562	7.53153987	7.71944419
First of Month Value by Index	2014 IRP Basecase	47	6.956191948	8.272925322	6.477953405	8.466938418
First of Month Value by Index	2014 IRP Basecase	48	10.46675789	7.623878929	7.581357706	7.923309042
First of Month Value by Index	2014 IRP Basecase	49	5.700707593	6.849552284	6.212452094	7.828677539
First of Month Value by Index	2014 IRP Basecase	50	8.138024603	6.294629332	7.672269987	6.788597455
First of Month Value by Index	2014 IRP Basecase	51	7.119017125	7.615107274	7.219848266	8.093764706
First of Month Value by Index	2014 IRP Basecase	52	7.004783488	6.734342969	8.171870474	7.637746782

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	53	5.959155993	7.839579039	6.774526313	7.170912394
First of Month Value by Index	2014 IRP Basecase	54	6.920716411	6.308515793	8.321649524	7.575995018
First of Month Value by Index	2014 IRP Basecase	55	8.004187911	6.751768855	7.843099408	7.094411403
First of Month Value by Index	2014 IRP Basecase	56	6.807358589	6.444607804	7.416574232	7.79626715
First of Month Value by Index	2014 IRP Basecase	57	8.293055529	7.872325457	6.990466942	7.276322084
First of Month Value by Index	2014 IRP Basecase	58	7.162809469	7.315126318	7.994970336	7.887107268
First of Month Value by Index	2014 IRP Basecase	59	6.91568853	7.651211833	8.570333833	7.721818218
First of Month Value by Index	2014 IRP Basecase	60	5.37675609	6.627058406	7.723667521	7.409832954
First of Month Value by Index	2014 IRP Basecase	61	7.466182364	6.342504672	7.012754446	7.989928228
First of Month Value by Index	2014 IRP Basecase	62	6.983016392	7.869734657	7.333228423	7.586143082
First of Month Value by Index	2014 IRP Basecase	63	8.393864054	6.911787576	8.691510487	9.487290219
First of Month Value by Index	2014 IRP Basecase	64	8.401537281	6.082619721	10.38198944	8.449359226
First of Month Value by Index	2014 IRP Basecase	65	7.109429198	6.167587749	7.442651598	7.255259957
First of Month Value by Index	2014 IRP Basecase	66	7.835179373	7.355591734	6.976762355	6.243438647
First of Month Value by Index	2014 IRP Basecase	67	8.447802082	6.466456723	8.308989767	8.465760603
First of Month Value by Index	2014 IRP Basecase	68	7.435006526	7.55618306	6.454359144	7.502014067
First of Month Value by Index	2014 IRP Basecase	69	6.364390722	8.219706254	6.845403188	7.359969444
First of Month Value by Index	2014 IRP Basecase	70	7.34372067	6.89999359	8.236173919	6.251107247
First of Month Value by Index	2014 IRP Basecase	71	6.838172885	7.315199556	7.080772214	8.753167288
First of Month Value by Index	2014 IRP Basecase	72	7.619641623	7.369712199	6.000554206	8.004633832
First of Month Value by Index	2014 IRP Basecase	73	6.605443927	7.204237514	10.04095441	7.852168106
First of Month Value by Index	2014 IRP Basecase	74	7.482529096	6.928935349	6.279101862	8.110845797
First of Month Value by Index	2014 IRP Basecase	75	9.316389344	8.885232695	6.889538355	6.996375594
First of Month Value by Index	2014 IRP Basecase	76	6.954329976	6.527642194	7.318301196	7.722152814
First of Month Value by Index	2014 IRP Basecase	77	7.683199788	8.374536355	7.02012634	7.539952347
First of Month Value by Index	2014 IRP Basecase	78	6.756142993	7.293953548	7.191723797	8.089641715
First of Month Value by Index	2014 IRP Basecase	79	6.871565444	8.04262738	6.783987383	7.073512296
First of Month Value by Index	2014 IRP Basecase	80	8.114133123	7.97237161	6.690091495	8.078748041
First of Month Value by Index	2014 IRP Basecase	81	8.19579107	6.422605222	8.204475876	6.933331246
First of Month Value by Index	2014 IRP Basecase	82	6.985345328	6.28962232	8.462448261	9.302974437
First of Month Value by Index	2014 IRP Basecase	83	9.624685709	6.926670765	7.631269501	9.288180855
First of Month Value by Index	2014 IRP Basecase	84	7.717031565	7.459457826	6.444275545	6.90810941
First of Month Value by Index	2014 IRP Basecase	85	6.075082392	6.354921566	7.657398324	7.935611159
First of Month Value by Index	2014 IRP Basecase	86	7.250475241	7.293662386	8.884528666	7.989817002
First of Month Value by Index	2014 IRP Basecase	87	8.180334879	8.099594182	7.635906358	6.772704083
First of Month Value by Index	2014 IRP Basecase	88	6.839508378	8.26553887	6.247675152	8.156969576
First of Month Value by Index	2014 IRP Basecase	89	8.435952335	6.883474151	7.792456792	7.882912709
First of Month Value by Index	2014 IRP Basecase	90	6.623091092	6.558182862	6.715725012	7.992949597
First of Month Value by Index	2014 IRP Basecase	91	7.190306938	7.693235475	8.244446042	7.882275165
First of Month Value by Index	2014 IRP Basecase	92	8.13806961	7.295047856	9.129133334	9.044983438
First of Month Value by Index	2014 IRP Basecase	93	8.073760163	6.797765293	6.978375302	6.151097791
First of Month Value by Index	2014 IRP Basecase	94	7.280874894	7.789874331	9.613399721	8.458267123
First of Month Value by Index	2014 IRP Basecase	95	7.422888184	8.104220721	5.793164915	6.883484764
First of Month Value by Index	2014 IRP Basecase	96	8.302131388	8.691287172	6.876871101	8.129594999
First of Month Value by Index	2014 IRP Basecase	97	7.56901798	6.324470941	6.757634585	8.666161092
First of Month Value by Index	2014 IRP Basecase	98	9.265022028	8.72325235	8.412522519	8.534881894
First of Month Value by Index	2014 IRP Basecase	99	5.657787289	7.03655055	6.101740559	8.02129444
First of Month Value by Index	2014 IRP Basecase	100	9.000065853	8.231096322	7.256125995	7.4641464
First of Month Value by Index	2014 IRP Basecase	101	6.930968596	7.456246041	6.196472449	6.65096026
First of Month Value by Index	2014 IRP Basecase	102	6.875219127	7.451998803	7.056915892	7.251320236
First of Month Value by Index	2014 IRP Basecase	103	8.603859995	7.432770235	7.707510649	7.146871757
First of Month Value by Index	2014 IRP Basecase	104	9.1946337	7.05763636	6.961837459	7.688310705
First of Month Value by Index	2014 IRP Basecase	105	6.700597802	6.697253264	7.552479498	6.63617739

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	106	6.913304178	6.897833247	7.221943668	8.038873533
First of Month Value by Index	2014 IRP Basecase	107	7.552886869	6.450190669	7.552514678	8.46820087
First of Month Value by Index	2014 IRP Basecase	108	6.990893047	8.372140217	7.03590916	6.567495174
First of Month Value by Index	2014 IRP Basecase	109	6.711418041	8.812902173	6.667371309	6.682367183
First of Month Value by Index	2014 IRP Basecase	110	6.92310082	7.629135676	7.238746835	8.227954967
First of Month Value by Index	2014 IRP Basecase	111	7.091780545	8.537483687	8.27462683	7.691971443
First of Month Value by Index	2014 IRP Basecase	112	7.838475417	7.095505599	8.56166291	7.800731399
First of Month Value by Index	2014 IRP Basecase	113	6.94985505	6.448608402	6.117690098	8.277562179
First of Month Value by Index	2014 IRP Basecase	114	7.144773042	6.875391883	9.036851488	6.797578471
First of Month Value by Index	2014 IRP Basecase	115	6.196943435	6.716281266	7.187167239	6.732554487
First of Month Value by Index	2014 IRP Basecase	116	7.652403392	7.389997312	6.474757469	7.608837346
First of Month Value by Index	2014 IRP Basecase	117	6.652098866	8.293810054	7.094186685	8.156022432
First of Month Value by Index	2014 IRP Basecase	118	7.126776786	7.960684034	8.627734854	9.244366991
First of Month Value by Index	2014 IRP Basecase	119	7.594144061	7.697175027	6.862145099	8.347923637
First of Month Value by Index	2014 IRP Basecase	120	6.69790467	8.572347701	8.190551372	9.251715315
First of Month Value by Index	2014 IRP Basecase	121	6.702750951	7.271207784	7.218881988	7.478920827
First of Month Value by Index	2014 IRP Basecase	122	8.252204495	6.680312373	8.00387963	9.018891837
First of Month Value by Index	2014 IRP Basecase	123	7.608158916	6.749997802	8.23627197	7.675504248
First of Month Value by Index	2014 IRP Basecase	124	7.848822431	8.882998503	6.810164969	8.778436679
First of Month Value by Index	2014 IRP Basecase	125	6.090575714	7.019635708	9.160985896	7.384804524
First of Month Value by Index	2014 IRP Basecase	126	6.178555152	6.138828594	6.026689614	7.553572571
First of Month Value by Index	2014 IRP Basecase	127	8.923367735	8.614868214	9.906403477	6.937664419
First of Month Value by Index	2014 IRP Basecase	128	7.630299607	7.017940518	7.445076241	6.85071498
First of Month Value by Index	2014 IRP Basecase	129	6.811631643	8.246060891	7.751460685	7.331028436
First of Month Value by Index	2014 IRP Basecase	130	6.740972699	7.73988901	7.986756677	6.869528617
First of Month Value by Index	2014 IRP Basecase	131	7.459890501	5.307750263	6.555001154	7.272282866
First of Month Value by Index	2014 IRP Basecase	132	7.668778629	6.685371405	7.87625347	7.578086679
First of Month Value by Index	2014 IRP Basecase	133	8.957725605	7.131731569	9.042044964	8.023941267
First of Month Value by Index	2014 IRP Basecase	134	6.913753404	8.001999078	6.346810927	7.277851278
First of Month Value by Index	2014 IRP Basecase	135	7.761238326	8.7966534	6.995075632	7.205502907
First of Month Value by Index	2014 IRP Basecase	136	7.143027209	7.36136234	8.777979724	9.077532575
First of Month Value by Index	2014 IRP Basecase	137	8.797017526	6.935267249	7.23798586	8.088476373
First of Month Value by Index	2014 IRP Basecase	138	6.635047824	7.153943448	7.816008882	8.043878195
First of Month Value by Index	2014 IRP Basecase	139	6.023475716	6.763662471	8.692747558	6.192552459
First of Month Value by Index	2014 IRP Basecase	140	7.405656132	6.721080582	6.615053915	7.122115979
First of Month Value by Index	2014 IRP Basecase	141	7.849343709	8.077633595	6.852354705	8.008425217
First of Month Value by Index	2014 IRP Basecase	142	6.858132877	7.605288781	7.320562166	8.266521742
First of Month Value by Index	2014 IRP Basecase	143	6.64075398	6.792590332	6.651224686	7.263700518
First of Month Value by Index	2014 IRP Basecase	144	8.135911422	7.675330313	7.047720322	7.489086838
First of Month Value by Index	2014 IRP Basecase	145	8.032469954	8.775916232	7.069538048	6.744647096
First of Month Value by Index	2014 IRP Basecase	146	6.474410779	6.856342486	7.084306529	7.300990066
First of Month Value by Index	2014 IRP Basecase	147	7.058577391	7.381902473	8.142615092	8.490473507
First of Month Value by Index	2014 IRP Basecase	148	7.731024373	6.777418839	7.606385062	9.289519971
First of Month Value by Index	2014 IRP Basecase	149	6.477361086	6.569253979	6.461059761	7.930533667
First of Month Value by Index	2014 IRP Basecase	150	8.230163195	7.812917644	7.184988492	7.143242037
First of Month Value by Index	2014 IRP Basecase	151	7.996382535	7.870901718	9.012424172	6.818880913
First of Month Value by Index	2014 IRP Basecase	152	6.616015652	6.33530234	6.576676152	7.062862125
First of Month Value by Index	2014 IRP Basecase	153	7.285482551	6.574382108	7.812169865	8.65853389
First of Month Value by Index	2014 IRP Basecase	154	7.240186599	7.274957847	6.163697562	7.761384255
First of Month Value by Index	2014 IRP Basecase	155	7.442495738	7.772924751	8.837954517	7.683050912
First of Month Value by Index	2014 IRP Basecase	156	7.710611981	6.242525159	7.133055832	6.160135661
First of Month Value by Index	2014 IRP Basecase	157	7.023718585	7.474149335	6.942590767	8.240764408
First of Month Value by Index	2014 IRP Basecase	158	7.094172092	6.235542948	8.256284929	7.778872029

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	159	7.763186817	7.065078502	7.414790551	6.922201834
First of Month Value by Index	2014 IRP Basecase	160	8.310077751	7.685366491	6.616058553	8.69178521
First of Month Value by Index	2014 IRP Basecase	161	8.031730794	6.778399753	7.529495469	5.931473043
First of Month Value by Index	2014 IRP Basecase	162	6.644722417	8.217608416	7.13998335	7.619873656
First of Month Value by Index	2014 IRP Basecase	163	8.303618734	9.031677433	7.015346699	7.921525361
First of Month Value by Index	2014 IRP Basecase	164	7.428792702	7.619934961	7.726215574	8.92076362
First of Month Value by Index	2014 IRP Basecase	165	7.1709972	8.473488698	6.574488616	6.418844356
First of Month Value by Index	2014 IRP Basecase	166	9.004100262	7.209313721	7.779382083	6.717298258
First of Month Value by Index	2014 IRP Basecase	167	7.631028554	7.059430029	7.129919671	7.618568359
First of Month Value by Index	2014 IRP Basecase	168	6.526839322	7.38431201	8.630627843	6.052359644
First of Month Value by Index	2014 IRP Basecase	169	7.768098917	7.094981703	8.197051191	8.451955964
First of Month Value by Index	2014 IRP Basecase	170	8.334457512	6.782135616	8.187530276	8.490617442
First of Month Value by Index	2014 IRP Basecase	171	6.403948027	6.369124219	7.91682908	8.415314095
First of Month Value by Index	2014 IRP Basecase	172	6.81702657	6.760744136	7.921847288	7.808354488
First of Month Value by Index	2014 IRP Basecase	173	8.654206452	7.072397991	7.383505811	9.7623272
First of Month Value by Index	2014 IRP Basecase	174	7.060023085	6.430959384	7.720517427	6.125671339
First of Month Value by Index	2014 IRP Basecase	175	6.775342993	6.629262471	7.067984209	7.852611703
First of Month Value by Index	2014 IRP Basecase	176	7.604725901	6.409480628	7.244513244	9.659182691
First of Month Value by Index	2014 IRP Basecase	177	6.489907856	8.487705038	6.971743775	8.619955028
First of Month Value by Index	2014 IRP Basecase	178	8.144933043	8.489386394	7.073534056	6.512957957
First of Month Value by Index	2014 IRP Basecase	179	6.580015826	7.095891078	7.079733518	9.186015014
First of Month Value by Index	2014 IRP Basecase	180	7.792911353	6.482424554	8.015935058	7.517305589
First of Month Value by Index	2014 IRP Basecase	181	6.746244222	6.482619223	7.093936129	6.91072816
First of Month Value by Index	2014 IRP Basecase	182	6.417176603	8.361361784	6.323112768	7.241050468
First of Month Value by Index	2014 IRP Basecase	183	6.745774437	7.871556676	7.570841453	7.28834295
First of Month Value by Index	2014 IRP Basecase	184	9.144967401	7.116727974	7.735458945	7.132108322
First of Month Value by Index	2014 IRP Basecase	185	7.26735776	6.754940821	7.10968497	7.35982421
First of Month Value by Index	2014 IRP Basecase	186	8.147881982	7.220993197	8.312836309	7.249828426
First of Month Value by Index	2014 IRP Basecase	187	8.028654092	6.079742209	7.318217956	8.476483149
First of Month Value by Index	2014 IRP Basecase	188	7.501401105	6.636454653	6.712926662	7.100176001
First of Month Value by Index	2014 IRP Basecase	189	8.55364797	6.936571571	7.588256263	7.559766187
First of Month Value by Index	2014 IRP Basecase	190	7.694345779	6.434742052	7.415544739	7.65305557
First of Month Value by Index	2014 IRP Basecase	191	8.065450966	6.068127703	7.144988509	8.646477851
First of Month Value by Index	2014 IRP Basecase	192	7.878937758	7.019555311	7.824473287	7.813211747
First of Month Value by Index	2014 IRP Basecase	193	6.962068803	8.385835364	8.017048704	7.579945507
First of Month Value by Index	2014 IRP Basecase	194	8.260020203	8.373695431	7.293776981	7.964073896
First of Month Value by Index	2014 IRP Basecase	195	7.582104495	7.666819441	9.094315162	8.271600807
First of Month Value by Index	2014 IRP Basecase	196	7.948210748	8.77027581	6.566598758	8.637296874
First of Month Value by Index	2014 IRP Basecase	197	7.234647646	7.812328736	7.133578057	7.574964606
First of Month Value by Index	2014 IRP Basecase	198	6.865264948	7.104950427	7.547239274	6.753637531
First of Month Value by Index	2014 IRP Basecase	199	6.362139256	7.428827468	7.42277978	7.09887168
First of Month Value by Index	2014 IRP Basecase	200	7.406843388	7.259618821	6.274687386	7.341501542
	Average Max Price		7.522762746	7.295763654	7.474851032	7.678229116
	NYMEX Absolute	Max	10.46675789	9.042044964	10.38198944	9.7623272
	Minimum Max		5.174091416	5.131577767	5.247338107	5.466780216

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	0	5.522875238
First of Month Value by Index	2014 IRP Basecase	1	7.329913947
First of Month Value by Index	2014 IRP Basecase	2	7.601534935
First of Month Value by Index	2014 IRP Basecase	3	8.6058924
First of Month Value by Index	2014 IRP Basecase	4	7.037920185
First of Month Value by Index	2014 IRP Basecase	5	7.734630915
First of Month Value by Index	2014 IRP Basecase	6	7.931038569
First of Month Value by Index	2014 IRP Basecase	7	7.033188962
First of Month Value by Index	2014 IRP Basecase	8	8.379352636
First of Month Value by Index	2014 IRP Basecase	9	7.996748774
First of Month Value by Index	2014 IRP Basecase	10	7.497877045
First of Month Value by Index	2014 IRP Basecase	11	6.901358971
First of Month Value by Index	2014 IRP Basecase	12	8.101360905
First of Month Value by Index	2014 IRP Basecase	13	7.713929924
First of Month Value by Index	2014 IRP Basecase	14	7.164887576
First of Month Value by Index	2014 IRP Basecase	15	8.691064314
First of Month Value by Index	2014 IRP Basecase	16	8.63213452
First of Month Value by Index	2014 IRP Basecase	17	8.145131313
First of Month Value by Index	2014 IRP Basecase	18	7.315127329
First of Month Value by Index	2014 IRP Basecase	19	7.912084472
First of Month Value by Index	2014 IRP Basecase	20	7.941930425
First of Month Value by Index	2014 IRP Basecase	21	6.945847756
First of Month Value by Index	2014 IRP Basecase	22	7.588839281
First of Month Value by Index	2014 IRP Basecase	23	9.776247781
First of Month Value by Index	2014 IRP Basecase	24	6.831128764
First of Month Value by Index	2014 IRP Basecase	25	6.878009946
First of Month Value by Index	2014 IRP Basecase	26	6.827332396
First of Month Value by Index	2014 IRP Basecase	27	9.7898792
First of Month Value by Index	2014 IRP Basecase	28	8.553837403
First of Month Value by Index	2014 IRP Basecase	29	5.874346864
First of Month Value by Index	2014 IRP Basecase	30	7.084612396
First of Month Value by Index	2014 IRP Basecase	31	6.868381034
First of Month Value by Index	2014 IRP Basecase	32	7.597486985
First of Month Value by Index	2014 IRP Basecase	33	7.104741242
First of Month Value by Index	2014 IRP Basecase	34	8.086144299
First of Month Value by Index	2014 IRP Basecase	35	8.984696299
First of Month Value by Index	2014 IRP Basecase	36	9.61522466
First of Month Value by Index	2014 IRP Basecase	37	7.6413478
First of Month Value by Index	2014 IRP Basecase	38	7.896767534
First of Month Value by Index	2014 IRP Basecase	39	6.918763449
First of Month Value by Index	2014 IRP Basecase	40	8.799057743
First of Month Value by Index	2014 IRP Basecase	41	8.915562359
First of Month Value by Index	2014 IRP Basecase	42	6.401289745
First of Month Value by Index	2014 IRP Basecase	43	7.189478213
First of Month Value by Index	2014 IRP Basecase	44	6.391248486
First of Month Value by Index	2014 IRP Basecase	45	6.82540028
First of Month Value by Index	2014 IRP Basecase	46	9.477924898
First of Month Value by Index	2014 IRP Basecase	47	11.0008075
First of Month Value by Index	2014 IRP Basecase	48	7.109754887
First of Month Value by Index	2014 IRP Basecase	49	9.354672552
First of Month Value by Index	2014 IRP Basecase	50	8.400266167
First of Month Value by Index	2014 IRP Basecase	51	8.828588065
First of Month Value by Index	2014 IRP Basecase	52	7.538458656

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	53	7.925701326
First of Month Value by Index	2014 IRP Basecase	54	6.703622211
First of Month Value by Index	2014 IRP Basecase	55	6.369177811
First of Month Value by Index	2014 IRP Basecase	56	6.854324836
First of Month Value by Index	2014 IRP Basecase	57	6.316823502
First of Month Value by Index	2014 IRP Basecase	58	6.376975388
First of Month Value by Index	2014 IRP Basecase	59	7.819895265
First of Month Value by Index	2014 IRP Basecase	60	7.006392687
First of Month Value by Index	2014 IRP Basecase	61	8.119982034
First of Month Value by Index	2014 IRP Basecase	62	5.939914369
First of Month Value by Index	2014 IRP Basecase	63	7.751441179
First of Month Value by Index	2014 IRP Basecase	64	8.023364138
First of Month Value by Index	2014 IRP Basecase	65	7.406226411
First of Month Value by Index	2014 IRP Basecase	66	8.321978723
First of Month Value by Index	2014 IRP Basecase	67	7.3444603
First of Month Value by Index	2014 IRP Basecase	68	7.242565174
First of Month Value by Index	2014 IRP Basecase	69	7.315740649
First of Month Value by Index	2014 IRP Basecase	70	7.425767142
First of Month Value by Index	2014 IRP Basecase	71	6.813786245
First of Month Value by Index	2014 IRP Basecase	72	7.39043721
First of Month Value by Index	2014 IRP Basecase	73	7.876773828
First of Month Value by Index	2014 IRP Basecase	74	7.863541041
First of Month Value by Index	2014 IRP Basecase	75	7.74192656
First of Month Value by Index	2014 IRP Basecase	76	7.053637502
First of Month Value by Index	2014 IRP Basecase	77	7.914017029
First of Month Value by Index	2014 IRP Basecase	78	9.104654616
First of Month Value by Index	2014 IRP Basecase	79	6.459604619
First of Month Value by Index	2014 IRP Basecase	80	9.193584048
First of Month Value by Index	2014 IRP Basecase	81	10.16874572
First of Month Value by Index	2014 IRP Basecase	82	7.769934413
First of Month Value by Index	2014 IRP Basecase	83	7.114669844
First of Month Value by Index	2014 IRP Basecase	84	6.888850898
First of Month Value by Index	2014 IRP Basecase	85	7.312671928
First of Month Value by Index	2014 IRP Basecase	86	9.695372533
First of Month Value by Index	2014 IRP Basecase	87	8.475696926
First of Month Value by Index	2014 IRP Basecase	88	9.279749861
First of Month Value by Index	2014 IRP Basecase	89	6.39413621
First of Month Value by Index	2014 IRP Basecase	90	6.940149595
First of Month Value by Index	2014 IRP Basecase	91	8.873190722
First of Month Value by Index	2014 IRP Basecase	92	6.384275294
First of Month Value by Index	2014 IRP Basecase	93	7.792971998
First of Month Value by Index	2014 IRP Basecase	94	8.323903952
First of Month Value by Index	2014 IRP Basecase	95	6.943070793
First of Month Value by Index	2014 IRP Basecase	96	7.34431885
First of Month Value by Index	2014 IRP Basecase	97	7.085424232
First of Month Value by Index	2014 IRP Basecase	98	8.455266348
First of Month Value by Index	2014 IRP Basecase	99	6.811214263
First of Month Value by Index	2014 IRP Basecase	100	8.871892226
First of Month Value by Index	2014 IRP Basecase	101	8.016940062
First of Month Value by Index	2014 IRP Basecase	102	6.759422211
First of Month Value by Index	2014 IRP Basecase	103	8.75453754
First of Month Value by Index	2014 IRP Basecase	104	8.113799558
First of Month Value by Index	2014 IRP Basecase	105	7.941653006

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	106	7.57842435
First of Month Value by Index	2014 IRP Basecase	107	8.394904771
First of Month Value by Index	2014 IRP Basecase	108	10.35844658
First of Month Value by Index	2014 IRP Basecase	109	7.169120887
First of Month Value by Index	2014 IRP Basecase	110	8.296035907
First of Month Value by Index	2014 IRP Basecase	111	6.802259219
First of Month Value by Index	2014 IRP Basecase	112	8.607932617
First of Month Value by Index	2014 IRP Basecase	113	7.66034216
First of Month Value by Index	2014 IRP Basecase	114	7.478067669
First of Month Value by Index	2014 IRP Basecase	115	8.255997214
First of Month Value by Index	2014 IRP Basecase	116	7.768098917
First of Month Value by Index	2014 IRP Basecase	117	7.858440498
First of Month Value by Index	2014 IRP Basecase	118	8.065271022
First of Month Value by Index	2014 IRP Basecase	119	6.86131281
First of Month Value by Index	2014 IRP Basecase	120	6.618325988
First of Month Value by Index	2014 IRP Basecase	121	8.511168013
First of Month Value by Index	2014 IRP Basecase	122	7.269252744
First of Month Value by Index	2014 IRP Basecase	123	6.295907978
First of Month Value by Index	2014 IRP Basecase	124	9.621778787
First of Month Value by Index	2014 IRP Basecase	125	9.056831583
First of Month Value by Index	2014 IRP Basecase	126	8.631613312
First of Month Value by Index	2014 IRP Basecase	127	9.030562278
First of Month Value by Index	2014 IRP Basecase	128	7.814794722
First of Month Value by Index	2014 IRP Basecase	129	6.994656244
First of Month Value by Index	2014 IRP Basecase	130	8.136640369
First of Month Value by Index	2014 IRP Basecase	131	7.635453397
First of Month Value by Index	2014 IRP Basecase	132	7.692417363
First of Month Value by Index	2014 IRP Basecase	133	8.735784619
First of Month Value by Index	2014 IRP Basecase	134	6.932249593
First of Month Value by Index	2014 IRP Basecase	135	7.608877327
First of Month Value by Index	2014 IRP Basecase	136	7.224100473
First of Month Value by Index	2014 IRP Basecase	137	8.936773096
First of Month Value by Index	2014 IRP Basecase	138	7.396555805
First of Month Value by Index	2014 IRP Basecase	139	7.070927792
First of Month Value by Index	2014 IRP Basecase	140	7.574849618
First of Month Value by Index	2014 IRP Basecase	141	8.223706143
First of Month Value by Index	2014 IRP Basecase	142	7.668585462
First of Month Value by Index	2014 IRP Basecase	143	7.28241965
First of Month Value by Index	2014 IRP Basecase	144	7.099855654
First of Month Value by Index	2014 IRP Basecase	145	6.785761125
First of Month Value by Index	2014 IRP Basecase	146	7.367276712
First of Month Value by Index	2014 IRP Basecase	147	7.772241323
First of Month Value by Index	2014 IRP Basecase	148	6.643604616
First of Month Value by Index	2014 IRP Basecase	149	7.052591928
First of Month Value by Index	2014 IRP Basecase	150	7.126254968
First of Month Value by Index	2014 IRP Basecase	151	8.152193725
First of Month Value by Index	2014 IRP Basecase	152	6.234151069
First of Month Value by Index	2014 IRP Basecase	153	6.520833581
First of Month Value by Index	2014 IRP Basecase	154	7.154088878
First of Month Value by Index	2014 IRP Basecase	155	8.290832379
First of Month Value by Index	2014 IRP Basecase	156	8.013113216
First of Month Value by Index	2014 IRP Basecase	157	8.990474725
First of Month Value by Index	2014 IRP Basecase	158	6.910930572

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	159	8.508269177
First of Month Value by Index	2014 IRP Basecase	160	7.005693115
First of Month Value by Index	2014 IRP Basecase	161	7.537646132
First of Month Value by Index	2014 IRP Basecase	162	6.902735709
First of Month Value by Index	2014 IRP Basecase	163	7.203717155
First of Month Value by Index	2014 IRP Basecase	164	9.885969734
First of Month Value by Index	2014 IRP Basecase	165	9.227754309
First of Month Value by Index	2014 IRP Basecase	166	7.334466729
First of Month Value by Index	2014 IRP Basecase	167	6.979307032
First of Month Value by Index	2014 IRP Basecase	168	7.188492772
First of Month Value by Index	2014 IRP Basecase	169	6.899605866
First of Month Value by Index	2014 IRP Basecase	170	7.295147921
First of Month Value by Index	2014 IRP Basecase	171	6.978883082
First of Month Value by Index	2014 IRP Basecase	172	6.476562208
First of Month Value by Index	2014 IRP Basecase	173	7.093690557
First of Month Value by Index	2014 IRP Basecase	174	8.491097349
First of Month Value by Index	2014 IRP Basecase	175	8.258835201
First of Month Value by Index	2014 IRP Basecase	176	7.643892281
First of Month Value by Index	2014 IRP Basecase	177	7.584540649
First of Month Value by Index	2014 IRP Basecase	178	7.020622223
First of Month Value by Index	2014 IRP Basecase	179	6.424569913
First of Month Value by Index	2014 IRP Basecase	180	7.442796053
First of Month Value by Index	2014 IRP Basecase	181	6.728904889
First of Month Value by Index	2014 IRP Basecase	182	6.823091166
First of Month Value by Index	2014 IRP Basecase	183	7.105422472
First of Month Value by Index	2014 IRP Basecase	184	7.570504617
First of Month Value by Index	2014 IRP Basecase	185	7.009109074
First of Month Value by Index	2014 IRP Basecase	186	7.395098459
First of Month Value by Index	2014 IRP Basecase	187	7.355743776
First of Month Value by Index	2014 IRP Basecase	188	6.047717888
First of Month Value by Index	2014 IRP Basecase	189	6.188034935
First of Month Value by Index	2014 IRP Basecase	190	7.474057862
First of Month Value by Index	2014 IRP Basecase	191	6.67245031
First of Month Value by Index	2014 IRP Basecase	192	8.763182773
First of Month Value by Index	2014 IRP Basecase	193	8.360709283
First of Month Value by Index	2014 IRP Basecase	194	8.494512206
First of Month Value by Index	2014 IRP Basecase	195	7.265832371
First of Month Value by Index	2014 IRP Basecase	196	7.681742821
First of Month Value by Index	2014 IRP Basecase	197	6.876276002
First of Month Value by Index	2014 IRP Basecase	198	7.288223056
First of Month Value by Index	2014 IRP Basecase	199	8.449450272
First of Month Value by Index	2014 IRP Basecase	200	9.261825439
	Average Max Price		7.681903519
	NYMEX Absolute	Max	11.0008075
	Minimum Max		5.522875238

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	0	2.787396877	3.470284158	3.89386978	4.217296585
First of Month Value by Index	2014 IRP Basecase	1	2.076151412	2.076151412	2.076151412	2.657847467
First of Month Value by Index	2014 IRP Basecase	2	2.632255386	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	3	2.09733663	2.09733663	2.09733663	2.925386191
First of Month Value by Index	2014 IRP Basecase	4	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	5	2.118521849	2.118521849	2.842569089	2.127610359
First of Month Value by Index	2014 IRP Basecase	6	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	7	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	8	2.076151412	2.076151412	2.076151412	2.630885195
First of Month Value by Index	2014 IRP Basecase	9	2.09733663	2.27859542	2.09733663	2.591147601
First of Month Value by Index	2014 IRP Basecase	10	2.118521849	2.341983608	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	11	2.09733663	2.09733663	2.486888923	3.902227516
First of Month Value by Index	2014 IRP Basecase	12	2.09733663	2.09733663	2.09733663	2.135906692
First of Month Value by Index	2014 IRP Basecase	13	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	14	2.09733663	2.09733663	2.555877329	2.27939249
First of Month Value by Index	2014 IRP Basecase	15	2.09733663	2.437419735	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	16	2.139707067	2.139707067	2.434037965	2.139707067
First of Month Value by Index	2014 IRP Basecase	17	2.076151412	2.076151412	3.123092443	2.453401965
First of Month Value by Index	2014 IRP Basecase	18	2.118521849	2.653180194	2.464229386	2.291605099
First of Month Value by Index	2014 IRP Basecase	19	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	20	2.09733663	2.09733663	2.09733663	2.898169795
First of Month Value by Index	2014 IRP Basecase	21	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	22	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	23	2.076151412	2.076151412	2.076151412	2.849677081
First of Month Value by Index	2014 IRP Basecase	24	2.118521849	2.281944652	2.118521849	3.141796103
First of Month Value by Index	2014 IRP Basecase	25	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	26	2.118521849	2.118521849	2.320565224	2.118521849
First of Month Value by Index	2014 IRP Basecase	27	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	28	2.139707067	2.282247278	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	29	2.139707067	2.256114203	2.703926413	2.926170802
First of Month Value by Index	2014 IRP Basecase	30	2.118521849	2.438122037	2.991176447	2.737426836
First of Month Value by Index	2014 IRP Basecase	31	2.118521849	2.118521849	2.118521849	3.485039114
First of Month Value by Index	2014 IRP Basecase	32	2.09733663	2.09733663	2.09733663	2.974121147
First of Month Value by Index	2014 IRP Basecase	33	2.139707067	2.139707067	2.651254016	2.139707067
First of Month Value by Index	2014 IRP Basecase	34	2.076151412	2.076151412	2.076151412	2.156969095
First of Month Value by Index	2014 IRP Basecase	35	2.189592273	2.076151412	2.965415371	2.076151412
First of Month Value by Index	2014 IRP Basecase	36	2.076151412	2.076151412	2.260361433	2.691598735
First of Month Value by Index	2014 IRP Basecase	37	2.139707067	2.139707067	2.737084707	2.181652455
First of Month Value by Index	2014 IRP Basecase	38	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	39	2.076151412	2.076151412	2.076151412	2.380563735
First of Month Value by Index	2014 IRP Basecase	40	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	41	2.118521849	2.118521849	2.197810983	2.223614602
First of Month Value by Index	2014 IRP Basecase	42	2.076151412	2.732934946	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	43	2.076151412	2.076151412	2.076151412	2.25443752
First of Month Value by Index	2014 IRP Basecase	44	2.139707067	2.139707067	2.139707067	2.85715078
First of Month Value by Index	2014 IRP Basecase	45	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	46	2.076151412	2.076151412	2.175612844	3.172020198
First of Month Value by Index	2014 IRP Basecase	47	2.139707067	2.766626917	3.350096619	2.487794592
First of Month Value by Index	2014 IRP Basecase	48	2.09733663	2.09733663	2.09733663	2.446578207
First of Month Value by Index	2014 IRP Basecase	49	2.139707067	2.354904471	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	50	2.09733663	2.09733663	2.09733663	2.455449822
First of Month Value by Index	2014 IRP Basecase	51	2.139707067	2.139707067	2.139707067	3.307402167
First of Month Value by Index	2014 IRP Basecase	52	2.076151412	2.076151412	2.330846796	2.076151412

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	53	2.118521849	2.118521849	2.439936843	2.118521849
First of Month Value by Index	2014 IRP Basecase	54	2.118521849	2.118521849	2.118521849	2.42895591
First of Month Value by Index	2014 IRP Basecase	55	2.076151412	2.076151412	2.559991627	2.364653337
First of Month Value by Index	2014 IRP Basecase	56	2.076151412	2.076151412	2.076151412	2.626566875
First of Month Value by Index	2014 IRP Basecase	57	2.076151412	2.076151412	2.553133333	2.076151412
First of Month Value by Index	2014 IRP Basecase	58	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	59	2.133114059	2.076151412	2.497720839	2.598268946
First of Month Value by Index	2014 IRP Basecase	60	2.09733663	2.09733663	3.495749734	2.09733663
First of Month Value by Index	2014 IRP Basecase	61	2.118521849	2.118521849	2.693029662	2.118521849
First of Month Value by Index	2014 IRP Basecase	62	2.118521849	2.118521849	2.118521849	2.396733208
First of Month Value by Index	2014 IRP Basecase	63	2.076151412	2.076151412	2.582857007	2.076151412
First of Month Value by Index	2014 IRP Basecase	64	2.09733663	2.179139831	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	65	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	66	2.076151412	2.417692175	2.076151412	2.44621153
First of Month Value by Index	2014 IRP Basecase	67	2.139707067	2.139707067	2.139707067	2.321254056
First of Month Value by Index	2014 IRP Basecase	68	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	69	2.09733663	2.09733663	3.040292306	2.09733663
First of Month Value by Index	2014 IRP Basecase	70	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	71	2.165451126	2.09733663	2.631388476	2.09733663
First of Month Value by Index	2014 IRP Basecase	72	2.09733663	2.09733663	3.138468615	2.447158425
First of Month Value by Index	2014 IRP Basecase	73	2.118521849	2.118521849	2.234369757	2.118521849
First of Month Value by Index	2014 IRP Basecase	74	2.270504588	2.711658575	2.118521849	3.03452134
First of Month Value by Index	2014 IRP Basecase	75	2.09733663	2.201741988	2.299387083	2.09733663
First of Month Value by Index	2014 IRP Basecase	76	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	77	2.09733663	2.09733663	2.09733663	2.509281561
First of Month Value by Index	2014 IRP Basecase	78	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	79	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	80	2.139707067	2.139707067	2.549575133	2.201537433
First of Month Value by Index	2014 IRP Basecase	81	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	82	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	83	2.076151412	2.076151412	2.076151412	2.303053925
First of Month Value by Index	2014 IRP Basecase	84	2.139707067	2.139707067	2.280991979	2.139707067
First of Month Value by Index	2014 IRP Basecase	85	2.09733663	2.09733663	2.904909055	2.09733663
First of Month Value by Index	2014 IRP Basecase	86	2.182282344	2.118521849	2.118521849	3.289315824
First of Month Value by Index	2014 IRP Basecase	87	2.09733663	2.09733663	2.418236046	2.09733663
First of Month Value by Index	2014 IRP Basecase	88	2.118521849	2.118521849	2.350090382	3.122270479
First of Month Value by Index	2014 IRP Basecase	89	2.139707067	2.139707067	2.713925953	2.655768808
First of Month Value by Index	2014 IRP Basecase	90	2.139707067	2.139707067	2.139707067	3.658792036
First of Month Value by Index	2014 IRP Basecase	91	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	92	2.076151412	2.076151412	2.076151412	3.31119839
First of Month Value by Index	2014 IRP Basecase	93	2.118521849	2.118521849	2.118521849	3.454355941
First of Month Value by Index	2014 IRP Basecase	94	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	95	2.139707067	2.139707067	2.139707067	2.308023591
First of Month Value by Index	2014 IRP Basecase	96	2.076151412	2.076151412	2.544510389	2.076151412
First of Month Value by Index	2014 IRP Basecase	97	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	98	2.076151412	2.076151412	2.076151412	2.093937173
First of Month Value by Index	2014 IRP Basecase	99	2.09733663	2.09733663	3.186196817	2.556185023
First of Month Value by Index	2014 IRP Basecase	100	2.076151412	2.076151412	2.076151412	2.547666135
First of Month Value by Index	2014 IRP Basecase	101	2.076151412	2.076151412	2.076151412	2.381491022
First of Month Value by Index	2014 IRP Basecase	102	2.118521849	2.118521849	3.702505396	2.642820697
First of Month Value by Index	2014 IRP Basecase	103	2.139707067	2.139707067	2.139707067	3.239680636
First of Month Value by Index	2014 IRP Basecase	104	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	105	2.076151412	2.077044214	2.076151412	2.076151412

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	106	2.09733663	2.09733663	2.570146252	2.561309474
First of Month Value by Index	2014 IRP Basecase	107	2.09733663	2.09733663	2.09733663	2.63930234
First of Month Value by Index	2014 IRP Basecase	108	2.076151412	2.076151412	2.076151412	3.231086731
First of Month Value by Index	2014 IRP Basecase	109	2.09733663	2.09733663	2.363824256	2.490727094
First of Month Value by Index	2014 IRP Basecase	110	2.09733663	2.09733663	2.225875446	2.09733663
First of Month Value by Index	2014 IRP Basecase	111	2.139707067	2.155084396	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	112	2.854305186	2.139707067	2.139707067	2.77572792
First of Month Value by Index	2014 IRP Basecase	113	2.076151412	2.712457248	2.076151412	2.23232651
First of Month Value by Index	2014 IRP Basecase	114	2.076151412	2.076151412	2.236866256	2.355573679
First of Month Value by Index	2014 IRP Basecase	115	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	116	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	117	2.118521849	2.118521849	2.118521849	2.664401384
First of Month Value by Index	2014 IRP Basecase	118	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	119	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	120	2.09733663	2.09733663	2.951742511	2.331280558
First of Month Value by Index	2014 IRP Basecase	121	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	122	2.076151412	2.076151412	2.392134693	2.076151412
First of Month Value by Index	2014 IRP Basecase	123	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	124	2.139707067	2.139707067	2.849733258	2.139707067
First of Month Value by Index	2014 IRP Basecase	125	2.076151412	2.076151412	2.076151412	2.325026667
First of Month Value by Index	2014 IRP Basecase	126	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	127	2.139707067	2.139707067	2.301219265	2.139707067
First of Month Value by Index	2014 IRP Basecase	128	2.09733663	2.354470099	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	129	2.118521849	2.126459248	2.118521849	2.86019522
First of Month Value by Index	2014 IRP Basecase	130	2.076151412	2.076151412	2.364293477	2.076151412
First of Month Value by Index	2014 IRP Basecase	131	2.076151412	2.107390589	3.073922142	2.315095621
First of Month Value by Index	2014 IRP Basecase	132	2.139707067	2.315155941	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	133	2.076151412	2.076151412	2.076151412	2.081023463
First of Month Value by Index	2014 IRP Basecase	134	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	135	2.118521849	2.247786932	2.118521849	2.501536542
First of Month Value by Index	2014 IRP Basecase	136	2.09733663	2.09733663	2.09733663	2.647992438
First of Month Value by Index	2014 IRP Basecase	137	2.118521849	2.118521849	2.118521849	2.796208779
First of Month Value by Index	2014 IRP Basecase	138	2.118521849	2.151690762	2.118521849	2.925021802
First of Month Value by Index	2014 IRP Basecase	139	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	140	2.562747654	2.118521849	2.118521849	2.491141519
First of Month Value by Index	2014 IRP Basecase	141	2.09733663	2.09733663	2.09733663	3.631321668
First of Month Value by Index	2014 IRP Basecase	142	2.076151412	2.076151412	2.076151412	3.010730997
First of Month Value by Index	2014 IRP Basecase	143	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	144	2.09733663	2.09733663	2.661373449	2.09733663
First of Month Value by Index	2014 IRP Basecase	145	2.076151412	2.313012525	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	146	2.09733663	2.09733663	2.536511958	2.09733663
First of Month Value by Index	2014 IRP Basecase	147	2.139707067	2.139707067	2.139707067	2.787353635
First of Month Value by Index	2014 IRP Basecase	148	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	149	2.102726105	2.076151412	2.076151412	2.433291056
First of Month Value by Index	2014 IRP Basecase	150	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	151	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	152	2.118521849	2.118521849	2.607264873	3.92211126
First of Month Value by Index	2014 IRP Basecase	153	2.09733663	2.09733663	2.383839851	3.355501054
First of Month Value by Index	2014 IRP Basecase	154	2.139707067	2.139707067	2.139707067	2.748810411
First of Month Value by Index	2014 IRP Basecase	155	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	156	2.139707067	2.139707067	2.139707067	3.351879749
First of Month Value by Index	2014 IRP Basecase	157	2.118521849	2.118521849	3.185628245	2.118521849
First of Month Value by Index	2014 IRP Basecase	158	2.076151412	2.076151412	2.296105872	2.076151412

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	159	2.191476756	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	160	2.139707067	2.139707067	2.139707067	2.704739585
First of Month Value by Index	2014 IRP Basecase	161	2.09733663	2.09733663	2.09733663	2.477611773
First of Month Value by Index	2014 IRP Basecase	162	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	163	2.076151412	3.744602112	2.076151412	2.244409621
First of Month Value by Index	2014 IRP Basecase	164	2.09733663	2.09733663	2.09733663	2.273988348
First of Month Value by Index	2014 IRP Basecase	165	2.076151412	2.112013495	2.076151412	3.124877718
First of Month Value by Index	2014 IRP Basecase	166	2.139707067	2.548070202	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	167	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	168	2.076151412	2.076151412	3.722283534	2.076151412
First of Month Value by Index	2014 IRP Basecase	169	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	170	2.139707067	2.139707067	2.618601957	2.844761886
First of Month Value by Index	2014 IRP Basecase	171	2.139707067	2.139707067	3.569716137	2.488094217
First of Month Value by Index	2014 IRP Basecase	172	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	173	2.09733663	2.09733663	2.09733663	2.131481303
First of Month Value by Index	2014 IRP Basecase	174	2.076151412	2.076151412	3.815779475	2.076151412
First of Month Value by Index	2014 IRP Basecase	175	2.076151412	2.076151412	2.135363308	2.076151412
First of Month Value by Index	2014 IRP Basecase	176	2.09733663	2.09733663	2.09733663	2.656374676
First of Month Value by Index	2014 IRP Basecase	177	2.09733663	2.09733663	2.103432833	2.09733663
First of Month Value by Index	2014 IRP Basecase	178	2.076151412	2.076151412	2.076151412	2.105030627
First of Month Value by Index	2014 IRP Basecase	179	2.09733663	2.09733663	2.151888432	4.020782953
First of Month Value by Index	2014 IRP Basecase	180	2.118521849	2.118521849	2.118521849	2.184132507
First of Month Value by Index	2014 IRP Basecase	181	2.09733663	2.09733663	2.5157833	2.09733663
First of Month Value by Index	2014 IRP Basecase	182	2.09733663	2.09733663	2.09733663	2.174777281
First of Month Value by Index	2014 IRP Basecase	183	2.139707067	2.694319175	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	184	2.139707067	2.139707067	2.444358558	2.139707067
First of Month Value by Index	2014 IRP Basecase	185	2.118521849	2.118521849	2.118521849	2.92696406
First of Month Value by Index	2014 IRP Basecase	186	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	187	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	188	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	189	2.139707067	2.176124854	3.217085253	2.30847286
First of Month Value by Index	2014 IRP Basecase	190	2.09733663	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	191	2.09733663	2.09733663	2.09733663	3.006818693
First of Month Value by Index	2014 IRP Basecase	192	2.09733663	2.09733663	2.09733663	2.765051743
First of Month Value by Index	2014 IRP Basecase	193	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	194	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	195	2.118521849	2.118521849	2.950966847	2.118521849
First of Month Value by Index	2014 IRP Basecase	196	2.118521849	2.118521849	2.229158187	3.273709399
First of Month Value by Index	2014 IRP Basecase	197	2.076151412	2.076151412	2.351712074	2.076151412
First of Month Value by Index	2014 IRP Basecase	198	2.076151412	2.076151412	2.355580609	2.076151412
First of Month Value by Index	2014 IRP Basecase	199	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	200	2.09733663	2.09733663	3.118362178	2.09733663
	average min		2.116942459	2.150047566	2.298336615	2.39332422
	Median Min Price		2.09733663	2.118521849	2.118521849	2.139707067
	Highest Minimum		2.854305186	3.744602112	3.815779475	4.020782953
	Absolute Min		2.076151412	2.076151412	2.076151412	2.076151412

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	0	4.495455405	4.363864488	4.372662262	4.524322946
First of Month Value by Index	2014 IRP Basecase	1	2.57442084	3.41832116	2.823199242	2.076151412
First of Month Value by Index	2014 IRP Basecase	2	4.190457556	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	3	2.530052056	3.144501813	2.09733663	3.979402643
First of Month Value by Index	2014 IRP Basecase	4	2.609538642	2.638880282	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	5	2.118521849	2.136423425	3.23510297	2.370442342
First of Month Value by Index	2014 IRP Basecase	6	3.150524481	2.118521849	2.324844725	3.303735948
First of Month Value by Index	2014 IRP Basecase	7	2.490689628	2.266966735	2.118521849	3.407359885
First of Month Value by Index	2014 IRP Basecase	8	2.076151412	2.723709925	2.076151412	2.707993565
First of Month Value by Index	2014 IRP Basecase	9	2.582604349	3.263889323	2.976784715	3.160154858
First of Month Value by Index	2014 IRP Basecase	10	2.118521849	2.118521849	3.139395219	2.405793434
First of Month Value by Index	2014 IRP Basecase	11	2.205887853	2.09733663	2.767596467	2.396458795
First of Month Value by Index	2014 IRP Basecase	12	3.606552154	2.09733663	2.772238542	2.754984523
First of Month Value by Index	2014 IRP Basecase	13	2.118521849	2.479687481	2.610350835	2.410807175
First of Month Value by Index	2014 IRP Basecase	14	2.557352459	3.18017062	2.09733663	2.325897417
First of Month Value by Index	2014 IRP Basecase	15	2.09733663	3.012495526	2.09733663	2.365439231
First of Month Value by Index	2014 IRP Basecase	16	2.139707067	2.337822575	2.139707067	3.756362884
First of Month Value by Index	2014 IRP Basecase	17	2.328244617	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	18	3.252199425	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	19	2.076151412	3.015679277	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	20	2.15462884	2.748503786	2.09733663	3.154562032
First of Month Value by Index	2014 IRP Basecase	21	3.527440523	2.334531344	2.09733663	2.87770666
First of Month Value by Index	2014 IRP Basecase	22	2.888668096	2.967568981	3.271838191	3.732214072
First of Month Value by Index	2014 IRP Basecase	23	2.420114341	2.076151412	2.076151412	2.701751208
First of Month Value by Index	2014 IRP Basecase	24	2.672924862	3.15051741	2.118521849	2.535157347
First of Month Value by Index	2014 IRP Basecase	25	3.495183684	2.09733663	2.09733663	2.305762978
First of Month Value by Index	2014 IRP Basecase	26	2.666597537	2.830253526	2.318037224	3.394684022
First of Month Value by Index	2014 IRP Basecase	27	3.118802551	2.557988682	3.213692904	2.09733663
First of Month Value by Index	2014 IRP Basecase	28	2.139707067	2.296005574	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	29	2.139707067	2.139707067	2.151468311	3.242290883
First of Month Value by Index	2014 IRP Basecase	30	2.118521849	2.774218459	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	31	2.51630956	2.521358826	2.268795683	3.801913473
First of Month Value by Index	2014 IRP Basecase	32	3.530146095	3.291567092	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	33	3.129121813	2.62868006	2.39601543	2.139707067
First of Month Value by Index	2014 IRP Basecase	34	2.737405558	2.076151412	2.582116498	3.330527539
First of Month Value by Index	2014 IRP Basecase	35	2.765565219	2.21232615	2.076151412	3.544613362
First of Month Value by Index	2014 IRP Basecase	36	2.267420364	2.076151412	2.765198429	2.265392542
First of Month Value by Index	2014 IRP Basecase	37	2.139707067	2.139707067	2.558419193	2.427362196
First of Month Value by Index	2014 IRP Basecase	38	2.925086572	2.565744208	3.250799776	2.300655894
First of Month Value by Index	2014 IRP Basecase	39	2.076151412	2.076151412	2.943878883	3.429282946
First of Month Value by Index	2014 IRP Basecase	40	3.140523796	2.95885247	2.739792853	2.68705171
First of Month Value by Index	2014 IRP Basecase	41	3.330613062	3.306680652	2.259636628	2.180481512
First of Month Value by Index	2014 IRP Basecase	42	3.353192282	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	43	2.153827209	2.830797716	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	44	3.243061203	2.66399236	2.715923004	2.139707067
First of Month Value by Index	2014 IRP Basecase	45	2.760651588	3.024627432	2.817088388	3.911005582
First of Month Value by Index	2014 IRP Basecase	46	2.311067863	3.11902987	2.076151412	2.249627673
First of Month Value by Index	2014 IRP Basecase	47	3.001459837	2.520717539	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	48	2.09733663	2.403268062	2.594685079	2.09733663
First of Month Value by Index	2014 IRP Basecase	49	2.939123067	2.139707067	2.291626311	2.225380973
First of Month Value by Index	2014 IRP Basecase	50	2.09733663	2.09733663	2.894471469	2.485532637
First of Month Value by Index	2014 IRP Basecase	51	2.139707067	2.539012052	2.139707067	2.665754064
First of Month Value by Index	2014 IRP Basecase	52	2.076151412	2.29303312	2.921394317	2.368127529

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	53	3.153130098	2.200091992	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	54	2.410101052	3.003435438	2.189224032	2.118521849
First of Month Value by Index	2014 IRP Basecase	55	3.948092442	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	56	2.162152498	2.351781208	2.076151412	2.691771817
First of Month Value by Index	2014 IRP Basecase	57	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	58	2.48320412	2.118521849	2.336687182	2.118521849
First of Month Value by Index	2014 IRP Basecase	59	2.453879468	2.076151412	2.076151412	3.406397107
First of Month Value by Index	2014 IRP Basecase	60	2.177329005	2.09733663	2.221485059	3.461430379
First of Month Value by Index	2014 IRP Basecase	61	2.118521849	2.565381725	2.118521849	2.895927658
First of Month Value by Index	2014 IRP Basecase	62	2.118521849	2.118521849	2.849503706	2.118521849
First of Month Value by Index	2014 IRP Basecase	63	2.076151412	2.076151412	2.218630712	2.425574609
First of Month Value by Index	2014 IRP Basecase	64	3.01686491	2.09733663	2.618161312	2.09733663
First of Month Value by Index	2014 IRP Basecase	65	2.394553352	2.139707067	2.139707067	2.329627421
First of Month Value by Index	2014 IRP Basecase	66	2.190865726	2.565444966	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	67	2.230680198	2.35343525	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	68	4.314548224	3.046964173	2.663314716	3.076991361
First of Month Value by Index	2014 IRP Basecase	69	2.852496774	2.440447001	2.885942052	2.422381911
First of Month Value by Index	2014 IRP Basecase	70	2.09733663	2.212200742	2.372514188	2.352966967
First of Month Value by Index	2014 IRP Basecase	71	2.09733663	2.09733663	2.09733663	3.079687107
First of Month Value by Index	2014 IRP Basecase	72	2.09733663	2.09733663	2.276106534	2.899686595
First of Month Value by Index	2014 IRP Basecase	73	2.118521849	2.164783328	2.118521849	2.795523702
First of Month Value by Index	2014 IRP Basecase	74	2.118521849	2.582548724	2.118521849	3.303609001
First of Month Value by Index	2014 IRP Basecase	75	2.09733663	2.837353774	2.09733663	2.432022593
First of Month Value by Index	2014 IRP Basecase	76	2.076151412	2.111695049	2.076151412	3.377635369
First of Month Value by Index	2014 IRP Basecase	77	2.854279264	2.608205936	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	78	3.736356322	2.139707067	2.139707067	2.724809916
First of Month Value by Index	2014 IRP Basecase	79	2.118521849	2.301244331	2.961982968	3.320846545
First of Month Value by Index	2014 IRP Basecase	80	2.589566152	2.669648348	2.980219742	2.139707067
First of Month Value by Index	2014 IRP Basecase	81	2.09733663	2.09733663	3.959456887	2.09733663
First of Month Value by Index	2014 IRP Basecase	82	2.107895812	2.41126304	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	83	2.468516413	2.832182046	2.082421324	2.076151412
First of Month Value by Index	2014 IRP Basecase	84	2.727113735	2.139707067	2.139707067	3.066371484
First of Month Value by Index	2014 IRP Basecase	85	2.110151425	2.846875946	3.090243703	2.09733663
First of Month Value by Index	2014 IRP Basecase	86	3.345944041	3.166766315	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	87	2.09733663	2.09733663	2.695105586	2.790016941
First of Month Value by Index	2014 IRP Basecase	88	2.118521849	3.611415895	2.200607526	2.412445534
First of Month Value by Index	2014 IRP Basecase	89	2.139707067	2.139707067	2.960184951	2.661217846
First of Month Value by Index	2014 IRP Basecase	90	2.139707067	2.594323432	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	91	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	92	2.358231132	2.279330557	3.010883124	2.076151412
First of Month Value by Index	2014 IRP Basecase	93	3.245702557	2.938065037	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	94	2.793547585	2.09733663	2.09733663	2.156614348
First of Month Value by Index	2014 IRP Basecase	95	3.234652298	2.139707067	2.139707067	3.040231267
First of Month Value by Index	2014 IRP Basecase	96	2.751461217	2.076151412	2.345857295	2.076151412
First of Month Value by Index	2014 IRP Basecase	97	2.641373094	2.118521849	2.169903139	2.118521849
First of Month Value by Index	2014 IRP Basecase	98	2.550655893	2.81403626	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	99	2.09733663	2.09733663	2.6456644	3.654294357
First of Month Value by Index	2014 IRP Basecase	100	3.276727402	3.007941876	2.472571726	3.036419817
First of Month Value by Index	2014 IRP Basecase	101	2.792278345	2.467076808	2.539299267	2.076151412
First of Month Value by Index	2014 IRP Basecase	102	2.420594737	2.921674706	3.596416932	3.513681366
First of Month Value by Index	2014 IRP Basecase	103	2.998207487	2.139707067	2.759601527	2.3249771
First of Month Value by Index	2014 IRP Basecase	104	2.330805183	2.09733663	2.258125451	4.127020305
First of Month Value by Index	2014 IRP Basecase	105	2.826874071	2.180609469	2.076151412	2.076151412

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	106	3.06870414	2.410007655	2.09733663	2.430896994
First of Month Value by Index	2014 IRP Basecase	107	2.579486407	3.447119453	3.316846985	2.09733663
First of Month Value by Index	2014 IRP Basecase	108	2.747218961	2.869912398	2.241087722	3.099901688
First of Month Value by Index	2014 IRP Basecase	109	2.09733663	3.199046615	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	110	2.237690319	2.09733663	2.09733663	3.25510855
First of Month Value by Index	2014 IRP Basecase	111	2.139707067	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	112	2.436755513	2.480319934	2.732142073	3.122966732
First of Month Value by Index	2014 IRP Basecase	113	2.076151412	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	114	2.273323486	2.363497693	3.492149046	2.975969283
First of Month Value by Index	2014 IRP Basecase	115	2.118521849	3.283214613	2.118521849	2.716411013
First of Month Value by Index	2014 IRP Basecase	116	2.139707067	2.139707067	2.139707067	3.021494628
First of Month Value by Index	2014 IRP Basecase	117	2.118521849	2.142284547	2.983712153	2.118521849
First of Month Value by Index	2014 IRP Basecase	118	3.580436064	2.946037793	4.029760467	3.674971659
First of Month Value by Index	2014 IRP Basecase	119	2.87834873	3.519533383	2.076151412	2.400646923
First of Month Value by Index	2014 IRP Basecase	120	2.813003964	2.426450769	3.002658993	3.811266175
First of Month Value by Index	2014 IRP Basecase	121	2.225330578	3.217130681	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	122	2.489817615	2.368611962	2.237156982	2.717377644
First of Month Value by Index	2014 IRP Basecase	123	2.474378604	2.450000261	2.454515053	2.139707067
First of Month Value by Index	2014 IRP Basecase	124	2.139707067	2.139707067	2.139707067	2.596277801
First of Month Value by Index	2014 IRP Basecase	125	2.091168841	2.076151412	2.076151412	2.899116989
First of Month Value by Index	2014 IRP Basecase	126	3.269401057	2.139707067	2.897897835	2.139707067
First of Month Value by Index	2014 IRP Basecase	127	2.706636648	3.147715951	2.163008492	3.871286516
First of Month Value by Index	2014 IRP Basecase	128	2.693714296	3.123870997	2.694881899	3.112104961
First of Month Value by Index	2014 IRP Basecase	129	2.96552099	2.415891629	2.118521849	2.756888987
First of Month Value by Index	2014 IRP Basecase	130	2.375643173	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	131	2.815593509	2.922494522	2.076151412	2.408218007
First of Month Value by Index	2014 IRP Basecase	132	2.888982525	2.670696698	3.15110366	2.862015191
First of Month Value by Index	2014 IRP Basecase	133	2.090871351	2.965934454	2.5037487	3.033153523
First of Month Value by Index	2014 IRP Basecase	134	2.840068884	2.139707067	2.766034978	2.139707067
First of Month Value by Index	2014 IRP Basecase	135	2.118521849	2.118521849	2.903533041	2.118521849
First of Month Value by Index	2014 IRP Basecase	136	2.09733663	2.338858892	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	137	2.893787739	2.118521849	3.019246595	2.118521849
First of Month Value by Index	2014 IRP Basecase	138	2.819773816	2.55602484	2.118521849	3.168729787
First of Month Value by Index	2014 IRP Basecase	139	2.457273555	3.07134108	2.118521849	2.889854396
First of Month Value by Index	2014 IRP Basecase	140	2.118521849	2.408667592	2.565487626	2.773695854
First of Month Value by Index	2014 IRP Basecase	141	2.09733663	2.09733663	2.654305327	2.899462909
First of Month Value by Index	2014 IRP Basecase	142	2.504620548	2.076151412	2.393504998	2.076151412
First of Month Value by Index	2014 IRP Basecase	143	3.230851754	2.118521849	2.982236266	2.118521849
First of Month Value by Index	2014 IRP Basecase	144	3.014788727	2.09733663	3.200193049	2.09733663
First of Month Value by Index	2014 IRP Basecase	145	2.32877063	2.076151412	2.695792646	3.691708472
First of Month Value by Index	2014 IRP Basecase	146	2.09733663	2.766589712	2.554087672	2.09733663
First of Month Value by Index	2014 IRP Basecase	147	2.139707067	2.841281331	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	148	3.079253736	2.09733663	3.267811335	2.163046248
First of Month Value by Index	2014 IRP Basecase	149	2.9654916	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	150	3.205916899	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	151	2.54724006	2.280186248	2.118521849	2.182352889
First of Month Value by Index	2014 IRP Basecase	152	2.129651111	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	153	2.67966906	3.442931751	2.740736602	2.09733663
First of Month Value by Index	2014 IRP Basecase	154	2.139707067	2.666766874	2.368306174	2.139707067
First of Month Value by Index	2014 IRP Basecase	155	3.525930653	2.139707067	2.139707067	2.325932944
First of Month Value by Index	2014 IRP Basecase	156	2.139707067	2.660640191	3.297459763	2.14191804
First of Month Value by Index	2014 IRP Basecase	157	2.118521849	2.774995295	3.259416559	2.118521849
First of Month Value by Index	2014 IRP Basecase	158	2.076151412	3.415684167	2.076151412	2.076151412

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	159	2.118521849	2.118521849	2.118521849	2.325649678
First of Month Value by Index	2014 IRP Basecase	160	2.139707067	2.664384662	2.139707067	2.829769718
First of Month Value by Index	2014 IRP Basecase	161	2.09733663	2.09733663	2.09733663	2.551263256
First of Month Value by Index	2014 IRP Basecase	162	2.891083124	2.118521849	2.118521849	2.950069798
First of Month Value by Index	2014 IRP Basecase	163	2.076151412	2.076151412	2.398425394	2.700367042
First of Month Value by Index	2014 IRP Basecase	164	2.15966245	2.09760232	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	165	2.076151412	2.655279938	2.851344878	2.760174085
First of Month Value by Index	2014 IRP Basecase	166	2.817623314	2.139707067	2.139707067	3.101940558
First of Month Value by Index	2014 IRP Basecase	167	2.076151412	2.076151412	2.076151412	2.77903926
First of Month Value by Index	2014 IRP Basecase	168	2.14126643	3.608385629	2.267551867	2.076151412
First of Month Value by Index	2014 IRP Basecase	169	2.09733663	2.47557026	2.417159451	2.88319481
First of Month Value by Index	2014 IRP Basecase	170	2.139707067	2.139707067	2.940685133	2.782168342
First of Month Value by Index	2014 IRP Basecase	171	3.991010281	2.383405473	2.97497034	2.180689639
First of Month Value by Index	2014 IRP Basecase	172	2.836701003	2.076151412	2.076151412	2.847157897
First of Month Value by Index	2014 IRP Basecase	173	2.957671033	3.257793119	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	174	2.076151412	2.076151412	2.076151412	3.508917431
First of Month Value by Index	2014 IRP Basecase	175	3.534128748	3.04977638	2.718574867	3.63975631
First of Month Value by Index	2014 IRP Basecase	176	2.09733663	2.950344388	2.09733663	2.976379346
First of Month Value by Index	2014 IRP Basecase	177	2.09733663	2.403407907	2.09733663	2.158802541
First of Month Value by Index	2014 IRP Basecase	178	2.076151412	3.709065239	2.076151412	2.248340526
First of Month Value by Index	2014 IRP Basecase	179	2.09733663	3.39899955	2.123958807	2.09733663
First of Month Value by Index	2014 IRP Basecase	180	2.118521849	2.118521849	2.118521849	2.709328235
First of Month Value by Index	2014 IRP Basecase	181	2.524885768	2.09733663	3.209015825	3.253500408
First of Month Value by Index	2014 IRP Basecase	182	2.09733663	2.09733663	2.09733663	3.117900471
First of Month Value by Index	2014 IRP Basecase	183	3.055501635	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	184	3.559424113	2.139707067	2.139707067	2.308801054
First of Month Value by Index	2014 IRP Basecase	185	3.344729456	2.118521849	2.268746184	3.581495416
First of Month Value by Index	2014 IRP Basecase	186	2.118521849	2.118521849	3.39864565	2.118521849
First of Month Value by Index	2014 IRP Basecase	187	2.258638197	2.076151412	2.076151412	2.691702683
First of Month Value by Index	2014 IRP Basecase	188	2.139707067	3.157294791	2.543519701	2.139707067
First of Month Value by Index	2014 IRP Basecase	189	3.521465856	2.139707067	2.139707067	2.835140364
First of Month Value by Index	2014 IRP Basecase	190	2.09733663	2.271010085	2.09733663	3.476300355
First of Month Value by Index	2014 IRP Basecase	191	3.080309495	2.526633421	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	192	2.09733663	3.030329762	2.160760047	3.248229277
First of Month Value by Index	2014 IRP Basecase	193	3.141424677	2.472398809	2.076151412	2.192810388
First of Month Value by Index	2014 IRP Basecase	194	3.52070791	2.118521849	2.118521849	2.385589803
First of Month Value by Index	2014 IRP Basecase	195	2.118521849	2.118521849	4.234233012	2.990279398
First of Month Value by Index	2014 IRP Basecase	196	2.118521849	2.118521849	2.118521849	2.153646995
First of Month Value by Index	2014 IRP Basecase	197	2.947740488	3.207930626	2.076151412	3.491443186
First of Month Value by Index	2014 IRP Basecase	198	2.098732995	2.076151412	2.743447279	2.621023448
First of Month Value by Index	2014 IRP Basecase	199	2.118521849	2.118521849	2.533547273	2.981586377
First of Month Value by Index	2014 IRP Basecase	200	2.605633209	2.690917884	2.667078118	2.744966141
	average min		2.550200334	2.474634845	2.422194766	2.588846665
	Median Min Price		2.385098263	2.298624952	2.139707067	2.391024299
	Highest Minimum		4.314548224	3.709065239	4.234233012	4.127020305
	Absolute Min		2.076151412	2.076151412	2.076151412	2.076151412

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	0	4.613819491	4.482172902	4.479634679	4.651603818
First of Month Value by Index	2014 IRP Basecase	1	4.176572993	2.393228132	2.076151412	3.289855608
First of Month Value by Index	2014 IRP Basecase	2	2.09733663	3.093263969	3.336876414	3.012705211
First of Month Value by Index	2014 IRP Basecase	3	2.913109777	2.534421607	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	4	2.801794624	3.103768513	3.136845836	2.118521849
First of Month Value by Index	2014 IRP Basecase	5	2.118521849	3.305960386	2.118521849	2.858239155
First of Month Value by Index	2014 IRP Basecase	6	2.118521849	3.000405879	3.15269942	2.282057625
First of Month Value by Index	2014 IRP Basecase	7	2.118521849	2.84247009	3.598846102	2.998344081
First of Month Value by Index	2014 IRP Basecase	8	2.669211023	2.188817279	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	9	3.455397181	2.09733663	2.589176094	2.09733663
First of Month Value by Index	2014 IRP Basecase	10	3.283518344	2.62462263	2.263146196	3.449087801
First of Month Value by Index	2014 IRP Basecase	11	2.09733663	3.009761952	2.40733692	3.06923552
First of Month Value by Index	2014 IRP Basecase	12	2.174518591	2.09733663	2.33902674	2.661939666
First of Month Value by Index	2014 IRP Basecase	13	2.601248182	2.118521849	2.885080575	2.199195112
First of Month Value by Index	2014 IRP Basecase	14	2.09733663	2.09733663	2.462252254	2.09733663
First of Month Value by Index	2014 IRP Basecase	15	2.09733663	2.291375212	2.540482807	2.09733663
First of Month Value by Index	2014 IRP Basecase	16	2.139707067	2.139707067	3.276733214	3.012436477
First of Month Value by Index	2014 IRP Basecase	17	3.899240586	2.076151412	3.446355917	3.401379527
First of Month Value by Index	2014 IRP Basecase	18	3.422104954	3.077145968	2.118521849	3.640665608
First of Month Value by Index	2014 IRP Basecase	19	2.468910758	2.137536327	2.076151412	2.374618868
First of Month Value by Index	2014 IRP Basecase	20	3.232142528	2.739743848	2.74521783	3.404557706
First of Month Value by Index	2014 IRP Basecase	21	2.240780424	2.09733663	2.580919534	2.09733663
First of Month Value by Index	2014 IRP Basecase	22	2.960725955	2.62094335	3.898666435	3.466586648
First of Month Value by Index	2014 IRP Basecase	23	2.155155936	2.395075941	2.270617524	2.288299501
First of Month Value by Index	2014 IRP Basecase	24	2.259587129	3.313897786	2.573912274	2.118521849
First of Month Value by Index	2014 IRP Basecase	25	2.616245643	2.09733663	3.10656814	3.695276298
First of Month Value by Index	2014 IRP Basecase	26	2.698121188	2.118521849	3.45959546	2.717978828
First of Month Value by Index	2014 IRP Basecase	27	2.590714063	3.138021242	2.119568421	2.09733663
First of Month Value by Index	2014 IRP Basecase	28	2.850974273	2.545131592	2.139707067	2.86508899
First of Month Value by Index	2014 IRP Basecase	29	4.434421632	2.768602712	3.136182912	2.994049457
First of Month Value by Index	2014 IRP Basecase	30	3.188530857	2.876903088	3.521908353	2.118521849
First of Month Value by Index	2014 IRP Basecase	31	2.965386971	2.118521849	3.035389767	2.633442767
First of Month Value by Index	2014 IRP Basecase	32	2.950708086	2.09733663	3.190216837	2.659800311
First of Month Value by Index	2014 IRP Basecase	33	2.139707067	2.612953281	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	34	2.076151412	2.076151412	3.85112924	2.24878338
First of Month Value by Index	2014 IRP Basecase	35	2.076151412	2.076151412	3.136317338	2.489194749
First of Month Value by Index	2014 IRP Basecase	36	2.567963986	2.076151412	2.196997205	2.415228429
First of Month Value by Index	2014 IRP Basecase	37	3.014283885	3.313229393	2.139707067	2.478715185
First of Month Value by Index	2014 IRP Basecase	38	2.511780803	2.174142087	2.139707067	3.759657747
First of Month Value by Index	2014 IRP Basecase	39	2.076151412	2.076151412	2.554517499	2.786388918
First of Month Value by Index	2014 IRP Basecase	40	3.136979484	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	41	2.458777559	2.118521849	2.731149011	3.197463967
First of Month Value by Index	2014 IRP Basecase	42	2.076151412	2.352777794	2.076151412	2.422204367
First of Month Value by Index	2014 IRP Basecase	43	2.076151412	2.682249141	2.076151412	2.160097121
First of Month Value by Index	2014 IRP Basecase	44	3.60262463	3.076413876	2.599751215	2.139707067
First of Month Value by Index	2014 IRP Basecase	45	2.146775208	3.044509984	2.076151412	2.122754019
First of Month Value by Index	2014 IRP Basecase	46	2.721889836	2.51733362	2.801620844	2.076151412
First of Month Value by Index	2014 IRP Basecase	47	2.741642351	2.656396457	2.660033968	2.788986953
First of Month Value by Index	2014 IRP Basecase	48	2.877468972	2.771036103	2.09733663	4.339697027
First of Month Value by Index	2014 IRP Basecase	49	3.076484957	2.139707067	2.360011371	2.311261657
First of Month Value by Index	2014 IRP Basecase	50	3.183288561	2.768099845	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	51	3.205901834	2.688171066	2.147502777	2.211301626
First of Month Value by Index	2014 IRP Basecase	52	2.076151412	2.076151412	4.20752854	3.344894548

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	53	4.039371414	2.644790904	2.309972709	2.835048225
First of Month Value by Index	2014 IRP Basecase	54	3.47241275	3.091354289	3.464581084	2.67554479
First of Month Value by Index	2014 IRP Basecase	55	4.037844586	3.432916195	2.387594946	2.076151412
First of Month Value by Index	2014 IRP Basecase	56	3.080877124	3.420888524	2.595736067	2.137487818
First of Month Value by Index	2014 IRP Basecase	57	2.076151412	3.006820881	2.076151412	2.439533249
First of Month Value by Index	2014 IRP Basecase	58	2.260130948	3.905650551	3.300070979	2.118521849
First of Month Value by Index	2014 IRP Basecase	59	2.535382222	2.564718316	2.375068816	2.584275657
First of Month Value by Index	2014 IRP Basecase	60	3.237672681	2.441635439	3.54175845	2.16757648
First of Month Value by Index	2014 IRP Basecase	61	2.301265545	2.118521849	2.237236676	2.455465651
First of Month Value by Index	2014 IRP Basecase	62	2.434584184	2.477879577	3.424124661	3.145327054
First of Month Value by Index	2014 IRP Basecase	63	2.076151412	2.076151412	2.076151412	3.633804843
First of Month Value by Index	2014 IRP Basecase	64	2.65069801	2.09733663	2.936180474	2.977358099
First of Month Value by Index	2014 IRP Basecase	65	2.139707067	2.139707067	2.139707067	2.363056773
First of Month Value by Index	2014 IRP Basecase	66	3.023395559	2.88191268	2.887518312	2.866030003
First of Month Value by Index	2014 IRP Basecase	67	2.241464343	2.440400165	3.145804604	2.139707067
First of Month Value by Index	2014 IRP Basecase	68	2.139707067	2.648108627	2.579887663	3.714117701
First of Month Value by Index	2014 IRP Basecase	69	2.148924171	2.299960301	2.990375578	2.09733663
First of Month Value by Index	2014 IRP Basecase	70	2.853482528	3.241580692	2.875210774	4.44261342
First of Month Value by Index	2014 IRP Basecase	71	2.736940435	2.09733663	2.88255842	2.09733663
First of Month Value by Index	2014 IRP Basecase	72	2.885725366	3.172564283	2.460972808	2.09733663
First of Month Value by Index	2014 IRP Basecase	73	2.118521849	3.158052417	3.016683406	2.205882569
First of Month Value by Index	2014 IRP Basecase	74	2.348812155	2.808298395	2.359637855	2.118521849
First of Month Value by Index	2014 IRP Basecase	75	3.337477801	2.09733663	3.424020752	2.686233805
First of Month Value by Index	2014 IRP Basecase	76	3.22758482	3.059451184	2.93974041	2.076151412
First of Month Value by Index	2014 IRP Basecase	77	2.934341646	2.621845636	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	78	2.313879216	3.407169703	2.172330388	2.831545706
First of Month Value by Index	2014 IRP Basecase	79	3.81584635	2.118521849	3.271294372	2.24008255
First of Month Value by Index	2014 IRP Basecase	80	2.643472591	3.091627108	2.527671678	2.638836555
First of Month Value by Index	2014 IRP Basecase	81	2.972918708	2.09733663	2.155635596	3.387743892
First of Month Value by Index	2014 IRP Basecase	82	2.076151412	2.310209875	2.076151412	3.64898826
First of Month Value by Index	2014 IRP Basecase	83	2.869261977	3.088911852	2.487007869	2.535098591
First of Month Value by Index	2014 IRP Basecase	84	3.04926085	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	85	2.629060438	2.653697107	2.777803532	2.979623299
First of Month Value by Index	2014 IRP Basecase	86	2.982617444	3.518010367	2.118521849	2.775122411
First of Month Value by Index	2014 IRP Basecase	87	2.09733663	2.09733663	2.446878734	2.09733663
First of Month Value by Index	2014 IRP Basecase	88	2.775221241	2.118521849	3.051059833	3.836741792
First of Month Value by Index	2014 IRP Basecase	89	3.102125911	2.139707067	2.7921252	2.139707067
First of Month Value by Index	2014 IRP Basecase	90	2.791055254	2.255365309	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	91	3.021598317	4.654724237	2.370265727	2.143894621
First of Month Value by Index	2014 IRP Basecase	92	2.076151412	3.03976927	2.87974659	2.076151412
First of Month Value by Index	2014 IRP Basecase	93	2.118521849	3.090450169	2.971276379	3.165064482
First of Month Value by Index	2014 IRP Basecase	94	2.195939477	2.09733663	3.326250146	2.6297665
First of Month Value by Index	2014 IRP Basecase	95	2.139707067	2.139707067	2.139707067	2.568497295
First of Month Value by Index	2014 IRP Basecase	96	2.076151412	3.68041438	2.974681971	2.076151412
First of Month Value by Index	2014 IRP Basecase	97	2.118521849	2.357420488	2.522050806	2.977547301
First of Month Value by Index	2014 IRP Basecase	98	2.705737387	2.115300744	3.226339418	2.076151412
First of Month Value by Index	2014 IRP Basecase	99	3.010670698	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	100	3.045693347	2.076151412	3.37472877	2.08166019
First of Month Value by Index	2014 IRP Basecase	101	2.076151412	3.698795123	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	102	3.402925151	3.026251925	2.351714599	2.118521849
First of Month Value by Index	2014 IRP Basecase	103	2.958316116	2.950377906	2.75607829	2.139707067
First of Month Value by Index	2014 IRP Basecase	104	3.015781148	2.09733663	2.726565522	3.255248229
First of Month Value by Index	2014 IRP Basecase	105	3.348084943	2.449505709	2.076151412	2.67869905

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	106	2.09733663	2.542880852	3.105938751	2.09733663
First of Month Value by Index	2014 IRP Basecase	107	2.770812417	3.281401864	2.688582845	2.797860964
First of Month Value by Index	2014 IRP Basecase	108	2.866798232	2.223655056	2.971678683	3.452231485
First of Month Value by Index	2014 IRP Basecase	109	2.09733663	2.09733663	3.768214719	2.179048823
First of Month Value by Index	2014 IRP Basecase	110	2.947771828	2.685513741	2.33755161	3.337289117
First of Month Value by Index	2014 IRP Basecase	111	3.631582213	2.218683607	3.261127511	3.204090136
First of Month Value by Index	2014 IRP Basecase	112	3.233596636	2.626426235	2.610777849	2.139707067
First of Month Value by Index	2014 IRP Basecase	113	2.587126817	2.349601258	2.076151412	3.840720856
First of Month Value by Index	2014 IRP Basecase	114	3.878126162	2.076151412	2.249932259	3.080178194
First of Month Value by Index	2014 IRP Basecase	115	2.324399737	3.31456148	3.551320706	2.813262805
First of Month Value by Index	2014 IRP Basecase	116	2.645697847	2.139707067	2.295620413	2.229660417
First of Month Value by Index	2014 IRP Basecase	117	3.48953749	2.354341598	2.118521849	2.508012028
First of Month Value by Index	2014 IRP Basecase	118	3.656250819	3.275955051	2.813389921	3.304103321
First of Month Value by Index	2014 IRP Basecase	119	2.076151412	2.509195109	2.397352744	2.076151412
First of Month Value by Index	2014 IRP Basecase	120	2.09733663	2.599145471	2.989529504	3.447084449
First of Month Value by Index	2014 IRP Basecase	121	2.181343035	3.122058676	3.386358373	2.118521849
First of Month Value by Index	2014 IRP Basecase	122	2.076151412	3.77686543	2.405200695	3.330769756
First of Month Value by Index	2014 IRP Basecase	123	2.622360712	2.908325557	3.356943457	2.344348701
First of Month Value by Index	2014 IRP Basecase	124	3.402918828	3.301753491	2.458708792	2.974706425
First of Month Value by Index	2014 IRP Basecase	125	3.336126241	2.588151123	2.907241805	2.609286337
First of Month Value by Index	2014 IRP Basecase	126	3.185274934	2.139707067	2.459743028	2.139707067
First of Month Value by Index	2014 IRP Basecase	127	2.379646718	2.139707067	2.139707067	2.690132407
First of Month Value by Index	2014 IRP Basecase	128	2.09733663	2.677096333	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	129	2.675382317	2.969200101	3.54919493	2.831580916
First of Month Value by Index	2014 IRP Basecase	130	2.492059933	2.076151412	2.076151412	3.154282947
First of Month Value by Index	2014 IRP Basecase	131	2.076151412	2.076151412	2.20982099	2.437470943
First of Month Value by Index	2014 IRP Basecase	132	3.115784218	2.139707067	3.059196111	3.770684381
First of Month Value by Index	2014 IRP Basecase	133	2.076801998	2.28197415	2.076151412	2.246478857
First of Month Value by Index	2014 IRP Basecase	134	3.427168784	2.816346588	2.720794387	2.139707067
First of Month Value by Index	2014 IRP Basecase	135	2.93002864	2.490859171	2.118521849	3.285537713
First of Month Value by Index	2014 IRP Basecase	136	2.09733663	3.3897294	2.421361154	3.959652571
First of Month Value by Index	2014 IRP Basecase	137	3.034845948	2.118521849	2.594680769	2.932126131
First of Month Value by Index	2014 IRP Basecase	138	2.38989035	2.118521849	2.118521849	2.398851745
First of Month Value by Index	2014 IRP Basecase	139	2.118521849	2.118521849	3.484064617	3.763518848
First of Month Value by Index	2014 IRP Basecase	140	4.250418612	2.118521849	2.200141492	3.087914929
First of Month Value by Index	2014 IRP Basecase	141	2.257489228	2.674509606	2.09733663	2.692462853
First of Month Value by Index	2014 IRP Basecase	142	3.375303292	2.076151412	2.644553273	2.923781834
First of Month Value by Index	2014 IRP Basecase	143	2.243648857	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	144	2.09733663	2.733941171	2.857516216	3.866545042
First of Month Value by Index	2014 IRP Basecase	145	2.076151412	3.153715355	2.076151412	2.560531335
First of Month Value by Index	2014 IRP Basecase	146	2.09733663	2.107250003	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	147	2.139707067	2.451248418	2.631918126	2.139707067
First of Month Value by Index	2014 IRP Basecase	148	2.09733663	3.443798827	2.209082801	3.349782217
First of Month Value by Index	2014 IRP Basecase	149	3.503207851	2.8012265	3.145653237	2.076151412
First of Month Value by Index	2014 IRP Basecase	150	3.419075395	3.893610098	2.186561677	3.510680092
First of Month Value by Index	2014 IRP Basecase	151	2.490237736	2.664168367	2.118521849	2.775920292
First of Month Value by Index	2014 IRP Basecase	152	2.180107236	2.92914607	3.040213087	2.556921721
First of Month Value by Index	2014 IRP Basecase	153	2.444431852	2.659471782	2.811444827	3.550825915
First of Month Value by Index	2014 IRP Basecase	154	2.682957375	2.696166413	2.139707067	2.934116154
First of Month Value by Index	2014 IRP Basecase	155	2.70675092	2.373805207	3.542306337	2.139707067
First of Month Value by Index	2014 IRP Basecase	156	3.33293599	2.139707067	2.139707067	2.67864222
First of Month Value by Index	2014 IRP Basecase	157	3.602920535	2.124969218	2.118521849	2.178532519
First of Month Value by Index	2014 IRP Basecase	158	2.076151412	2.50446149	2.409262938	2.574116255

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	159	2.946651989	2.118521849	2.504996779	3.389288934
First of Month Value by Index	2014 IRP Basecase	160	2.219682133	2.139707067	2.546985972	2.270735666
First of Month Value by Index	2014 IRP Basecase	161	2.182467458	2.09733663	2.747622875	2.317857543
First of Month Value by Index	2014 IRP Basecase	162	2.701863941	2.572549359	2.700684545	2.118521849
First of Month Value by Index	2014 IRP Basecase	163	2.094559874	2.827046988	2.076151412	2.601410832
First of Month Value by Index	2014 IRP Basecase	164	2.875399457	2.214123244	2.09733663	3.225640956
First of Month Value by Index	2014 IRP Basecase	165	2.480073511	2.076151412	2.782333604	2.076151412
First of Month Value by Index	2014 IRP Basecase	166	3.990511018	3.116932726	2.348599577	2.139707067
First of Month Value by Index	2014 IRP Basecase	167	2.251032628	4.090758685	2.076151412	2.863275861
First of Month Value by Index	2014 IRP Basecase	168	2.076151412	3.403206711	2.507506522	2.076151412
First of Month Value by Index	2014 IRP Basecase	169	4.429344252	2.09733663	2.239172449	3.14404744
First of Month Value by Index	2014 IRP Basecase	170	2.139707067	2.139707067	2.278160329	4.305639716
First of Month Value by Index	2014 IRP Basecase	171	2.139707067	3.510688853	3.046714541	2.474200393
First of Month Value by Index	2014 IRP Basecase	172	2.076151412	2.219585718	2.653543008	2.557001869
First of Month Value by Index	2014 IRP Basecase	173	2.228783702	4.024075909	3.051449955	2.764212836
First of Month Value by Index	2014 IRP Basecase	174	2.28268694	2.076151412	3.495740716	3.648469178
First of Month Value by Index	2014 IRP Basecase	175	3.479193758	2.076151412	2.395664158	2.980031526
First of Month Value by Index	2014 IRP Basecase	176	3.848633798	2.291417215	2.09733663	2.858571976
First of Month Value by Index	2014 IRP Basecase	177	3.243055822	2.09733663	2.09733663	2.58515624
First of Month Value by Index	2014 IRP Basecase	178	2.698283946	2.892784708	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	179	2.109326352	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	180	2.366706659	2.118521849	2.231587357	2.308044761
First of Month Value by Index	2014 IRP Basecase	181	2.465964581	2.09733663	2.09733663	2.676019739
First of Month Value by Index	2014 IRP Basecase	182	2.09733663	2.09733663	2.09733663	2.349981871
First of Month Value by Index	2014 IRP Basecase	183	3.070080245	2.754822991	3.980347211	2.699326087
First of Month Value by Index	2014 IRP Basecase	184	2.851587639	2.139707067	2.413382667	2.403803998
First of Month Value by Index	2014 IRP Basecase	185	2.118521849	2.240598083	2.742631335	2.118521849
First of Month Value by Index	2014 IRP Basecase	186	2.118521849	2.182141085	2.761528621	3.149994805
First of Month Value by Index	2014 IRP Basecase	187	3.472515641	2.076151412	3.430639557	2.853476318
First of Month Value by Index	2014 IRP Basecase	188	2.139707067	2.139707067	3.208376722	4.157572243
First of Month Value by Index	2014 IRP Basecase	189	3.271740586	2.176010751	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	190	2.09733663	2.471641247	2.09733663	2.85608309
First of Month Value by Index	2014 IRP Basecase	191	3.584655893	2.09733663	2.508848022	2.09733663
First of Month Value by Index	2014 IRP Basecase	192	3.21497935	2.09733663	2.09733663	3.09489978
First of Month Value by Index	2014 IRP Basecase	193	2.806735113	3.339475694	2.53836505	2.076151412
First of Month Value by Index	2014 IRP Basecase	194	2.243924302	2.799068795	2.118521849	3.480441739
First of Month Value by Index	2014 IRP Basecase	195	3.383879704	2.118521849	2.896633781	2.118521849
First of Month Value by Index	2014 IRP Basecase	196	3.448861855	2.406838475	2.118521849	2.585175723
First of Month Value by Index	2014 IRP Basecase	197	2.184028221	3.065105325	2.273316556	3.176982339
First of Month Value by Index	2014 IRP Basecase	198	2.076151412	2.076151412	3.155078896	2.696207945
First of Month Value by Index	2014 IRP Basecase	199	2.613902831	2.417000312	2.805014773	2.558870714
First of Month Value by Index	2014 IRP Basecase	200	2.806180364	3.483158958	2.09733663	3.251130533
	average min		2.698090439	2.574417845	2.60848669	2.671887198
	Median Min Price		2.625710575	2.441017802	2.496002324	2.571306775
	Highest Minimum		4.434421632	4.654724237	4.20752854	4.44261342
	Absolute Min		2.076151412	2.076151412	2.076151412	2.076151412

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	0	4.879001836	4.479666015	4.424313142	4.574526699
First of Month Value by Index	2014 IRP Basecase	1	2.802831927	2.57478763	2.433097184	2.076151412
First of Month Value by Index	2014 IRP Basecase	2	2.958293421	2.897330721	3.024638928	2.304861065
First of Month Value by Index	2014 IRP Basecase	3	2.09733663	2.24023521	2.282195903	2.09733663
First of Month Value by Index	2014 IRP Basecase	4	3.358428978	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	5	2.118521849	2.417395802	2.502002576	2.150709194
First of Month Value by Index	2014 IRP Basecase	6	2.828918729	2.221263048	2.118521849	3.104580706
First of Month Value by Index	2014 IRP Basecase	7	2.118521849	2.803743617	2.118521849	3.245455397
First of Month Value by Index	2014 IRP Basecase	8	2.080435247	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	9	2.09733663	3.405892823	2.631800846	2.391844723
First of Month Value by Index	2014 IRP Basecase	10	3.367891764	2.118521849	3.239530633	2.983987599
First of Month Value by Index	2014 IRP Basecase	11	2.521473967	2.09733663	3.415337988	2.262243147
First of Month Value by Index	2014 IRP Basecase	12	4.090330742	2.09733663	2.769484133	2.829908452
First of Month Value by Index	2014 IRP Basecase	13	2.118521849	2.312267692	2.730146229	2.857031641
First of Month Value by Index	2014 IRP Basecase	14	2.910306196	2.369969464	2.128880574	3.25715673
First of Month Value by Index	2014 IRP Basecase	15	2.325086346	2.3658446	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	16	2.876315602	3.36457524	4.513013011	4.445769317
First of Month Value by Index	2014 IRP Basecase	17	2.754852249	2.518420129	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	18	3.297825327	2.630391993	2.173144334	2.118521849
First of Month Value by Index	2014 IRP Basecase	19	2.187799903	2.076151412	2.340300173	2.492765794
First of Month Value by Index	2014 IRP Basecase	20	2.861340553	2.550634034	3.652630544	2.09733663
First of Month Value by Index	2014 IRP Basecase	21	2.58417732	4.123419654	2.09733663	2.87758765
First of Month Value by Index	2014 IRP Basecase	22	2.307112693	3.837469128	2.984164045	2.118521849
First of Month Value by Index	2014 IRP Basecase	23	2.786050012	2.6019644	2.076151412	2.980052316
First of Month Value by Index	2014 IRP Basecase	24	2.903363666	2.575550633	2.655023454	2.118521849
First of Month Value by Index	2014 IRP Basecase	25	3.195285283	2.09733663	2.217507042	2.09733663
First of Month Value by Index	2014 IRP Basecase	26	2.909380021	2.427126961	2.677303193	2.569103264
First of Month Value by Index	2014 IRP Basecase	27	2.238256702	2.707654524	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	28	3.841109345	3.17949056	2.200460515	2.139707067
First of Month Value by Index	2014 IRP Basecase	29	2.874881751	2.139707067	2.579445367	3.865495
First of Month Value by Index	2014 IRP Basecase	30	2.118521849	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	31	2.805014773	2.989290759	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	32	3.595534184	2.708283746	3.351362023	2.271240772
First of Month Value by Index	2014 IRP Basecase	33	3.252433264	2.728454568	2.752875764	2.950620395
First of Month Value by Index	2014 IRP Basecase	34	2.915262673	3.239689051	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	35	3.698906001	3.051658674	2.642075668	3.084226578
First of Month Value by Index	2014 IRP Basecase	36	2.299905109	2.076151412	2.922556891	2.305815326
First of Month Value by Index	2014 IRP Basecase	37	3.491395815	2.800576958	2.706429869	2.369262017
First of Month Value by Index	2014 IRP Basecase	38	2.654470657	3.124136326	2.330975566	3.175510741
First of Month Value by Index	2014 IRP Basecase	39	2.794243798	2.653099989	2.388508373	2.076151412
First of Month Value by Index	2014 IRP Basecase	40	2.09733663	3.541772452	2.944681556	3.040403982
First of Month Value by Index	2014 IRP Basecase	41	2.921349761	2.713713469	3.409238502	2.977060053
First of Month Value by Index	2014 IRP Basecase	42	3.130628878	2.076151412	2.178858679	2.902480302
First of Month Value by Index	2014 IRP Basecase	43	3.886534774	3.693480217	2.326535241	3.782837686
First of Month Value by Index	2014 IRP Basecase	44	2.139707067	2.139707067	2.929337448	3.013598929
First of Month Value by Index	2014 IRP Basecase	45	3.639507163	2.529049941	3.332444482	2.076151412
First of Month Value by Index	2014 IRP Basecase	46	3.433220781	2.076151412	2.538032745	2.38875752
First of Month Value by Index	2014 IRP Basecase	47	2.139707067	2.139707067	2.628423286	2.704340141
First of Month Value by Index	2014 IRP Basecase	48	3.170348088	2.522620568	2.21982808	2.720930692
First of Month Value by Index	2014 IRP Basecase	49	2.139707067	3.223254618	2.457788829	2.684098401
First of Month Value by Index	2014 IRP Basecase	50	3.113622095	2.940109487	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	51	3.760620902	2.567405923	2.139707067	2.22624397
First of Month Value by Index	2014 IRP Basecase	52	3.66973606	2.879905648	2.076151412	2.076151412

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	53	3.693918108	2.118521849	2.732102294	2.881210874
First of Month Value by Index	2014 IRP Basecase	54	3.038518325	3.246994926	2.909281359	2.118521849
First of Month Value by Index	2014 IRP Basecase	55	3.15186771	2.730609634	2.258569063	2.95902798
First of Month Value by Index	2014 IRP Basecase	56	2.833621486	2.112442489	2.076151412	4.255307581
First of Month Value by Index	2014 IRP Basecase	57	3.253481538	2.076151412	2.390667533	3.673037004
First of Month Value by Index	2014 IRP Basecase	58	3.184145286	2.136981218	3.272035851	3.740638719
First of Month Value by Index	2014 IRP Basecase	59	2.076151412	2.872881367	2.125577625	2.076151412
First of Month Value by Index	2014 IRP Basecase	60	3.762307199	2.09733663	2.99698216	2.696958249
First of Month Value by Index	2014 IRP Basecase	61	3.259091614	2.890857178	3.443650285	2.639600548
First of Month Value by Index	2014 IRP Basecase	62	2.759078069	2.532163312	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	63	2.889102949	2.076151412	2.423948227	2.8804871
First of Month Value by Index	2014 IRP Basecase	64	2.09733663	2.850266578	2.09733663	2.994094906
First of Month Value by Index	2014 IRP Basecase	65	4.140054853	2.490162519	2.744773456	3.209025628
First of Month Value by Index	2014 IRP Basecase	66	2.724332791	2.076151412	2.076151412	3.569437264
First of Month Value by Index	2014 IRP Basecase	67	3.018506193	2.393226632	2.139707067	3.388661269
First of Month Value by Index	2014 IRP Basecase	68	3.70509526	2.93127022	3.57738329	3.474976939
First of Month Value by Index	2014 IRP Basecase	69	4.078676716	2.453030942	2.09733663	3.126814256
First of Month Value by Index	2014 IRP Basecase	70	2.09733663	2.353840877	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	71	3.470959218	2.346870763	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	72	2.09733663	2.664085855	3.241216993	2.09733663
First of Month Value by Index	2014 IRP Basecase	73	3.157028421	3.41447802	3.171045816	2.515440965
First of Month Value by Index	2014 IRP Basecase	74	2.118521849	2.118521849	2.7258243	2.118521849
First of Month Value by Index	2014 IRP Basecase	75	2.628039682	3.064831133	3.074150286	2.09733663
First of Month Value by Index	2014 IRP Basecase	76	2.570413871	2.076151412	2.481395473	2.755364402
First of Month Value by Index	2014 IRP Basecase	77	2.407847298	2.09733663	2.608108094	2.09733663
First of Month Value by Index	2014 IRP Basecase	78	3.288137696	3.195738027	2.825811326	3.696322451
First of Month Value by Index	2014 IRP Basecase	79	2.318905819	2.118521849	3.237433142	3.942590504
First of Month Value by Index	2014 IRP Basecase	80	2.172573048	2.139707067	2.57368956	2.139707067
First of Month Value by Index	2014 IRP Basecase	81	4.051557995	2.62464905	2.09733663	3.573903613
First of Month Value by Index	2014 IRP Basecase	82	2.733495608	2.076151412	2.076151412	2.453215187
First of Month Value by Index	2014 IRP Basecase	83	2.182083558	2.312147607	2.091542561	2.076151412
First of Month Value by Index	2014 IRP Basecase	84	2.139707067	3.009433758	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	85	2.868918886	2.09733663	2.494222568	2.09733663
First of Month Value by Index	2014 IRP Basecase	86	3.272615027	2.777897571	3.076694076	2.118521849
First of Month Value by Index	2014 IRP Basecase	87	3.151360083	2.794232645	2.09733663	2.651529916
First of Month Value by Index	2014 IRP Basecase	88	2.922204382	2.368281377	2.758209474	3.141979621
First of Month Value by Index	2014 IRP Basecase	89	4.07152015	3.804998156	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	90	2.834762346	3.767795934	2.139707067	2.722399306
First of Month Value by Index	2014 IRP Basecase	91	2.683411644	2.893335847	2.705239491	2.118521849
First of Month Value by Index	2014 IRP Basecase	92	2.792236766	2.076151412	3.186498086	2.79409134
First of Month Value by Index	2014 IRP Basecase	93	3.922330134	2.207422099	2.118521849	2.778222515
First of Month Value by Index	2014 IRP Basecase	94	2.09733663	2.450612063	2.09733663	2.242353396
First of Month Value by Index	2014 IRP Basecase	95	2.139707067	2.139707067	2.178849373	4.10176126
First of Month Value by Index	2014 IRP Basecase	96	3.643901711	3.473117553	2.994917618	2.843974431
First of Month Value by Index	2014 IRP Basecase	97	2.995547539	3.493979295	2.118521849	2.567253102
First of Month Value by Index	2014 IRP Basecase	98	3.630815085	2.342770849	3.399386355	2.540108911
First of Month Value by Index	2014 IRP Basecase	99	2.623726135	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	100	2.459263673	2.797281735	3.01479324	2.25912956
First of Month Value by Index	2014 IRP Basecase	101	2.131556976	2.076151412	3.082925736	3.182850977
First of Month Value by Index	2014 IRP Basecase	102	3.447844931	2.749587166	2.816935014	2.118521849
First of Month Value by Index	2014 IRP Basecase	103	2.989142194	2.139707067	2.139707067	3.349504509
First of Month Value by Index	2014 IRP Basecase	104	4.455253199	2.990557261	2.90190279	3.714166294
First of Month Value by Index	2014 IRP Basecase	105	3.031001293	2.893663816	2.364715706	2.689107435

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	106	3.923229032	2.457575176	2.765555121	2.588169339
First of Month Value by Index	2014 IRP Basecase	107	2.659863316	2.420906781	2.414013507	2.09733663
First of Month Value by Index	2014 IRP Basecase	108	3.138580447	2.098857569	2.990661668	2.076151412
First of Month Value by Index	2014 IRP Basecase	109	2.236865413	2.09733663	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	110	2.879139786	2.837381777	2.09733663	2.635478336
First of Month Value by Index	2014 IRP Basecase	111	3.227726557	2.916064131	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	112	3.29769511	2.139707067	4.288037301	2.139707067
First of Month Value by Index	2014 IRP Basecase	113	4.192005887	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	114	2.609369331	2.076151412	2.076151412	3.378223751
First of Month Value by Index	2014 IRP Basecase	115	3.292846774	2.118521849	3.294435803	3.350618863
First of Month Value by Index	2014 IRP Basecase	116	2.139707067	2.139707067	2.272611472	3.103003022
First of Month Value by Index	2014 IRP Basecase	117	2.860385809	2.118521849	2.502885314	2.769289406
First of Month Value by Index	2014 IRP Basecase	118	3.103874583	2.41709224	2.99152934	2.118521849
First of Month Value by Index	2014 IRP Basecase	119	3.320160734	2.076151412	2.076151412	3.055963463
First of Month Value by Index	2014 IRP Basecase	120	3.491037652	3.128834767	2.366830354	3.330584527
First of Month Value by Index	2014 IRP Basecase	121	2.118521849	3.191539203	2.726000915	2.118521849
First of Month Value by Index	2014 IRP Basecase	122	2.838188952	2.332044019	2.076151412	2.307739199
First of Month Value by Index	2014 IRP Basecase	123	3.215601749	2.139707067	2.139707067	2.293459265
First of Month Value by Index	2014 IRP Basecase	124	3.588153151	2.807231471	2.8921138	2.139707067
First of Month Value by Index	2014 IRP Basecase	125	2.076151412	2.322147622	2.116207241	2.076151412
First of Month Value by Index	2014 IRP Basecase	126	3.227227294	2.139707067	2.139707067	2.976888829
First of Month Value by Index	2014 IRP Basecase	127	2.821289392	2.559339326	2.290356728	2.616284024
First of Month Value by Index	2014 IRP Basecase	128	2.09733663	4.016078205	4.076970565	2.631675002
First of Month Value by Index	2014 IRP Basecase	129	2.566638569	2.799979649	3.008350349	2.444583549
First of Month Value by Index	2014 IRP Basecase	130	3.290346972	2.897594721	3.145722207	2.872874437
First of Month Value by Index	2014 IRP Basecase	131	2.523049965	2.076151412	2.313420895	2.978176952
First of Month Value by Index	2014 IRP Basecase	132	3.54284131	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	133	3.178629346	2.076151412	2.251766208	2.84976684
First of Month Value by Index	2014 IRP Basecase	134	2.188677844	2.375196035	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	135	2.118521849	3.008004528	3.213910532	2.227096053
First of Month Value by Index	2014 IRP Basecase	136	2.742624269	2.09733663	3.781560894	2.592545724
First of Month Value by Index	2014 IRP Basecase	137	2.118521849	4.096105364	2.118521849	4.195273354
First of Month Value by Index	2014 IRP Basecase	138	3.070522152	2.118521849	2.655665935	2.118521849
First of Month Value by Index	2014 IRP Basecase	139	3.09422828	2.118521849	2.451609925	3.58231468
First of Month Value by Index	2014 IRP Basecase	140	2.601551912	2.310078611	2.118521849	2.687034185
First of Month Value by Index	2014 IRP Basecase	141	2.947540808	2.856111092	2.872309518	3.523756199
First of Month Value by Index	2014 IRP Basecase	142	2.076151412	2.076151412	2.960425841	2.167688995
First of Month Value by Index	2014 IRP Basecase	143	3.6506015	2.709165763	2.118521849	3.465788598
First of Month Value by Index	2014 IRP Basecase	144	3.170697452	2.308496552	2.09733663	2.614399981
First of Month Value by Index	2014 IRP Basecase	145	2.524219468	2.531285329	3.535990252	2.862209976
First of Month Value by Index	2014 IRP Basecase	146	2.09733663	2.942891732	2.988103378	2.853852894
First of Month Value by Index	2014 IRP Basecase	147	2.293437839	2.264216681	2.561093888	2.139707067
First of Month Value by Index	2014 IRP Basecase	148	2.09733663	2.862291303	3.213336539	2.800699548
First of Month Value by Index	2014 IRP Basecase	149	2.937103747	2.076151412	2.076151412	2.832043448
First of Month Value by Index	2014 IRP Basecase	150	2.813029788	3.000871913	2.118521849	3.630765074
First of Month Value by Index	2014 IRP Basecase	151	2.118521849	2.118521849	3.486451359	2.118521849
First of Month Value by Index	2014 IRP Basecase	152	2.118521849	2.722604151	2.118521849	2.743951822
First of Month Value by Index	2014 IRP Basecase	153	3.434018299	2.09733663	2.24448575	2.09733663
First of Month Value by Index	2014 IRP Basecase	154	3.246548901	3.858455326	2.328315155	2.139707067
First of Month Value by Index	2014 IRP Basecase	155	2.645833376	2.139707067	2.139707067	2.164220939
First of Month Value by Index	2014 IRP Basecase	156	2.643187249	2.139707067	2.281533924	2.863227638
First of Month Value by Index	2014 IRP Basecase	157	2.708191266	2.118521849	3.709778763	2.43903306
First of Month Value by Index	2014 IRP Basecase	158	2.076151412	3.060828585	3.357157506	2.076151412

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	159	2.623485661	2.588530059	2.118521849	2.98617668
First of Month Value by Index	2014 IRP Basecase	160	2.139707067	2.139707067	2.139707067	2.811068619
First of Month Value by Index	2014 IRP Basecase	161	4.067679414	2.476570014	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	162	2.865773825	2.118521849	2.610181291	3.601642645
First of Month Value by Index	2014 IRP Basecase	163	2.242174397	2.774866469	2.605120146	2.601431622
First of Month Value by Index	2014 IRP Basecase	164	2.09733663	2.09733663	2.642727975	2.256601317
First of Month Value by Index	2014 IRP Basecase	165	3.745280252	2.076151412	2.320805036	2.486959525
First of Month Value by Index	2014 IRP Basecase	166	2.684169821	2.467595704	3.124457378	2.139707067
First of Month Value by Index	2014 IRP Basecase	167	2.583078434	2.382189952	2.089258828	2.401159076
First of Month Value by Index	2014 IRP Basecase	168	2.076151412	3.689937057	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	169	3.146941694	2.09733663	2.731382446	2.781858389
First of Month Value by Index	2014 IRP Basecase	170	2.139707067	2.747447981	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	171	4.206678209	3.183919647	2.139707067	2.798865248
First of Month Value by Index	2014 IRP Basecase	172	3.309246797	2.788077504	3.991407966	2.955671597
First of Month Value by Index	2014 IRP Basecase	173	2.604283924	2.270499707	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	174	3.330001526	2.076151412	2.076151412	2.548773434
First of Month Value by Index	2014 IRP Basecase	175	3.606683183	2.076151412	2.387968666	2.388660666
First of Month Value by Index	2014 IRP Basecase	176	2.58939978	3.352292105	2.09733663	3.133099476
First of Month Value by Index	2014 IRP Basecase	177	3.948872289	3.56648596	2.263194064	2.755159205
First of Month Value by Index	2014 IRP Basecase	178	2.612698159	2.272935906	3.052987565	2.687439638
First of Month Value by Index	2014 IRP Basecase	179	2.921995559	2.742736112	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	180	4.434051949	2.483952671	2.118521849	2.934279856
First of Month Value by Index	2014 IRP Basecase	181	2.443334255	2.399255208	2.316354577	2.09733663
First of Month Value by Index	2014 IRP Basecase	182	2.378232858	3.48495545	2.945275942	2.243206471
First of Month Value by Index	2014 IRP Basecase	183	2.80135442	2.139707067	3.343042661	2.139707067
First of Month Value by Index	2014 IRP Basecase	184	3.884167361	2.139707067	3.932118356	2.280649501
First of Month Value by Index	2014 IRP Basecase	185	2.118521849	2.620364343	2.594998642	2.118521849
First of Month Value by Index	2014 IRP Basecase	186	2.118521849	2.303539483	2.118521849	2.464116245
First of Month Value by Index	2014 IRP Basecase	187	2.38983017	2.076151412	2.463561202	2.323254922
First of Month Value by Index	2014 IRP Basecase	188	3.077376692	3.143044375	2.374596953	2.764166313
First of Month Value by Index	2014 IRP Basecase	189	2.150426933	4.285191367	3.086555917	2.139707067
First of Month Value by Index	2014 IRP Basecase	190	2.211103145	3.039306552	2.09733663	4.128579109
First of Month Value by Index	2014 IRP Basecase	191	2.71613477	2.09733663	2.09733663	3.43996749
First of Month Value by Index	2014 IRP Basecase	192	4.382461791	2.672978638	3.446532401	3.572757179
First of Month Value by Index	2014 IRP Basecase	193	2.659951353	2.076151412	2.076151412	2.943574297
First of Month Value by Index	2014 IRP Basecase	194	2.376572006	2.366290125	3.083671121	2.118521849
First of Month Value by Index	2014 IRP Basecase	195	3.346035632	2.118521849	2.118521849	2.226742992
First of Month Value by Index	2014 IRP Basecase	196	2.824964172	2.122681137	3.265997946	2.290291683
First of Month Value by Index	2014 IRP Basecase	197	2.457270501	2.076151412	2.076151412	3.403033464
First of Month Value by Index	2014 IRP Basecase	198	2.524759341	2.076151412	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	199	2.626712881	3.891011552	2.254326228	2.118521849
First of Month Value by Index	2014 IRP Basecase	200	3.242825135	2.43372841	2.355281004	2.642616132
	average min		2.876194416	2.571320053	2.561234061	2.629687681
	Median Min Price		2.831270108	2.424016871	2.36577303	2.527774938
	Highest Minimum		4.455253199	4.285191367	4.513013011	4.445769317
	Absolute Min		2.076151412	2.076151412	2.076151412	2.076151412

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	0	4.659796872	4.5813513	4.704427801	4.843779068
First of Month Value by Index	2014 IRP Basecase	1	2.978384519	2.476911001	2.076151412	3.249135499
First of Month Value by Index	2014 IRP Basecase	2	2.420592087	2.09733663	2.242835939	4.490803329
First of Month Value by Index	2014 IRP Basecase	3	2.635373327	2.09733663	2.09733663	2.390914807
First of Month Value by Index	2014 IRP Basecase	4	3.648073331	3.0414701	2.118521849	2.495442235
First of Month Value by Index	2014 IRP Basecase	5	3.691905809	2.118521849	2.343056934	3.087265377
First of Month Value by Index	2014 IRP Basecase	6	2.118521849	3.530099983	3.517000513	2.758124786
First of Month Value by Index	2014 IRP Basecase	7	2.118521849	3.059011375	2.213947084	2.853874798
First of Month Value by Index	2014 IRP Basecase	8	2.076151412	2.076151412	2.590960869	2.215322838
First of Month Value by Index	2014 IRP Basecase	9	3.528419276	3.446301714	2.09733663	2.435532235
First of Month Value by Index	2014 IRP Basecase	10	2.118521849	2.141317121	2.714815082	4.608011034
First of Month Value by Index	2014 IRP Basecase	11	3.619821322	2.09733663	2.09733663	3.136895477
First of Month Value by Index	2014 IRP Basecase	12	2.09733663	2.220443301	2.655053393	2.361237528
First of Month Value by Index	2014 IRP Basecase	13	4.805902192	3.648158187	3.133364385	2.711178398
First of Month Value by Index	2014 IRP Basecase	14	2.494544263	2.799804469	3.353829907	2.945010251
First of Month Value by Index	2014 IRP Basecase	15	2.548145148	2.940745543	2.725712613	2.09733663
First of Month Value by Index	2014 IRP Basecase	16	2.968686703	2.925414766	2.971618001	3.681786693
First of Month Value by Index	2014 IRP Basecase	17	2.793897632	2.076151412	2.515914804	3.548191172
First of Month Value by Index	2014 IRP Basecase	18	3.377149818	2.118521849	2.657819828	2.953353589
First of Month Value by Index	2014 IRP Basecase	19	2.076151412	2.076151412	2.076151412	3.198089833
First of Month Value by Index	2014 IRP Basecase	20	3.230087014	3.062425921	2.237354789	3.421993574
First of Month Value by Index	2014 IRP Basecase	21	3.400607691	2.09733663	2.890989829	3.036789664
First of Month Value by Index	2014 IRP Basecase	22	2.789118761	3.806976545	3.433495519	2.118521849
First of Month Value by Index	2014 IRP Basecase	23	3.290886844	2.076151412	2.076151412	3.102718199
First of Month Value by Index	2014 IRP Basecase	24	2.118521849	2.721608609	2.118521849	3.677323044
First of Month Value by Index	2014 IRP Basecase	25	3.763425964	2.09733663	2.742770948	3.912127054
First of Month Value by Index	2014 IRP Basecase	26	2.903956648	3.422260187	2.118521849	2.953071072
First of Month Value by Index	2014 IRP Basecase	27	3.005986619	3.079393415	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	28	2.393590366	4.110006238	3.94663983	2.139707067
First of Month Value by Index	2014 IRP Basecase	29	2.139707067	2.534376016	2.397983913	3.094308775
First of Month Value by Index	2014 IRP Basecase	30	3.57898139	2.118521849	2.118521849	3.182196293
First of Month Value by Index	2014 IRP Basecase	31	2.123712205	3.387149352	2.118521849	3.71855664
First of Month Value by Index	2014 IRP Basecase	32	2.09733663	2.81590522	3.105204687	2.737639496
First of Month Value by Index	2014 IRP Basecase	33	3.072876184	3.089280437	4.072504391	2.401707128
First of Month Value by Index	2014 IRP Basecase	34	3.176407817	2.076151412	2.076151412	2.992101107
First of Month Value by Index	2014 IRP Basecase	35	3.238401739	2.292437973	3.112047168	2.944633252
First of Month Value by Index	2014 IRP Basecase	36	3.820249922	3.092302884	2.292251031	3.585582618
First of Month Value by Index	2014 IRP Basecase	37	2.139707067	3.857870359	2.627439045	2.866458562
First of Month Value by Index	2014 IRP Basecase	38	2.603310333	3.392213245	3.403732	3.498463717
First of Month Value by Index	2014 IRP Basecase	39	2.714374191	3.348493148	3.171688223	2.506281579
First of Month Value by Index	2014 IRP Basecase	40	3.755267246	3.052435708	3.394238797	2.14743504
First of Month Value by Index	2014 IRP Basecase	41	3.760616235	3.956678612	2.378499785	3.151089514
First of Month Value by Index	2014 IRP Basecase	42	2.171910461	2.076151412	2.076151412	2.276160951
First of Month Value by Index	2014 IRP Basecase	43	2.076151412	3.471103591	3.442812757	2.9476438
First of Month Value by Index	2014 IRP Basecase	44	2.139707067	2.139707067	2.909958705	2.942446837
First of Month Value by Index	2014 IRP Basecase	45	2.076151412	2.076151412	2.6023104	2.076151412
First of Month Value by Index	2014 IRP Basecase	46	2.076151412	3.175840225	2.076151412	2.168976142
First of Month Value by Index	2014 IRP Basecase	47	2.827615712	3.143186876	2.139707067	2.99524762
First of Month Value by Index	2014 IRP Basecase	48	2.288145261	2.10471928	3.043263567	2.838185848
First of Month Value by Index	2014 IRP Basecase	49	2.393968384	3.60870863	3.697378113	2.204119451
First of Month Value by Index	2014 IRP Basecase	50	2.697971838	2.137654513	2.146840821	2.842541231
First of Month Value by Index	2014 IRP Basecase	51	2.660904107	3.847507255	3.352728291	3.616561476
First of Month Value by Index	2014 IRP Basecase	52	2.076151412	2.935816435	2.076151412	2.57410256

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	53	2.118521849	2.405108357	2.118521849	3.088331801
First of Month Value by Index	2014 IRP Basecase	54	2.932133202	2.118521849	3.266979514	3.421956456
First of Month Value by Index	2014 IRP Basecase	55	3.933504007	2.076151412	2.076151412	2.13984085
First of Month Value by Index	2014 IRP Basecase	56	2.801295799	2.638995986	2.114414871	3.423359199
First of Month Value by Index	2014 IRP Basecase	57	2.686671409	2.076151412	2.076151412	2.549216288
First of Month Value by Index	2014 IRP Basecase	58	2.479390822	2.118521849	2.747334443	3.274041415
First of Month Value by Index	2014 IRP Basecase	59	3.756387567	2.666774997	2.499236508	3.173155052
First of Month Value by Index	2014 IRP Basecase	60	2.09733663	3.408822081	2.09733663	3.458011745
First of Month Value by Index	2014 IRP Basecase	61	2.559852282	2.118521849	3.182231649	3.128463617
First of Month Value by Index	2014 IRP Basecase	62	3.539605197	2.118521849	2.592816463	4.066799418
First of Month Value by Index	2014 IRP Basecase	63	2.976543805	3.652642299	2.076151412	3.433193062
First of Month Value by Index	2014 IRP Basecase	64	3.283429376	2.09733663	2.303574785	2.934621337
First of Month Value by Index	2014 IRP Basecase	65	3.443580518	2.791861285	2.823036812	3.636646261
First of Month Value by Index	2014 IRP Basecase	66	3.249398505	2.555631728	2.667003354	2.589860499
First of Month Value by Index	2014 IRP Basecase	67	2.622931395	2.822701646	2.382435515	2.91592163
First of Month Value by Index	2014 IRP Basecase	68	3.815311606	2.139707067	2.546222964	3.417882428
First of Month Value by Index	2014 IRP Basecase	69	2.887536192	2.501039002	3.344448081	2.413279443
First of Month Value by Index	2014 IRP Basecase	70	2.25246962	2.286565288	3.967203236	2.09733663
First of Month Value by Index	2014 IRP Basecase	71	2.30612651	2.545593424	3.08884558	2.469236369
First of Month Value by Index	2014 IRP Basecase	72	2.09733663	2.09733663	2.806760748	2.414558722
First of Month Value by Index	2014 IRP Basecase	73	2.118521849	2.47561288	2.118521849	3.524761466
First of Month Value by Index	2014 IRP Basecase	74	2.28560255	2.99753896	2.710684078	2.118521849
First of Month Value by Index	2014 IRP Basecase	75	3.856316808	3.119760302	2.869268251	3.401411762
First of Month Value by Index	2014 IRP Basecase	76	2.909705551	2.561368698	2.549763091	2.602704909
First of Month Value by Index	2014 IRP Basecase	77	3.233743669	2.452213037	3.075031031	3.323977946
First of Month Value by Index	2014 IRP Basecase	78	2.139707067	2.139707067	3.923659457	3.333478105
First of Month Value by Index	2014 IRP Basecase	79	2.313228046	3.8295883	2.118521849	3.858619138
First of Month Value by Index	2014 IRP Basecase	80	4.405442963	3.209945591	3.344697234	3.682129171
First of Month Value by Index	2014 IRP Basecase	81	2.508582332	2.09733663	2.62150994	2.898728844
First of Month Value by Index	2014 IRP Basecase	82	2.452592321	2.595770551	2.569057425	2.076151412
First of Month Value by Index	2014 IRP Basecase	83	2.076151412	3.415006026	2.48374834	3.789419114
First of Month Value by Index	2014 IRP Basecase	84	2.139707067	2.483358363	2.139707067	2.283452583
First of Month Value by Index	2014 IRP Basecase	85	2.580849694	2.196344846	2.455827355	2.373443936
First of Month Value by Index	2014 IRP Basecase	86	3.057641557	3.072040131	2.42215548	2.118521849
First of Month Value by Index	2014 IRP Basecase	87	4.123258974	3.219069044	3.428942519	2.799322093
First of Month Value by Index	2014 IRP Basecase	88	2.118521849	3.850109972	2.185777938	2.595627148
First of Month Value by Index	2014 IRP Basecase	89	3.304706215	2.549553707	2.139707067	3.085921296
First of Month Value by Index	2014 IRP Basecase	90	2.314428473	2.402070862	2.139707067	3.264315582
First of Month Value by Index	2014 IRP Basecase	91	2.118521849	3.362101356	2.92699908	2.118521849
First of Month Value by Index	2014 IRP Basecase	92	2.076151412	2.595203124	2.613902313	2.902494162
First of Month Value by Index	2014 IRP Basecase	93	2.420877253	3.755228219	2.59538706	2.571617122
First of Month Value by Index	2014 IRP Basecase	94	3.677812761	2.09733663	2.614546827	2.497333676
First of Month Value by Index	2014 IRP Basecase	95	2.42195584	2.139707067	2.450848974	2.84970469
First of Month Value by Index	2014 IRP Basecase	96	2.38943566	3.022523381	3.06188028	3.951788061
First of Month Value by Index	2014 IRP Basecase	97	2.118521849	2.925481101	2.346870233	3.05611617
First of Month Value by Index	2014 IRP Basecase	98	2.813081254	2.345303728	2.905574009	3.01692468
First of Month Value by Index	2014 IRP Basecase	99	2.09733663	2.51370695	3.383912888	2.09733663
First of Month Value by Index	2014 IRP Basecase	100	2.54905723	2.282403144	2.076151412	2.076151412
First of Month Value by Index	2014 IRP Basecase	101	3.066371848	2.23302544	2.405678198	3.252920876
First of Month Value by Index	2014 IRP Basecase	102	2.118521849	2.748005377	2.118521849	3.317435807
First of Month Value by Index	2014 IRP Basecase	103	2.139707067	2.46467869	2.139707067	2.224960102
First of Month Value by Index	2014 IRP Basecase	104	3.741676383	2.798902723	3.361939621	2.832530016
First of Month Value by Index	2014 IRP Basecase	105	2.888957751	2.076151412	2.759170569	2.992751528

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	106	2.472067785	4.112772384	2.473815605	2.809676005
First of Month Value by Index	2014 IRP Basecase	107	2.886326752	2.344724408	3.084916568	2.152146955
First of Month Value by Index	2014 IRP Basecase	108	3.14692636	3.041997729	2.963027854	2.254977228
First of Month Value by Index	2014 IRP Basecase	109	2.09733663	2.09733663	2.462447938	3.650407348
First of Month Value by Index	2014 IRP Basecase	110	3.183882946	2.76407299	2.713345358	2.499333185
First of Month Value by Index	2014 IRP Basecase	111	3.066870747	2.139707067	2.491724586	2.139707067
First of Month Value by Index	2014 IRP Basecase	112	2.139707067	3.346644631	2.139707067	2.457710267
First of Month Value by Index	2014 IRP Basecase	113	2.722263555	2.076151412	2.32768412	2.506420012
First of Month Value by Index	2014 IRP Basecase	114	2.689079715	2.076151412	2.29662479	3.136082051
First of Month Value by Index	2014 IRP Basecase	115	2.118521849	2.914401001	2.346820902	2.210472704
First of Month Value by Index	2014 IRP Basecase	116	2.139707067	2.139707067	2.139707067	3.249123777
First of Month Value by Index	2014 IRP Basecase	117	2.741571982	2.393407158	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	118	3.642586316	2.570190734	3.751330232	3.748265316
First of Month Value by Index	2014 IRP Basecase	119	2.076151412	2.823828873	2.076151412	3.903233861
First of Month Value by Index	2014 IRP Basecase	120	2.681528724	2.178112074	3.869250613	3.665109642
First of Month Value by Index	2014 IRP Basecase	121	2.487271818	2.700783375	3.653249544	2.118521849
First of Month Value by Index	2014 IRP Basecase	122	3.664580212	2.225572	2.451630385	2.72658897
First of Month Value by Index	2014 IRP Basecase	123	2.539917901	3.692877605	3.471924225	2.139707067
First of Month Value by Index	2014 IRP Basecase	124	2.615749051	2.161460709	2.294671712	3.838270893
First of Month Value by Index	2014 IRP Basecase	125	2.286866991	2.67087882	3.417137466	2.887573751
First of Month Value by Index	2014 IRP Basecase	126	2.139707067	2.139707067	2.892099516	2.217620973
First of Month Value by Index	2014 IRP Basecase	127	3.244138291	2.927197555	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	128	2.318263078	2.09733663	2.09733663	3.083742131
First of Month Value by Index	2014 IRP Basecase	129	2.118521849	2.48434816	2.670672138	3.005419788
First of Month Value by Index	2014 IRP Basecase	130	2.862126817	2.580822256	4.088689614	2.076151412
First of Month Value by Index	2014 IRP Basecase	131	2.076151412	3.201577884	2.345968009	2.854894968
First of Month Value by Index	2014 IRP Basecase	132	3.476046885	2.139707067	3.325682395	3.669362259
First of Month Value by Index	2014 IRP Basecase	133	2.208063105	3.544073489	2.284783896	2.419325322
First of Month Value by Index	2014 IRP Basecase	134	2.139707067	2.336909584	2.30417216	2.172672866
First of Month Value by Index	2014 IRP Basecase	135	2.118521849	3.570012924	3.971098737	3.248237797
First of Month Value by Index	2014 IRP Basecase	136	2.857767905	4.02555804	3.854401306	3.44640639
First of Month Value by Index	2014 IRP Basecase	137	2.118521849	2.118521849	2.939399498	3.837095021
First of Month Value by Index	2014 IRP Basecase	138	2.875646411	2.833261535	2.658568379	2.118521849
First of Month Value by Index	2014 IRP Basecase	139	2.357505176	2.167487944	3.1616891	2.54103278
First of Month Value by Index	2014 IRP Basecase	140	2.118521849	2.221199574	3.042599829	2.835126009
First of Month Value by Index	2014 IRP Basecase	141	2.09733663	4.458161789	2.988432074	2.431952753
First of Month Value by Index	2014 IRP Basecase	142	2.279365041	2.246651939	2.885995713	2.277911742
First of Month Value by Index	2014 IRP Basecase	143	2.118521849	2.118521849	3.424046876	2.421004369
First of Month Value by Index	2014 IRP Basecase	144	3.784972527	3.157449286	2.922295919	2.09733663
First of Month Value by Index	2014 IRP Basecase	145	2.172242601	2.076151412	3.432736348	2.818105763
First of Month Value by Index	2014 IRP Basecase	146	2.811710517	2.09733663	2.957118651	2.864745186
First of Month Value by Index	2014 IRP Basecase	147	2.291119906	2.139707067	4.036550327	3.07076486
First of Month Value by Index	2014 IRP Basecase	148	2.196960067	3.2621135	2.816289587	2.406232322
First of Month Value by Index	2014 IRP Basecase	149	2.076151412	3.431476756	3.329184788	2.295372292
First of Month Value by Index	2014 IRP Basecase	150	2.118521849	2.584384744	2.530842657	2.732292883
First of Month Value by Index	2014 IRP Basecase	151	2.508315758	2.118521849	2.871585785	2.29955664
First of Month Value by Index	2014 IRP Basecase	152	2.118521849	2.118521849	2.808192494	3.418538647
First of Month Value by Index	2014 IRP Basecase	153	2.09733663	2.983615317	2.09733663	2.834019148
First of Month Value by Index	2014 IRP Basecase	154	3.174718995	2.139707067	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	155	2.737027741	2.536957864	2.433346208	2.139707067
First of Month Value by Index	2014 IRP Basecase	156	2.248275811	3.844019557	2.593817028	2.139707067
First of Month Value by Index	2014 IRP Basecase	157	2.288469638	2.118521849	4.134775435	2.434555898
First of Month Value by Index	2014 IRP Basecase	158	2.994121669	3.288762334	2.076151412	3.5154157

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	159	2.118521849	2.118521849	2.437098041	2.506521998
First of Month Value by Index	2014 IRP Basecase	160	2.456619064	2.826132207	2.479307124	2.139707067
First of Month Value by Index	2014 IRP Basecase	161	2.09733663	2.09733663	2.648887184	2.849777201
First of Month Value by Index	2014 IRP Basecase	162	3.374522988	2.743443359	2.20563541	3.259995397
First of Month Value by Index	2014 IRP Basecase	163	2.076151412	2.076151412	3.392272315	3.488238931
First of Month Value by Index	2014 IRP Basecase	164	2.326680319	2.09733663	3.129715511	4.11299607
First of Month Value by Index	2014 IRP Basecase	165	2.682131497	2.445318893	3.418459428	2.787786778
First of Month Value by Index	2014 IRP Basecase	166	3.252925384	2.901464095	2.856537584	2.993300563
First of Month Value by Index	2014 IRP Basecase	167	2.468073394	2.316189061	3.16543877	3.389074989
First of Month Value by Index	2014 IRP Basecase	168	2.241807607	2.981727043	2.586524741	2.963221562
First of Month Value by Index	2014 IRP Basecase	169	2.662345202	2.09733663	3.315749555	3.366379012
First of Month Value by Index	2014 IRP Basecase	170	2.548526613	3.750193179	3.331944607	2.592911349
First of Month Value by Index	2014 IRP Basecase	171	2.139707067	2.139707067	2.139707067	3.321210456
First of Month Value by Index	2014 IRP Basecase	172	2.076151412	3.083534577	2.602725699	2.984142279
First of Month Value by Index	2014 IRP Basecase	173	2.677795562	2.828796688	2.484225355	3.811804556
First of Month Value by Index	2014 IRP Basecase	174	3.847101646	2.076151412	4.277397802	2.076151412
First of Month Value by Index	2014 IRP Basecase	175	2.727523187	2.489181054	2.21271373	2.076151412
First of Month Value by Index	2014 IRP Basecase	176	2.09733663	2.329323052	2.218206104	2.898064786
First of Month Value by Index	2014 IRP Basecase	177	3.078799362	3.076464157	2.907467947	2.708388588
First of Month Value by Index	2014 IRP Basecase	178	2.797793888	3.052876686	2.75515667	2.076151412
First of Month Value by Index	2014 IRP Basecase	179	2.912753079	3.071451716	2.904622363	3.02266042
First of Month Value by Index	2014 IRP Basecase	180	3.472017092	3.390489376	2.954504532	2.974722473
First of Month Value by Index	2014 IRP Basecase	181	3.395909611	3.635831065	3.606216458	2.359273022
First of Month Value by Index	2014 IRP Basecase	182	3.648967221	3.033825403	3.307415821	2.857138849
First of Month Value by Index	2014 IRP Basecase	183	3.414516145	3.978927985	2.579381258	2.618580701
First of Month Value by Index	2014 IRP Basecase	184	3.072048728	3.090849645	2.536266106	2.341096351
First of Month Value by Index	2014 IRP Basecase	185	2.401076183	2.40671136	2.895864016	3.1589067
First of Month Value by Index	2014 IRP Basecase	186	2.779401744	3.268533186	3.817449184	3.469114816
First of Month Value by Index	2014 IRP Basecase	187	2.076151412	2.864355276	2.396819967	3.99326947
First of Month Value by Index	2014 IRP Basecase	188	2.292097006	2.139707067	2.931384493	2.532421817
First of Month Value by Index	2014 IRP Basecase	189	2.199440563	2.643272784	2.139707067	2.139707067
First of Month Value by Index	2014 IRP Basecase	190	2.766617714	3.031944904	2.09733663	2.09733663
First of Month Value by Index	2014 IRP Basecase	191	3.80514897	2.989480833	2.642944827	2.547543929
First of Month Value by Index	2014 IRP Basecase	192	3.795235431	3.160888922	2.611247037	3.628441414
First of Month Value by Index	2014 IRP Basecase	193	3.001851811	2.7401531	4.272899635	2.540738707
First of Month Value by Index	2014 IRP Basecase	194	3.96003278	2.118521849	2.118521849	2.118521849
First of Month Value by Index	2014 IRP Basecase	195	3.711480933	2.926342457	2.693050876	2.221368949
First of Month Value by Index	2014 IRP Basecase	196	2.118521849	2.118521849	2.722992569	2.318552757
First of Month Value by Index	2014 IRP Basecase	197	3.60973531	2.392639915	3.266533515	2.076151412
First of Month Value by Index	2014 IRP Basecase	198	3.591098491	2.076151412	3.47262619	2.076151412
First of Month Value by Index	2014 IRP Basecase	199	2.118521849	2.787769989	2.770313401	2.118521849
First of Month Value by Index	2014 IRP Basecase	200	2.09733663	2.665386303	2.09733663	3.7729198
	average min		2.718318719	2.700458641	2.738632935	2.842598508
	Median Min Price		2.570350988	2.575506495	2.624474492	2.846122961
	Highest Minimum		4.805902192	4.458161789	4.277397802	4.608011034
	Absolute Min		2.076151412	2.076151412	2.076151412	2.076151412

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	0	4.930235012
First of Month Value by Index	2014 IRP Basecase	1	4.125271252
First of Month Value by Index	2014 IRP Basecase	2	2.548256992
First of Month Value by Index	2014 IRP Basecase	3	3.582817398
First of Month Value by Index	2014 IRP Basecase	4	3.097151769
First of Month Value by Index	2014 IRP Basecase	5	2.961432414
First of Month Value by Index	2014 IRP Basecase	6	2.762842037
First of Month Value by Index	2014 IRP Basecase	7	3.385291949
First of Month Value by Index	2014 IRP Basecase	8	2.234402511
First of Month Value by Index	2014 IRP Basecase	9	2.09733663
First of Month Value by Index	2014 IRP Basecase	10	2.118521849
First of Month Value by Index	2014 IRP Basecase	11	2.697077092
First of Month Value by Index	2014 IRP Basecase	12	2.288921329
First of Month Value by Index	2014 IRP Basecase	13	3.872975621
First of Month Value by Index	2014 IRP Basecase	14	3.173990409
First of Month Value by Index	2014 IRP Basecase	15	2.287089668
First of Month Value by Index	2014 IRP Basecase	16	3.019355076
First of Month Value by Index	2014 IRP Basecase	17	4.254830078
First of Month Value by Index	2014 IRP Basecase	18	2.561794372
First of Month Value by Index	2014 IRP Basecase	19	4.248352599
First of Month Value by Index	2014 IRP Basecase	20	4.12200053
First of Month Value by Index	2014 IRP Basecase	21	2.611561564
First of Month Value by Index	2014 IRP Basecase	22	3.086898341
First of Month Value by Index	2014 IRP Basecase	23	2.076151412
First of Month Value by Index	2014 IRP Basecase	24	2.829052747
First of Month Value by Index	2014 IRP Basecase	25	2.570635628
First of Month Value by Index	2014 IRP Basecase	26	2.383294652
First of Month Value by Index	2014 IRP Basecase	27	3.513108928
First of Month Value by Index	2014 IRP Basecase	28	2.139707067
First of Month Value by Index	2014 IRP Basecase	29	3.371500641
First of Month Value by Index	2014 IRP Basecase	30	2.873810223
First of Month Value by Index	2014 IRP Basecase	31	2.964129958
First of Month Value by Index	2014 IRP Basecase	32	2.83125057
First of Month Value by Index	2014 IRP Basecase	33	2.991745638
First of Month Value by Index	2014 IRP Basecase	34	3.127009159
First of Month Value by Index	2014 IRP Basecase	35	2.937975595
First of Month Value by Index	2014 IRP Basecase	36	2.076151412
First of Month Value by Index	2014 IRP Basecase	37	3.097732534
First of Month Value by Index	2014 IRP Basecase	38	4.061021347
First of Month Value by Index	2014 IRP Basecase	39	2.3294557
First of Month Value by Index	2014 IRP Basecase	40	3.192090335
First of Month Value by Index	2014 IRP Basecase	41	2.118521849
First of Month Value by Index	2014 IRP Basecase	42	2.076151412
First of Month Value by Index	2014 IRP Basecase	43	2.839988417
First of Month Value by Index	2014 IRP Basecase	44	2.139707067
First of Month Value by Index	2014 IRP Basecase	45	3.517395013
First of Month Value by Index	2014 IRP Basecase	46	3.386431396
First of Month Value by Index	2014 IRP Basecase	47	3.507693276
First of Month Value by Index	2014 IRP Basecase	48	2.29014477
First of Month Value by Index	2014 IRP Basecase	49	4.221763224
First of Month Value by Index	2014 IRP Basecase	50	2.09733663
First of Month Value by Index	2014 IRP Basecase	51	3.057284765
First of Month Value by Index	2014 IRP Basecase	52	3.472785247

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	53	3.836988952
First of Month Value by Index	2014 IRP Basecase	54	2.163688788
First of Month Value by Index	2014 IRP Basecase	55	2.935595009
First of Month Value by Index	2014 IRP Basecase	56	2.777814318
First of Month Value by Index	2014 IRP Basecase	57	3.334901298
First of Month Value by Index	2014 IRP Basecase	58	3.355788005
First of Month Value by Index	2014 IRP Basecase	59	2.391691839
First of Month Value by Index	2014 IRP Basecase	60	2.416138861
First of Month Value by Index	2014 IRP Basecase	61	3.798544826
First of Month Value by Index	2014 IRP Basecase	62	2.425008425
First of Month Value by Index	2014 IRP Basecase	63	2.912044558
First of Month Value by Index	2014 IRP Basecase	64	3.146536325
First of Month Value by Index	2014 IRP Basecase	65	3.433523842
First of Month Value by Index	2014 IRP Basecase	66	2.372397504
First of Month Value by Index	2014 IRP Basecase	67	3.125120568
First of Month Value by Index	2014 IRP Basecase	68	4.124328074
First of Month Value by Index	2014 IRP Basecase	69	2.672258574
First of Month Value by Index	2014 IRP Basecase	70	3.010601025
First of Month Value by Index	2014 IRP Basecase	71	2.615085208
First of Month Value by Index	2014 IRP Basecase	72	3.591786854
First of Month Value by Index	2014 IRP Basecase	73	2.22117836
First of Month Value by Index	2014 IRP Basecase	74	3.054251696
First of Month Value by Index	2014 IRP Basecase	75	4.27244244
First of Month Value by Index	2014 IRP Basecase	76	3.586738262
First of Month Value by Index	2014 IRP Basecase	77	2.09733663
First of Month Value by Index	2014 IRP Basecase	78	4.071078023
First of Month Value by Index	2014 IRP Basecase	79	2.118521849
First of Month Value by Index	2014 IRP Basecase	80	2.594444677
First of Month Value by Index	2014 IRP Basecase	81	4.026278103
First of Month Value by Index	2014 IRP Basecase	82	3.372292744
First of Month Value by Index	2014 IRP Basecase	83	2.076151412
First of Month Value by Index	2014 IRP Basecase	84	2.724660103
First of Month Value by Index	2014 IRP Basecase	85	2.09733663
First of Month Value by Index	2014 IRP Basecase	86	2.118521849
First of Month Value by Index	2014 IRP Basecase	87	3.211798404
First of Month Value by Index	2014 IRP Basecase	88	2.217838167
First of Month Value by Index	2014 IRP Basecase	89	3.40023716
First of Month Value by Index	2014 IRP Basecase	90	2.946961629
First of Month Value by Index	2014 IRP Basecase	91	2.118521849
First of Month Value by Index	2014 IRP Basecase	92	4.181036841
First of Month Value by Index	2014 IRP Basecase	93	3.107320678
First of Month Value by Index	2014 IRP Basecase	94	3.72751947
First of Month Value by Index	2014 IRP Basecase	95	3.889488182
First of Month Value by Index	2014 IRP Basecase	96	2.974149029
First of Month Value by Index	2014 IRP Basecase	97	4.687773274
First of Month Value by Index	2014 IRP Basecase	98	3.741806061
First of Month Value by Index	2014 IRP Basecase	99	2.919443668
First of Month Value by Index	2014 IRP Basecase	100	2.31836901
First of Month Value by Index	2014 IRP Basecase	101	2.730672003
First of Month Value by Index	2014 IRP Basecase	102	2.288257834
First of Month Value by Index	2014 IRP Basecase	103	3.744801277
First of Month Value by Index	2014 IRP Basecase	104	2.435762922
First of Month Value by Index	2014 IRP Basecase	105	3.546225719

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	106	2.393159005
First of Month Value by Index	2014 IRP Basecase	107	3.688229344
First of Month Value by Index	2014 IRP Basecase	108	4.421558923
First of Month Value by Index	2014 IRP Basecase	109	3.681692769
First of Month Value by Index	2014 IRP Basecase	110	2.47549342
First of Month Value by Index	2014 IRP Basecase	111	2.750286773
First of Month Value by Index	2014 IRP Basecase	112	2.611448351
First of Month Value by Index	2014 IRP Basecase	113	3.832935275
First of Month Value by Index	2014 IRP Basecase	114	3.107016058
First of Month Value by Index	2014 IRP Basecase	115	2.118521849
First of Month Value by Index	2014 IRP Basecase	116	2.139707067
First of Month Value by Index	2014 IRP Basecase	117	3.272798545
First of Month Value by Index	2014 IRP Basecase	118	3.596084916
First of Month Value by Index	2014 IRP Basecase	119	2.076151412
First of Month Value by Index	2014 IRP Basecase	120	2.870415018
First of Month Value by Index	2014 IRP Basecase	121	3.464870672
First of Month Value by Index	2014 IRP Basecase	122	3.512688949
First of Month Value by Index	2014 IRP Basecase	123	2.160547888
First of Month Value by Index	2014 IRP Basecase	124	3.932838682
First of Month Value by Index	2014 IRP Basecase	125	3.229488234
First of Month Value by Index	2014 IRP Basecase	126	4.081498264
First of Month Value by Index	2014 IRP Basecase	127	3.505410884
First of Month Value by Index	2014 IRP Basecase	128	2.225253224
First of Month Value by Index	2014 IRP Basecase	129	2.765885571
First of Month Value by Index	2014 IRP Basecase	130	2.897407613
First of Month Value by Index	2014 IRP Basecase	131	2.650774676
First of Month Value by Index	2014 IRP Basecase	132	2.920471792
First of Month Value by Index	2014 IRP Basecase	133	2.309116435
First of Month Value by Index	2014 IRP Basecase	134	2.195817337
First of Month Value by Index	2014 IRP Basecase	135	3.968711658
First of Month Value by Index	2014 IRP Basecase	136	3.38945671
First of Month Value by Index	2014 IRP Basecase	137	2.606332636
First of Month Value by Index	2014 IRP Basecase	138	2.118521849
First of Month Value by Index	2014 IRP Basecase	139	4.046313102
First of Month Value by Index	2014 IRP Basecase	140	2.877863778
First of Month Value by Index	2014 IRP Basecase	141	3.783637076
First of Month Value by Index	2014 IRP Basecase	142	2.542628095
First of Month Value by Index	2014 IRP Basecase	143	2.277467491
First of Month Value by Index	2014 IRP Basecase	144	2.581555756
First of Month Value by Index	2014 IRP Basecase	145	2.657937556
First of Month Value by Index	2014 IRP Basecase	146	2.09733663
First of Month Value by Index	2014 IRP Basecase	147	2.558290806
First of Month Value by Index	2014 IRP Basecase	148	3.338372546
First of Month Value by Index	2014 IRP Basecase	149	2.541015573
First of Month Value by Index	2014 IRP Basecase	150	3.024980769
First of Month Value by Index	2014 IRP Basecase	151	2.118521849
First of Month Value by Index	2014 IRP Basecase	152	2.867602942
First of Month Value by Index	2014 IRP Basecase	153	3.064712122
First of Month Value by Index	2014 IRP Basecase	154	3.786803631
First of Month Value by Index	2014 IRP Basecase	155	3.236364007
First of Month Value by Index	2014 IRP Basecase	156	2.139707067
First of Month Value by Index	2014 IRP Basecase	157	3.500137076
First of Month Value by Index	2014 IRP Basecase	158	2.790174625

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	159	2.118521849
First of Month Value by Index	2014 IRP Basecase	160	2.139707067
First of Month Value by Index	2014 IRP Basecase	161	2.778425754
First of Month Value by Index	2014 IRP Basecase	162	2.848515067
First of Month Value by Index	2014 IRP Basecase	163	2.490724277
First of Month Value by Index	2014 IRP Basecase	164	3.964315648
First of Month Value by Index	2014 IRP Basecase	165	3.209418575
First of Month Value by Index	2014 IRP Basecase	166	3.456703852
First of Month Value by Index	2014 IRP Basecase	167	3.043049754
First of Month Value by Index	2014 IRP Basecase	168	2.203391855
First of Month Value by Index	2014 IRP Basecase	169	3.793207919
First of Month Value by Index	2014 IRP Basecase	170	2.813750456
First of Month Value by Index	2014 IRP Basecase	171	2.880231142
First of Month Value by Index	2014 IRP Basecase	172	2.493160303
First of Month Value by Index	2014 IRP Basecase	173	2.193590437
First of Month Value by Index	2014 IRP Basecase	174	2.488426684
First of Month Value by Index	2014 IRP Basecase	175	3.333752584
First of Month Value by Index	2014 IRP Basecase	176	2.805586311
First of Month Value by Index	2014 IRP Basecase	177	2.612820009
First of Month Value by Index	2014 IRP Basecase	178	3.984141468
First of Month Value by Index	2014 IRP Basecase	179	2.451541811
First of Month Value by Index	2014 IRP Basecase	180	2.131967477
First of Month Value by Index	2014 IRP Basecase	181	3.45659962
First of Month Value by Index	2014 IRP Basecase	182	4.036862701
First of Month Value by Index	2014 IRP Basecase	183	2.139707067
First of Month Value by Index	2014 IRP Basecase	184	3.466339828
First of Month Value by Index	2014 IRP Basecase	185	3.281307711
First of Month Value by Index	2014 IRP Basecase	186	3.667839381
First of Month Value by Index	2014 IRP Basecase	187	3.373143802
First of Month Value by Index	2014 IRP Basecase	188	3.569566154
First of Month Value by Index	2014 IRP Basecase	189	3.194054886
First of Month Value by Index	2014 IRP Basecase	190	3.744353952
First of Month Value by Index	2014 IRP Basecase	191	2.441425754
First of Month Value by Index	2014 IRP Basecase	192	2.09733663
First of Month Value by Index	2014 IRP Basecase	193	2.77407745
First of Month Value by Index	2014 IRP Basecase	194	2.538081005
First of Month Value by Index	2014 IRP Basecase	195	2.118521849
First of Month Value by Index	2014 IRP Basecase	196	2.93846743
First of Month Value by Index	2014 IRP Basecase	197	4.048336129
First of Month Value by Index	2014 IRP Basecase	198	3.172961345
First of Month Value by Index	2014 IRP Basecase	199	3.732369304
First of Month Value by Index	2014 IRP Basecase	200	2.09733663

average min	2.976069551
Median Min Price	2.91995773
Highest Minimum	4.687773274
Absolute Min	2.076151412

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	0	$ 3.3045098	$ 3.6783774	$ 4.1346972	$ 4.4882115
First of Month Value by Index	2014 IRP Basecase	1	$ 3.6401381	$ 3.5175236	$ 4.2785171	$ 4.8191956
First of Month Value by Index	2014 IRP Basecase	2	$ 4.1502584	$ 4.1288475	$ 5.1475976	$ 5.4939209
First of Month Value by Index	2014 IRP Basecase	3	$ 3.2093410	$ 3.6984079	$ 3.8950690	$ 4.3489085
First of Month Value by Index	2014 IRP Basecase	4	$ 3.7386257	$ 3.5253687	$ 4.3777569	$ 4.3815330
First of Month Value by Index	2014 IRP Basecase	5	$ 3.3649240	$ 3.9437657	$ 4.1739159	$ 4.3514720
First of Month Value by Index	2014 IRP Basecase	6	$ 3.3731081	$ 3.8030152	$ 4.3238506	$ 4.8759338
First of Month Value by Index	2014 IRP Basecase	7	$ 4.0501286	$ 3.5387753	$ 4.4826246	$ 4.9463869
First of Month Value by Index	2014 IRP Basecase	8	$ 3.0630678	$ 3.9870903	$ 3.6357842	$ 4.8590210
First of Month Value by Index	2014 IRP Basecase	9	$ 3.3692224	$ 3.9631841	$ 4.3570763	$ 4.2754268
First of Month Value by Index	2014 IRP Basecase	10	$ 3.0345591	$ 4.1977629	$ 4.4251083	$ 4.4092968
First of Month Value by Index	2014 IRP Basecase	11	$ 3.7024442	$ 3.8327729	$ 3.9885092	$ 5.1499041
First of Month Value by Index	2014 IRP Basecase	12	$ 3.3980682	$ 3.2904919	$ 4.1111000	$ 3.7255138
First of Month Value by Index	2014 IRP Basecase	13	$ 3.7055829	$ 3.9566881	$ 4.7691340	$ 3.9713208
First of Month Value by Index	2014 IRP Basecase	14	$ 2.9803974	$ 3.0426051	$ 3.6684781	$ 4.1440589
First of Month Value by Index	2014 IRP Basecase	15	$ 3.2908363	$ 3.7488596	$ 4.1605037	$ 4.6147484
First of Month Value by Index	2014 IRP Basecase	16	$ 3.6125889	$ 3.5811343	$ 4.3118846	$ 3.9073058
First of Month Value by Index	2014 IRP Basecase	17	$ 3.8132301	$ 4.1560535	$ 4.9637181	$ 4.5177341
First of Month Value by Index	2014 IRP Basecase	18	$ 3.7403671	$ 3.9402796	$ 4.4824109	$ 4.5675537
First of Month Value by Index	2014 IRP Basecase	19	$ 3.3745178	$ 4.3580245	$ 4.1565513	$ 4.4326117
First of Month Value by Index	2014 IRP Basecase	20	$ 2.8191540	$ 3.7978090	$ 4.7009594	$ 4.8342624
First of Month Value by Index	2014 IRP Basecase	21	$ 3.5826954	$ 3.9746065	$ 3.7426906	$ 4.6532565
First of Month Value by Index	2014 IRP Basecase	22	$ 3.5206491	$ 4.0580424	$ 3.8915952	$ 4.2558729
First of Month Value by Index	2014 IRP Basecase	23	$ 3.3949629	$ 3.7813802	$ 4.3664689	$ 4.8547308
First of Month Value by Index	2014 IRP Basecase	24	$ 3.6570278	$ 4.1516560	$ 3.5447400	$ 4.8726294
First of Month Value by Index	2014 IRP Basecase	25	$ 4.1042806	$ 3.2284943	$ 3.3167069	$ 4.3471392
First of Month Value by Index	2014 IRP Basecase	26	$ 3.6666852	$ 3.9591874	$ 3.9580073	$ 4.5342394
First of Month Value by Index	2014 IRP Basecase	27	$ 3.7444362	$ 3.9207336	$ 4.6718937	$ 4.8553690
First of Month Value by Index	2014 IRP Basecase	28	$ 3.5809505	$ 4.3553503	$ 4.1329714	$ 4.4207433
First of Month Value by Index	2014 IRP Basecase	29	$ 3.9344233	$ 3.7115371	$ 3.7767305	$ 4.3902830
First of Month Value by Index	2014 IRP Basecase	30	$ 3.6201216	$ 4.5539916	$ 5.0548223	$ 5.7706423
First of Month Value by Index	2014 IRP Basecase	31	$ 3.2472283	$ 3.3722420	$ 4.1052735	$ 4.8062075
First of Month Value by Index	2014 IRP Basecase	32	$ 3.1679029	$ 3.4076867	$ 4.2796486	$ 4.6792652
First of Month Value by Index	2014 IRP Basecase	33	$ 3.7959199	$ 4.3128044	$ 3.9340226	$ 4.0761252
First of Month Value by Index	2014 IRP Basecase	34	$ 4.5606198	$ 3.5691183	$ 3.7071064	$ 4.6698944
First of Month Value by Index	2014 IRP Basecase	35	$ 3.8234269	$ 3.9023382	$ 4.6087761	$ 4.7462451
First of Month Value by Index	2014 IRP Basecase	36	$ 3.9776017	$ 3.5005876	$ 4.3184272	$ 4.4250754
First of Month Value by Index	2014 IRP Basecase	37	$ 3.4970673	$ 3.5571384	$ 4.6776014	$ 4.1768903
First of Month Value by Index	2014 IRP Basecase	38	$ 3.6500556	$ 3.6886735	$ 3.8428858	$ 4.2642229
First of Month Value by Index	2014 IRP Basecase	39	$ 3.3717146	$ 3.8594813	$ 4.2836894	$ 4.7977066
First of Month Value by Index	2014 IRP Basecase	40	$ 3.6706608	$ 3.7400318	$ 3.9547152	$ 4.1335835
First of Month Value by Index	2014 IRP Basecase	41	$ 3.1296047	$ 3.4765325	$ 4.0235282	$ 4.4387737
First of Month Value by Index	2014 IRP Basecase	42	$ 4.1547096	$ 4.1564937	$ 4.2651155	$ 5.4254329
First of Month Value by Index	2014 IRP Basecase	43	$ 3.2756053	$ 3.2896097	$ 4.3206943	$ 4.7208460
First of Month Value by Index	2014 IRP Basecase	44	$ 3.6496366	$ 4.1030529	$ 3.6472872	$ 4.4753803
First of Month Value by Index	2014 IRP Basecase	45	$ 3.7622987	$ 3.8117023	$ 4.1673435	$ 4.4881247
First of Month Value by Index	2014 IRP Basecase	46	$ 3.3052575	$ 3.8454412	$ 4.1152221	$ 5.0529479
First of Month Value by Index	2014 IRP Basecase	47	$ 3.9522619	$ 4.1654627	$ 5.0665926	$ 4.0920921
First of Month Value by Index	2014 IRP Basecase	48	$ 3.5899260	$ 4.0707923	$ 4.4643777	$ 4.7437816
First of Month Value by Index	2014 IRP Basecase	49	$ 3.9140473	$ 3.6701607	$ 4.7840437	$ 4.5745619
First of Month Value by Index	2014 IRP Basecase	50	$ 3.6019900	$ 3.7416354	$ 3.9330548	$ 4.2577935
First of Month Value by Index	2014 IRP Basecase	51	$ 3.9589155	$ 3.8940446	$ 4.3437082	$ 4.5677286
First of Month Value by Index	2014 IRP Basecase	52	$ 3.1951473	$ 3.9180609	$ 4.2117188	$ 5.1780655

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	53	$ 4.1065887	$ 3.3913449	$ 4.5381396	$ 4.3383314
First of Month Value by Index	2014 IRP Basecase	54	$ 3.4498216	$ 3.9855180	$ 3.4834871	$ 4.6274230
First of Month Value by Index	2014 IRP Basecase	55	$ 3.4328460	$ 3.7431493	$ 5.0205219	$ 5.2401028
First of Month Value by Index	2014 IRP Basecase	56	$ 3.9320501	$ 3.2406876	$ 3.8779642	$ 4.4839958
First of Month Value by Index	2014 IRP Basecase	57	$ 3.4395073	$ 4.1004098	$ 3.7957240	$ 5.0600142
First of Month Value by Index	2014 IRP Basecase	58	$ 3.2839884	$ 3.8789355	$ 4.4063707	$ 4.2653287
First of Month Value by Index	2014 IRP Basecase	59	$ 3.1178406	$ 3.2085311	$ 4.7800007	$ 4.8039932
First of Month Value by Index	2014 IRP Basecase	60	$ 3.3318242	$ 2.9166980	$ 4.7587215	$ 4.1995274
First of Month Value by Index	2014 IRP Basecase	61	$ 3.2827656	$ 4.2260997	$ 4.8705267	$ 4.8817665
First of Month Value by Index	2014 IRP Basecase	62	$ 3.8947551	$ 3.6926197	$ 3.9685394	$ 4.7499966
First of Month Value by Index	2014 IRP Basecase	63	$ 3.5008556	$ 3.5843498	$ 4.5433092	$ 5.0471026
First of Month Value by Index	2014 IRP Basecase	64	$ 4.2581322	$ 3.7612596	$ 4.0248246	$ 4.6103202
First of Month Value by Index	2014 IRP Basecase	65	$ 3.9948472	$ 3.6202555	$ 3.7839891	$ 4.7449626
First of Month Value by Index	2014 IRP Basecase	66	$ 3.8732940	$ 4.0314843	$ 3.9446346	$ 4.7108257
First of Month Value by Index	2014 IRP Basecase	67	$ 3.1547697	$ 3.9552653	$ 4.4235464	$ 4.2779150
First of Month Value by Index	2014 IRP Basecase	68	$ 3.1470987	$ 3.8765188	$ 4.3066023	$ 4.5990423
First of Month Value by Index	2014 IRP Basecase	69	$ 3.4190910	$ 4.3094749	$ 4.1727278	$ 4.4385475
First of Month Value by Index	2014 IRP Basecase	70	$ 3.6529875	$ 3.7804013	$ 4.6630304	$ 4.3567666
First of Month Value by Index	2014 IRP Basecase	71	$ 3.8926228	$ 4.5236361	$ 4.9401853	$ 4.9774605
First of Month Value by Index	2014 IRP Basecase	72	$ 3.3957516	$ 3.3897704	$ 4.6174018	$ 4.5833825
First of Month Value by Index	2014 IRP Basecase	73	$ 3.5616876	$ 3.6308296	$ 4.0286194	$ 4.4911087
First of Month Value by Index	2014 IRP Basecase	74	$ 3.6996959	$ 3.8995360	$ 3.5279034	$ 4.7666123
First of Month Value by Index	2014 IRP Basecase	75	$ 3.3488404	$ 3.9923631	$ 3.5676826	$ 4.0257365
First of Month Value by Index	2014 IRP Basecase	76	$ 3.2130135	$ 3.9320094	$ 3.5005375	$ 4.1890040
First of Month Value by Index	2014 IRP Basecase	77	$ 3.0053215	$ 3.3817557	$ 4.3777306	$ 4.2872650
First of Month Value by Index	2014 IRP Basecase	78	$ 4.0016922	$ 4.3702715	$ 4.2766398	$ 4.0889965
First of Month Value by Index	2014 IRP Basecase	79	$ 3.8762366	$ 3.9028407	$ 3.6176696	$ 4.4065344
First of Month Value by Index	2014 IRP Basecase	80	$ 2.9634014	$ 3.7878502	$ 4.3046287	$ 4.2783918
First of Month Value by Index	2014 IRP Basecase	81	$ 3.5474909	$ 4.1158248	$ 4.5824889	$ 4.6406057
First of Month Value by Index	2014 IRP Basecase	82	$ 3.1230956	$ 3.9134625	$ 3.8613098	$ 4.0154565
First of Month Value by Index	2014 IRP Basecase	83	$ 3.2008174	$ 3.2995936	$ 3.8711869	$ 4.3391141
First of Month Value by Index	2014 IRP Basecase	84	$ 3.5383517	$ 3.6602317	$ 4.9148904	$ 5.1315270
First of Month Value by Index	2014 IRP Basecase	85	$ 3.3037400	$ 3.8827915	$ 4.3981606	$ 4.3513976
First of Month Value by Index	2014 IRP Basecase	86	$ 3.9622173	$ 3.6222173	$ 4.5051719	$ 4.4183354
First of Month Value by Index	2014 IRP Basecase	87	$ 3.6047640	$ 3.5635399	$ 4.7144726	$ 5.3706140
First of Month Value by Index	2014 IRP Basecase	88	$ 3.4205652	$ 3.2271984	$ 3.8223298	$ 4.0250277
First of Month Value by Index	2014 IRP Basecase	89	$ 3.5875016	$ 4.4232747	$ 4.0111118	$ 4.5658546
First of Month Value by Index	2014 IRP Basecase	90	$ 3.2176136	$ 4.1933615	$ 4.3083399	$ 5.1195485
First of Month Value by Index	2014 IRP Basecase	91	$ 3.3647822	$ 3.9471309	$ 3.8369589	$ 4.3079585
First of Month Value by Index	2014 IRP Basecase	92	$ 3.7967874	$ 3.7937958	$ 4.0940697	$ 4.5585338
First of Month Value by Index	2014 IRP Basecase	93	$ 3.4888331	$ 3.5648761	$ 4.1151469	$ 5.4584975
First of Month Value by Index	2014 IRP Basecase	94	$ 4.0646649	$ 3.2556537	$ 4.1290119	$ 4.4779525
First of Month Value by Index	2014 IRP Basecase	95	$ 3.6343092	$ 3.6583116	$ 4.3423470	$ 4.4599102
First of Month Value by Index	2014 IRP Basecase	96	$ 3.6075168	$ 3.1911432	$ 4.2162255	$ 4.3931639
First of Month Value by Index	2014 IRP Basecase	97	$ 3.6799942	$ 3.7621384	$ 4.0090899	$ 4.1789132
First of Month Value by Index	2014 IRP Basecase	98	$ 3.0372111	$ 3.8244834	$ 3.5597384	$ 3.9605640
First of Month Value by Index	2014 IRP Basecase	99	$ 3.4589130	$ 3.7000151	$ 4.4050795	$ 4.4891287
First of Month Value by Index	2014 IRP Basecase	100	$ 3.2752849	$ 3.5021344	$ 3.9350726	$ 4.7610401
First of Month Value by Index	2014 IRP Basecase	101	$ 3.6645980	$ 4.4346165	$ 3.6359017	$ 4.7849691
First of Month Value by Index	2014 IRP Basecase	102	$ 3.3317192	$ 4.0726213	$ 5.0756293	$ 4.5679250
First of Month Value by Index	2014 IRP Basecase	103	$ 3.7261760	$ 3.6807257	$ 4.5286968	$ 4.6005468
First of Month Value by Index	2014 IRP Basecase	104	$ 3.8312178	$ 3.7606949	$ 4.0389659	$ 4.4995128
First of Month Value by Index	2014 IRP Basecase	105	$ 3.2748505	$ 4.0536873	$ 3.6001782	$ 4.3039900

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	106	$ 3.6010746	$ 3.8212908	$ 4.1289078	$ 4.6491856
First of Month Value by Index	2014 IRP Basecase	107	$ 3.3744807	$ 3.3340456	$ 3.9394188	$ 4.6704909
First of Month Value by Index	2014 IRP Basecase	108	$ 3.4658731	$ 3.2055169	$ 4.0217297	$ 4.6615841
First of Month Value by Index	2014 IRP Basecase	109	$ 3.4088804	$ 3.5557877	$ 4.2598703	$ 4.9388584
First of Month Value by Index	2014 IRP Basecase	110	$ 2.8345145	$ 3.9609414	$ 4.1103164	$ 4.7115668
First of Month Value by Index	2014 IRP Basecase	111	$ 3.0116966	$ 3.9393215	$ 4.4905395	$ 4.1143091
First of Month Value by Index	2014 IRP Basecase	112	$ 4.2850654	$ 3.6497760	$ 3.8502333	$ 4.8847620
First of Month Value by Index	2014 IRP Basecase	113	$ 3.1485850	$ 4.4462233	$ 4.1700232	$ 4.5726776
First of Month Value by Index	2014 IRP Basecase	114	$ 3.2043488	$ 3.3593642	$ 4.5656798	$ 4.6190267
First of Month Value by Index	2014 IRP Basecase	115	$ 3.1482707	$ 3.5803834	$ 4.1013985	$ 4.0016637
First of Month Value by Index	2014 IRP Basecase	116	$ 2.8133478	$ 2.9766039	$ 4.3736753	$ 4.6629784
First of Month Value by Index	2014 IRP Basecase	117	$ 3.9669403	$ 3.5961653	$ 4.4746488	$ 4.3835317
First of Month Value by Index	2014 IRP Basecase	118	$ 2.9157228	$ 3.6472814	$ 4.1929572	$ 4.1529943
First of Month Value by Index	2014 IRP Basecase	119	$ 4.1727594	$ 3.3180970	$ 4.1994540	$ 4.0360160
First of Month Value by Index	2014 IRP Basecase	120	$ 3.6791225	$ 3.7865192	$ 5.2271637	$ 5.1190256
First of Month Value by Index	2014 IRP Basecase	121	$ 3.9233907	$ 3.8565194	$ 3.3268775	$ 4.8094068
First of Month Value by Index	2014 IRP Basecase	122	$ 3.6180062	$ 4.0502617	$ 4.0190043	$ 4.4589383
First of Month Value by Index	2014 IRP Basecase	123	$ 3.2944934	$ 3.2449779	$ 4.6385902	$ 5.2055127
First of Month Value by Index	2014 IRP Basecase	124	$ 2.8765750	$ 3.4839207	$ 3.8107502	$ 4.4882218
First of Month Value by Index	2014 IRP Basecase	125	$ 3.4114128	$ 3.9706811	$ 4.2034857	$ 4.5581657
First of Month Value by Index	2014 IRP Basecase	126	$ 4.1463187	$ 3.6107091	$ 4.5828625	$ 3.8635451
First of Month Value by Index	2014 IRP Basecase	127	$ 3.5836293	$ 3.7958833	$ 4.3031185	$ 4.5713768
First of Month Value by Index	2014 IRP Basecase	128	$ 3.0650255	$ 3.8775874	$ 3.7011743	$ 4.4406028
First of Month Value by Index	2014 IRP Basecase	129	$ 3.2760433	$ 3.3594423	$ 3.8903568	$ 4.9826319
First of Month Value by Index	2014 IRP Basecase	130	$ 3.1620287	$ 3.1050697	$ 4.4730989	$ 4.5791432
First of Month Value by Index	2014 IRP Basecase	131	$ 3.4494589	$ 3.3436822	$ 5.0818292	$ 4.5225151
First of Month Value by Index	2014 IRP Basecase	132	$ 3.3351994	$ 3.6957304	$ 3.9965678	$ 4.2184704
First of Month Value by Index	2014 IRP Basecase	133	$ 3.5325772	$ 3.8700286	$ 4.2323674	$ 4.5187738
First of Month Value by Index	2014 IRP Basecase	134	$ 3.7156773	$ 4.1587347	$ 3.9560943	$ 4.2953663
First of Month Value by Index	2014 IRP Basecase	135	$ 3.3466665	$ 4.2070221	$ 3.7309560	$ 4.3262135
First of Month Value by Index	2014 IRP Basecase	136	$ 3.3155495	$ 3.7564854	$ 3.9235700	$ 5.0316196
First of Month Value by Index	2014 IRP Basecase	137	$ 3.4654695	$ 3.0275113	$ 4.3081422	$ 5.4828361
First of Month Value by Index	2014 IRP Basecase	138	$ 3.2688221	$ 4.7536232	$ 3.7815483	$ 4.8237948
First of Month Value by Index	2014 IRP Basecase	139	$ 3.4636097	$ 3.8346096	$ 3.8537651	$ 4.5146778
First of Month Value by Index	2014 IRP Basecase	140	$ 3.8541522	$ 3.7979618	$ 4.4291626	$ 4.0250823
First of Month Value by Index	2014 IRP Basecase	141	$ 2.8190972	$ 3.7731866	$ 4.1053156	$ 4.4171365
First of Month Value by Index	2014 IRP Basecase	142	$ 3.5406345	$ 3.2145465	$ 4.1311269	$ 4.3982999
First of Month Value by Index	2014 IRP Basecase	143	$ 3.0852912	$ 3.6595464	$ 3.4864948	$ 4.4820541
First of Month Value by Index	2014 IRP Basecase	144	$ 3.4504562	$ 4.2978882	$ 4.0269490	$ 4.0508286
First of Month Value by Index	2014 IRP Basecase	145	$ 4.0338143	$ 3.8521153	$ 3.9857575	$ 4.7860425
First of Month Value by Index	2014 IRP Basecase	146	$ 3.5665421	$ 3.8187314	$ 4.2753531	$ 4.3545656
First of Month Value by Index	2014 IRP Basecase	147	$ 2.9263181	$ 3.9351311	$ 4.0372661	$ 4.9741847
First of Month Value by Index	2014 IRP Basecase	148	$ 3.4320540	$ 3.3844965	$ 4.8286510	$ 4.8434228
First of Month Value by Index	2014 IRP Basecase	149	$ 3.6630363	$ 3.7200091	$ 3.8174893	$ 4.6371906
First of Month Value by Index	2014 IRP Basecase	150	$ 3.6231129	$ 3.5440080	$ 3.8073119	$ 4.0878936
First of Month Value by Index	2014 IRP Basecase	151	$ 3.8292977	$ 3.9421001	$ 3.5727952	$ 4.7371739
First of Month Value by Index	2014 IRP Basecase	152	$ 3.2425268	$ 3.4931493	$ 5.0773891	$ 5.0823087
First of Month Value by Index	2014 IRP Basecase	153	$ 3.0832594	$ 4.3226899	$ 4.7868647	$ 4.9354152
First of Month Value by Index	2014 IRP Basecase	154	$ 4.1695447	$ 3.6948227	$ 3.8403526	$ 3.9336332
First of Month Value by Index	2014 IRP Basecase	155	$ 3.2064404	$ 3.6349563	$ 4.7514404	$ 4.5027800
First of Month Value by Index	2014 IRP Basecase	156	$ 3.3230423	$ 3.9320717	$ 3.8557184	$ 5.5602985
First of Month Value by Index	2014 IRP Basecase	157	$ 3.1899458	$ 3.1108267	$ 5.2221860	$ 4.6054886
First of Month Value by Index	2014 IRP Basecase	158	$ 3.6847410	$ 3.9912570	$ 4.5862224	$ 4.4449670

Data Item	Scenario	Draw	2015	2016	2017	2018
First of Month Value by Index	2014 IRP Basecase	159	$ 3.6518672	$ 3.4820627	$ 4.4041138	$ 4.0897798
First of Month Value by Index	2014 IRP Basecase	160	$ 3.1307597	$ 3.0223279	$ 3.7099113	$ 4.9915505
First of Month Value by Index	2014 IRP Basecase	161	$ 3.4885892	$ 4.4992148	$ 4.1683862	$ 5.1796410
First of Month Value by Index	2014 IRP Basecase	162	$ 3.7028248	$ 3.4375360	$ 3.9851387	$ 3.5640692
First of Month Value by Index	2014 IRP Basecase	163	$ 3.5344195	$ 4.8842921	$ 4.7364043	$ 4.5665461
First of Month Value by Index	2014 IRP Basecase	164	$ 3.4856108	$ 3.4756699	$ 4.1474253	$ 4.2290742
First of Month Value by Index	2014 IRP Basecase	165	$ 3.7930983	$ 4.5552708	$ 4.1510592	$ 4.6347947
First of Month Value by Index	2014 IRP Basecase	166	$ 3.6649108	$ 4.3813555	$ 4.2330680	$ 4.0752939
First of Month Value by Index	2014 IRP Basecase	167	$ 2.9729948	$ 3.4806506	$ 3.9328612	$ 4.2270910
First of Month Value by Index	2014 IRP Basecase	168	$ 3.3117738	$ 3.0774359	$ 5.0579698	$ 5.0126156
First of Month Value by Index	2014 IRP Basecase	169	$ 3.0398260	$ 3.2710742	$ 4.5150170	$ 4.1951283
First of Month Value by Index	2014 IRP Basecase	170	$ 3.6311514	$ 3.3510552	$ 3.8077505	$ 4.3804666
First of Month Value by Index	2014 IRP Basecase	171	$ 3.7399373	$ 3.5465596	$ 4.9371426	$ 4.2311634
First of Month Value by Index	2014 IRP Basecase	172	$ 2.9395189	$ 3.9516448	$ 3.9267924	$ 4.4159395
First of Month Value by Index	2014 IRP Basecase	173	$ 3.2792005	$ 3.7818601	$ 3.7839468	$ 4.1866868
First of Month Value by Index	2014 IRP Basecase	174	$ 3.3265328	$ 3.2953046	$ 4.7699373	$ 4.7782550
First of Month Value by Index	2014 IRP Basecase	175	$ 3.9303797	$ 4.0427943	$ 3.8479724	$ 3.6182711
First of Month Value by Index	2014 IRP Basecase	176	$ 2.9155201	$ 3.9011628	$ 4.2992095	$ 4.8273701
First of Month Value by Index	2014 IRP Basecase	177	$ 3.6699019	$ 3.3677082	$ 4.6447901	$ 4.4286131
First of Month Value by Index	2014 IRP Basecase	178	$ 3.7407049	$ 3.6922580	$ 3.8109689	$ 5.1460963
First of Month Value by Index	2014 IRP Basecase	179	$ 3.4433413	$ 3.5049029	$ 4.0723846	$ 5.5202170
First of Month Value by Index	2014 IRP Basecase	180	$ 3.3456019	$ 4.5028848	$ 4.8169900	$ 4.0735971
First of Month Value by Index	2014 IRP Basecase	181	$ 3.3077853	$ 3.7268953	$ 4.8285521	$ 3.8765689
First of Month Value by Index	2014 IRP Basecase	182	$ 3.7383681	$ 3.6423663	$ 4.1922289	$ 3.9794046
First of Month Value by Index	2014 IRP Basecase	183	$ 4.0549487	$ 4.3802152	$ 3.1468733	$ 3.8663746
First of Month Value by Index	2014 IRP Basecase	184	$ 3.0752762	$ 4.8193569	$ 4.3149549	$ 5.0747492
First of Month Value by Index	2014 IRP Basecase	185	$ 3.6248404	$ 3.9849700	$ 4.2066068	$ 4.4681530
First of Month Value by Index	2014 IRP Basecase	186	$ 3.3580895	$ 4.3922059	$ 4.1625386	$ 4.7767431
First of Month Value by Index	2014 IRP Basecase	187	$ 3.6979991	$ 3.6301423	$ 3.8806322	$ 4.5988075
First of Month Value by Index	2014 IRP Basecase	188	$ 3.6019258	$ 4.0979228	$ 4.1301752	$ 4.5151138
First of Month Value by Index	2014 IRP Basecase	189	$ 3.8716533	$ 3.7814956	$ 4.8729336	$ 4.0093236
First of Month Value by Index	2014 IRP Basecase	190	$ 3.2414657	$ 3.9963152	$ 3.9615043	$ 4.9821669
First of Month Value by Index	2014 IRP Basecase	191	$ 3.8532244	$ 3.7433944	$ 4.9745522	$ 4.9909090
First of Month Value by Index	2014 IRP Basecase	192	$ 3.1966126	$ 3.5512883	$ 4.1529306	$ 4.9960188
First of Month Value by Index	2014 IRP Basecase	193	$ 3.2047204	$ 3.0821082	$ 4.0501328	$ 4.3400022
First of Month Value by Index	2014 IRP Basecase	194	$ 3.5306557	$ 4.1552317	$ 4.2341374	$ 4.3342206
First of Month Value by Index	2014 IRP Basecase	195	$ 3.1439974	$ 3.4899795	$ 4.5449944	$ 4.7153039
First of Month Value by Index	2014 IRP Basecase	196	$ 3.4267017	$ 3.7217889	$ 4.7941035	$ 5.1297656
First of Month Value by Index	2014 IRP Basecase	197	$ 3.5424272	$ 3.8309549	$ 4.3689086	$ 4.7316374
First of Month Value by Index	2014 IRP Basecase	198	$ 2.9924060	$ 3.3166950	$ 4.5755661	$ 3.6904062
First of Month Value by Index	2014 IRP Basecase	199	$ 3.7060588	$ 4.3103489	$ 4.2770858	$ 4.6099024
First of Month Value by Index	2014 IRP Basecase	200	$ 3.8213439	$ 3.8620495	$ 4.7371764	$ 4.9833868
	NYMEX	Max	$ 4.5606198	$ 4.8842921	$ 5.2271637	$ 5.7706423
		Min	$ 2.8133478	$ 2.9166980	$ 3.1468733	$ 3.5640692
		avg	$ 3.5059782	$ 3.7764698	$ 4.2263255	$ 4.5572638

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	0	$ 4.7078695	$ 4.5930227	$ 4.5485496	$ 4.7081750
First of Month Value by Index	2014 IRP Basecase	1	$ 4.5554855	$ 4.7063124	$ 4.2876673	$ 4.4351025
First of Month Value by Index	2014 IRP Basecase	2	$ 5.5767438	$ 5.0295616	$ 4.2012346	$ 4.7281589
First of Month Value by Index	2014 IRP Basecase	3	$ 4.8272625	$ 5.2097169	$ 4.4735966	$ 5.1152386
First of Month Value by Index	2014 IRP Basecase	4	$ 4.2933548	$ 5.0736783	$ 4.2225582	$ 4.3916584
First of Month Value by Index	2014 IRP Basecase	5	$ 4.5504900	$ 4.5328138	$ 5.1072734	$ 4.6267097
First of Month Value by Index	2014 IRP Basecase	6	$ 5.4458574	$ 4.5270896	$ 4.4250199	$ 5.1056413
First of Month Value by Index	2014 IRP Basecase	7	$ 4.9841139	$ 4.9930695	$ 4.1488493	$ 5.4988764
First of Month Value by Index	2014 IRP Basecase	8	$ 4.4141409	$ 4.7067407	$ 4.7866080	$ 5.2918458
First of Month Value by Index	2014 IRP Basecase	9	$ 4.6848386	$ 5.2202874	$ 4.2566911	$ 5.2902110
First of Month Value by Index	2014 IRP Basecase	10	$ 4.4030434	$ 4.2747213	$ 5.2154600	$ 5.0321317
First of Month Value by Index	2014 IRP Basecase	11	$ 4.7174917	$ 4.9229343	$ 4.3387750	$ 4.8322072
First of Month Value by Index	2014 IRP Basecase	12	$ 4.6425173	$ 4.6089470	$ 4.7533359	$ 5.2082067
First of Month Value by Index	2014 IRP Basecase	13	$ 4.8675808	$ 4.1699569	$ 4.4233065	$ 5.1178374
First of Month Value by Index	2014 IRP Basecase	14	$ 4.5816248	$ 4.6885482	$ 4.3719336	$ 4.8106162
First of Month Value by Index	2014 IRP Basecase	15	$ 5.0523070	$ 4.7172573	$ 4.4710017	$ 4.7104717
First of Month Value by Index	2014 IRP Basecase	16	$ 5.0354608	$ 5.4799631	$ 4.8846270	$ 5.0172404
First of Month Value by Index	2014 IRP Basecase	17	$ 4.2210008	$ 4.4429628	$ 4.2648286	$ 5.1093519
First of Month Value by Index	2014 IRP Basecase	18	$ 4.8950688	$ 5.2320907	$ 4.8393436	$ 4.7601659
First of Month Value by Index	2014 IRP Basecase	19	$ 4.4424296	$ 4.6218464	$ 4.6820547	$ 4.8790384
First of Month Value by Index	2014 IRP Basecase	20	$ 4.4131159	$ 4.9474881	$ 4.0709657	$ 4.6781218
First of Month Value by Index	2014 IRP Basecase	21	$ 5.0151177	$ 4.1318798	$ 4.6802958	$ 4.5225608
First of Month Value by Index	2014 IRP Basecase	22	$ 5.3424383	$ 4.8534882	$ 5.0159132	$ 5.0676923
First of Month Value by Index	2014 IRP Basecase	23	$ 4.5807337	$ 4.8272979	$ 4.5185304	$ 5.0009070
First of Month Value by Index	2014 IRP Basecase	24	$ 5.1153402	$ 4.7050539	$ 4.1438297	$ 4.9504712
First of Month Value by Index	2014 IRP Basecase	25	$ 5.4746636	$ 4.3038641	$ 4.3402095	$ 4.2716630
First of Month Value by Index	2014 IRP Basecase	26	$ 4.7541289	$ 5.3250703	$ 5.1215818	$ 5.0226658
First of Month Value by Index	2014 IRP Basecase	27	$ 5.4213022	$ 4.7859087	$ 4.8951037	$ 4.7604178
First of Month Value by Index	2014 IRP Basecase	28	$ 4.7389895	$ 4.3897634	$ 4.9580731	$ 4.5628525
First of Month Value by Index	2014 IRP Basecase	29	$ 4.9914009	$ 4.8008919	$ 4.8949340	$ 4.8851889
First of Month Value by Index	2014 IRP Basecase	30	$ 4.5832146	$ 5.4602353	$ 4.7461855	$ 4.9984215
First of Month Value by Index	2014 IRP Basecase	31	$ 4.3960885	$ 4.2608670	$ 4.6287521	$ 5.0614511
First of Month Value by Index	2014 IRP Basecase	32	$ 5.1700826	$ 4.6341734	$ 4.0045031	$ 4.2361413
First of Month Value by Index	2014 IRP Basecase	33	$ 4.9729113	$ 4.5163099	$ 4.9287429	$ 3.7985611
First of Month Value by Index	2014 IRP Basecase	34	$ 4.3200874	$ 4.3296249	$ 4.4455847	$ 4.4841982
First of Month Value by Index	2014 IRP Basecase	35	$ 5.0528520	$ 4.4356294	$ 4.4014718	$ 5.0142262
First of Month Value by Index	2014 IRP Basecase	36	$ 5.1512952	$ 4.3477702	$ 5.2336185	$ 5.5273220
First of Month Value by Index	2014 IRP Basecase	37	$ 4.7409058	$ 4.4179398	$ 4.6220908	$ 4.4859044
First of Month Value by Index	2014 IRP Basecase	38	$ 4.8452964	$ 4.6516683	$ 4.5567513	$ 4.4789198
First of Month Value by Index	2014 IRP Basecase	39	$ 3.9264248	$ 4.2434828	$ 4.9486510	$ 4.9727873
First of Month Value by Index	2014 IRP Basecase	40	$ 4.8098895	$ 4.6212615	$ 4.3554949	$ 4.2004894
First of Month Value by Index	2014 IRP Basecase	41	$ 4.9478267	$ 5.2025167	$ 4.5410642	$ 4.8306271
First of Month Value by Index	2014 IRP Basecase	42	$ 5.2936016	$ 4.6140065	$ 4.0566670	$ 4.0702279
First of Month Value by Index	2014 IRP Basecase	43	$ 4.9291361	$ 5.4240771	$ 4.7839505	$ 4.4004748
First of Month Value by Index	2014 IRP Basecase	44	$ 5.1469846	$ 4.2604083	$ 4.6467736	$ 4.7753202
First of Month Value by Index	2014 IRP Basecase	45	$ 4.8157017	$ 4.5318596	$ 4.1487295	$ 5.5921647
First of Month Value by Index	2014 IRP Basecase	46	$ 4.4819209	$ 5.0347728	$ 4.4458273	$ 5.0531795
First of Month Value by Index	2014 IRP Basecase	47	$ 4.7656962	$ 4.3202173	$ 4.4683925	$ 4.2206428
First of Month Value by Index	2014 IRP Basecase	48	$ 4.8165376	$ 4.4581476	$ 4.5535915	$ 4.6232032
First of Month Value by Index	2014 IRP Basecase	49	$ 5.1837896	$ 4.0038810	$ 5.0691938	$ 4.6154577
First of Month Value by Index	2014 IRP Basecase	50	$ 4.1161620	$ 4.6105533	$ 4.5909708	$ 4.6893809
First of Month Value by Index	2014 IRP Basecase	51	$ 4.8475783	$ 4.5174865	$ 4.2910426	$ 5.1759468
First of Month Value by Index	2014 IRP Basecase	52	$ 5.1282531	$ 5.2502559	$ 4.5747429	$ 4.7370716

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	53	$ 5.5186917	$ 4.3657928	$ 4.8252343	$ 4.2869596
First of Month Value by Index	2014 IRP Basecase	54	$ 4.7555749	$ 4.6308419	$ 4.5771141	$ 3.9299374
First of Month Value by Index	2014 IRP Basecase	55	$ 5.5397263	$ 4.3703209	$ 4.5883776	$ 4.6517648
First of Month Value by Index	2014 IRP Basecase	56	$ 4.5702732	$ 4.1705391	$ 4.8462904	$ 4.8937664
First of Month Value by Index	2014 IRP Basecase	57	$ 4.9850967	$ 4.0838280	$ 4.1643039	$ 3.9029945
First of Month Value by Index	2014 IRP Basecase	58	$ 4.4660721	$ 4.9963522	$ 4.4560777	$ 4.6444911
First of Month Value by Index	2014 IRP Basecase	59	$ 4.6563859	$ 4.8332818	$ 4.4982175	$ 5.1841986
First of Month Value by Index	2014 IRP Basecase	60	$ 4.7243726	$ 3.9535093	$ 4.5630832	$ 4.9406620
First of Month Value by Index	2014 IRP Basecase	61	$ 4.6927145	$ 4.3503700	$ 4.2825553	$ 4.5713661
First of Month Value by Index	2014 IRP Basecase	62	$ 5.1053646	$ 4.5514703	$ 4.4974623	$ 4.3843791
First of Month Value by Index	2014 IRP Basecase	63	$ 4.7259448	$ 4.5424652	$ 4.9239109	$ 4.6120209
First of Month Value by Index	2014 IRP Basecase	64	$ 4.9098514	$ 4.5310250	$ 4.4496360	$ 4.8072141
First of Month Value by Index	2014 IRP Basecase	65	$ 4.1706749	$ 5.1010026	$ 4.1712006	$ 5.2264190
First of Month Value by Index	2014 IRP Basecase	66	$ 4.7929993	$ 4.7442381	$ 4.4818100	$ 4.7593954
First of Month Value by Index	2014 IRP Basecase	67	$ 4.7414685	$ 4.3209712	$ 3.9396981	$ 4.5624797
First of Month Value by Index	2014 IRP Basecase	68	$ 5.8250813	$ 4.9371040	$ 5.0301800	$ 5.3361708
First of Month Value by Index	2014 IRP Basecase	69	$ 4.7130815	$ 4.6526140	$ 4.8278922	$ 4.3554081
First of Month Value by Index	2014 IRP Basecase	70	$ 4.6211832	$ 4.1057272	$ 5.4079986	$ 5.2218955
First of Month Value by Index	2014 IRP Basecase	71	$ 4.1066048	$ 4.3984792	$ 4.9741986	$ 5.0977663
First of Month Value by Index	2014 IRP Basecase	72	$ 4.2489931	$ 4.3880082	$ 4.2870636	$ 4.5219971
First of Month Value by Index	2014 IRP Basecase	73	$ 4.4238395	$ 4.1632953	$ 4.2903881	$ 4.4905753
First of Month Value by Index	2014 IRP Basecase	74	$ 5.0196851	$ 4.4941930	$ 4.6331667	$ 4.4761660
First of Month Value by Index	2014 IRP Basecase	75	$ 4.6326979	$ 4.8462268	$ 4.3308471	$ 4.0513843
First of Month Value by Index	2014 IRP Basecase	76	$ 5.1449354	$ 4.2718203	$ 4.1844757	$ 4.9960987
First of Month Value by Index	2014 IRP Basecase	77	$ 4.7845997	$ 4.3477776	$ 5.2591171	$ 4.3704525
First of Month Value by Index	2014 IRP Basecase	78	$ 5.5417274	$ 5.0285654	$ 4.3354268	$ 5.1672262
First of Month Value by Index	2014 IRP Basecase	79	$ 4.2724507	$ 5.1826068	$ 4.9656574	$ 4.7636238
First of Month Value by Index	2014 IRP Basecase	80	$ 4.6730792	$ 4.6037407	$ 4.8853605	$ 4.5377024
First of Month Value by Index	2014 IRP Basecase	81	$ 4.8535621	$ 4.5330219	$ 5.7128666	$ 4.7219254
First of Month Value by Index	2014 IRP Basecase	82	$ 4.5644234	$ 4.4547162	$ 3.9046882	$ 4.7463668
First of Month Value by Index	2014 IRP Basecase	83	$ 5.1389611	$ 4.4999844	$ 5.0666652	$ 4.7084411
First of Month Value by Index	2014 IRP Basecase	84	$ 4.9004335	$ 4.6126010	$ 4.5798075	$ 5.1829892
First of Month Value by Index	2014 IRP Basecase	85	$ 3.9883933	$ 4.5713491	$ 4.7969613	$ 4.5927049
First of Month Value by Index	2014 IRP Basecase	86	$ 5.0253896	$ 4.6775407	$ 3.9230113	$ 4.3159645
First of Month Value by Index	2014 IRP Basecase	87	$ 4.2611411	$ 4.4382150	$ 4.4651912	$ 5.1364618
First of Month Value by Index	2014 IRP Basecase	88	$ 4.6586668	$ 4.7152463	$ 4.6037581	$ 4.9651021
First of Month Value by Index	2014 IRP Basecase	89	$ 4.7766905	$ 4.7673282	$ 4.4889572	$ 4.6434332
First of Month Value by Index	2014 IRP Basecase	90	$ 4.6347600	$ 3.6271815	$ 4.9637838	$ 4.9800796
First of Month Value by Index	2014 IRP Basecase	91	$ 4.8660139	$ 4.5627276	$ 4.6209969	$ 4.5478328
First of Month Value by Index	2014 IRP Basecase	92	$ 4.2891874	$ 4.4965257	$ 5.7557040	$ 4.3786355
First of Month Value by Index	2014 IRP Basecase	93	$ 4.8427338	$ 5.0190736	$ 5.3232683	$ 4.7737088
First of Month Value by Index	2014 IRP Basecase	94	$ 4.9018037	$ 4.9401399	$ 5.0085426	$ 4.3192213
First of Month Value by Index	2014 IRP Basecase	95	$ 4.7647718	$ 4.8394986	$ 4.5603418	$ 4.7293854
First of Month Value by Index	2014 IRP Basecase	96	$ 4.6272229	$ 4.4687622	$ 4.5748536	$ 4.7265691
First of Month Value by Index	2014 IRP Basecase	97	$ 4.6607686	$ 3.6250727	$ 5.2465960	$ 4.4639021
First of Month Value by Index	2014 IRP Basecase	98	$ 4.5178414	$ 4.7742301	$ 4.4198193	$ 4.3270543
First of Month Value by Index	2014 IRP Basecase	99	$ 5.3781022	$ 4.3443931	$ 4.6722544	$ 5.3329544
First of Month Value by Index	2014 IRP Basecase	100	$ 4.9004472	$ 4.8932161	$ 4.6302193	$ 4.6516259
First of Month Value by Index	2014 IRP Basecase	101	$ 5.0943520	$ 4.3232576	$ 4.6296160	$ 5.0291578
First of Month Value by Index	2014 IRP Basecase	102	$ 4.7216855	$ 4.4819111	$ 4.8927602	$ 5.6616027
First of Month Value by Index	2014 IRP Basecase	103	$ 4.5680975	$ 4.1771061	$ 4.5579038	$ 4.0509755
First of Month Value by Index	2014 IRP Basecase	104	$ 4.5816318	$ 5.4724051	$ 4.6951152	$ 5.4061550
First of Month Value by Index	2014 IRP Basecase	105	$ 4.7987464	$ 4.6381637	$ 4.7235194	$ 5.2018272

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	106	$ 5.0972602	$ 4.5084472	$ 4.1806025	$ 4.9137246
First of Month Value by Index	2014 IRP Basecase	107	$ 5.0575729	$ 4.6807856	$ 5.1778136	$ 4.9604013
First of Month Value by Index	2014 IRP Basecase	108	$ 4.5085093	$ 4.3053604	$ 5.1033538	$ 5.4944628
First of Month Value by Index	2014 IRP Basecase	109	$ 4.7508228	$ 4.3370821	$ 4.7709480	$ 5.0268502
First of Month Value by Index	2014 IRP Basecase	110	$ 4.8314585	$ 3.6397460	$ 4.6113610	$ 5.1259546
First of Month Value by Index	2014 IRP Basecase	111	$ 4.5653370	$ 5.4143003	$ 4.0697999	$ 4.4703771
First of Month Value by Index	2014 IRP Basecase	112	$ 4.4504832	$ 4.4102877	$ 4.5765740	$ 4.6330793
First of Month Value by Index	2014 IRP Basecase	113	$ 3.9510179	$ 3.7767879	$ 4.6513115	$ 4.7825762
First of Month Value by Index	2014 IRP Basecase	114	$ 5.0344089	$ 4.8561508	$ 4.8985411	$ 4.9252820
First of Month Value by Index	2014 IRP Basecase	115	$ 4.4194766	$ 4.6899149	$ 4.5321391	$ 4.2859099
First of Month Value by Index	2014 IRP Basecase	116	$ 4.8071552	$ 4.5829718	$ 4.7755587	$ 4.5227304
First of Month Value by Index	2014 IRP Basecase	117	$ 4.4010604	$ 4.7756508	$ 4.9528239	$ 4.7072796
First of Month Value by Index	2014 IRP Basecase	118	$ 5.7426115	$ 5.0331623	$ 5.5547494	$ 5.0576949
First of Month Value by Index	2014 IRP Basecase	119	$ 4.9819644	$ 4.9572560	$ 4.5967741	$ 3.7635205
First of Month Value by Index	2014 IRP Basecase	120	$ 4.8257920	$ 4.4054591	$ 4.9512134	$ 5.0504682
First of Month Value by Index	2014 IRP Basecase	121	$ 4.6653877	$ 4.6883319	$ 4.5696198	$ 4.4348095
First of Month Value by Index	2014 IRP Basecase	122	$ 4.6152774	$ 4.3082416	$ 5.9628287	$ 5.5241591
First of Month Value by Index	2014 IRP Basecase	123	$ 5.0759635	$ 4.2044977	$ 4.4919858	$ 4.9122465
First of Month Value by Index	2014 IRP Basecase	124	$ 4.5954921	$ 4.5749710	$ 4.0920845	$ 4.1444416
First of Month Value by Index	2014 IRP Basecase	125	$ 4.6666083	$ 4.5409787	$ 3.9333348	$ 4.5773690
First of Month Value by Index	2014 IRP Basecase	126	$ 5.9190320	$ 4.1142632	$ 5.1070282	$ 4.5174487
First of Month Value by Index	2014 IRP Basecase	127	$ 4.2896850	$ 4.5924098	$ 4.1561248	$ 5.4149581
First of Month Value by Index	2014 IRP Basecase	128	$ 5.3914144	$ 5.2195948	$ 5.0182152	$ 5.2403976
First of Month Value by Index	2014 IRP Basecase	129	$ 4.8985998	$ 4.6083821	$ 4.5489081	$ 4.7096622
First of Month Value by Index	2014 IRP Basecase	130	$ 4.7389257	$ 4.2291695	$ 3.7834204	$ 4.4648654
First of Month Value by Index	2014 IRP Basecase	131	$ 4.5868987	$ 5.1416422	$ 4.3588138	$ 4.9489098
First of Month Value by Index	2014 IRP Basecase	132	$ 4.2835271	$ 4.4668012	$ 4.2218246	$ 4.9202776
First of Month Value by Index	2014 IRP Basecase	133	$ 4.5015029	$ 4.8931998	$ 4.2916316	$ 4.9157837
First of Month Value by Index	2014 IRP Basecase	134	$ 4.9408269	$ 4.2741906	$ 5.3909763	$ 5.0159639
First of Month Value by Index	2014 IRP Basecase	135	$ 4.3628965	$ 4.5815378	$ 4.8479898	$ 4.1857257
First of Month Value by Index	2014 IRP Basecase	136	$ 4.6932917	$ 4.6003767	$ 4.4131049	$ 4.2142283
First of Month Value by Index	2014 IRP Basecase	137	$ 4.9771208	$ 4.4474824	$ 4.8098337	$ 4.1197962
First of Month Value by Index	2014 IRP Basecase	138	$ 5.0843171	$ 3.8796837	$ 5.4228585	$ 5.2575110
First of Month Value by Index	2014 IRP Basecase	139	$ 4.7716783	$ 4.7358156	$ 4.8335616	$ 4.4857658
First of Month Value by Index	2014 IRP Basecase	140	$ 4.3382314	$ 5.2285626	$ 4.9004603	$ 4.5521383
First of Month Value by Index	2014 IRP Basecase	141	$ 4.7423117	$ 4.3882270	$ 4.5276401	$ 4.8618062
First of Month Value by Index	2014 IRP Basecase	142	$ 5.0410207	$ 3.7922410	$ 4.9157518	$ 4.6198631
First of Month Value by Index	2014 IRP Basecase	143	$ 5.0623197	$ 4.2574885	$ 4.7494475	$ 4.1733003
First of Month Value by Index	2014 IRP Basecase	144	$ 4.5847611	$ 4.2477515	$ 5.5728504	$ 4.8697834
First of Month Value by Index	2014 IRP Basecase	145	$ 4.7213888	$ 4.7213941	$ 4.4736729	$ 5.1110619
First of Month Value by Index	2014 IRP Basecase	146	$ 4.2784270	$ 4.6725922	$ 4.6184205	$ 4.2881568
First of Month Value by Index	2014 IRP Basecase	147	$ 4.9098279	$ 4.4097324	$ 4.3742159	$ 4.6162675
First of Month Value by Index	2014 IRP Basecase	148	$ 5.1379767	$ 4.4033369	$ 4.9330115	$ 3.9615344
First of Month Value by Index	2014 IRP Basecase	149	$ 4.7110027	$ 4.6710378	$ 4.4968517	$ 4.5297785
First of Month Value by Index	2014 IRP Basecase	150	$ 4.5920170	$ 4.9867870	$ 4.4393532	$ 5.1941145
First of Month Value by Index	2014 IRP Basecase	151	$ 4.9793743	$ 4.1091605	$ 4.7944944	$ 4.7578188
First of Month Value by Index	2014 IRP Basecase	152	$ 4.4975768	$ 4.3552037	$ 4.3698443	$ 4.2081080
First of Month Value by Index	2014 IRP Basecase	153	$ 5.2219538	$ 4.9677055	$ 4.8257669	$ 4.4954256
First of Month Value by Index	2014 IRP Basecase	154	$ 4.4826263	$ 4.1507811	$ 4.4008591	$ 4.9142307
First of Month Value by Index	2014 IRP Basecase	155	$ 4.4840116	$ 4.0471993	$ 4.7655406	$ 4.5598830
First of Month Value by Index	2014 IRP Basecase	156	$ 4.1662896	$ 4.9026679	$ 5.5452209	$ 4.6974482
First of Month Value by Index	2014 IRP Basecase	157	$ 4.8701740	$ 4.8156043	$ 4.9829866	$ 4.5073056
First of Month Value by Index	2014 IRP Basecase	158	$ 4.6702517	$ 4.7133924	$ 4.2261481	$ 4.1161726

Data Item	Scenario	Draw	2019	2020	2021	2022
First of Month Value by Index	2014 IRP Basecase	159	$ 4.3589875	$ 4.8159511	$ 4.0668651	$ 4.3075921
First of Month Value by Index	2014 IRP Basecase	160	$ 4.1962664	$ 4.1206682	$ 4.6281755	$ 5.4967413
First of Month Value by Index	2014 IRP Basecase	161	$ 4.6605697	$ 4.5220013	$ 5.1345159	$ 4.6594969
First of Month Value by Index	2014 IRP Basecase	162	$ 4.9776976	$ 4.3075520	$ 4.3276597	$ 5.3091908
First of Month Value by Index	2014 IRP Basecase	163	$ 4.0606210	$ 4.1307751	$ 4.6693272	$ 4.9963779
First of Month Value by Index	2014 IRP Basecase	164	$ 4.7395746	$ 4.4930835	$ 5.1714925	$ 5.5275829
First of Month Value by Index	2014 IRP Basecase	165	$ 4.6102413	$ 5.0232487	$ 4.9283604	$ 4.5227971
First of Month Value by Index	2014 IRP Basecase	166	$ 4.8618782	$ 4.4257103	$ 4.4273244	$ 4.7910884
First of Month Value by Index	2014 IRP Basecase	167	$ 4.8149006	$ 4.8494328	$ 4.3392714	$ 4.4273229
First of Month Value by Index	2014 IRP Basecase	168	$ 3.9530905	$ 5.1329814	$ 4.4864638	$ 4.4876188
First of Month Value by Index	2014 IRP Basecase	169	$ 4.8521237	$ 4.0576069	$ 4.8019861	$ 4.4690411
First of Month Value by Index	2014 IRP Basecase	170	$ 4.3911907	$ 4.5621252	$ 4.3100991	$ 5.5700475
First of Month Value by Index	2014 IRP Basecase	171	$ 5.2626289	$ 4.8402567	$ 4.6237256	$ 4.2201087
First of Month Value by Index	2014 IRP Basecase	172	$ 4.4480587	$ 4.9062561	$ 4.2073146	$ 5.5582166
First of Month Value by Index	2014 IRP Basecase	173	$ 4.9523001	$ 4.9823324	$ 4.0582614	$ 4.5431761
First of Month Value by Index	2014 IRP Basecase	174	$ 4.8209644	$ 4.7297683	$ 4.4193363	$ 4.9556612
First of Month Value by Index	2014 IRP Basecase	175	$ 4.8752000	$ 5.2738316	$ 4.3634895	$ 5.0663772
First of Month Value by Index	2014 IRP Basecase	176	$ 4.4367320	$ 4.2663760	$ 4.3520578	$ 5.3241423
First of Month Value by Index	2014 IRP Basecase	177	$ 4.1197428	$ 5.0668037	$ 4.5558057	$ 4.0053003
First of Month Value by Index	2014 IRP Basecase	178	$ 4.7185366	$ 4.7635018	$ 3.9264129	$ 4.6758709
First of Month Value by Index	2014 IRP Basecase	179	$ 5.1755217	$ 5.1206330	$ 4.7518651	$ 5.4548553
First of Month Value by Index	2014 IRP Basecase	180	$ 5.1064708	$ 4.6613574	$ 4.1994284	$ 5.1267244
First of Month Value by Index	2014 IRP Basecase	181	$ 4.6824169	$ 5.3390520	$ 4.5529825	$ 4.2849134
First of Month Value by Index	2014 IRP Basecase	182	$ 4.2462595	$ 3.9551114	$ 4.4483862	$ 4.7967506
First of Month Value by Index	2014 IRP Basecase	183	$ 4.8522177	$ 4.2407043	$ 4.3216968	$ 4.6833273
First of Month Value by Index	2014 IRP Basecase	184	$ 5.1289743	$ 4.8876117	$ 4.3718905	$ 4.8257555
First of Month Value by Index	2014 IRP Basecase	185	$ 5.2263880	$ 4.3170361	$ 4.6028068	$ 4.8477730
First of Month Value by Index	2014 IRP Basecase	186	$ 4.8092720	$ 5.1386175	$ 4.7825815	$ 4.3670839
First of Month Value by Index	2014 IRP Basecase	187	$ 4.6038636	$ 4.4077444	$ 4.5972673	$ 4.6297495
First of Month Value by Index	2014 IRP Basecase	188	$ 4.3076098	$ 4.8076763	$ 4.3008486	$ 4.8903746
First of Month Value by Index	2014 IRP Basecase	189	$ 4.4643352	$ 4.4137965	$ 4.5392704	$ 5.2661606
First of Month Value by Index	2014 IRP Basecase	190	$ 4.5109836	$ 4.3854027	$ 4.0463946	$ 5.1773720
First of Month Value by Index	2014 IRP Basecase	191	$ 4.5040193	$ 4.8514385	$ 4.9347750	$ 4.6674312
First of Month Value by Index	2014 IRP Basecase	192	$ 4.2005185	$ 4.1956723	$ 5.0770639	$ 5.2398613
First of Month Value by Index	2014 IRP Basecase	193	$ 5.0888161	$ 4.9168663	$ 4.4486491	$ 5.4506929
First of Month Value by Index	2014 IRP Basecase	194	$ 5.2837313	$ 4.2535885	$ 4.7938122	$ 4.1826770
First of Month Value by Index	2014 IRP Basecase	195	$ 4.2592111	$ 4.9734974	$ 5.4237173	$ 5.1189318
First of Month Value by Index	2014 IRP Basecase	196	$ 4.4885376	$ 4.9319476	$ 4.0268685	$ 4.6834993
First of Month Value by Index	2014 IRP Basecase	197	$ 4.8039887	$ 4.4051488	$ 5.0723701	$ 5.0888595
First of Month Value by Index	2014 IRP Basecase	198	$ 5.2285947	$ 4.4435149	$ 4.4843893	$ 4.3684485
First of Month Value by Index	2014 IRP Basecase	199	$ 4.7596284	$ 5.2997398	$ 4.7515143	$ 5.3878475
First of Month Value by Index	2014 IRP Basecase	200	$ 4.7934887	$ 5.1730540	$ 5.1843716	$ 5.4086871
	NYMEX	Max	$ 5.9190320	$ 5.4799631	$ 5.9628287	$ 5.6616027
		Min	$ 3.9264248	$ 3.6250727	$ 3.7834204	$ 3.7635205
		avg	$ 4.7588517	$ 4.6100073	$ 4.6320574	$ 4.7684216

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	0	$ 4.8190758	$ 4.6606380	$ 4.6614496	$ 4.8419400
First of Month Value by Index	2014 IRP Basecase	1	$ 5.3553860	$ 4.5044646	$ 4.8483274	$ 5.2432884
First of Month Value by Index	2014 IRP Basecase	2	$ 5.0162907	$ 4.8625518	$ 4.9206651	$ 5.2152474
First of Month Value by Index	2014 IRP Basecase	3	$ 4.8163592	$ 4.4031597	$ 5.0070349	$ 4.4801195
First of Month Value by Index	2014 IRP Basecase	4	$ 4.8129980	$ 4.9748803	$ 5.1059142	$ 4.8354974
First of Month Value by Index	2014 IRP Basecase	5	$ 4.8020655	$ 5.1695902	$ 4.7977430	$ 5.1695197
First of Month Value by Index	2014 IRP Basecase	6	$ 5.1190971	$ 5.6434127	$ 5.1809371	$ 4.6616659
First of Month Value by Index	2014 IRP Basecase	7	$ 5.3148898	$ 5.1950870	$ 5.0752282	$ 5.0566640
First of Month Value by Index	2014 IRP Basecase	8	$ 5.3599597	$ 4.9161789	$ 4.4706064	$ 4.4779711
First of Month Value by Index	2014 IRP Basecase	9	$ 4.8628765	$ 4.0671239	$ 4.9311140	$ 4.2031071
First of Month Value by Index	2014 IRP Basecase	10	$ 5.2264563	$ 4.7989802	$ 5.3270599	$ 4.7743170
First of Month Value by Index	2014 IRP Basecase	11	$ 4.9902104	$ 4.7068209	$ 4.4968795	$ 5.3447104
First of Month Value by Index	2014 IRP Basecase	12	$ 4.5849965	$ 3.9775032	$ 4.7350801	$ 5.2709627
First of Month Value by Index	2014 IRP Basecase	13	$ 5.3022711	$ 4.1775443	$ 5.1421018	$ 4.6332007
First of Month Value by Index	2014 IRP Basecase	14	$ 4.3703751	$ 4.0938286	$ 4.6033272	$ 4.8707500
First of Month Value by Index	2014 IRP Basecase	15	$ 5.1611302	$ 4.7327300	$ 4.7319983	$ 5.2435528
First of Month Value by Index	2014 IRP Basecase	16	$ 4.7198144	$ 4.6839087	$ 5.1804001	$ 4.6827291
First of Month Value by Index	2014 IRP Basecase	17	$ 4.9976170	$ 4.2188500	$ 4.6181031	$ 4.9944152
First of Month Value by Index	2014 IRP Basecase	18	$ 5.1800995	$ 5.1325413	$ 4.7587357	$ 5.1456591
First of Month Value by Index	2014 IRP Basecase	19	$ 5.2242735	$ 4.2386122	$ 4.8505364	$ 5.2203878
First of Month Value by Index	2014 IRP Basecase	20	$ 4.7984135	$ 4.6062436	$ 4.2845718	$ 4.8931052
First of Month Value by Index	2014 IRP Basecase	21	$ 5.4717596	$ 4.7366509	$ 4.5808446	$ 5.3092829
First of Month Value by Index	2014 IRP Basecase	22	$ 5.0148306	$ 4.5778184	$ 5.1727566	$ 4.9715573
First of Month Value by Index	2014 IRP Basecase	23	$ 5.0171774	$ 4.9442693	$ 4.6819431	$ 5.6505372
First of Month Value by Index	2014 IRP Basecase	24	$ 5.3193473	$ 4.8890435	$ 5.1413111	$ 4.3965841
First of Month Value by Index	2014 IRP Basecase	25	$ 4.2370697	$ 4.3006581	$ 4.7236842	$ 4.8842737
First of Month Value by Index	2014 IRP Basecase	26	$ 4.7708319	$ 4.2228372	$ 5.1514798	$ 4.9130043
First of Month Value by Index	2014 IRP Basecase	27	$ 5.4592648	$ 4.7869291	$ 4.8502356	$ 4.6237870
First of Month Value by Index	2014 IRP Basecase	28	$ 5.1661461	$ 4.8795038	$ 4.4572070	$ 4.6943419
First of Month Value by Index	2014 IRP Basecase	29	$ 5.9644351	$ 4.5815357	$ 4.7019917	$ 4.9104198
First of Month Value by Index	2014 IRP Basecase	30	$ 5.5934637	$ 4.8248935	$ 5.3634385	$ 4.7428548
First of Month Value by Index	2014 IRP Basecase	31	$ 5.0841662	$ 4.3249463	$ 4.7943633	$ 5.0829603
First of Month Value by Index	2014 IRP Basecase	32	$ 4.5083728	$ 4.4483439	$ 5.2866628	$ 4.7444903
First of Month Value by Index	2014 IRP Basecase	33	$ 5.3722287	$ 4.4097748	$ 4.3014266	$ 4.7031508
First of Month Value by Index	2014 IRP Basecase	34	$ 4.0231773	$ 4.2109205	$ 5.3413592	$ 4.7311250
First of Month Value by Index	2014 IRP Basecase	35	$ 4.1835491	$ 4.5972608	$ 5.0100339	$ 4.5871529
First of Month Value by Index	2014 IRP Basecase	36	$ 4.1410973	$ 4.5098020	$ 4.2197709	$ 4.8327469
First of Month Value by Index	2014 IRP Basecase	37	$ 4.5084216	$ 4.5698127	$ 4.7677853	$ 5.2846151
First of Month Value by Index	2014 IRP Basecase	38	$ 5.0316881	$ 5.1465603	$ 5.0155121	$ 4.9164691
First of Month Value by Index	2014 IRP Basecase	39	$ 4.7881202	$ 4.0281288	$ 4.4436772	$ 4.9857544
First of Month Value by Index	2014 IRP Basecase	40	$ 4.7389876	$ 4.3116665	$ 4.6063841	$ 4.8956756
First of Month Value by Index	2014 IRP Basecase	41	$ 4.6234319	$ 4.4429722	$ 4.7454552	$ 4.9929383
First of Month Value by Index	2014 IRP Basecase	42	$ 4.6091617	$ 4.3560759	$ 4.8257863	$ 5.3678964
First of Month Value by Index	2014 IRP Basecase	43	$ 4.7124633	$ 4.8733606	$ 4.9995898	$ 4.5009757
First of Month Value by Index	2014 IRP Basecase	44	$ 5.3969547	$ 5.3846863	$ 5.0654382	$ 4.6729204
First of Month Value by Index	2014 IRP Basecase	45	$ 4.3779068	$ 4.2248459	$ 4.3021466	$ 4.0695667
First of Month Value by Index	2014 IRP Basecase	46	$ 4.6742106	$ 5.0650348	$ 5.1664995	$ 4.8629857
First of Month Value by Index	2014 IRP Basecase	47	$ 5.1757455	$ 4.7548675	$ 4.1925773	$ 5.1815523
First of Month Value by Index	2014 IRP Basecase	48	$ 4.7399414	$ 4.5127607	$ 4.9657007	$ 5.5388037
First of Month Value by Index	2014 IRP Basecase	49	$ 4.9582440	$ 4.7244612	$ 4.0564251	$ 4.2381937
First of Month Value by Index	2014 IRP Basecase	50	$ 4.9962472	$ 5.6331982	$ 4.7567787	$ 4.6352689
First of Month Value by Index	2014 IRP Basecase	51	$ 4.9341705	$ 4.6511831	$ 5.0148754	$ 4.9529650
First of Month Value by Index	2014 IRP Basecase	52	$ 5.0691646	$ 4.0680310	$ 5.3775475	$ 4.8417565

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	53	$ 5.7576687	$ 4.8789179	$ 4.6906029	$ 4.0680438
First of Month Value by Index	2014 IRP Basecase	54	$ 4.5840731	$ 5.0737746	$ 5.0882030	$ 4.6249061
First of Month Value by Index	2014 IRP Basecase	55	$ 5.8446430	$ 5.0161099	$ 4.7630560	$ 5.0442202
First of Month Value by Index	2014 IRP Basecase	56	$ 5.0845490	$ 5.1432739	$ 5.0903205	$ 5.1649024
First of Month Value by Index	2014 IRP Basecase	57	$ 5.1442090	$ 4.8693905	$ 4.7007858	$ 5.3259227
First of Month Value by Index	2014 IRP Basecase	58	$ 4.6527115	$ 5.7113637	$ 5.2392479	$ 4.5412839
First of Month Value by Index	2014 IRP Basecase	59	$ 4.5259361	$ 4.4918666	$ 4.7516409	$ 4.9318156
First of Month Value by Index	2014 IRP Basecase	60	$ 5.5498305	$ 4.5313192	$ 4.8975757	$ 4.8774563
First of Month Value by Index	2014 IRP Basecase	61	$ 5.0339244	$ 4.8332730	$ 4.1185101	$ 4.5379523
First of Month Value by Index	2014 IRP Basecase	62	$ 5.4172097	$ 5.2230213	$ 5.1500531	$ 4.5740349
First of Month Value by Index	2014 IRP Basecase	63	$ 4.8616054	$ 4.2227237	$ 4.7037451	$ 5.5005289
First of Month Value by Index	2014 IRP Basecase	64	$ 5.1355224	$ 4.4852347	$ 5.1177682	$ 6.1405126
First of Month Value by Index	2014 IRP Basecase	65	$ 4.1975318	$ 4.0907308	$ 4.9122333	$ 5.3546314
First of Month Value by Index	2014 IRP Basecase	66	$ 5.6095397	$ 4.6487184	$ 4.9045923	$ 5.1408839
First of Month Value by Index	2014 IRP Basecase	67	$ 4.3512141	$ 4.3437671	$ 5.1839901	$ 4.5127798
First of Month Value by Index	2014 IRP Basecase	68	$ 5.1202889	$ 4.6461931	$ 4.9244816	$ 5.4209189
First of Month Value by Index	2014 IRP Basecase	69	$ 5.1918551	$ 5.1534561	$ 4.6861435	$ 4.3366926
First of Month Value by Index	2014 IRP Basecase	70	$ 5.4948503	$ 4.9909607	$ 5.3054621	$ 5.4268517
First of Month Value by Index	2014 IRP Basecase	71	$ 4.0324255	$ 4.2787863	$ 5.0456310	$ 4.6713812
First of Month Value by Index	2014 IRP Basecase	72	$ 5.6110107	$ 4.7533199	$ 4.2525302	$ 5.1842078
First of Month Value by Index	2014 IRP Basecase	73	$ 5.0319882	$ 4.8351603	$ 5.3405173	$ 5.2205886
First of Month Value by Index	2014 IRP Basecase	74	$ 4.8834847	$ 4.7276992	$ 4.6312590	$ 5.5339456
First of Month Value by Index	2014 IRP Basecase	75	$ 5.0693903	$ 4.4737385	$ 5.3049955	$ 5.3442605
First of Month Value by Index	2014 IRP Basecase	76	$ 4.7044379	$ 5.1242806	$ 4.7773992	$ 4.9218639
First of Month Value by Index	2014 IRP Basecase	77	$ 5.4981561	$ 4.4134432	$ 4.7521282	$ 4.1268477
First of Month Value by Index	2014 IRP Basecase	78	$ 4.3741561	$ 5.4441080	$ 4.5994221	$ 5.0197979
First of Month Value by Index	2014 IRP Basecase	79	$ 5.2198715	$ 4.0891520	$ 5.2906270	$ 5.2251676
First of Month Value by Index	2014 IRP Basecase	80	$ 5.3108522	$ 5.0473239	$ 4.2528233	$ 5.0612791
First of Month Value by Index	2014 IRP Basecase	81	$ 5.0570475	$ 4.3955954	$ 4.6255115	$ 5.6971328
First of Month Value by Index	2014 IRP Basecase	82	$ 5.1400503	$ 4.4241510	$ 4.8620518	$ 5.1857447
First of Month Value by Index	2014 IRP Basecase	83	$ 5.0112423	$ 5.0783964	$ 4.8839078	$ 4.5364810
First of Month Value by Index	2014 IRP Basecase	84	$ 5.2736578	$ 4.4377463	$ 4.9659768	$ 4.7972848
First of Month Value by Index	2014 IRP Basecase	85	$ 5.0990250	$ 5.3221188	$ 4.1476423	$ 5.0576019
First of Month Value by Index	2014 IRP Basecase	86	$ 5.3293316	$ 5.8466369	$ 4.1099902	$ 4.9087297
First of Month Value by Index	2014 IRP Basecase	87	$ 4.1404194	$ 4.2185863	$ 4.8249407	$ 5.2875411
First of Month Value by Index	2014 IRP Basecase	88	$ 5.2126531	$ 4.3533843	$ 4.7166540	$ 5.1889211
First of Month Value by Index	2014 IRP Basecase	89	$ 5.1825520	$ 4.1212307	$ 5.1813628	$ 5.0675394
First of Month Value by Index	2014 IRP Basecase	90	$ 4.9676683	$ 4.3017951	$ 4.8011417	$ 5.0421302
First of Month Value by Index	2014 IRP Basecase	91	$ 4.7333557	$ 5.9366985	$ 4.8124441	$ 4.6219920
First of Month Value by Index	2014 IRP Basecase	92	$ 5.4096104	$ 4.9544629	$ 4.9732330	$ 5.3722104
First of Month Value by Index	2014 IRP Basecase	93	$ 4.4315395	$ 5.4088864	$ 4.6018048	$ 4.5561725
First of Month Value by Index	2014 IRP Basecase	94	$ 4.9755921	$ 4.7032041	$ 4.7698434	$ 4.9740152
First of Month Value by Index	2014 IRP Basecase	95	$ 4.5681469	$ 4.4505844	$ 5.2663119	$ 4.8171167
First of Month Value by Index	2014 IRP Basecase	96	$ 4.3284946	$ 5.5834956	$ 4.3847966	$ 4.7003369
First of Month Value by Index	2014 IRP Basecase	97	$ 5.0888191	$ 4.3570003	$ 5.4873663	$ 4.6464111
First of Month Value by Index	2014 IRP Basecase	98	$ 4.7754230	$ 4.9715045	$ 4.9567550	$ 4.9784889
First of Month Value by Index	2014 IRP Basecase	99	$ 4.7451028	$ 4.4484090	$ 4.7077184	$ 4.5051579
First of Month Value by Index	2014 IRP Basecase	100	$ 5.4610994	$ 4.1282537	$ 5.7938726	$ 5.3861753
First of Month Value by Index	2014 IRP Basecase	101	$ 4.8163209	$ 5.0402578	$ 4.8222029	$ 3.8773083
First of Month Value by Index	2014 IRP Basecase	102	$ 4.9934832	$ 5.3554379	$ 4.6148623	$ 4.8832883
First of Month Value by Index	2014 IRP Basecase	103	$ 4.8548964	$ 4.0642033	$ 4.4019627	$ 4.5705532
First of Month Value by Index	2014 IRP Basecase	104	$ 4.8916373	$ 4.2010810	$ 4.8899040	$ 5.2514029
First of Month Value by Index	2014 IRP Basecase	105	$ 5.5252526	$ 4.4352939	$ 4.7375591	$ 4.7826808

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	106	$ 4.5481185	$ 4.5991822	$ 4.8002719	$ 4.6142475
First of Month Value by Index	2014 IRP Basecase	107	$ 4.9218956	$ 5.3682162	$ 4.7074033	$ 4.2401361
First of Month Value by Index	2014 IRP Basecase	108	$ 5.4485523	$ 4.2340497	$ 4.6771926	$ 5.5412600
First of Month Value by Index	2014 IRP Basecase	109	$ 4.5020542	$ 4.7253873	$ 4.8887458	$ 4.7368623
First of Month Value by Index	2014 IRP Basecase	110	$ 4.8694135	$ 4.5009558	$ 4.9679019	$ 5.1273054
First of Month Value by Index	2014 IRP Basecase	111	$ 4.8287463	$ 5.3033268	$ 4.9664353	$ 5.0070727
First of Month Value by Index	2014 IRP Basecase	112	$ 5.4801022	$ 4.7351733	$ 4.3087002	$ 4.7728674
First of Month Value by Index	2014 IRP Basecase	113	$ 4.9195807	$ 5.3069943	$ 4.8728133	$ 5.1140060
First of Month Value by Index	2014 IRP Basecase	114	$ 5.2775464	$ 5.0159532	$ 4.7791274	$ 4.9606896
First of Month Value by Index	2014 IRP Basecase	115	$ 4.6487036	$ 5.1874602	$ 5.4297734	$ 4.7785936
First of Month Value by Index	2014 IRP Basecase	116	$ 4.6720785	$ 5.0059851	$ 4.9696634	$ 4.4661820
First of Month Value by Index	2014 IRP Basecase	117	$ 5.0596207	$ 5.0262430	$ 4.1879715	$ 4.8625482
First of Month Value by Index	2014 IRP Basecase	118	$ 5.0581946	$ 5.3316419	$ 4.6408582	$ 4.9768019
First of Month Value by Index	2014 IRP Basecase	119	$ 4.7218391	$ 4.7230709	$ 4.6872803	$ 3.9122642
First of Month Value by Index	2014 IRP Basecase	120	$ 4.6819471	$ 4.7314107	$ 4.5844648	$ 6.1129511
First of Month Value by Index	2014 IRP Basecase	121	$ 4.8524146	$ 4.8994062	$ 4.8017931	$ 4.6421197
First of Month Value by Index	2014 IRP Basecase	122	$ 4.4561168	$ 5.4108050	$ 4.8531015	$ 5.3702541
First of Month Value by Index	2014 IRP Basecase	123	$ 4.3697779	$ 4.5249358	$ 4.9074367	$ 4.6446223
First of Month Value by Index	2014 IRP Basecase	124	$ 5.2769716	$ 4.7394876	$ 4.6088550	$ 4.4076601
First of Month Value by Index	2014 IRP Basecase	125	$ 4.9861245	$ 4.5419348	$ 5.1174178	$ 5.1872849
First of Month Value by Index	2014 IRP Basecase	126	$ 4.9973364	$ 4.5855175	$ 5.5077708	$ 4.1523833
First of Month Value by Index	2014 IRP Basecase	127	$ 5.3095843	$ 4.8180814	$ 4.5154352	$ 4.9108511
First of Month Value by Index	2014 IRP Basecase	128	$ 5.6055631	$ 4.6076675	$ 4.6063927	$ 4.6486649
First of Month Value by Index	2014 IRP Basecase	129	$ 5.0525076	$ 5.0674424	$ 5.0131143	$ 5.5720244
First of Month Value by Index	2014 IRP Basecase	130	$ 4.7241396	$ 4.1757009	$ 4.6948801	$ 5.2752901
First of Month Value by Index	2014 IRP Basecase	131	$ 5.3213141	$ 5.0760586	$ 4.6368929	$ 4.7831306
First of Month Value by Index	2014 IRP Basecase	132	$ 5.3135514	$ 4.4392478	$ 5.0359054	$ 4.8908991
First of Month Value by Index	2014 IRP Basecase	133	$ 4.6081298	$ 4.1217716	$ 4.0240085	$ 4.0796453
First of Month Value by Index	2014 IRP Basecase	134	$ 5.4357266	$ 5.0842603	$ 4.7581231	$ 4.6677619
First of Month Value by Index	2014 IRP Basecase	135	$ 5.4177171	$ 4.7690683	$ 4.5435866	$ 5.1737635
First of Month Value by Index	2014 IRP Basecase	136	$ 4.7530855	$ 4.7884947	$ 5.0440624	$ 5.2315618
First of Month Value by Index	2014 IRP Basecase	137	$ 4.8205912	$ 5.4629494	$ 4.9388086	$ 4.9822393
First of Month Value by Index	2014 IRP Basecase	138	$ 4.3806838	$ 4.6389060	$ 4.5567256	$ 5.2297256
First of Month Value by Index	2014 IRP Basecase	139	$ 5.1641378	$ 4.3020936	$ 5.3536656	$ 5.4341147
First of Month Value by Index	2014 IRP Basecase	140	$ 5.4931964	$ 4.6960265	$ 4.8224115	$ 4.9286814
First of Month Value by Index	2014 IRP Basecase	141	$ 4.7698597	$ 5.1586619	$ 4.7460029	$ 5.3915399
First of Month Value by Index	2014 IRP Basecase	142	$ 5.3406710	$ 4.8180313	$ 4.0500870	$ 5.1280035
First of Month Value by Index	2014 IRP Basecase	143	$ 5.0529297	$ 4.7442007	$ 4.3136645	$ 5.1237281
First of Month Value by Index	2014 IRP Basecase	144	$ 4.2907724	$ 4.7690446	$ 4.5079955	$ 5.4890824
First of Month Value by Index	2014 IRP Basecase	145	$ 4.3943610	$ 4.5859085	$ 4.3049327	$ 4.4289667
First of Month Value by Index	2014 IRP Basecase	146	$ 4.7343264	$ 4.4844806	$ 4.4523781	$ 4.9660881
First of Month Value by Index	2014 IRP Basecase	147	$ 4.6266928	$ 4.5572679	$ 4.8951778	$ 4.9278868
First of Month Value by Index	2014 IRP Basecase	148	$ 4.6042446	$ 5.1781014	$ 4.8078525	$ 5.3052072
First of Month Value by Index	2014 IRP Basecase	149	$ 5.1098302	$ 5.0705410	$ 5.0789830	$ 5.0129623
First of Month Value by Index	2014 IRP Basecase	150	$ 5.1103672	$ 5.1283900	$ 4.7047153	$ 4.4027615
First of Month Value by Index	2014 IRP Basecase	151	$ 4.7456111	$ 4.7834559	$ 5.0075820	$ 4.4841925
First of Month Value by Index	2014 IRP Basecase	152	$ 4.8632192	$ 4.8533391	$ 5.3053429	$ 5.3372116
First of Month Value by Index	2014 IRP Basecase	153	$ 4.8901450	$ 5.3361021	$ 4.7256642	$ 4.9408741
First of Month Value by Index	2014 IRP Basecase	154	$ 5.0022162	$ 4.6956715	$ 4.4023289	$ 4.7738383
First of Month Value by Index	2014 IRP Basecase	155	$ 5.3768725	$ 4.3813626	$ 5.3836040	$ 4.7059370
First of Month Value by Index	2014 IRP Basecase	156	$ 5.2536140	$ 4.2955649	$ 4.3060720	$ 5.1972533
First of Month Value by Index	2014 IRP Basecase	157	$ 4.9081421	$ 4.3900967	$ 5.0336048	$ 5.4529271
First of Month Value by Index	2014 IRP Basecase	158	$ 4.4398567	$ 4.7012332	$ 3.8004177	$ 5.4574300

Data Item	Scenario	Draw	2023	2024	2025	2026
First of Month Value by Index	2014 IRP Basecase	159	$ 5.4416426	$ 4.4741076	$ 5.6458920	$ 5.6981187
First of Month Value by Index	2014 IRP Basecase	160	$ 4.2423944	$ 4.3648896	$ 4.3131577	$ 5.1199642
First of Month Value by Index	2014 IRP Basecase	161	$ 4.2274023	$ 4.1441688	$ 3.8698306	$ 5.4747274
First of Month Value by Index	2014 IRP Basecase	162	$ 4.4248869	$ 4.6315060	$ 4.7541695	$ 5.4031338
First of Month Value by Index	2014 IRP Basecase	163	$ 4.4338788	$ 4.7573729	$ 4.6966591	$ 4.5305473
First of Month Value by Index	2014 IRP Basecase	164	$ 4.6574533	$ 4.5755763	$ 4.9185858	$ 4.9429451
First of Month Value by Index	2014 IRP Basecase	165	$ 4.9836495	$ 3.9129260	$ 4.8341040	$ 5.5337384
First of Month Value by Index	2014 IRP Basecase	166	$ 5.9055888	$ 4.4767498	$ 4.1786992	$ 5.0634900
First of Month Value by Index	2014 IRP Basecase	167	$ 4.5340849	$ 4.9524428	$ 4.2762437	$ 5.2394163
First of Month Value by Index	2014 IRP Basecase	168	$ 4.6543046	$ 5.4844165	$ 4.4953965	$ 4.6292059
First of Month Value by Index	2014 IRP Basecase	169	$ 6.0504439	$ 4.3553650	$ 4.5283190	$ 4.8606868
First of Month Value by Index	2014 IRP Basecase	170	$ 4.0504656	$ 4.6082046	$ 4.5163433	$ 5.9778253
First of Month Value by Index	2014 IRP Basecase	171	$ 5.3651213	$ 5.1355218	$ 5.0316513	$ 5.5490180
First of Month Value by Index	2014 IRP Basecase	172	$ 4.6440452	$ 4.5729208	$ 4.4573592	$ 4.9033982
First of Month Value by Index	2014 IRP Basecase	173	$ 4.9116216	$ 5.3817518	$ 4.7905065	$ 4.9198203
First of Month Value by Index	2014 IRP Basecase	174	$ 4.9519804	$ 4.5447516	$ 4.7827559	$ 5.9477376
First of Month Value by Index	2014 IRP Basecase	175	$ 5.3025527	$ 4.3727158	$ 4.6788359	$ 4.5961541
First of Month Value by Index	2014 IRP Basecase	176	$ 5.4389039	$ 4.7989076	$ 5.3346710	$ 5.3810038
First of Month Value by Index	2014 IRP Basecase	177	$ 4.5468150	$ 4.2728242	$ 4.7693688	$ 4.7381174
First of Month Value by Index	2014 IRP Basecase	178	$ 4.6435459	$ 4.3449714	$ 4.6603254	$ 4.3770605
First of Month Value by Index	2014 IRP Basecase	179	$ 5.2236704	$ 4.6740834	$ 4.4656319	$ 4.6453426
First of Month Value by Index	2014 IRP Basecase	180	$ 4.6558468	$ 3.8611588	$ 4.8900622	$ 4.3815329
First of Month Value by Index	2014 IRP Basecase	181	$ 4.6098655	$ 4.6153284	$ 4.5280330	$ 4.9071353
First of Month Value by Index	2014 IRP Basecase	182	$ 4.4170488	$ 4.4088529	$ 4.1041091	$ 4.7608694
First of Month Value by Index	2014 IRP Basecase	183	$ 5.2288956	$ 4.7721692	$ 6.2492987	$ 5.2447791
First of Month Value by Index	2014 IRP Basecase	184	$ 5.6572397	$ 4.5037157	$ 4.4826730	$ 4.7229097
First of Month Value by Index	2014 IRP Basecase	185	$ 4.5645516	$ 4.6090203	$ 4.8270634	$ 4.5773517
First of Month Value by Index	2014 IRP Basecase	186	$ 4.7649857	$ 4.2846665	$ 4.8413412	$ 4.9369056
First of Month Value by Index	2014 IRP Basecase	187	$ 4.9195429	$ 4.9349351	$ 4.7971104	$ 4.9581204
First of Month Value by Index	2014 IRP Basecase	188	$ 4.6418331	$ 4.3800737	$ 5.2208629	$ 5.5482938
First of Month Value by Index	2014 IRP Basecase	189	$ 5.2249506	$ 4.1341423	$ 4.3712200	$ 5.6831689
First of Month Value by Index	2014 IRP Basecase	190	$ 4.1944238	$ 4.8063613	$ 4.0267931	$ 5.0252846
First of Month Value by Index	2014 IRP Basecase	191	$ 4.7949056	$ 4.2377195	$ 4.7686718	$ 4.3722178
First of Month Value by Index	2014 IRP Basecase	192	$ 6.0286227	$ 4.3694173	$ 4.5480690	$ 4.7317376
First of Month Value by Index	2014 IRP Basecase	193	$ 4.6187369	$ 4.6463848	$ 4.1470370	$ 4.3168159
First of Month Value by Index	2014 IRP Basecase	194	$ 4.3050590	$ 4.8391574	$ 4.7266663	$ 4.8466415
First of Month Value by Index	2014 IRP Basecase	195	$ 5.0167373	$ 4.2612426	$ 5.1946783	$ 4.4462056
First of Month Value by Index	2014 IRP Basecase	196	$ 5.5843040	$ 5.3258900	$ 4.3960956	$ 4.3092796
First of Month Value by Index	2014 IRP Basecase	197	$ 4.8897547	$ 4.5638487	$ 4.4483872	$ 4.9758957
First of Month Value by Index	2014 IRP Basecase	198	$ 5.2408443	$ 4.2662805	$ 5.0840610	$ 4.3945099
First of Month Value by Index	2014 IRP Basecase	199	$ 4.4835934	$ 4.7802050	$ 5.1549461	$ 4.1806242
First of Month Value by Index	2014 IRP Basecase	200	$ 5.0838735	$ 4.9614913	$ 4.9445726	$ 4.8328377
	NYMEX	Max	$ 6.0504439	$ 5.9366985	$ 6.2492987	$ 6.1405126
		Min	$ 4.0231773	$ 3.8611588	$ 3.8004177	$ 3.8773083
		avg	$ 4.9451679	$ 4.7002548	$ 4.7867413	$ 4.9315325

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	0	$ 5.0797650	$ 4.7630334	$ 4.6478724	$ 4.7960632
First of Month Value by Index	2014 IRP Basecase	1	$ 5.6009989	$ 4.9936002	$ 5.3179559	$ 4.3999145
First of Month Value by Index	2014 IRP Basecase	2	$ 5.4088950	$ 4.0927045	$ 5.2696681	$ 4.5772674
First of Month Value by Index	2014 IRP Basecase	3	$ 4.8677369	$ 4.3030022	$ 4.4463649	$ 4.8422947
First of Month Value by Index	2014 IRP Basecase	4	$ 4.8306340	$ 3.8190926	$ 4.7885529	$ 4.5490100
First of Month Value by Index	2014 IRP Basecase	5	$ 5.0225361	$ 4.2653644	$ 4.6413985	$ 4.5447557
First of Month Value by Index	2014 IRP Basecase	6	$ 5.0652008	$ 4.6685997	$ 4.5792817	$ 5.0824485
First of Month Value by Index	2014 IRP Basecase	7	$ 4.6327926	$ 5.3433245	$ 4.3314719	$ 5.5549607
First of Month Value by Index	2014 IRP Basecase	8	$ 5.1539480	$ 4.9859966	$ 4.1405308	$ 5.0687822
First of Month Value by Index	2014 IRP Basecase	9	$ 4.6774072	$ 5.0884640	$ 4.0146341	$ 5.0191504
First of Month Value by Index	2014 IRP Basecase	10	$ 5.4088473	$ 5.0295146	$ 5.3880403	$ 5.4310195
First of Month Value by Index	2014 IRP Basecase	11	$ 5.1336088	$ 4.7085719	$ 4.9953800	$ 4.6639074
First of Month Value by Index	2014 IRP Basecase	12	$ 6.0572181	$ 4.8073094	$ 4.1583279	$ 4.9424204
First of Month Value by Index	2014 IRP Basecase	13	$ 5.6264205	$ 4.9223265	$ 4.2306130	$ 5.0887474
First of Month Value by Index	2014 IRP Basecase	14	$ 4.7115480	$ 5.0353337	$ 4.4096982	$ 4.7283621
First of Month Value by Index	2014 IRP Basecase	15	$ 5.5423415	$ 4.5351675	$ 4.8306985	$ 5.2896934
First of Month Value by Index	2014 IRP Basecase	16	$ 4.9700878	$ 4.8095018	$ 5.7235622	$ 5.2910432
First of Month Value by Index	2014 IRP Basecase	17	$ 5.4878113	$ 5.1496713	$ 4.6032275	$ 4.5263556
First of Month Value by Index	2014 IRP Basecase	18	$ 5.1750871	$ 4.4404479	$ 4.8491748	$ 5.1612519
First of Month Value by Index	2014 IRP Basecase	19	$ 4.6562533	$ 5.1759828	$ 4.5833151	$ 4.4208057
First of Month Value by Index	2014 IRP Basecase	20	$ 4.7351393	$ 5.0026576	$ 4.5829575	$ 4.3371095
First of Month Value by Index	2014 IRP Basecase	21	$ 4.5126175	$ 5.6566713	$ 5.3835283	$ 4.4302007
First of Month Value by Index	2014 IRP Basecase	22	$ 4.5314436	$ 5.3802894	$ 4.7302421	$ 5.4166940
First of Month Value by Index	2014 IRP Basecase	23	$ 5.5340991	$ 5.1652107	$ 4.7766423	$ 4.8816856
First of Month Value by Index	2014 IRP Basecase	24	$ 5.0386936	$ 4.6262614	$ 4.0239087	$ 5.0687900
First of Month Value by Index	2014 IRP Basecase	25	$ 5.6853668	$ 4.8340750	$ 4.5462410	$ 4.3424234
First of Month Value by Index	2014 IRP Basecase	26	$ 5.2694090	$ 4.9507282	$ 5.1644867	$ 4.5642508
First of Month Value by Index	2014 IRP Basecase	27	$ 4.8125803	$ 4.1565003	$ 3.8055787	$ 5.3553208
First of Month Value by Index	2014 IRP Basecase	28	$ 5.6614744	$ 4.5640898	$ 4.6345880	$ 4.5979056
First of Month Value by Index	2014 IRP Basecase	29	$ 4.9490250	$ 4.5983759	$ 4.7468991	$ 5.2040355
First of Month Value by Index	2014 IRP Basecase	30	$ 5.0608755	$ 4.2310200	$ 4.4708383	$ 4.3980823
First of Month Value by Index	2014 IRP Basecase	31	$ 5.3528940	$ 5.2703347	$ 4.7882024	$ 4.6384160
First of Month Value by Index	2014 IRP Basecase	32	$ 5.3780013	$ 4.8907472	$ 4.9421603	$ 4.3960454
First of Month Value by Index	2014 IRP Basecase	33	$ 6.1665153	$ 4.9931119	$ 4.4550727	$ 5.5854576
First of Month Value by Index	2014 IRP Basecase	34	$ 4.9762758	$ 4.7700509	$ 4.1617490	$ 5.4291499
First of Month Value by Index	2014 IRP Basecase	35	$ 5.5353428	$ 5.2444718	$ 5.1729533	$ 5.5467322
First of Month Value by Index	2014 IRP Basecase	36	$ 5.2419093	$ 5.0168548	$ 5.2037890	$ 4.7292945
First of Month Value by Index	2014 IRP Basecase	37	$ 5.7136612	$ 5.0158827	$ 4.3145052	$ 5.1016143
First of Month Value by Index	2014 IRP Basecase	38	$ 5.0420163	$ 4.4550336	$ 4.6677946	$ 4.8432495
First of Month Value by Index	2014 IRP Basecase	39	$ 4.7365637	$ 4.5987840	$ 4.6364137	$ 5.0005064
First of Month Value by Index	2014 IRP Basecase	40	$ 5.6511140	$ 5.2085487	$ 4.9318766	$ 4.8338414
First of Month Value by Index	2014 IRP Basecase	41	$ 4.7636201	$ 4.6179304	$ 5.2473136	$ 4.3803385
First of Month Value by Index	2014 IRP Basecase	42	$ 5.3877480	$ 4.9629692	$ 4.1798828	$ 4.8154451
First of Month Value by Index	2014 IRP Basecase	43	$ 5.3471169	$ 5.1863569	$ 4.4045125	$ 5.6448002
First of Month Value by Index	2014 IRP Basecase	44	$ 4.9025407	$ 4.4046880	$ 4.7394115	$ 4.8262285
First of Month Value by Index	2014 IRP Basecase	45	$ 5.1567180	$ 4.9857285	$ 4.9643126	$ 4.2891838
First of Month Value by Index	2014 IRP Basecase	46	$ 5.3284812	$ 4.8628497	$ 4.9315137	$ 4.3599818
First of Month Value by Index	2014 IRP Basecase	47	$ 5.1867280	$ 4.7672015	$ 4.2769895	$ 4.8197942
First of Month Value by Index	2014 IRP Basecase	48	$ 5.9748725	$ 5.3739684	$ 4.9338267	$ 5.1389827
First of Month Value by Index	2014 IRP Basecase	49	$ 4.4668675	$ 5.1922899	$ 4.5746108	$ 4.1143878
First of Month Value by Index	2014 IRP Basecase	50	$ 4.6854433	$ 4.9155464	$ 4.2381789	$ 4.7943541
First of Month Value by Index	2014 IRP Basecase	51	$ 5.5223335	$ 5.0364573	$ 4.6487732	$ 4.6990331
First of Month Value by Index	2014 IRP Basecase	52	$ 5.1791843	$ 4.9206280	$ 4.6927239	$ 4.4413874

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	53	$ 5.7815513	$ 4.2024115	$ 4.7650425	$ 4.8778154
First of Month Value by Index	2014 IRP Basecase	54	$ 5.0252759	$ 4.9343189	$ 4.8030705	$ 4.3523256
First of Month Value by Index	2014 IRP Basecase	55	$ 5.3813572	$ 5.5624228	$ 4.5961782	$ 4.6351582
First of Month Value by Index	2014 IRP Basecase	56	$ 4.7965078	$ 4.5482771	$ 4.3950026	$ 5.3238532
First of Month Value by Index	2014 IRP Basecase	57	$ 5.4934791	$ 4.3133204	$ 4.9570768	$ 5.8815900
First of Month Value by Index	2014 IRP Basecase	58	$ 5.1652775	$ 5.1134656	$ 4.8015497	$ 5.4959165
First of Month Value by Index	2014 IRP Basecase	59	$ 4.9584980	$ 4.4389019	$ 4.5339941	$ 4.2485686
First of Month Value by Index	2014 IRP Basecase	60	$ 4.7276582	$ 4.7329912	$ 4.9763917	$ 5.2413670
First of Month Value by Index	2014 IRP Basecase	61	$ 5.6131450	$ 5.6432731	$ 4.6972282	$ 4.8149542
First of Month Value by Index	2014 IRP Basecase	62	$ 5.2892021	$ 4.5633936	$ 4.7533382	$ 5.0733780
First of Month Value by Index	2014 IRP Basecase	63	$ 5.2239156	$ 3.8199766	$ 4.6583515	$ 4.4913260
First of Month Value by Index	2014 IRP Basecase	64	$ 4.7834646	$ 4.7203186	$ 4.7184711	$ 4.5959208
First of Month Value by Index	2014 IRP Basecase	65	$ 5.7967986	$ 4.6845108	$ 5.0584412	$ 4.6357800
First of Month Value by Index	2014 IRP Basecase	66	$ 5.2690395	$ 4.7708444	$ 4.7654937	$ 5.1591868
First of Month Value by Index	2014 IRP Basecase	67	$ 4.7595506	$ 4.7627659	$ 4.3111377	$ 5.0798675
First of Month Value by Index	2014 IRP Basecase	68	$ 5.5657976	$ 5.2823647	$ 4.9786167	$ 5.1685619
First of Month Value by Index	2014 IRP Basecase	69	$ 5.8513304	$ 4.7542905	$ 4.9551771	$ 5.2569149
First of Month Value by Index	2014 IRP Basecase	70	$ 4.5360127	$ 5.2341557	$ 4.2729474	$ 4.9508910
First of Month Value by Index	2014 IRP Basecase	71	$ 5.8454321	$ 4.7165708	$ 4.2800843	$ 4.5843286
First of Month Value by Index	2014 IRP Basecase	72	$ 4.8907545	$ 4.9917965	$ 5.2013748	$ 4.0637717
First of Month Value by Index	2014 IRP Basecase	73	$ 5.4318871	$ 5.1203432	$ 5.1494457	$ 5.0968556
First of Month Value by Index	2014 IRP Basecase	74	$ 5.1665122	$ 4.6828452	$ 4.1746127	$ 4.9864255
First of Month Value by Index	2014 IRP Basecase	75	$ 4.9729657	$ 4.0801288	$ 4.7599462	$ 5.3577455
First of Month Value by Index	2014 IRP Basecase	76	$ 4.7927416	$ 4.7026656	$ 4.8936876	$ 5.4179729
First of Month Value by Index	2014 IRP Basecase	77	$ 4.3172706	$ 5.1556256	$ 5.0776402	$ 4.7995759
First of Month Value by Index	2014 IRP Basecase	78	$ 5.3654956	$ 5.0135808	$ 4.7142243	$ 5.9108720
First of Month Value by Index	2014 IRP Basecase	79	$ 5.0516597	$ 4.6866950	$ 4.6281418	$ 5.5790566
First of Month Value by Index	2014 IRP Basecase	80	$ 4.9622701	$ 4.1251061	$ 4.8318009	$ 4.8015899
First of Month Value by Index	2014 IRP Basecase	81	$ 5.2625993	$ 4.7544069	$ 4.9283361	$ 4.7957954
First of Month Value by Index	2014 IRP Basecase	82	$ 4.8920912	$ 4.6889877	$ 4.5125888	$ 4.7589293
First of Month Value by Index	2014 IRP Basecase	83	$ 5.2979624	$ 4.5132016	$ 4.5689331	$ 4.2847833
First of Month Value by Index	2014 IRP Basecase	84	$ 4.7818194	$ 4.7317386	$ 4.4487783	$ 4.5834480
First of Month Value by Index	2014 IRP Basecase	85	$ 5.3178601	$ 4.8618079	$ 4.4186544	$ 4.7368957
First of Month Value by Index	2014 IRP Basecase	86	$ 5.2013657	$ 5.4870985	$ 4.7959653	$ 4.1958203
First of Month Value by Index	2014 IRP Basecase	87	$ 4.8927125	$ 4.2422654	$ 3.9951974	$ 4.7031991
First of Month Value by Index	2014 IRP Basecase	88	$ 4.8367204	$ 4.9184518	$ 4.3671418	$ 4.6418809
First of Month Value by Index	2014 IRP Basecase	89	$ 5.4520887	$ 5.2492197	$ 4.6574546	$ 4.9580298
First of Month Value by Index	2014 IRP Basecase	90	$ 5.4107343	$ 5.5054237	$ 4.8285200	$ 4.7028514
First of Month Value by Index	2014 IRP Basecase	91	$ 4.8221801	$ 4.8276324	$ 4.6935692	$ 4.9080619
First of Month Value by Index	2014 IRP Basecase	92	$ 5.2251449	$ 4.0101089	$ 5.2202706	$ 4.5652785
First of Month Value by Index	2014 IRP Basecase	93	$ 5.7073176	$ 5.0537028	$ 4.1704219	$ 5.2231648
First of Month Value by Index	2014 IRP Basecase	94	$ 5.5410003	$ 4.8709792	$ 4.4686546	$ 4.9429031
First of Month Value by Index	2014 IRP Basecase	95	$ 5.5272967	$ 3.5418675	$ 5.0220117	$ 5.5149042
First of Month Value by Index	2014 IRP Basecase	96	$ 5.6381606	$ 4.6800863	$ 5.3500763	$ 5.0571867
First of Month Value by Index	2014 IRP Basecase	97	$ 5.2602975	$ 4.6476118	$ 5.0244719	$ 5.1293192
First of Month Value by Index	2014 IRP Basecase	98	$ 5.3259907	$ 4.9433236	$ 5.4427083	$ 4.3304863
First of Month Value by Index	2014 IRP Basecase	99	$ 4.7504893	$ 4.6843096	$ 4.5608165	$ 4.8114293
First of Month Value by Index	2014 IRP Basecase	100	$ 4.6365945	$ 4.6969246	$ 4.5951538	$ 4.2708494
First of Month Value by Index	2014 IRP Basecase	101	$ 4.6123737	$ 4.2607812	$ 4.7259161	$ 5.0528640
First of Month Value by Index	2014 IRP Basecase	102	$ 5.2685477	$ 4.6732818	$ 4.8260448	$ 4.0771648
First of Month Value by Index	2014 IRP Basecase	103	$ 5.1901311	$ 4.4535758	$ 4.5704876	$ 4.8412746
First of Month Value by Index	2014 IRP Basecase	104	$ 5.5788462	$ 4.9704858	$ 4.1810460	$ 5.5316310
First of Month Value by Index	2014 IRP Basecase	105	$ 5.2517114	$ 4.7421206	$ 4.8378892	$ 4.7390438

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	106	$ 5.0966654	$ 4.8234670	$ 4.9378834	$ 4.3828319
First of Month Value by Index	2014 IRP Basecase	107	$ 4.9006489	$ 4.8455626	$ 4.5114388	$ 4.7190146
First of Month Value by Index	2014 IRP Basecase	108	$ 5.3599415	$ 4.8377443	$ 4.7153904	$ 5.0540436
First of Month Value by Index	2014 IRP Basecase	109	$ 4.3477435	$ 4.1464609	$ 3.7769154	$ 4.2634968
First of Month Value by Index	2014 IRP Basecase	110	$ 5.1616129	$ 4.2697728	$ 4.5420219	$ 5.0699762
First of Month Value by Index	2014 IRP Basecase	111	$ 5.5493337	$ 4.6544545	$ 5.3431132	$ 4.6199191
First of Month Value by Index	2014 IRP Basecase	112	$ 5.1212415	$ 4.6089637	$ 5.5539770	$ 4.1045917
First of Month Value by Index	2014 IRP Basecase	113	$ 5.4314668	$ 4.3852881	$ 4.3290481	$ 4.5280083
First of Month Value by Index	2014 IRP Basecase	114	$ 4.7674211	$ 4.9516125	$ 4.7211238	$ 5.4977591
First of Month Value by Index	2014 IRP Basecase	115	$ 5.6315689	$ 4.6676521	$ 4.8049126	$ 5.0235869
First of Month Value by Index	2014 IRP Basecase	116	$ 4.7028450	$ 4.1569206	$ 4.8760909	$ 4.7550007
First of Month Value by Index	2014 IRP Basecase	117	$ 5.0105931	$ 5.1975105	$ 4.7378545	$ 4.5874174
First of Month Value by Index	2014 IRP Basecase	118	$ 5.5225092	$ 4.4179442	$ 4.5798610	$ 4.4424116
First of Month Value by Index	2014 IRP Basecase	119	$ 6.0502265	$ 5.2049762	$ 4.7613737	$ 5.0764172
First of Month Value by Index	2014 IRP Basecase	120	$ 5.3291693	$ 4.8631831	$ 4.5234665	$ 4.6755559
First of Month Value by Index	2014 IRP Basecase	121	$ 4.4677961	$ 4.2565228	$ 4.4293924	$ 4.4615555
First of Month Value by Index	2014 IRP Basecase	122	$ 5.0862601	$ 4.5853657	$ 4.8504936	$ 4.5840242
First of Month Value by Index	2014 IRP Basecase	123	$ 5.1683810	$ 4.6426803	$ 4.5356175	$ 5.3227355
First of Month Value by Index	2014 IRP Basecase	124	$ 5.7093140	$ 5.3983703	$ 4.1617023	$ 4.5619491
First of Month Value by Index	2014 IRP Basecase	125	$ 4.4398614	$ 4.9496834	$ 4.3362502	$ 4.6843079
First of Month Value by Index	2014 IRP Basecase	126	$ 5.0166721	$ 5.2859235	$ 3.9446199	$ 4.8972255
First of Month Value by Index	2014 IRP Basecase	127	$ 5.6479421	$ 4.8166452	$ 4.7400156	$ 4.6023677
First of Month Value by Index	2014 IRP Basecase	128	$ 5.1448057	$ 5.8100738	$ 5.7108299	$ 4.3848450
First of Month Value by Index	2014 IRP Basecase	129	$ 4.8444040	$ 4.6210843	$ 5.0698102	$ 5.1067287
First of Month Value by Index	2014 IRP Basecase	130	$ 4.7484316	$ 5.0850217	$ 4.8795090	$ 5.3403090
First of Month Value by Index	2014 IRP Basecase	131	$ 5.0288651	$ 5.1043931	$ 4.7158464	$ 4.9686052
First of Month Value by Index	2014 IRP Basecase	132	$ 5.4469094	$ 4.0672667	$ 4.0516221	$ 4.6062017
First of Month Value by Index	2014 IRP Basecase	133	$ 5.0759853	$ 4.4229433	$ 4.0564133	$ 5.2886187
First of Month Value by Index	2014 IRP Basecase	134	$ 4.7894629	$ 4.3787871	$ 3.4951433	$ 4.7874047
First of Month Value by Index	2014 IRP Basecase	135	$ 4.3918802	$ 4.9961527	$ 5.4444678	$ 4.6749037
First of Month Value by Index	2014 IRP Basecase	136	$ 5.2547029	$ 4.4884048	$ 5.2024670	$ 4.6019563
First of Month Value by Index	2014 IRP Basecase	137	$ 5.0982167	$ 5.3182786	$ 4.8311403	$ 5.6594661
First of Month Value by Index	2014 IRP Basecase	138	$ 5.3793448	$ 4.2846778	$ 5.3055061	$ 4.8475642
First of Month Value by Index	2014 IRP Basecase	139	$ 5.3007944	$ 4.5220952	$ 4.1608635	$ 5.2517250
First of Month Value by Index	2014 IRP Basecase	140	$ 4.6318538	$ 4.9334657	$ 4.4015454	$ 4.9011687
First of Month Value by Index	2014 IRP Basecase	141	$ 5.4195471	$ 4.6821510	$ 4.9026904	$ 5.8691056
First of Month Value by Index	2014 IRP Basecase	142	$ 5.1579351	$ 4.4417023	$ 5.1613262	$ 4.3047557
First of Month Value by Index	2014 IRP Basecase	143	$ 4.9253477	$ 4.8375740	$ 4.5556594	$ 5.1082251
First of Month Value by Index	2014 IRP Basecase	144	$ 5.1422636	$ 5.6143746	$ 4.5759929	$ 5.1062858
First of Month Value by Index	2014 IRP Basecase	145	$ 4.8581130	$ 5.3674286	$ 4.7588355	$ 5.1060464
First of Month Value by Index	2014 IRP Basecase	146	$ 4.3207349	$ 4.6680236	$ 5.1517112	$ 5.2159567
First of Month Value by Index	2014 IRP Basecase	147	$ 4.5279731	$ 4.6318273	$ 4.8719299	$ 4.0979642
First of Month Value by Index	2014 IRP Basecase	148	$ 4.5925021	$ 4.4879386	$ 4.8230414	$ 5.1126582
First of Month Value by Index	2014 IRP Basecase	149	$ 5.1923349	$ 4.6050534	$ 4.3080844	$ 5.5049991
First of Month Value by Index	2014 IRP Basecase	150	$ 4.7708966	$ 4.2768064	$ 4.0397228	$ 4.5155749
First of Month Value by Index	2014 IRP Basecase	151	$ 4.4197636	$ 4.7974874	$ 4.6547361	$ 3.7425578
First of Month Value by Index	2014 IRP Basecase	152	$ 4.6347004	$ 4.2771725	$ 4.7696883	$ 4.9907639
First of Month Value by Index	2014 IRP Basecase	153	$ 5.5236797	$ 5.2121378	$ 4.6213791	$ 4.6198470
First of Month Value by Index	2014 IRP Basecase	154	$ 5.3581672	$ 5.4541417	$ 4.4559449	$ 4.2495669
First of Month Value by Index	2014 IRP Basecase	155	$ 4.6672492	$ 4.6254489	$ 4.6620980	$ 4.8641806
First of Month Value by Index	2014 IRP Basecase	156	$ 5.0925316	$ 4.8449543	$ 4.8556397	$ 4.8260438
First of Month Value by Index	2014 IRP Basecase	157	$ 5.2110245	$ 5.1307620	$ 5.2802353	$ 4.5840951
First of Month Value by Index	2014 IRP Basecase	158	$ 5.1204878	$ 5.8242193	$ 5.0855569	$ 4.5298537

Data Item	Scenario	Draw	2027	2028	2029	2030
First of Month Value by Index	2014 IRP Basecase	159	$ 5.2400538	$ 4.3492901	$ 4.2154765	$ 5.3351659
First of Month Value by Index	2014 IRP Basecase	160	$ 4.2772064	$ 4.8579276	$ 4.6531904	$ 5.1803990
First of Month Value by Index	2014 IRP Basecase	161	$ 5.3313370	$ 4.4761040	$ 4.3556265	$ 4.7467655
First of Month Value by Index	2014 IRP Basecase	162	$ 5.2117427	$ 4.2020511	$ 4.5068674	$ 4.6611451
First of Month Value by Index	2014 IRP Basecase	163	$ 4.0208106	$ 5.1380476	$ 4.4939649	$ 5.0590982
First of Month Value by Index	2014 IRP Basecase	164	$ 4.8536817	$ 4.4902196	$ 5.1953911	$ 4.8325986
First of Month Value by Index	2014 IRP Basecase	165	$ 6.1035951	$ 5.7567179	$ 4.5322642	$ 5.0594616
First of Month Value by Index	2014 IRP Basecase	166	$ 5.2024343	$ 4.0704270	$ 5.2631953	$ 5.1621276
First of Month Value by Index	2014 IRP Basecase	167	$ 5.2501819	$ 4.9621183	$ 4.9818002	$ 4.9449154
First of Month Value by Index	2014 IRP Basecase	168	$ 4.5819054	$ 5.1562274	$ 5.0696991	$ 4.4359554
First of Month Value by Index	2014 IRP Basecase	169	$ 5.3959953	$ 4.3509128	$ 4.6189362	$ 4.8373374
First of Month Value by Index	2014 IRP Basecase	170	$ 5.0512547	$ 4.8583287	$ 4.4304088	$ 4.6299452
First of Month Value by Index	2014 IRP Basecase	171	$ 5.4079462	$ 4.8603772	$ 4.2025601	$ 4.2495499
First of Month Value by Index	2014 IRP Basecase	172	$ 5.3507566	$ 4.6947631	$ 5.2448282	$ 5.2977792
First of Month Value by Index	2014 IRP Basecase	173	$ 4.5722814	$ 4.8723823	$ 4.7577712	$ 5.2300810
First of Month Value by Index	2014 IRP Basecase	174	$ 5.6982538	$ 5.0861318	$ 4.2412210	$ 5.1725442
First of Month Value by Index	2014 IRP Basecase	175	$ 5.4102435	$ 4.8279549	$ 4.3664605	$ 4.4719238
First of Month Value by Index	2014 IRP Basecase	176	$ 4.8400452	$ 5.3093227	$ 4.2060523	$ 4.2096778
First of Month Value by Index	2014 IRP Basecase	177	$ 5.4991304	$ 4.6620455	$ 4.5691081	$ 5.3245795
First of Month Value by Index	2014 IRP Basecase	178	$ 5.0732689	$ 5.1532645	$ 4.2471385	$ 4.6162239
First of Month Value by Index	2014 IRP Basecase	179	$ 5.5595207	$ 5.4235770	$ 4.3248610	$ 4.6349762
First of Month Value by Index	2014 IRP Basecase	180	$ 5.1689373	$ 4.5944939	$ 4.4269027	$ 4.7247089
First of Month Value by Index	2014 IRP Basecase	181	$ 5.0209699	$ 4.8254039	$ 4.1344941	$ 5.1992516
First of Month Value by Index	2014 IRP Basecase	182	$ 4.6287374	$ 5.1031927	$ 4.5975792	$ 4.8109536
First of Month Value by Index	2014 IRP Basecase	183	$ 5.1431134	$ 4.1549531	$ 4.9256599	$ 4.2017169
First of Month Value by Index	2014 IRP Basecase	184	$ 5.4377502	$ 5.0926807	$ 5.6399471	$ 5.0323541
First of Month Value by Index	2014 IRP Basecase	185	$ 4.9483466	$ 4.5509137	$ 4.3426941	$ 5.1378936
First of Month Value by Index	2014 IRP Basecase	186	$ 4.2420077	$ 4.6026447	$ 4.7867402	$ 4.3527398
First of Month Value by Index	2014 IRP Basecase	187	$ 3.7222585	$ 4.4534869	$ 4.4265058	$ 5.3000648
First of Month Value by Index	2014 IRP Basecase	188	$ 4.7896504	$ 4.6760741	$ 4.8492798	$ 5.1894323
First of Month Value by Index	2014 IRP Basecase	189	$ 5.2724686	$ 5.3737676	$ 4.5001454	$ 4.3360083
First of Month Value by Index	2014 IRP Basecase	190	$ 4.5312926	$ 5.3281232	$ 4.9214757	$ 5.0502475
First of Month Value by Index	2014 IRP Basecase	191	$ 5.1789025	$ 3.6531084	$ 4.4796470	$ 5.6802817
First of Month Value by Index	2014 IRP Basecase	192	$ 5.4503809	$ 4.6932091	$ 5.4410570	$ 5.9468233
First of Month Value by Index	2014 IRP Basecase	193	$ 5.2534836	$ 4.2217913	$ 4.0480964	$ 4.9109847
First of Month Value by Index	2014 IRP Basecase	194	$ 4.6179617	$ 4.9749308	$ 4.6554435	$ 4.2490328
First of Month Value by Index	2014 IRP Basecase	195	$ 5.8648216	$ 4.6342737	$ 3.8259514	$ 5.0060898
First of Month Value by Index	2014 IRP Basecase	196	$ 4.6882127	$ 4.8028998	$ 4.8165276	$ 5.3262733
First of Month Value by Index	2014 IRP Basecase	197	$ 5.2722625	$ 4.6088076	$ 4.1455591	$ 4.8404997
First of Month Value by Index	2014 IRP Basecase	198	$ 5.3599163	$ 4.3126971	$ 3.7815688	$ 4.1505737
First of Month Value by Index	2014 IRP Basecase	199	$ 5.1366012	$ 4.9859847	$ 4.2204685	$ 4.8112567
First of Month Value by Index	2014 IRP Basecase	200	$ 4.9634677	$ 4.6146954	$ 4.7753108	$ 5.3862865
	NYMEX	Max	$ 6.1665153	$ 5.8242193	$ 5.7235622	$ 5.9468233
		Min	$ 3.7222585	$ 3.5418675	$ 3.4951433	$ 3.7425578
		avg	$ 5.1211312	$ 4.7849596	$ 4.6699191	$ 4.8593179

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	0	$ 4.8844951	$ 4.8129826	$ 4.9276772	$ 5.0920172
First of Month Value by Index	2014 IRP Basecase	1	$ 5.0707194	$ 4.5909228	$ 3.9369697	$ 5.3067272
First of Month Value by Index	2014 IRP Basecase	2	$ 4.0699441	$ 4.8716417	$ 4.9491780	$ 5.9257108
First of Month Value by Index	2014 IRP Basecase	3	$ 5.1582068	$ 4.8196920	$ 4.9098574	$ 4.4409880
First of Month Value by Index	2014 IRP Basecase	4	$ 4.7773770	$ 4.8305021	$ 5.4782294	$ 4.7144865
First of Month Value by Index	2014 IRP Basecase	5	$ 5.4249078	$ 4.0443400	$ 4.1881638	$ 5.0709739
First of Month Value by Index	2014 IRP Basecase	6	$ 5.5006489	$ 5.5123395	$ 5.0010149	$ 4.7083378
First of Month Value by Index	2014 IRP Basecase	7	$ 5.2000128	$ 4.9318831	$ 4.5411202	$ 5.3282842
First of Month Value by Index	2014 IRP Basecase	8	$ 4.3876399	$ 4.7269155	$ 4.8220204	$ 5.0266281
First of Month Value by Index	2014 IRP Basecase	9	$ 4.9722470	$ 5.0408330	$ 4.7031181	$ 5.4924059
First of Month Value by Index	2014 IRP Basecase	10	$ 5.1456647	$ 3.8841548	$ 4.7651077	$ 6.1944147
First of Month Value by Index	2014 IRP Basecase	11	$ 5.3568489	$ 4.8908954	$ 5.2755062	$ 4.7684439
First of Month Value by Index	2014 IRP Basecase	12	$ 5.1800936	$ 4.9987537	$ 6.1171193	$ 4.7063844
First of Month Value by Index	2014 IRP Basecase	13	$ 6.0044381	$ 5.4694159	$ 5.2833572	$ 5.3443957
First of Month Value by Index	2014 IRP Basecase	14	$ 5.2720386	$ 4.5624161	$ 4.8238228	$ 4.9823213
First of Month Value by Index	2014 IRP Basecase	15	$ 4.9098737	$ 4.5344335	$ 4.8580024	$ 5.1865643
First of Month Value by Index	2014 IRP Basecase	16	$ 4.5628901	$ 4.7101390	$ 4.6525822	$ 5.2611431
First of Month Value by Index	2014 IRP Basecase	17	$ 5.3603866	$ 4.2353513	$ 4.4862612	$ 5.3993454
First of Month Value by Index	2014 IRP Basecase	18	$ 5.6393540	$ 4.9428222	$ 4.5588008	$ 4.8208100
First of Month Value by Index	2014 IRP Basecase	19	$ 4.6276959	$ 4.5577169	$ 4.9939741	$ 4.6858287
First of Month Value by Index	2014 IRP Basecase	20	$ 6.0312555	$ 5.1687000	$ 5.0360842	$ 5.3704990
First of Month Value by Index	2014 IRP Basecase	21	$ 4.8056078	$ 5.2221932	$ 4.8716610	$ 4.6795599
First of Month Value by Index	2014 IRP Basecase	22	$ 4.7149899	$ 5.7394911	$ 5.4763241	$ 5.0820516
First of Month Value by Index	2014 IRP Basecase	23	$ 5.3592888	$ 4.2966192	$ 5.1567646	$ 5.3312699
First of Month Value by Index	2014 IRP Basecase	24	$ 4.6603931	$ 5.1557226	$ 4.0832072	$ 5.4357034
First of Month Value by Index	2014 IRP Basecase	25	$ 5.0087378	$ 5.2407839	$ 4.9712374	$ 5.7438164
First of Month Value by Index	2014 IRP Basecase	26	$ 4.8613765	$ 5.3131826	$ 5.1189810	$ 5.8954830
First of Month Value by Index	2014 IRP Basecase	27	$ 4.6496456	$ 5.7138383	$ 4.5431261	$ 4.4354367
First of Month Value by Index	2014 IRP Basecase	28	$ 5.2375026	$ 5.3798414	$ 5.8199917	$ 4.8982874
First of Month Value by Index	2014 IRP Basecase	29	$ 4.3091990	$ 4.8148015	$ 4.4372315	$ 5.2367457
First of Month Value by Index	2014 IRP Basecase	30	$ 5.5123748	$ 4.5637276	$ 5.6782532	$ 5.2533950
First of Month Value by Index	2014 IRP Basecase	31	$ 4.9996452	$ 4.9444717	$ 5.2496786	$ 6.0102242
First of Month Value by Index	2014 IRP Basecase	32	$ 4.5864863	$ 4.8418173	$ 4.4770393	$ 5.1708329
First of Month Value by Index	2014 IRP Basecase	33	$ 4.9421013	$ 5.8584378	$ 5.7112357	$ 5.1205318
First of Month Value by Index	2014 IRP Basecase	34	$ 5.5784317	$ 4.5567488	$ 4.6741970	$ 4.8535853
First of Month Value by Index	2014 IRP Basecase	35	$ 5.0079217	$ 4.3610582	$ 5.8515751	$ 5.3278423
First of Month Value by Index	2014 IRP Basecase	36	$ 5.7918335	$ 5.1927429	$ 4.8983752	$ 5.3967990
First of Month Value by Index	2014 IRP Basecase	37	$ 4.4968736	$ 5.1343122	$ 5.2240421	$ 5.4066766
First of Month Value by Index	2014 IRP Basecase	38	$ 4.7639046	$ 4.8214591	$ 4.8590692	$ 5.3799402
First of Month Value by Index	2014 IRP Basecase	39	$ 5.5140004	$ 5.3843534	$ 6.0281274	$ 5.3788040
First of Month Value by Index	2014 IRP Basecase	40	$ 5.4309846	$ 4.8369386	$ 5.0580803	$ 4.6377216
First of Month Value by Index	2014 IRP Basecase	41	$ 5.4369844	$ 5.2819509	$ 4.3998204	$ 5.2594038
First of Month Value by Index	2014 IRP Basecase	42	$ 4.8659579	$ 4.6659255	$ 5.1818293	$ 4.2965318
First of Month Value by Index	2014 IRP Basecase	43	$ 4.3632909	$ 4.8810373	$ 5.3288046	$ 4.8259224
First of Month Value by Index	2014 IRP Basecase	44	$ 4.8843410	$ 5.2955002	$ 4.9784100	$ 4.7053027
First of Month Value by Index	2014 IRP Basecase	45	$ 4.5608064	$ 4.2784293	$ 4.3925884	$ 4.9168558
First of Month Value by Index	2014 IRP Basecase	46	$ 4.9279097	$ 4.4956556	$ 4.6150775	$ 5.3035607
First of Month Value by Index	2014 IRP Basecase	47	$ 4.2981324	$ 5.2510753	$ 4.6661848	$ 5.1159331
First of Month Value by Index	2014 IRP Basecase	48	$ 5.6473788	$ 4.8078213	$ 4.8691897	$ 5.5720461
First of Month Value by Index	2014 IRP Basecase	49	$ 4.1746040	$ 4.6798852	$ 4.8559934	$ 4.8851132
First of Month Value by Index	2014 IRP Basecase	50	$ 5.1104057	$ 4.3292225	$ 4.7597134	$ 4.7214783
First of Month Value by Index	2014 IRP Basecase	51	$ 4.6957016	$ 4.6850017	$ 4.9373160	$ 5.1288235
First of Month Value by Index	2014 IRP Basecase	52	$ 4.6521810	$ 4.4617675	$ 4.7320379	$ 4.7926178

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	53	$ 4.4349111	$ 5.4799967	$ 4.4393438	$ 5.5230501
First of Month Value by Index	2014 IRP Basecase	54	$ 4.6575797	$ 4.1521204	$ 5.4088043	$ 5.1759598
First of Month Value by Index	2014 IRP Basecase	55	$ 5.9586791	$ 4.0228723	$ 4.8632438	$ 4.7975186
First of Month Value by Index	2014 IRP Basecase	56	$ 4.5422273	$ 4.2248170	$ 4.6359476	$ 5.1664173
First of Month Value by Index	2014 IRP Basecase	57	$ 4.7300564	$ 5.1857850	$ 5.3043187	$ 5.4795698
First of Month Value by Index	2014 IRP Basecase	58	$ 4.5613781	$ 4.4880127	$ 5.1666878	$ 5.1467359
First of Month Value by Index	2014 IRP Basecase	59	$ 5.4252526	$ 4.9843029	$ 4.7710730	$ 5.0268927
First of Month Value by Index	2014 IRP Basecase	60	$ 3.6688017	$ 5.1766051	$ 4.3086522	$ 5.0261397
First of Month Value by Index	2014 IRP Basecase	61	$ 5.2222192	$ 4.6997131	$ 5.4160451	$ 5.1483250
First of Month Value by Index	2014 IRP Basecase	62	$ 5.1485403	$ 5.1186235	$ 5.2565436	$ 5.7012133
First of Month Value by Index	2014 IRP Basecase	63	$ 5.1856277	$ 4.8646214	$ 5.2898172	$ 6.2185395
First of Month Value by Index	2014 IRP Basecase	64	$ 4.9823037	$ 3.8589617	$ 5.2003332	$ 5.3563799
First of Month Value by Index	2014 IRP Basecase	65	$ 5.1737150	$ 3.9806518	$ 5.0133322	$ 5.0715551
First of Month Value by Index	2014 IRP Basecase	66	$ 5.1228782	$ 4.8767239	$ 5.0816119	$ 4.7929647
First of Month Value by Index	2014 IRP Basecase	67	$ 5.1258263	$ 4.5959201	$ 5.2805762	$ 5.3429790
First of Month Value by Index	2014 IRP Basecase	68	$ 5.3755114	$ 4.8037653	$ 4.9513985	$ 5.6609700
First of Month Value by Index	2014 IRP Basecase	69	$ 4.7948624	$ 5.1641053	$ 5.3786365	$ 4.6375306
First of Month Value by Index	2014 IRP Basecase	70	$ 4.2254579	$ 4.7153515	$ 5.7940953	$ 4.0269559
First of Month Value by Index	2014 IRP Basecase	71	$ 5.0240006	$ 4.9580561	$ 5.3286845	$ 5.1152718
First of Month Value by Index	2014 IRP Basecase	72	$ 5.6269167	$ 4.9456238	$ 4.3916876	$ 5.5541042
First of Month Value by Index	2014 IRP Basecase	73	$ 4.4855529	$ 4.6248705	$ 4.9291093	$ 4.9964353
First of Month Value by Index	2014 IRP Basecase	74	$ 4.2659148	$ 5.0277081	$ 4.8085774	$ 4.7581579
First of Month Value by Index	2014 IRP Basecase	75	$ 5.2624836	$ 5.2340520	$ 4.5345153	$ 4.8025856
First of Month Value by Index	2014 IRP Basecase	76	$ 4.7041975	$ 4.8538504	$ 4.9426923	$ 5.4510587
First of Month Value by Index	2014 IRP Basecase	77	$ 4.8583976	$ 4.4518404	$ 4.9214240	$ 5.2299730
First of Month Value by Index	2014 IRP Basecase	78	$ 4.8339641	$ 4.7267394	$ 5.5811107	$ 5.6087508
First of Month Value by Index	2014 IRP Basecase	79	$ 4.8292670	$ 5.6324432	$ 4.5495001	$ 5.4874096
First of Month Value by Index	2014 IRP Basecase	80	$ 6.0700450	$ 5.0329711	$ 5.1471559	$ 5.3566337
First of Month Value by Index	2014 IRP Basecase	81	$ 4.6638670	$ 4.3471741	$ 5.0536282	$ 5.2099353
First of Month Value by Index	2014 IRP Basecase	82	$ 4.6811491	$ 4.8000943	$ 5.1520781	$ 4.9449725
First of Month Value by Index	2014 IRP Basecase	83	$ 5.4384425	$ 5.2885174	$ 5.3129694	$ 5.7875970
First of Month Value by Index	2014 IRP Basecase	84	$ 4.9742031	$ 4.3298918	$ 4.5577447	$ 4.9846194
First of Month Value by Index	2014 IRP Basecase	85	$ 4.2681766	$ 4.5395665	$ 4.6781756	$ 5.2781238
First of Month Value by Index	2014 IRP Basecase	86	$ 5.1100207	$ 4.5707596	$ 5.4978465	$ 4.7360379
First of Month Value by Index	2014 IRP Basecase	87	$ 5.5754799	$ 5.6488672	$ 5.3197038	$ 5.0424609
First of Month Value by Index	2014 IRP Basecase	88	$ 4.3694250	$ 5.5130341	$ 4.4717454	$ 4.9756799
First of Month Value by Index	2014 IRP Basecase	89	$ 5.8134087	$ 4.5371663	$ 5.0378607	$ 5.7539732
First of Month Value by Index	2014 IRP Basecase	90	$ 4.9824733	$ 4.7166002	$ 4.1219729	$ 5.4800941
First of Month Value by Index	2014 IRP Basecase	91	$ 5.2782619	$ 5.1036992	$ 5.4003650	$ 5.4300262
First of Month Value by Index	2014 IRP Basecase	92	$ 5.0804368	$ 4.7169068	$ 5.1617564	$ 5.7166927
First of Month Value by Index	2014 IRP Basecase	93	$ 4.9580483	$ 5.3635233	$ 4.9421785	$ 4.8839651
First of Month Value by Index	2014 IRP Basecase	94	$ 5.1538149	$ 4.3407553	$ 5.0426076	$ 4.8072988
First of Month Value by Index	2014 IRP Basecase	95	$ 5.0761554	$ 5.4731760	$ 4.1628457	$ 4.5786430
First of Month Value by Index	2014 IRP Basecase	96	$ 4.8776525	$ 5.3211474	$ 5.1471218	$ 5.6180783
First of Month Value by Index	2014 IRP Basecase	97	$ 4.8355017	$ 4.0485326	$ 4.4646736	$ 5.6410982
First of Month Value by Index	2014 IRP Basecase	98	$ 4.7538927	$ 4.7692305	$ 4.6547001	$ 5.4026115
First of Month Value by Index	2014 IRP Basecase	99	$ 4.2688150	$ 4.4525845	$ 4.7036049	$ 5.3166346
First of Month Value by Index	2014 IRP Basecase	100	$ 5.1989278	$ 4.7514728	$ 4.6159906	$ 4.3458987
First of Month Value by Index	2014 IRP Basecase	101	$ 5.2127567	$ 5.0740585	$ 4.5856357	$ 4.7092650
First of Month Value by Index	2014 IRP Basecase	102	$ 4.2908311	$ 4.7644309	$ 4.8330950	$ 5.4500455
First of Month Value by Index	2014 IRP Basecase	103	$ 5.3491275	$ 5.1291812	$ 4.8199077	$ 4.3160176
First of Month Value by Index	2014 IRP Basecase	104	$ 5.5996815	$ 5.1601850	$ 5.1959645	$ 4.9808993
First of Month Value by Index	2014 IRP Basecase	105	$ 4.8518509	$ 4.3207368	$ 5.2982078	$ 4.7387028

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	106	$ 4.9736038	$ 5.3041838	$ 4.4807117	$ 5.4786615
First of Month Value by Index	2014 IRP Basecase	107	$ 4.9225812	$ 4.7753745	$ 4.8115307	$ 4.4574063
First of Month Value by Index	2014 IRP Basecase	108	$ 4.9414045	$ 5.0489299	$ 5.0456692	$ 4.3780657
First of Month Value by Index	2014 IRP Basecase	109	$ 4.7339381	$ 4.3879039	$ 4.4924115	$ 4.6782751
First of Month Value by Index	2014 IRP Basecase	110	$ 4.3488226	$ 4.3268668	$ 5.0510546	$ 5.3842763
First of Month Value by Index	2014 IRP Basecase	111	$ 5.0383505	$ 4.9558701	$ 5.2420800	$ 5.3867160
First of Month Value by Index	2014 IRP Basecase	112	$ 4.5040964	$ 5.0952751	$ 4.2632646	$ 4.9440417
First of Month Value by Index	2014 IRP Basecase	113	$ 4.6905423	$ 3.9007999	$ 4.0439198	$ 5.4465153
First of Month Value by Index	2014 IRP Basecase	114	$ 4.9018224	$ 4.5826649	$ 5.7366378	$ 5.0051665
First of Month Value by Index	2014 IRP Basecase	115	$ 4.3230759	$ 4.9716253	$ 4.5468774	$ 4.7474559
First of Month Value by Index	2014 IRP Basecase	116	$ 5.0482987	$ 4.5490534	$ 4.2739520	$ 5.1348264
First of Month Value by Index	2014 IRP Basecase	117	$ 4.9002613	$ 4.7173031	$ 4.4056846	$ 5.4650541
First of Month Value by Index	2014 IRP Basecase	118	$ 5.2516061	$ 4.4567754	$ 5.9069592	$ 5.7346904
First of Month Value by Index	2014 IRP Basecase	119	$ 4.9747012	$ 4.6025863	$ 4.3871402	$ 6.0881417
First of Month Value by Index	2014 IRP Basecase	120	$ 4.4381173	$ 4.7316796	$ 5.9242682	$ 6.0172759
First of Month Value by Index	2014 IRP Basecase	121	$ 5.0052040	$ 5.0337124	$ 5.0939952	$ 4.2331260
First of Month Value by Index	2014 IRP Basecase	122	$ 5.6105548	$ 4.4657229	$ 4.4776415	$ 6.0938171
First of Month Value by Index	2014 IRP Basecase	123	$ 4.5670108	$ 4.8112955	$ 5.5244420	$ 4.8635334
First of Month Value by Index	2014 IRP Basecase	124	$ 5.2143046	$ 4.3826381	$ 4.8347402	$ 5.8053907
First of Month Value by Index	2014 IRP Basecase	125	$ 4.4957463	$ 5.1263699	$ 5.1600939	$ 5.5375076
First of Month Value by Index	2014 IRP Basecase	126	$ 3.7546444	$ 4.1065089	$ 4.7038665	$ 4.7379721
First of Month Value by Index	2014 IRP Basecase	127	$ 5.5341589	$ 4.8087893	$ 4.5526289	$ 4.7058799
First of Month Value by Index	2014 IRP Basecase	128	$ 5.2956960	$ 4.6330071	$ 5.0054240	$ 5.2929019
First of Month Value by Index	2014 IRP Basecase	129	$ 5.1093477	$ 4.6777236	$ 4.4963648	$ 5.4189608
First of Month Value by Index	2014 IRP Basecase	130	$ 4.9531692	$ 4.5570025	$ 5.7966214	$ 4.8304774
First of Month Value by Index	2014 IRP Basecase	131	$ 4.5230713	$ 4.0826343	$ 4.6971172	$ 4.8883956
First of Month Value by Index	2014 IRP Basecase	132	$ 5.1030194	$ 4.1349466	$ 5.3281527	$ 5.6949677
First of Month Value by Index	2014 IRP Basecase	133	$ 5.0577799	$ 4.7364666	$ 5.1972126	$ 5.3927186
First of Month Value by Index	2014 IRP Basecase	134	$ 4.6188831	$ 4.7428697	$ 4.5116859	$ 5.0422437
First of Month Value by Index	2014 IRP Basecase	135	$ 4.7677417	$ 5.3989150	$ 5.3871977	$ 5.5896321
First of Month Value by Index	2014 IRP Basecase	136	$ 4.9741318	$ 5.1510674	$ 5.2436396	$ 5.3794323
First of Month Value by Index	2014 IRP Basecase	137	$ 4.7840680	$ 4.8183352	$ 4.9472920	$ 5.8881104
First of Month Value by Index	2014 IRP Basecase	138	$ 4.7890061	$ 4.4820378	$ 5.2999785	$ 4.7133328
First of Month Value by Index	2014 IRP Basecase	139	$ 4.3230095	$ 4.5016430	$ 5.3444622	$ 4.6105296
First of Month Value by Index	2014 IRP Basecase	140	$ 5.2385877	$ 4.8013625	$ 4.9464710	$ 4.5751783
First of Month Value by Index	2014 IRP Basecase	141	$ 5.1142326	$ 5.7592560	$ 5.2581011	$ 5.1370021
First of Month Value by Index	2014 IRP Basecase	142	$ 4.8315505	$ 4.1277594	$ 4.7055508	$ 5.2633572
First of Month Value by Index	2014 IRP Basecase	143	$ 4.9047420	$ 4.4614791	$ 4.9969942	$ 5.1953775
First of Month Value by Index	2014 IRP Basecase	144	$ 5.5726434	$ 5.0648946	$ 4.7137833	$ 4.8967317
First of Month Value by Index	2014 IRP Basecase	145	$ 5.1618142	$ 5.0161731	$ 4.8118354	$ 5.0471053
First of Month Value by Index	2014 IRP Basecase	146	$ 4.8264970	$ 4.4888136	$ 4.7961437	$ 4.8316424
First of Month Value by Index	2014 IRP Basecase	147	$ 4.7025838	$ 4.6617118	$ 5.3451487	$ 5.5276465
First of Month Value by Index	2014 IRP Basecase	148	$ 5.1097434	$ 5.1714616	$ 5.3345121	$ 5.8461342
First of Month Value by Index	2014 IRP Basecase	149	$ 4.6839942	$ 5.0822992	$ 5.1141006	$ 5.2859540
First of Month Value by Index	2014 IRP Basecase	150	$ 4.8021997	$ 4.8293164	$ 4.7549323	$ 4.4939391
First of Month Value by Index	2014 IRP Basecase	151	$ 4.6880643	$ 4.4283881	$ 5.0487413	$ 4.6869394
First of Month Value by Index	2014 IRP Basecase	152	$ 4.4726325	$ 3.8852828	$ 4.6606108	$ 5.2683284
First of Month Value by Index	2014 IRP Basecase	153	$ 4.5490661	$ 4.9241928	$ 5.1409397	$ 5.6413088
First of Month Value by Index	2014 IRP Basecase	154	$ 5.2562150	$ 5.2502987	$ 4.2176601	$ 4.7250539
First of Month Value by Index	2014 IRP Basecase	155	$ 5.2089078	$ 5.3024445	$ 5.4228706	$ 4.6623255
First of Month Value by Index	2014 IRP Basecase	156	$ 5.0922930	$ 4.8617314	$ 4.7215140	$ 4.2995973
First of Month Value by Index	2014 IRP Basecase	157	$ 5.0600534	$ 5.0472152	$ 5.1704165	$ 5.3664908
First of Month Value by Index	2014 IRP Basecase	158	$ 4.8190066	$ 4.5408071	$ 4.9377313	$ 5.3133631

Data Item	Scenario	Draw	2031	2032	2033	2034
First of Month Value by Index	2014 IRP Basecase	159	$ 4.7820687	$ 4.8374791	$ 4.9800538	$ 4.7997111
First of Month Value by Index	2014 IRP Basecase	160	$ 4.5451031	$ 4.6859469	$ 4.9269156	$ 5.2575580
First of Month Value by Index	2014 IRP Basecase	161	$ 5.2726895	$ 4.5776446	$ 4.3707237	$ 4.7774587
First of Month Value by Index	2014 IRP Basecase	162	$ 5.0833886	$ 4.7923108	$ 4.5852205	$ 4.8033079
First of Month Value by Index	2014 IRP Basecase	163	$ 5.5005581	$ 5.3669863	$ 4.8438648	$ 5.2758325
First of Month Value by Index	2014 IRP Basecase	164	$ 4.7658763	$ 4.8816080	$ 5.0891676	$ 6.0326579
First of Month Value by Index	2014 IRP Basecase	165	$ 4.4319614	$ 5.2309891	$ 5.0619615	$ 4.4711487
First of Month Value by Index	2014 IRP Basecase	166	$ 5.1686842	$ 5.0955785	$ 4.9493806	$ 4.7774992
First of Month Value by Index	2014 IRP Basecase	167	$ 4.9494249	$ 5.3146410	$ 4.9717194	$ 5.2440978
First of Month Value by Index	2014 IRP Basecase	168	$ 4.2669625	$ 4.4389421	$ 4.8320160	$ 4.6648267
First of Month Value by Index	2014 IRP Basecase	169	$ 5.2342585	$ 4.4268501	$ 5.0560287	$ 5.3646192
First of Month Value by Index	2014 IRP Basecase	170	$ 5.3380567	$ 4.9511895	$ 5.5122446	$ 5.5742806
First of Month Value by Index	2014 IRP Basecase	171	$ 4.6601120	$ 4.4699090	$ 4.4225611	$ 5.6903008
First of Month Value by Index	2014 IRP Basecase	172	$ 4.2473761	$ 4.5005604	$ 4.7989383	$ 5.6729515
First of Month Value by Index	2014 IRP Basecase	173	$ 4.5345388	$ 5.1797492	$ 4.6157314	$ 6.2047043
First of Month Value by Index	2014 IRP Basecase	174	$ 5.3524657	$ 4.7625750	$ 5.4902055	$ 4.4187944
First of Month Value by Index	2014 IRP Basecase	175	$ 4.4398288	$ 4.3061983	$ 4.3989426	$ 5.4151749
First of Month Value by Index	2014 IRP Basecase	176	$ 4.5261685	$ 4.4457403	$ 4.6582053	$ 4.9231083
First of Month Value by Index	2014 IRP Basecase	177	$ 4.9328111	$ 4.8895463	$ 4.7329993	$ 5.4437967
First of Month Value by Index	2014 IRP Basecase	178	$ 5.6809637	$ 4.6039728	$ 5.1813417	$ 4.5166756
First of Month Value by Index	2014 IRP Basecase	179	$ 4.7458992	$ 4.9718331	$ 5.3494478	$ 5.0549724
First of Month Value by Index	2014 IRP Basecase	180	$ 4.9497443	$ 5.0784192	$ 4.7865925	$ 4.8736386
First of Month Value by Index	2014 IRP Basecase	181	$ 5.2755920	$ 4.9042217	$ 5.3201532	$ 5.0405085
First of Month Value by Index	2014 IRP Basecase	182	$ 5.3084017	$ 5.9055456	$ 4.7113139	$ 5.2840380
First of Month Value by Index	2014 IRP Basecase	183	$ 4.4767673	$ 5.2377707	$ 4.9143041	$ 5.3775949
First of Month Value by Index	2014 IRP Basecase	184	$ 5.6817733	$ 4.7244473	$ 4.8305502	$ 4.5491414
First of Month Value by Index	2014 IRP Basecase	185	$ 4.5349108	$ 5.0207081	$ 4.9153341	$ 4.8681037
First of Month Value by Index	2014 IRP Basecase	186	$ 5.1135808	$ 4.6538185	$ 5.3859684	$ 5.2822977
First of Month Value by Index	2014 IRP Basecase	187	$ 4.7997762	$ 4.5937905	$ 4.5837234	$ 5.2924251
First of Month Value by Index	2014 IRP Basecase	188	$ 4.4476079	$ 4.7688148	$ 4.3252422	$ 4.9393837
First of Month Value by Index	2014 IRP Basecase	189	$ 4.8203336	$ 4.5140745	$ 4.4795748	$ 4.4820284
First of Month Value by Index	2014 IRP Basecase	190	$ 5.1505268	$ 4.7441549	$ 4.8706454	$ 4.7080439
First of Month Value by Index	2014 IRP Basecase	191	$ 5.7510259	$ 4.4817278	$ 4.5397041	$ 4.8329524
First of Month Value by Index	2014 IRP Basecase	192	$ 5.7328425	$ 4.7702004	$ 4.6879105	$ 5.3087418
First of Month Value by Index	2014 IRP Basecase	193	$ 4.7357089	$ 5.0666756	$ 5.5012428	$ 5.4211986
First of Month Value by Index	2014 IRP Basecase	194	$ 6.1450406	$ 5.3257550	$ 4.4146152	$ 5.0210597
First of Month Value by Index	2014 IRP Basecase	195	$ 5.0057348	$ 4.6931304	$ 4.8313923	$ 5.6767387
First of Month Value by Index	2014 IRP Basecase	196	$ 5.5337707	$ 4.9992212	$ 4.5853266	$ 5.6340723
First of Month Value by Index	2014 IRP Basecase	197	$ 5.1913902	$ 5.0738976	$ 4.8482229	$ 5.1806609
First of Month Value by Index	2014 IRP Basecase	198	$ 5.3510396	$ 4.8973295	$ 5.0600474	$ 4.8093955
First of Month Value by Index	2014 IRP Basecase	199	$ 4.5271802	$ 5.1803139	$ 5.1441060	$ 5.2110058
First of Month Value by Index	2014 IRP Basecase	200	$ 4.8982451	$ 4.9898963	$ 4.2232128	$ 5.6621911
	NYMEX	Max	$ 6.1450406	$ 5.9055456	$ 6.1171193	$ 6.2185395
		Min	$ 3.6688017	$ 3.8589617	$ 3.9369697	$ 4.0269559
		avg	$ 4.9595850	$ 4.8194485	$ 4.9315619	$ 5.1484506

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	0	$ 5.1970056
First of Month Value by Index	2014 IRP Basecase	1	$ 5.3654846
First of Month Value by Index	2014 IRP Basecase	2	$ 5.1476198
First of Month Value by Index	2014 IRP Basecase	3	$ 6.1268414
First of Month Value by Index	2014 IRP Basecase	4	$ 5.1530993
First of Month Value by Index	2014 IRP Basecase	5	$ 4.5852213
First of Month Value by Index	2014 IRP Basecase	6	$ 5.3836205
First of Month Value by Index	2014 IRP Basecase	7	$ 5.1703976
First of Month Value by Index	2014 IRP Basecase	8	$ 5.1711993
First of Month Value by Index	2014 IRP Basecase	9	$ 4.7249843
First of Month Value by Index	2014 IRP Basecase	10	$ 5.0351707
First of Month Value by Index	2014 IRP Basecase	11	$ 5.0392742
First of Month Value by Index	2014 IRP Basecase	12	$ 5.5823296
First of Month Value by Index	2014 IRP Basecase	13	$ 5.3191650
First of Month Value by Index	2014 IRP Basecase	14	$ 5.1546384
First of Month Value by Index	2014 IRP Basecase	15	$ 5.5194081
First of Month Value by Index	2014 IRP Basecase	16	$ 5.6560687
First of Month Value by Index	2014 IRP Basecase	17	$ 6.2568335
First of Month Value by Index	2014 IRP Basecase	18	$ 5.4021365
First of Month Value by Index	2014 IRP Basecase	19	$ 5.8770031
First of Month Value by Index	2014 IRP Basecase	20	$ 5.8102910
First of Month Value by Index	2014 IRP Basecase	21	$ 4.8217148
First of Month Value by Index	2014 IRP Basecase	22	$ 5.5403232
First of Month Value by Index	2014 IRP Basecase	23	$ 5.5388716
First of Month Value by Index	2014 IRP Basecase	24	$ 4.7781901
First of Month Value by Index	2014 IRP Basecase	25	$ 5.0180579
First of Month Value by Index	2014 IRP Basecase	26	$ 5.2560698
First of Month Value by Index	2014 IRP Basecase	27	$ 5.3967746
First of Month Value by Index	2014 IRP Basecase	28	$ 5.3361262
First of Month Value by Index	2014 IRP Basecase	29	$ 4.6865130
First of Month Value by Index	2014 IRP Basecase	30	$ 5.0735366
First of Month Value by Index	2014 IRP Basecase	31	$ 5.2123135
First of Month Value by Index	2014 IRP Basecase	32	$ 5.1520563
First of Month Value by Index	2014 IRP Basecase	33	$ 5.1728256
First of Month Value by Index	2014 IRP Basecase	34	$ 5.2819549
First of Month Value by Index	2014 IRP Basecase	35	$ 5.0846128
First of Month Value by Index	2014 IRP Basecase	36	$ 5.8992329
First of Month Value by Index	2014 IRP Basecase	37	$ 5.2242898
First of Month Value by Index	2014 IRP Basecase	38	$ 5.8662663
First of Month Value by Index	2014 IRP Basecase	39	$ 5.0474845
First of Month Value by Index	2014 IRP Basecase	40	$ 6.1117658
First of Month Value by Index	2014 IRP Basecase	41	$ 4.8018417
First of Month Value by Index	2014 IRP Basecase	42	$ 4.7787579
First of Month Value by Index	2014 IRP Basecase	43	$ 5.4918740
First of Month Value by Index	2014 IRP Basecase	44	$ 4.6966806
First of Month Value by Index	2014 IRP Basecase	45	$ 4.8768914
First of Month Value by Index	2014 IRP Basecase	46	$ 6.3691569
First of Month Value by Index	2014 IRP Basecase	47	$ 5.7203106
First of Month Value by Index	2014 IRP Basecase	48	$ 4.9981582
First of Month Value by Index	2014 IRP Basecase	49	$ 5.4676662
First of Month Value by Index	2014 IRP Basecase	50	$ 5.2888968
First of Month Value by Index	2014 IRP Basecase	51	$ 5.0637528
First of Month Value by Index	2014 IRP Basecase	52	$ 5.2544147

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	53	$ 5.4940236
First of Month Value by Index	2014 IRP Basecase	54	$ 4.4921377
First of Month Value by Index	2014 IRP Basecase	55	$ 4.4498620
First of Month Value by Index	2014 IRP Basecase	56	$ 4.9310446
First of Month Value by Index	2014 IRP Basecase	57	$ 5.1925290
First of Month Value by Index	2014 IRP Basecase	58	$ 5.2437208
First of Month Value by Index	2014 IRP Basecase	59	$ 5.2816524
First of Month Value by Index	2014 IRP Basecase	60	$ 4.9998106
First of Month Value by Index	2014 IRP Basecase	61	$ 5.3503439
First of Month Value by Index	2014 IRP Basecase	62	$ 4.5179499
First of Month Value by Index	2014 IRP Basecase	63	$ 5.5227095
First of Month Value by Index	2014 IRP Basecase	64	$ 5.5468995
First of Month Value by Index	2014 IRP Basecase	65	$ 4.9785639
First of Month Value by Index	2014 IRP Basecase	66	$ 5.2488998
First of Month Value by Index	2014 IRP Basecase	67	$ 5.6531340
First of Month Value by Index	2014 IRP Basecase	68	$ 5.7907693
First of Month Value by Index	2014 IRP Basecase	69	$ 5.2976158
First of Month Value by Index	2014 IRP Basecase	70	$ 4.8888533
First of Month Value by Index	2014 IRP Basecase	71	$ 5.0802476
First of Month Value by Index	2014 IRP Basecase	72	$ 5.2694360
First of Month Value by Index	2014 IRP Basecase	73	$ 5.4052307
First of Month Value by Index	2014 IRP Basecase	74	$ 5.2804532
First of Month Value by Index	2014 IRP Basecase	75	$ 5.6934815
First of Month Value by Index	2014 IRP Basecase	76	$ 5.7473223
First of Month Value by Index	2014 IRP Basecase	77	$ 4.6487779
First of Month Value by Index	2014 IRP Basecase	78	$ 6.2356248
First of Month Value by Index	2014 IRP Basecase	79	$ 4.4939870
First of Month Value by Index	2014 IRP Basecase	80	$ 4.7444786
First of Month Value by Index	2014 IRP Basecase	81	$ 5.9617831
First of Month Value by Index	2014 IRP Basecase	82	$ 5.6514470
First of Month Value by Index	2014 IRP Basecase	83	$ 5.1638463
First of Month Value by Index	2014 IRP Basecase	84	$ 4.6644654
First of Month Value by Index	2014 IRP Basecase	85	$ 5.0949095
First of Month Value by Index	2014 IRP Basecase	86	$ 5.9597152
First of Month Value by Index	2014 IRP Basecase	87	$ 5.3535763
First of Month Value by Index	2014 IRP Basecase	88	$ 5.0935311
First of Month Value by Index	2014 IRP Basecase	89	$ 5.5209204
First of Month Value by Index	2014 IRP Basecase	90	$ 5.2293791
First of Month Value by Index	2014 IRP Basecase	91	$ 5.2406689
First of Month Value by Index	2014 IRP Basecase	92	$ 5.3004707
First of Month Value by Index	2014 IRP Basecase	93	$ 4.9487388
First of Month Value by Index	2014 IRP Basecase	94	$ 6.0944437
First of Month Value by Index	2014 IRP Basecase	95	$ 5.5790123
First of Month Value by Index	2014 IRP Basecase	96	$ 5.3893895
First of Month Value by Index	2014 IRP Basecase	97	$ 5.4928790
First of Month Value by Index	2014 IRP Basecase	98	$ 5.7214965
First of Month Value by Index	2014 IRP Basecase	99	$ 5.3906976
First of Month Value by Index	2014 IRP Basecase	100	$ 5.1993437
First of Month Value by Index	2014 IRP Basecase	101	$ 5.0514795
First of Month Value by Index	2014 IRP Basecase	102	$ 4.2607957
First of Month Value by Index	2014 IRP Basecase	103	$ 6.0234784
First of Month Value by Index	2014 IRP Basecase	104	$ 5.3079810
First of Month Value by Index	2014 IRP Basecase	105	$ 5.2653873

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	106	$ 5.0082677
First of Month Value by Index	2014 IRP Basecase	107	$ 5.7348637
First of Month Value by Index	2014 IRP Basecase	108	$ 6.1061756
First of Month Value by Index	2014 IRP Basecase	109	$ 5.4695712
First of Month Value by Index	2014 IRP Basecase	110	$ 4.9405764
First of Month Value by Index	2014 IRP Basecase	111	$ 5.2157424
First of Month Value by Index	2014 IRP Basecase	112	$ 5.2094494
First of Month Value by Index	2014 IRP Basecase	113	$ 5.7843321
First of Month Value by Index	2014 IRP Basecase	114	$ 5.3585884
First of Month Value by Index	2014 IRP Basecase	115	$ 5.4298109
First of Month Value by Index	2014 IRP Basecase	116	$ 5.0398645
First of Month Value by Index	2014 IRP Basecase	117	$ 5.6000467
First of Month Value by Index	2014 IRP Basecase	118	$ 5.6695451
First of Month Value by Index	2014 IRP Basecase	119	$ 4.9624031
First of Month Value by Index	2014 IRP Basecase	120	$ 4.7973674
First of Month Value by Index	2014 IRP Basecase	121	$ 5.2260897
First of Month Value by Index	2014 IRP Basecase	122	$ 5.4456658
First of Month Value by Index	2014 IRP Basecase	123	$ 4.1913760
First of Month Value by Index	2014 IRP Basecase	124	$ 5.8708683
First of Month Value by Index	2014 IRP Basecase	125	$ 5.6194437
First of Month Value by Index	2014 IRP Basecase	126	$ 5.6004163
First of Month Value by Index	2014 IRP Basecase	127	$ 5.5260791
First of Month Value by Index	2014 IRP Basecase	128	$ 5.5684418
First of Month Value by Index	2014 IRP Basecase	129	$ 4.9277722
First of Month Value by Index	2014 IRP Basecase	130	$ 5.3026625
First of Month Value by Index	2014 IRP Basecase	131	$ 5.1213848
First of Month Value by Index	2014 IRP Basecase	132	$ 5.5102001
First of Month Value by Index	2014 IRP Basecase	133	$ 5.2464239
First of Month Value by Index	2014 IRP Basecase	134	$ 4.7365237
First of Month Value by Index	2014 IRP Basecase	135	$ 5.4381818
First of Month Value by Index	2014 IRP Basecase	136	$ 4.8253028
First of Month Value by Index	2014 IRP Basecase	137	$ 5.3706774
First of Month Value by Index	2014 IRP Basecase	138	$ 5.2613197
First of Month Value by Index	2014 IRP Basecase	139	$ 5.5524128
First of Month Value by Index	2014 IRP Basecase	140	$ 5.0840574
First of Month Value by Index	2014 IRP Basecase	141	$ 5.3960206
First of Month Value by Index	2014 IRP Basecase	142	$ 4.7333815
First of Month Value by Index	2014 IRP Basecase	143	$ 5.1842559
First of Month Value by Index	2014 IRP Basecase	144	$ 4.9606479
First of Month Value by Index	2014 IRP Basecase	145	$ 5.0200674
First of Month Value by Index	2014 IRP Basecase	146	$ 5.2255813
First of Month Value by Index	2014 IRP Basecase	147	$ 5.0971914
First of Month Value by Index	2014 IRP Basecase	148	$ 5.3275222
First of Month Value by Index	2014 IRP Basecase	149	$ 5.2477792
First of Month Value by Index	2014 IRP Basecase	150	$ 5.2523204
First of Month Value by Index	2014 IRP Basecase	151	$ 5.8775838
First of Month Value by Index	2014 IRP Basecase	152	$ 4.4756848
First of Month Value by Index	2014 IRP Basecase	153	$ 4.6586793
First of Month Value by Index	2014 IRP Basecase	154	$ 5.2708817
First of Month Value by Index	2014 IRP Basecase	155	$ 5.3940483
First of Month Value by Index	2014 IRP Basecase	156	$ 5.1650237
First of Month Value by Index	2014 IRP Basecase	157	$ 6.0950628
First of Month Value by Index	2014 IRP Basecase	158	$ 5.3143037

Data Item	Scenario	Draw	2035
First of Month Value by Index	2014 IRP Basecase	159	$ 5.5708658
First of Month Value by Index	2014 IRP Basecase	160	$ 5.0037004
First of Month Value by Index	2014 IRP Basecase	161	$ 5.4053989
First of Month Value by Index	2014 IRP Basecase	162	$ 4.6244352
First of Month Value by Index	2014 IRP Basecase	163	$ 4.5761063
First of Month Value by Index	2014 IRP Basecase	164	$ 5.7936730
First of Month Value by Index	2014 IRP Basecase	165	$ 5.7725949
First of Month Value by Index	2014 IRP Basecase	166	$ 4.9872110
First of Month Value by Index	2014 IRP Basecase	167	$ 4.9556260
First of Month Value by Index	2014 IRP Basecase	168	$ 4.5809222
First of Month Value by Index	2014 IRP Basecase	169	$ 4.9375822
First of Month Value by Index	2014 IRP Basecase	170	$ 5.6803637
First of Month Value by Index	2014 IRP Basecase	171	$ 4.8262479
First of Month Value by Index	2014 IRP Basecase	172	$ 4.6941772
First of Month Value by Index	2014 IRP Basecase	173	$ 4.7027104
First of Month Value by Index	2014 IRP Basecase	174	$ 5.3327808
First of Month Value by Index	2014 IRP Basecase	175	$ 5.6221274
First of Month Value by Index	2014 IRP Basecase	176	$ 5.3003795
First of Month Value by Index	2014 IRP Basecase	177	$ 5.5665714
First of Month Value by Index	2014 IRP Basecase	178	$ 5.1120269
First of Month Value by Index	2014 IRP Basecase	179	$ 4.9354737
First of Month Value by Index	2014 IRP Basecase	180	$ 4.5667185
First of Month Value by Index	2014 IRP Basecase	181	$ 5.2393979
First of Month Value by Index	2014 IRP Basecase	182	$ 5.4681090
First of Month Value by Index	2014 IRP Basecase	183	$ 4.9037831
First of Month Value by Index	2014 IRP Basecase	184	$ 5.2374454
First of Month Value by Index	2014 IRP Basecase	185	$ 5.5039478
First of Month Value by Index	2014 IRP Basecase	186	$ 4.9246668
First of Month Value by Index	2014 IRP Basecase	187	$ 5.3884400
First of Month Value by Index	2014 IRP Basecase	188	$ 4.6695675
First of Month Value by Index	2014 IRP Basecase	189	$ 4.5460741
First of Month Value by Index	2014 IRP Basecase	190	$ 5.5111453
First of Month Value by Index	2014 IRP Basecase	191	$ 4.7935822
First of Month Value by Index	2014 IRP Basecase	192	$ 5.4216274
First of Month Value by Index	2014 IRP Basecase	193	$ 5.3297017
First of Month Value by Index	2014 IRP Basecase	194	$ 5.2535213
First of Month Value by Index	2014 IRP Basecase	195	$ 4.5591551
First of Month Value by Index	2014 IRP Basecase	196	$ 5.8426413
First of Month Value by Index	2014 IRP Basecase	197	$ 5.0868622
First of Month Value by Index	2014 IRP Basecase	198	$ 4.8638477
First of Month Value by Index	2014 IRP Basecase	199	$ 5.7881397
First of Month Value by Index	2014 IRP Basecase	200	$ 5.0934636
	NYMEX	Max	$ 6.3691569
		Min	$ 4.1913760
		avg	$ 5.2532416

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.00%

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Category	1	2	3	4	5	6	7	8	9
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.42376	$ 0.41893	$ 0.41008	$ 0.38128	$ 0.36780	$ 0.34089	$ 0.31463	$ 0.31208	$ 0.29403
Nominal Cost Per Therm	$ 0.46	$ 0.50	$ 0.53	$ 0.53	$ 0.56	$ 0.56	$ 0.57	$ 0.61	$ 0.63
Verification	$0.4238	$ 0.42	$0.4101	$0.3813	$0.3678	$0.3409	$0.3146	$0.3121	$0.2940
Resource Portfolio Cost - % Change		7.51%	6.48%	1.12%	4.91%	0.80%	0.37%	7.89%	2.47%
PV of Resource Portfolio Cost/Therm	$ 0.42	$ 0.84	$ 1.25	$ 1.63	$ 2.00	$ 2.34	$ 2.66	$ 2.97	$ 3.26
Portfolio Costs with 10% Conservation Credit	$0.47	$0.93	$1.38	$1.80	$2.20	$2.58	$2.92	$3.27	$3.59
Cost-Effectiveness Limit	$0.4813	$0.4862	$0.4895	$0.4865	$0.4843	$0.4797	$0.4736	$0.4702	$0.4665

* 2014 IRP Start - All Resources Medium Forecast Scenario Average Weather. 8.76% discount rate (CNGC weighted average cost of capital) utilized in Sendout Model.

PRELIMIINARY AVOIDED COST ESTIMATES
BASECASE - MEDIUM FORECAST - AVERAGE WEATHER
45 YEAR RESOURCE SUMMARY COSTS - MELDED COST PER THERM

	YEAR	IRP ANNUAL PORTFOLIO COST PER THERM (PV)*	NOMINAL COST PER THERM	RESOURCE PORTFOLIO COST - % CHANGE	PV OF RESOURCE PORTFOLIO COST/THERM	Non-Energy Benefits %	ORTFOLIO COSTS INCLUDING CONSERVATION CREDIT	COST-EFFECTIVENESS LIMIT
2015	1	$ 0.42	$ 0.46		$ 0.42	5%	$ 0.4450	$0.4635
2016	2	$ 0.42	$ 0.50	7.51%	$ 0.84	5%	$ 0.8848	$0.4703
2017	3	$ 0.41	$ 0.53	6.48%	$ 1.25	5%	$ 1.3154	$0.4755
2018	4	$ 0.38	$ 0.53	1.12%	$ 1.63	5%	$ 1.7158	$0.4746
2019	**5**	**$ 0.37**	**$ 0.56**	**4.91%**	**$ 2.00**	7.5%	**$ 2.1520**	$0.4857
2020	6	$ 0.34	$ 0.56	0.80%	$ 2.34	7.5%	$ 2.5185	$0.4831
2021	7	$ 0.31	$ 0.57	0.37%	$ 2.66	7.5%	$ 2.8567	$0.4789
2022	8	$ 0.31	$ 0.61	7.89%	$ 2.97	7.5%	$ 3.1922	$0.4775
2023	9	$ 0.29	$ 0.63	2.47%	$ 3.26	7.5%	$ 3.5083	$0.4755
2024	**10**	**$ 0.27**	**$ 0.63**	**0.62%**	**$ 3.54**	10.0%	**$ 3.8891**	$0.4836
2025	11	$ 0.24	$ 0.61	-2.59%	$ 3.78	10%	$ 4.1571	$0.4789
2026	12	$ 0.24	$ 0.65	6.05%	$ 4.02	10%	$ 4.4185	$0.4755
2027	13	$ 0.23	$ 0.67	3.44%	$ 4.24	10%	$ 4.6671	$0.4723
2028	14	$ 0.21	$ 0.67	0.16%	$ 4.45	10%	$ 4.8960	$0.4687
2029	15	$ 0.19	$ 0.66	-1.51%	$ 4.64	12.5%	$ 5.2192	$0.4750
2030	16	$ 0.18	$ 0.67	1.42%	$ 4.82	12.5%	$ 5.4169	$0.4707
2031	17	$ 0.15	$ 0.64	-4.66%	$ 4.97	12.5%	$ 5.5902	$0.4656
2032	18	$ 0.14	$ 0.65	0.69%	$ 5.11	12.5%	$ 5.7507	$0.4606
2033	19	$ 0.14	$ 0.69	6.05%	$ 5.25	12.5%	$ 5.9071	$0.4563
2034	**20**	**$ 0.13**	**$ 0.69**	**0.86%**	**$ 5.38**	12.5%	**$ 6.0521**	$0.4521
2035	21	$ 0.12	$ 0.71	2.00%	$ 5.50	15%	$ 6.3257	$0.4580
2036	22	$ 0.11	$ 0.72	2.00%	$ 5.61	15%	$ 6.4561	$0.4540
2037	23	$ 0.11	$ 0.73	2.00%	$ 5.72	15%	$ 6.5785	$0.4503
2038	24	$ 0.10	$ 0.75	2.00%	$ 5.82	15%	$ 6.6932	$0.4467
2039	25	$ 0.09	$ 0.76	2.00%	$ 5.91	15%	$ 6.8008	$0.4432
2040	26	$ 0.09	$ 0.78	2.00%	$ 6.00	17.5%	$ 7.0517	$0.4494
2041	27	$ 0.08	$ 0.79	2.00%	$ 6.08	17.5%	$ 7.1484	$0.4461
2042	28	$ 0.08	$ 0.81	2.00%	$ 6.16	17.5%	$ 7.2391	$0.4430
2043	29	$ 0.07	$ 0.83	2.00%	$ 6.23	17.5%	$ 7.3241	$0.4400
2044	**30**	**$ 0.07**	**$ 0.84**	**2.00%**	**$ 6.30**	**17.5%**	**$ 7.4039**	$0.4370
2045	31	$ 0.06	$ 0.86	2.00%	$ 6.36	20%	$ 7.6378	$0.4435
2046	32	$ 0.06	$ 0.88	2.00%	$ 6.42	20%	$ 7.7094	$0.4407
2047	33	$ 0.06	$ 0.89	2.00%	$ 6.48	20%	$ 7.7766	$0.4381
2048	34	$ 0.05	$ 0.91	2.00%	$ 6.53	20%	$ 7.8396	$0.4355
2049	35	$ 0.05	$ 0.93	2.00%	$ 6.58	20%	$ 7.8987	$0.4330
2050	36	$ 0.05	$ 0.95	2.00%	$ 6.63	20%	$ 7.9541	$0.4306
2051	37	$ 0.04	$ 0.97	2.00%	$ 6.67	20%	$ 8.0061	$0.4283
2052	38	$ 0.04	$ 0.99	2.00%	$ 6.71	20%	$ 8.0549	$0.4261
2053	39	$ 0.04	$ 1.01	2.00%	$ 6.75	20%	$ 8.1006	$0.4240
2054	**40**	**$ 0.04**	**$ 1.03**	**2.00%**	**$ 6.79**	20%	**$ 8.1434**	$0.4219
2055	41	$ 0.03	$ 1.05	2.00%	$ 6.82	20%	$ 8.1837	$0.4199
2056	42	$ 0.03	$ 1.07	2.00%	$ 6.85	20%	$ 8.2214	$0.4180
2057	43	$ 0.03	$ 1.09	2.00%	$ 6.88	20%	$ 8.2567	$0.4161
2058	44	$ 0.03	$ 1.11	2.00%	$ 6.91	20%	$ 8.2899	$0.4143
2059	45	$ 0.03	$ 1.13	2.00%	$ 6.93	20%	$ 8.3210	$0.4126
		$ 0.15	$ 0.773	$ 0.02	$ 5.05			

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.00% (EIA Inflation Rate)

Conservation Credit % attempts to recognize non-quantifiable benefits associated with conservation, including benefits of price certainty & hedge against future carbon costs

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2024	2025	2026	2027	2028	2029	2030	2031	2032
Category	10	11	12	13	14	15	16	17	18
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.27206	$ 0.24366	$ 0.23759	$ 0.22598	$ 0.20812	$ 0.18846	$ 0.17573	$ 0.15405	$ 0.14259
Nominal Cost Per Therm	$ 0.63	$ 0.61	$ 0.65	$ 0.67	$ 0.67	$ 0.66	$ 0.67	$ 0.64	$ 0.65
Verification	$0.2720	$0.2437	$0.2376	$0.2260	$0.2081	$0.1884	$0.1757	$0.1540	$0.1426
Resource Portfolio Cost - % Change	0.62%	-2.59%	6.05%	3.44%	0.16%	-1.51%	1.42%	-4.66%	0.69%
PV of Resource Portfolio Cost/Therm	$ 3.54	$ 3.78	$ 4.02	$ 4.24	$ 4.45	$ 4.64	$ 4.82	$ 4.97	$ 5.11
Portfolio Costs with 10% Conservation Credit	$3.89	$4.16	$4.42	$4.67	$4.90	$5.10	$5.30	$5.47	$5.62
Cost-Effectiveness Limit	$0.4618	$0.4555	$0.4505	$0.4459	$0.4408	$0.4353	$0.4298	$0.4236	$0.4175

* 2014 IRP Start - All Resources Medium Foreca

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Category	19	20	21	22	23	24	25	26	27	28
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.13904	$ 0.12894	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08	$ 0.08
Nominal Cost Per Therm	$ 0.69	$ 0.69	$ 0.71	$ 0.72	$ 0.73	$ 0.75	$ 0.76	$ 0.78	$ 0.79	$ 0.81
Verification	$0.1390	$0.1289	$0.1209	$0.1134	$0.1064	$0.0998	$0.0936	$0.0877	$0.0823	$0.0772
Resource Portfolio Cost - % Change	6.05%	0.86%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 5.25	$ 5.38	$ 5.50	$ 5.61	$ 5.72	$ 5.82	$ 5.91	$ 6.00	$ 6.08	$ 6.16
Portfolio Costs with 10% Conservation Credit	$5.78	$5.92	$6.05	$6.18	$6.29	$6.40	$6.51	$6.60	$6.69	$6.78
Cost-Effectiveness Limit	$0.4122	$0.4070	$0.4020	$0.3973	$0.3927	$0.3883	$0.3841	$0.3800	$0.3761	$0.3723

* 2014 IRP Start - All Resources Medium Foreca

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052
Category	29	30	31	32	33	34	35	36	37	38
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05	$ 0.04	$ 0.04
Nominal Cost Per Therm	$ 0.83	$ 0.84	$ 0.86	$ 0.88	$ 0.89	$ 0.91	$ 0.93	$ 0.95	$ 0.97	$ 0.99
Verification	$0.0724	$0.0679	$0.0637	$0.0597	$0.0560	$0.0525	$0.0492	$0.0462	$0.0433	$0.0406
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.23	$ 6.30	$ 6.36	$ 6.42	$ 6.48	$ 6.53	$ 6.58	$ 6.63	$ 6.67	$ 6.71
Portfolio Costs with 10% Conservation Credit	$6.86	$6.93	$7.00	$7.07	$7.13	$7.19	$7.24	$7.29	$7.34	$7.38
Cost-Effectiveness Limit	$0.3687	$0.3652	$0.3618	$0.3585	$0.3554	$0.3523	$0.3494	$0.3465	$0.3438	$0.3412

* 2014 IRP Start - All Resources Medium Foreca

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2053	2054	2055	2056	2057	2058	2059
Category	39	40	41	42	43	44	45
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Nominal Cost Per Therm	$ 1.01	$ 1.03	$ 1.05	$ 1.07	$ 1.09	$ 1.11	$ 1.13
Verification	$0.0381	$0.0357	$0.0335	$0.0314	$0.0295	$0.0276	$0.0259
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.75	$ 6.79	$ 6.82	$ 6.85	$ 6.88	$ 6.91	$ 6.93
Portfolio Costs with 10% Conservation Credit	$7.43	$7.46	$7.50	$7.54	$7.57	$7.60	$7.63
Cost-Effectiveness Limit	$0.3386	$0.3361	$0.3337	$0.3314	$0.3292	$0.3270	$0.3249

* 2014 IRP Start - All Resources Medium Foreca

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Revised Discount Rate= 8.760%
Years 21-45 Escalation = 2.000% (EIA Inflation Rate)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Category	1	2	3	4	5	6	7	8	9
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Nominal Cost Per Therm	$ 0.46	$ 0.50	$ 0.53	$ 0.53	$ 0.56	$ 0.56	$ 0.57	$ 0.61	$ 0.63
Verification	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Resource Portfolio Cost - % Change		7.51%	6.48%	1.12%	4.91%	0.80%	0.37%	7.89%	2.47%
PV of Resource Portfolio Cost/Therm	$ 0.42	$ 0.84	$ 1.25	$ 1.63	$ 2.00	$ 2.34	$ 2.66	$ 2.97	$ 3.26
Portfolio Costs with 10% Conservation Credit	$ 0.47	$0.93	$1.38	$1.80	$2.20	$2.58	$2.92	$3.27	$3.59
Cost-Effectiveness Limit	$ 0.48	$0.4862	$0.4895	$0.4865	$0.4843	$0.4797	$0.4736	$0.4702	$0.4665

* 2014 IRP Start - All Resources Medium Forecast Scenario Average Weather. 8.76% discount rate (CNGC weighted average cost of capital) utilized in Sendout Model.

PRELIMIINARY AVOIDED COST ESTIMATES
BASECASE - MEDIUM FORECAST - AVERAGE WEATHER - with Carbon 1 Scenario
45 YEAR RESOURCE SUMMARY COSTS - MELDED COST PER THERM

	YEAR	IRP ANNUAL PORTFOLIO COST PER THERM (PV)*	NOMINAL COST PER THERM	RESOURCE PORTFOLIO COST - % CHANGE	PV OF RESOURCE PORTFOLIO COST/THERM	Non-Energy Benefits %	ORTFOLIO COSTS INCLUDING CONSERVATIOI CREDIT	COST-EFFECTIVENESS LIMIT
2015	1	$ 0.42	$ 0.46		$ 0.42	5%	$ 0.4450	$0.4635
2016	2	$ 0.42	$ 0.50	7.51%	$ 0.84	5%	$ 0.8848	$0.4703
2017	3	$ 0.41	$ 0.53	6.48%	$ 1.25	5%	$ 1.3154	$0.4755
2018	4	$ 0.38	$ 0.53	1.12%	$ 1.63	5%	$ 1.7158	$0.4746
2019	**5**	**$ 0.37**	**$ 0.56**	**4.91%**	**$ 2.00**	7.5%	**$ 2.1520**	$0.4857
2020	6	$ 0.34	$ 0.56	0.80%	$ 2.34	7.5%	$ 2.5185	$0.4831
2021	7	$ 0.31	$ 0.57	0.37%	$ 2.66	7.5%	$ 2.8567	$0.4789
2022	8	$ 0.31	$ 0.61	7.89%	$ 2.97	7.5%	$ 3.1922	$0.4775
2023	9	$ 0.29	$ 0.63	2.47%	$ 3.26	7.5%	$ 3.5083	$0.4755
2024	**10**	**$ 0.27**	**$ 0.63**	**0.62%**	**$ 3.54**	10.0%	**$ 3.8891**	$0.4836
2025	11	$ 0.24	$ 0.61	-2.59%	$ 3.78	10%	$ 4.1571	$0.4789
2026	12	$ 0.24	$ 0.65	6.05%	$ 4.02	10%	$ 4.4185	$0.4755
2027	13	$ 0.23	$ 0.67	3.44%	$ 4.24	10%	$ 4.6671	$0.4723
2028	14	$ 0.21	$ 0.67	0.16%	$ 4.45	10%	$ 4.8960	$0.4687
2029	15	$ 0.19	$ 0.66	-1.51%	$ 4.64	12.5%	$ 5.2192	$0.4750
2030	16	$ 0.18	$ 0.67	1.42%	$ 4.82	12.5%	$ 5.4169	$0.4707
2031	17	$ 0.15	$ 0.64	-4.66%	$ 4.97	12.5%	$ 5.5902	$0.4656
2032	18	$ 0.14	$ 0.65	0.69%	$ 5.11	12.5%	$ 5.7507	$0.4606
2033	19	$ 0.14	$ 0.69	6.05%	$ 5.25	12.5%	$ 5.9071	$0.4563
2034	**20**	**$ 0.13**	**$ 0.69**	**0.86%**	**$ 5.38**	12.5%	**$ 6.0521**	$0.4521
2035	21	$ 0.12	$ 0.71	2.00%	$ 5.50	15%	$ 6.3257	$0.4580
2036	22	$ 0.11	$ 0.72	2.00%	$ 5.61	15%	$ 6.4561	$0.4540
2037	23	$ 0.11	$ 0.73	2.00%	$ 5.72	15%	$ 6.5785	$0.4503
2038	24	$ 0.10	$ 0.75	2.00%	$ 5.82	15%	$ 6.6932	$0.4467
2039	25	$ 0.09	$ 0.76	2.00%	$ 5.91	15%	$ 6.8008	$0.4432
2040	26	$ 0.09	$ 0.78	2.00%	$ 6.00	17.5%	$ 7.0517	$0.4494
2041	27	$ 0.08	$ 0.79	2.00%	$ 6.08	17.5%	$ 7.1484	$0.4461
2042	28	$ 0.08	$ 0.81	2.00%	$ 6.16	17.5%	$ 7.2391	$0.4430
2043	29	$ 0.07	$ 0.83	2.00%	$ 6.23	17.5%	$ 7.3241	$0.4400
2044	**30**	**$ 0.07**	**$ 0.84**	**2.00%**	**$ 6.30**	**17.5%**	**$ 7.4039**	$0.4370
2045	31	$ 0.06	$ 0.86	2.00%	$ 6.36	20%	$ 7.6378	$0.4435
2046	32	$ 0.06	$ 0.88	2.00%	$ 6.42	20%	$ 7.7094	$0.4407
2047	33	$ 0.06	$ 0.89	2.00%	$ 6.48	20%	$ 7.7766	$0.4381
2048	34	$ 0.05	$ 0.91	2.00%	$ 6.53	20%	$ 7.8396	$0.4355
2049	35	$ 0.05	$ 0.93	2.00%	$ 6.58	20%	$ 7.8987	$0.4330
2050	36	$ 0.05	$ 0.95	2.00%	$ 6.63	20%	$ 7.9541	$0.4306
2051	37	$ 0.04	$ 0.97	2.00%	$ 6.67	20%	$ 8.0061	$0.4283
2052	38	$ 0.04	$ 0.99	2.00%	$ 6.71	20%	$ 8.0549	$0.4261
2053	39	$ 0.04	$ 1.01	2.00%	$ 6.75	20%	$ 8.1006	$0.4240
2054	**40**	**$ 0.04**	**$ 1.03**	**2.00%**	**$ 6.79**	20%	**$ 8.1434**	$0.4219
2055	41	$ 0.03	$ 1.05	2.00%	$ 6.82	20%	$ 8.1837	$0.4199
2056	42	$ 0.03	$ 1.07	2.00%	$ 6.85	20%	$ 8.2214	$0.4180
2057	43	$ 0.03	$ 1.09	2.00%	$ 6.88	20%	$ 8.2567	$0.4161
2058	44	$ 0.03	$ 1.11	2.00%	$ 6.91	20%	$ 8.2899	$0.4143
2059	45	$ 0.03	$ 1.13	2.00%	$ 6.93	20%	$ 8.3210	$0.4126

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.00% (EIA Inflation Rate)

Conservation Credit % attempts to recognize non-quantifiable benefits associated with conservation, including benefits of price certainty & hedge against future carbon costs
Carbon estimated at $15/ton, applies to Natural Gas 2017

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Revised Discount Rate=
Years 21-45 Escalation =

	2024	2025	2026	2027	2028	2029	2030	2031	2032
Category	10	11	12	13	14	15	16	17	18
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Nominal Cost Per Therm	$ 0.63	$ 0.61	$ 0.65	$ 0.67	$ 0.67	$ 0.66	$ 0.67	$ 0.64	$ 0.65
Verification	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Resource Portfolio Cost - % Change	0.62%	-2.59%	6.05%	3.44%	0.16%	-1.51%	1.42%	-4.66%	0.69%
PV of Resource Portfolio Cost/Therm	$ 3.54	$ 3.78	$ 4.02	$ 4.24	$ 4.45	$ 4.64	$ 4.82	$ 4.97	$ 5.11
Portfolio Costs with 10% Conservation Credit	$3.89	$4.16	$4.42	$4.67	$4.90	$5.10	$5.30	$5.47	$5.62
Cost-Effectiveness Limit	$0.4618	$0.4555	$0.4505	$0.4459	$0.4408	$0.4353	$0.4298	$0.4236	$0.4175

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Revised Discount Rate=
Years 21-45 Escalation =

	2033	2034	2035	2036	2037	2038	2039	2040	2041
Category	19	20	21	22	23	24	25	26	27
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Nominal Cost Per Therm	$ 0.69	$ 0.69	$ 0.71	$ 0.72	$ 0.73	$ 0.75	$ 0.76	$ 0.78	$ 0.79
Verification	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Resource Portfolio Cost - % Change	6.05%	0.86%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 5.25	$ 5.38	$ 5.50	$ 5.61	$ 5.72	$ 5.82	$ 5.91	$ 6.00	$ 6.08
Portfolio Costs with 10% Conservation Credit	$5.78	$5.92	$6.05	$6.18	$6.29	$6.40	$6.51	$6.60	$6.69
Cost-Effectiveness Limit	$0.4122	$0.4070	$0.4020	$0.3973	$0.3927	$0.3883	$0.3841	$0.3800	$0.3761

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Revised Discount Rate=
Years 21-45 Escalation =

	2042	2043	2044	2045	2046	2047	2048	2049	2050
Category	28	29	30	31	32	33	34	35	36
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Nominal Cost Per Therm	$ 0.81	$ 0.83	$ 0.84	$ 0.86	$ 0.88	$ 0.89	$ 0.91	$ 0.93	$ 0.95
Verification	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.16	$ 6.23	$ 6.30	$ 6.36	$ 6.42	$ 6.48	$ 6.53	$ 6.58	$ 6.63
Portfolio Costs with 10% Conservation Credit	$6.78	$6.86	$6.93	$7.00	$7.07	$7.13	$7.19	$7.24	$7.29
Cost-Effectiveness Limit	$0.3723	$0.3687	$0.3652	$0.3618	$0.3585	$0.3554	$0.3523	$0.3494	$0.3465

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Revised Discount Rate=
Years 21-45 Escalation =

	2051	2052	2053	2054	2055	2056	2057	2058	2059
Category	37	38	39	40	41	42	43	44	45
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Nominal Cost Per Therm	$ 0.97	$ 0.99	$ 1.01	$ 1.03	$ 1.05	$ 1.07	$ 1.09	$ 1.11	$ 1.13
Verification	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.67	$ 6.71	$ 6.75	$ 6.79	$ 6.82	$ 6.85	$ 6.88	$ 6.91	$ 6.93
Portfolio Costs with 10% Conservation Credit	$7.34	$7.38	$7.43	$7.46	$7.50	$7.54	$7.57	$7.60	$7.63
Cost-Effectiveness Limit	$0.3438	$0.3412	$0.3386	$0.3361	$0.3337	$0.3314	$0.3292	$0.3270	$0.3249

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.000% (EIA Inflation Rate)

Category	2015 1	2016 2	2017 3	2018 4	2019 5	2020 6	2021 7	2022 8	2023 9
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Nominal Cost Per Therm	$ 0.46	$ 0.50	$ 0.53	$ 0.53	$ 0.56	$ 0.56	$ 0.57	$ 0.61	$ 0.63
Verification	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Resource Portfolio Cost - % Change		7.51%	6.48%	1.12%	4.91%	0.80%	0.37%	7.89%	2.47%
PV of Resource Portfolio Cost/Therm	$ 0.42	$ 0.84	$ 1.25	$ 1.63	$ 2.00	$ 2.34	$ 2.66	$ 2.97	$ 3.26
Portfolio Costs with 10% Conservation Credit	$ 0.47	$0.93	$1.38	$1.80	$2.20	$2.58	$2.92	$3.27	$3.59
Cost-Effectiveness Limit	$ 0.48	$0.4862	$0.4895	$0.4865	$0.4843	$0.4797	$0.4736	$0.4702	$0.4665

* 2014 IRP Start - All Resources Medium Forecast Scenario Average Weather. 8.76% discount rate (CNGC weighted average cost of capital) utilized in Sendout Model.

PRELIMIINARY AVOIDED COST ESTIMATES
BASECASE - MEDIUM FORECAST - AVERAGE WEATHER - Carbon 2 scenario
45 YEAR RESOURCE SUMMARY COSTS - MELDED COST PER THERM

	YEAR	IRP ANNUAL PORTFOLIO COST PER THERM (PV)*	NOMINAL COST PER THERM	RESOURCE PORTFOLIO COST - % CHANGE	PV OF RESOURCE PORTFOLIO COST/THERM	Non-Energy Benefits %	ORTFOLIO COSTS INCLUDING CONSERVATIOI CREDIT	COST-EFFECTIVENESS LIMIT
2015	1	$ 0.42	$ 0.46		$ 0.42	10%	$ 0.4662	$0.4856
2016	2	$ 0.42	$ 0.50	7.51%	$ 0.84	10%	$ 0.9269	$0.4927
2017	3	$ 0.41	$ 0.53	6.48%	$ 1.25	10%	$ 1.3781	$0.4982
2018	4	$ 0.38	$ 0.53	1.12%	$ 1.63	10%	$ 1.7975	$0.4972
2019	**5**	**$ 0.37**	**$ 0.56**	**4.91%**	**$ 2.00**	**10%**	**$ 2.2021**	$0.4970
2020	6	$ 0.34	$ 0.56	0.80%	$ 2.34	10%	$ 2.5770	$0.4943
2021	7	$ 0.31	$ 0.57	0.37%	$ 2.66	10%	$ 2.9231	$0.4901
2022	8	$ 0.31	$ 0.61	7.89%	$ 2.97	10%	$ 3.2664	$0.4886
2023	9	$ 0.29	$ 0.63	2.47%	$ 3.26	10%	$ 3.5899	$0.4866
2024	**10**	**$ 0.27**	**$ 0.63**	**0.62%**	**$ 3.54**	**10%**	**$ 3.8891**	$0.4836
2025	11	$ 0.24	$ 0.61	-2.59%	$ 3.78	10%	$ 4.1571	$0.4789
2026	12	$ 0.24	$ 0.65	6.05%	$ 4.02	10%	$ 4.4185	$0.4755
2027	13	$ 0.23	$ 0.67	3.44%	$ 4.24	10%	$ 4.6671	$0.4723
2028	14	$ 0.21	$ 0.67	0.16%	$ 4.45	10%	$ 4.8960	$0.4687
2029	15	$ 0.19	$ 0.66	-1.51%	$ 4.64	10%	$ 5.1033	$0.4645
2030	16	$ 0.18	$ 0.67	1.42%	$ 4.82	10%	$ 5.2966	$0.4603
2031	17	$ 0.15	$ 0.64	-4.66%	$ 4.97	10%	$ 5.4660	$0.4552
2032	18	$ 0.14	$ 0.65	0.69%	$ 5.11	10%	$ 5.6229	$0.4503
2033	19	$ 0.14	$ 0.69	6.05%	$ 5.25	10%	$ 5.7758	$0.4461
2034	**20**	**$ 0.13**	**$ 0.69**	**0.86%**	**$ 5.38**	**10%**	**$ 5.9177**	$0.4420
2035	21	$ 0.12	$ 0.71	2.00%	$ 5.50	10%	$ 6.0507	$0.4381
2036	22	$ 0.11	$ 0.72	2.00%	$ 5.61	10%	$ 6.1754	$0.4343
2037	23	$ 0.11	$ 0.73	2.00%	$ 5.72	10%	$ 6.2924	$0.4307
2038	24	$ 0.10	$ 0.75	2.00%	$ 5.82	10%	$ 6.4022	$0.4272
2039	25	$ 0.09	$ 0.76	2.00%	$ 5.91	10%	$ 6.5051	$0.4239
2040	26	$ 0.09	$ 0.78	2.00%	$ 6.00	10%	$ 6.6016	$0.4207
2041	27	$ 0.08	$ 0.79	2.00%	$ 6.08	10%	$ 6.6921	$0.4177
2042	28	$ 0.08	$ 0.81	2.00%	$ 6.16	10%	$ 6.7770	$0.4147
2043	29	$ 0.07	$ 0.83	2.00%	$ 6.23	10%	$ 6.8566	$0.4119
2044	**30**	**$ 0.07**	**$ 0.84**	**2.00%**	**$ 6.30**	**10%**	**$ 6.9313**	$0.4092
2045	31	$ 0.06	$ 0.86	2.00%	$ 6.36	10%	$ 7.0013	$0.4065
2046	32	$ 0.06	$ 0.88	2.00%	$ 6.42	10%	$ 7.0670	$0.4040
2047	33	$ 0.06	$ 0.89	2.00%	$ 6.48	10%	$ 7.1286	$0.4015
2048	34	$ 0.05	$ 0.91	2.00%	$ 6.53	10%	$ 7.1863	$0.3992
2049	35	$ 0.05	$ 0.93	2.00%	$ 6.58	10%	$ 7.2405	$0.3969
2050	36	$ 0.05	$ 0.95	2.00%	$ 6.63	10%	$ 7.2913	$0.3947
2051	37	$ 0.04	$ 0.97	2.00%	$ 6.67	10%	$ 7.3389	$0.3926
2052	38	$ 0.04	$ 0.99	2.00%	$ 6.71	10%	$ 7.3836	$0.3906
2053	39	$ 0.04	$ 1.01	2.00%	$ 6.75	10%	$ 7.4255	$0.3886
2054	**40**	**$ 0.04**	**$ 1.03**	**2.00%**	**$ 6.79**	**10%**	**$ 7.4648**	$0.3867
2055	41	$ 0.03	$ 1.05	2.00%	$ 6.82	10%	$ 7.5017	$0.3849
2056	42	$ 0.03	$ 1.07	2.00%	$ 6.85	10%	$ 7.5363	$0.3832
2057	43	$ 0.03	$ 1.09	2.00%	$ 6.88	10%	$ 7.5687	$0.3815
2058	44	$ 0.03	$ 1.11	2.00%	$ 6.91	10%	$ 7.5991	$0.3798
2059	45	$ 0.03	$ 1.13	2.00%	$ 6.93	10%	$ 7.6276	$0.3782

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.00% (EIA Inflation Rate)

Conservation Credit % attempts to recognize non-quantifiable benefits associated with conservation, including benefits of price certainty & hedge against future carbon costs
Carbon estimated at $20/ton, applies to Natural Gas 2017

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2024	2025	2026	2027	2028	2029	2030	2031	2032
Category	10	11	12	13	14	15	16	17	18
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Nominal Cost Per Therm	$ 0.63	$ 0.61	$ 0.65	$ 0.67	$ 0.67	$ 0.66	$ 0.67	$ 0.64	$ 0.65
Verification	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Resource Portfolio Cost - % Change	0.62%	-2.59%	6.05%	3.44%	0.16%	-1.51%	1.42%	-4.66%	0.69%
PV of Resource Portfolio Cost/Therm	$ 3.54	$ 3.78	$ 4.02	$ 4.24	$ 4.45	$ 4.64	$ 4.82	$ 4.97	$ 5.11
Portfolio Costs with 10% Conservation Credit	$3.89	$4.16	$4.42	$4.67	$4.90	$5.10	$5.30	$5.47	$5.62
Cost-Effectiveness Limit	$0.4618	$0.4555	$0.4505	$0.4459	$0.4408	$0.4353	$0.4298	$0.4236	$0.4175

* 2014 IRP Start - All Resources Medium Forecast Scenario /

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2033	2034	2035	2036	2037	2038	2039	2040	2041
Category	19	20	21	22	23	24	25	26	27
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Nominal Cost Per Therm	$ 0.69	$ 0.69	$ 0.71	$ 0.72	$ 0.73	$ 0.75	$ 0.76	$ 0.78	$ 0.79
Verification	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Resource Portfolio Cost - % Change	6.05%	0.86%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 5.25	$ 5.38	$ 5.50	$ 5.61	$ 5.72	$ 5.82	$ 5.91	$ 6.00	$ 6.08
Portfolio Costs with 10% Conservation Credit	$5.78	$5.92	$6.05	$6.18	$6.29	$6.40	$6.51	$6.60	$6.69
Cost-Effectiveness Limit	$0.4122	$0.4070	$0.4020	$0.3973	$0.3927	$0.3883	$0.3841	$0.3800	$0.3761

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

Category	2042 28	2043 29	2044 30	2045 31	2046 32	2047 33	2048 34	2049 35	2050 36
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Nominal Cost Per Therm	$ 0.81	$ 0.83	$ 0.84	$ 0.86	$ 0.88	$ 0.89	$ 0.91	$ 0.93	$ 0.95
Verification	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.16	$ 6.23	$ 6.30	$ 6.36	$ 6.42	$ 6.48	$ 6.53	$ 6.58	$ 6.63
Portfolio Costs with 10% Conservation Credit	$6.78	$6.86	$6.93	$7.00	$7.07	$7.13	$7.19	$7.24	$7.29
Cost-Effectiveness Limit	$0.3723	$0.3687	$0.3652	$0.3618	$0.3585	$0.3554	$0.3523	$0.3494	$0.3465

* 2014 IRP Start - All Resources Medium Forecast Scenario /

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

	2051	2052	2053	2054	2055	2056	2057	2058	2059
Category	37	38	39	40	41	42	43	44	45
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Nominal Cost Per Therm	$ 0.97	$ 0.99	$ 1.01	$ 1.03	$ 1.05	$ 1.07	$ 1.09	$ 1.11	$ 1.13
Verification	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.67	$ 6.71	$ 6.75	$ 6.79	$ 6.82	$ 6.85	$ 6.88	$ 6.91	$ 6.93
Portfolio Costs with 10% Conservation Credit	$7.34	$7.38	$7.43	$7.46	$7.50	$7.54	$7.57	$7.60	$7.63
Cost-Effectiveness Limit	$0.3438	$0.3412	$0.3386	$0.3361	$0.3337	$0.3314	$0.3292	$0.3270	$0.3249

* 2014 IRP Start - All Resources Medium Forecast Scenario /

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.000% (EIA Inflation Rate)

Category	2015 1	2016 2	2017 3	2018 4	2019 5	2020 6	2021 7	2022 8	2023 9
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Nominal Cost Per Therm	$ 0.46	$ 0.50	$ 0.53	$ 0.53	$ 0.56	$ 0.56	$ 0.57	$ 0.61	$ 0.63
Verification	$ 0.42	$ 0.42	$ 0.41	$ 0.38	$ 0.37	$ 0.34	$ 0.31	$ 0.31	$ 0.29
Resource Portfolio Cost - % Change		7.51%	6.48%	1.12%	4.91%	0.80%	0.37%	7.89%	2.47%
PV of Resource Portfolio Cost/Therm	$ 0.42	$ 0.84	$ 1.25	$ 1.63	$ 2.00	$ 2.34	$ 2.66	$ 2.97	$ 3.26
Portfolio Costs with 10% Conservation Credit	$ 0.47	$0.93	$1.38	$1.80	$2.20	$2.58	$2.92	$3.27	$3.59
Cost-Effectiveness Limit	$ 0.48	$0.4862	$0.4895	$0.4865	$0.4843	$0.4797	$0.4736	$0.4702	$0.4665

* 2014 IRP Start - All Resources Medium Forecast Scenario Average Weather. 8.76% discount rate (CNGC weighted average cost of capital) utilized in Sendout Model.

PRELIMIINARY AVOIDED COST ESTIMATES
BASECASE - MEDIUM FORECAST - AVERAGE WEATHER - Carbon 3 scenario
45 YEAR RESOURCE SUMMARY COSTS - MELDED COST PER THERM

	YEAR	IRP ANNUAL PORTFOLIO COST PER THERM (PV)*	NOMINAL COST PER THERM	RESOURCE PORTFOLIO COST - % CHANGE	PV OF RESOURCE PORTFOLIO COST/THERM	Non-Energy Benefits %	ORTFOLIO COSTS INCLUDING CONSERVATIOI CREDIT	COST-EFFECTIVENESS LIMIT
2015	1	$ 0.42	$ 0.46		$ 0.42	10%	$ 0.4662	$0.4856
2016	2	$ 0.42	$ 0.50	7.51%	$ 0.84	10%	$ 0.9269	$0.4927
2017	3	$ 0.41	$ 0.53	6.48%	$ 1.25	10%	$ 1.3781	$0.4982
2018	4	$ 0.38	$ 0.53	1.12%	$ 1.63	10%	$ 1.7975	$0.4972
2019	**5**	**$ 0.37**	**$ 0.56**	**4.91%**	**$ 2.00**	**10%**	**$ 2.2021**	$0.4970
2020	6	$ 0.34	$ 0.56	0.80%	$ 2.34	10%	$ 2.5770	$0.4943
2021	7	$ 0.31	$ 0.57	0.37%	$ 2.66	10%	$ 2.9231	$0.4901
2022	8	$ 0.31	$ 0.61	7.89%	$ 2.97	10%	$ 3.2664	$0.4886
2023	9	$ 0.29	$ 0.63	2.47%	$ 3.26	10%	$ 3.5899	$0.4866
2024	**10**	**$ 0.27**	**$ 0.63**	**0.62%**	**$ 3.54**	**10%**	**$ 3.8891**	$0.4836
2025	11	$ 0.24	$ 0.61	-2.59%	$ 3.78	10%	$ 4.1571	$0.4789
2026	12	$ 0.24	$ 0.65	6.05%	$ 4.02	10%	$ 4.4185	$0.4755
2027	13	$ 0.23	$ 0.67	3.44%	$ 4.24	10%	$ 4.6671	$0.4723
2028	14	$ 0.21	$ 0.67	0.16%	$ 4.45	10%	$ 4.8960	$0.4687
2029	15	$ 0.19	$ 0.66	-1.51%	$ 4.64	10%	$ 5.1033	$0.4645
2030	16	$ 0.18	$ 0.67	1.42%	$ 4.82	10%	$ 5.2966	$0.4603
2031	17	$ 0.15	$ 0.64	-4.66%	$ 4.97	10%	$ 5.4660	$0.4552
2032	18	$ 0.14	$ 0.65	0.69%	$ 5.11	10%	$ 5.6229	$0.4503
2033	19	$ 0.14	$ 0.69	6.05%	$ 5.25	10%	$ 5.7758	$0.4461
2034	**20**	**$ 0.13**	**$ 0.69**	**0.86%**	**$ 5.38**	**10%**	**$ 5.9177**	$0.4420
2035	21	$ 0.12	$ 0.71	2.00%	$ 5.50	10%	$ 6.0507	$0.4381
2036	22	$ 0.11	$ 0.72	2.00%	$ 5.61	10%	$ 6.1754	$0.4343
2037	23	$ 0.11	$ 0.73	2.00%	$ 5.72	10%	$ 6.2924	$0.4307
2038	24	$ 0.10	$ 0.75	2.00%	$ 5.82	10%	$ 6.4022	$0.4272
2039	25	$ 0.09	$ 0.76	2.00%	$ 5.91	10%	$ 6.5051	$0.4239
2040	26	$ 0.09	$ 0.78	2.00%	$ 6.00	10%	$ 6.6016	$0.4207
2041	27	$ 0.08	$ 0.79	2.00%	$ 6.08	10%	$ 6.6921	$0.4177
2042	28	$ 0.08	$ 0.81	2.00%	$ 6.16	10%	$ 6.7770	$0.4147
2043	29	$ 0.07	$ 0.83	2.00%	$ 6.23	10%	$ 6.8566	$0.4119
2044	**30**	**$ 0.07**	**$ 0.84**	**2.00%**	**$ 6.30**	**10%**	**$ 6.9313**	$0.4092
2045	31	$ 0.06	$ 0.86	2.00%	$ 6.36	10%	$ 7.0013	$0.4065
2046	32	$ 0.06	$ 0.88	2.00%	$ 6.42	10%	$ 7.0670	$0.4040
2047	33	$ 0.06	$ 0.89	2.00%	$ 6.48	10%	$ 7.1286	$0.4015
2048	34	$ 0.05	$ 0.91	2.00%	$ 6.53	10%	$ 7.1863	$0.3992
2049	35	$ 0.05	$ 0.93	2.00%	$ 6.58	10%	$ 7.2405	$0.3969
2050	36	$ 0.05	$ 0.95	2.00%	$ 6.63	10%	$ 7.2913	$0.3947
2051	37	$ 0.04	$ 0.97	2.00%	$ 6.67	10%	$ 7.3389	$0.3926
2052	38	$ 0.04	$ 0.99	2.00%	$ 6.71	10%	$ 7.3836	$0.3906
2053	39	$ 0.04	$ 1.01	2.00%	$ 6.75	10%	$ 7.4255	$0.3886
2054	**40**	**$ 0.04**	**$ 1.03**	**2.00%**	**$ 6.79**	**10%**	**$ 7.4648**	$0.3867
2055	41	$ 0.03	$ 1.05	2.00%	$ 6.82	10%	$ 7.5017	$0.3849
2056	42	$ 0.03	$ 1.07	2.00%	$ 6.85	10%	$ 7.5363	$0.3832
2057	43	$ 0.03	$ 1.09	2.00%	$ 6.88	10%	$ 7.5687	$0.3815
2058	44	$ 0.03	$ 1.11	2.00%	$ 6.91	10%	$ 7.5991	$0.3798
2059	45	$ 0.03	$ 1.13	2.00%	$ 6.93	10%	$ 7.6276	$0.3782

Cascade's Long Term Real Discount Rate: 3.250%
IRP Discount Rate = 8.760%
Years 21-45 Escalation = 2.00% (EIA Inflation Rate)

Conservation Credit % attempts to recognize non-quantifiable benefits associated with conservation, including benefits of price certainty & hedge against future carbon costs
Carbon estimated at $30/ton, applies to Natural Gas 2017

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

Category	2024 10	2025 11	2026 12	2027 13	2028 14	2029 15	2030 16	2031 17	2032 18
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Nominal Cost Per Therm	$ 0.63	$ 0.61	$ 0.65	$ 0.67	$ 0.67	$ 0.66	$ 0.67	$ 0.64	$ 0.65
Verification	$ 0.27	$ 0.24	$ 0.24	$ 0.23	$ 0.21	$ 0.19	$ 0.18	$ 0.15	$ 0.14
Resource Portfolio Cost - % Change	0.62%	-2.59%	6.05%	3.44%	0.16%	-1.51%	1.42%	-4.66%	0.69%
PV of Resource Portfolio Cost/Therm	$ 3.54	$ 3.78	$ 4.02	$ 4.24	$ 4.45	$ 4.64	$ 4.82	$ 4.97	$ 5.11
Portfolio Costs with 10% Conservation Credit	$3.89	$4.16	$4.42	$4.67	$4.90	$5.10	$5.30	$5.47	$5.62
Cost-Effectiveness Limit	$0.4618	$0.4555	$0.4505	$0.4459	$0.4408	$0.4353	$0.4298	$0.4236	$0.4175

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

Category	2033 19	2034 20	2035 21	2036 22	2037 23	2038 24	2039 25	2040 26	2041 27
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Nominal Cost Per Therm	$ 0.69	$ 0.69	$ 0.71	$ 0.72	$ 0.73	$ 0.75	$ 0.76	$ 0.78	$ 0.79
Verification	$ 0.14	$ 0.13	$ 0.12	$ 0.11	$ 0.11	$ 0.10	$ 0.09	$ 0.09	$ 0.08
Resource Portfolio Cost - % Change	6.05%	0.86%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 5.25	$ 5.38	$ 5.50	$ 5.61	$ 5.72	$ 5.82	$ 5.91	$ 6.00	$ 6.08
Portfolio Costs with 10% Conservation Credit	$5.78	$5.92	$6.05	$6.18	$6.29	$6.40	$6.51	$6.60	$6.69
Cost-Effectiveness Limit	$0.4122	$0.4070	$0.4020	$0.3973	$0.3927	$0.3883	$0.3841	$0.3800	$0.3761

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

Category	2042 28	2043 29	2044 30	2045 31	2046 32	2047 33	2048 34	2049 35	2050 36
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Nominal Cost Per Therm	$ 0.81	$ 0.83	$ 0.84	$ 0.86	$ 0.88	$ 0.89	$ 0.91	$ 0.93	$ 0.95
Verification	$ 0.08	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	$ 0.05
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.16	$ 6.23	$ 6.30	$ 6.36	$ 6.42	$ 6.48	$ 6.53	$ 6.58	$ 6.63
Portfolio Costs with 10% Conservation Credit	$6.78	$6.86	$6.93	$7.00	$7.07	$7.13	$7.19	$7.24	$7.29
Cost-Effectiveness Limit	$0.3723	$0.3687	$0.3652	$0.3618	$0.3585	$0.3554	$0.3523	$0.3494	$0.3465

* 2014 IRP Start - All Resources Medium Forecast Scenario

Cascade's Long Term Real Discount Rate:
IRP Discount Rate =
Years 21-45 Escalation =

Category	2051 37	2052 38	2053 39	2054 40	2055 41	2056 42	2057 43	2058 44	2059 45
IRP Annual Portfolio Cost Per Therm (PV)*	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Nominal Cost Per Therm	$ 0.97	$ 0.99	$ 1.01	$ 1.03	$ 1.05	$ 1.07	$ 1.09	$ 1.11	$ 1.13
Verification	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03
Resource Portfolio Cost - % Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
PV of Resource Portfolio Cost/Therm	$ 6.67	$ 6.71	$ 6.75	$ 6.79	$ 6.82	$ 6.85	$ 6.88	$ 6.91	$ 6.93
Portfolio Costs with 10% Conservation Credit	$7.34	$7.38	$7.43	$7.46	$7.50	$7.54	$7.57	$7.60	$7.63
Cost-Effectiveness Limit	$0.3438	$0.3412	$0.3386	$0.3361	$0.3337	$0.3314	$0.3292	$0.3270	$0.3249

* 2014 IRP Start - All Resources Medium Forecast Scenario

SYSTEM AVOIDED COSTS LAYERS (dollars in therms)

	Total Avoided Cost	Commodity	Transport Fixed	Transport Commodity	Storage Fixed	Storage Commodity
2015	$ 0.460900	$ 0.294449	$ 0.147345	$ 0.002834	$ 0.014888	$ 0.001384
2016	$ 0.495500	$ 0.316554	$ 0.158406	$ 0.003046	$ 0.016006	$ 0.001488
2017	$ 0.527600	$ 0.337061	$ 0.168669	$ 0.003244	$ 0.017043	$ 0.001584
2018	$ 0.533500	$ 0.340830	$ 0.170555	$ 0.003280	$ 0.017233	$ 0.001602
2019	$ 0.559700	$ 0.357568	$ 0.178931	$ 0.003441	$ 0.018079	$ 0.001681
2020	$ 0.564200	$ 0.360443	$ 0.180369	$ 0.003469	$ 0.018225	$ 0.001694
2021	$ 0.566300	$ 0.361785	$ 0.181041	$ 0.003482	$ 0.018293	$ 0.001701
2022	$ 0.611000	$ 0.390341	$ 0.195331	$ 0.003757	$ 0.019736	$ 0.001835
2023	$ 0.626100	$ 0.399988	$ 0.200158	$ 0.003849	$ 0.020224	$ 0.001880
2024	$ 0.630000	$ 0.402480	$ 0.201405	$ 0.003873	$ 0.020350	$ 0.001892
2025	$ 0.613700	$ 0.392066	$ 0.196194	$ 0.003773	$ 0.019824	$ 0.001843
2026	$ 0.650800	$ 0.415768	$ 0.208054	$ 0.004001	$ 0.021022	$ 0.001954
2027	$ 0.673200	$ 0.430078	$ 0.215215	$ 0.004139	$ 0.021746	$ 0.002022
2028	$ 0.674300	$ 0.430781	$ 0.215567	$ 0.004146	$ 0.021781	$ 0.002025
2029	$ 0.664100	$ 0.424265	$ 0.212306	$ 0.004083	$ 0.021452	$ 0.001994
2030	$ 0.673500	$ 0.430270	$ 0.215311	$ 0.004141	$ 0.021755	$ 0.002022
2031	$ 0.642100	$ 0.410210	$ 0.205273	$ 0.003948	$ 0.020741	$ 0.001928
2032	$ 0.646500	$ 0.413021	$ 0.206680	$ 0.003975	$ 0.020883	$ 0.001941
2033	$ 0.685600	$ 0.438000	$ 0.219180	$ 0.004215	$ 0.022146	$ 0.002059
2034	$ 0.691500	$ 0.441769	$ 0.221066	$ 0.004252	$ 0.022337	$ 0.002076
2035	$ 0.705330	$ 0.450605	$ 0.225487	$ 0.004337	$ 0.022784	$ 0.002118
2036	$ 0.719437	$ 0.459617	$ 0.229997	$ 0.004423	$ 0.023239	$ 0.002160
2037	$ 0.733825	$ 0.468809	$ 0.234597	$ 0.004512	$ 0.023704	$ 0.002204
2038	$ 0.748502	$ 0.478185	$ 0.239289	$ 0.004602	$ 0.024178	$ 0.002248
2039	$ 0.763472	$ 0.487749	$ 0.244074	$ 0.004694	$ 0.024662	$ 0.002293
2040	$ 0.778741	$ 0.497504	$ 0.248956	$ 0.004788	$ 0.025155	$ 0.002338
2041	$ 0.794316	$ 0.507454	$ 0.253935	$ 0.004884	$ 0.025658	$ 0.002385
2042	$ 0.810202	$ 0.517603	$ 0.259014	$ 0.004981	$ 0.026171	$ 0.002433
2043	$ 0.826407	$ 0.527955	$ 0.264194	$ 0.005081	$ 0.026695	$ 0.002482
2044	$ 0.842935	$ 0.538514	$ 0.269478	$ 0.005183	$ 0.027228	$ 0.002531
2045	$ 0.859793	$ 0.549285	$ 0.274867	$ 0.005286	$ 0.027773	$ 0.002582
2046	$ 0.876989	$ 0.560270	$ 0.280365	$ 0.005392	$ 0.028328	$ 0.002633
2047	$ 0.894529	$ 0.571476	$ 0.285972	$ 0.005500	$ 0.028895	$ 0.002686
2048	$ 0.912420	$ 0.582905	$ 0.291692	$ 0.005610	$ 0.029473	$ 0.002740
2049	$ 0.930668	$ 0.594564	$ 0.297525	$ 0.005722	$ 0.030062	$ 0.002795
2050	$ 0.949281	$ 0.606455	$ 0.303476	$ 0.005836	$ 0.030664	$ 0.002851
2051	$ 0.968267	$ 0.618584	$ 0.309545	$ 0.005953	$ 0.031277	$ 0.002908
2052	$ 0.987632	$ 0.630956	$ 0.315736	$ 0.006072	$ 0.031902	$ 0.002966
2053	$ 1.007385	$ 0.643575	$ 0.322051	$ 0.006194	$ 0.032540	$ 0.003025
2054	$ 1.027533	$ 0.656446	$ 0.328492	$ 0.006318	$ 0.033191	$ 0.003086
2055	$ 1.048083	$ 0.669575	$ 0.335062	$ 0.006444	$ 0.033855	$ 0.003147
2056	$ 1.069045	$ 0.682967	$ 0.341763	$ 0.006573	$ 0.034532	$ 0.003210
2057	$ 1.090426	$ 0.696626	$ 0.348598	$ 0.006704	$ 0.035223	$ 0.003274
2058	$ 1.112234	$ 0.710558	$ 0.355570	$ 0.006838	$ 0.035927	$ 0.003340
2059	$ 1.134479	$ 0.724770	$ 0.362682	$ 0.006975	$ 0.036646	$ 0.003407

Supply	Supply Group	Data Item	Draw	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		Total Served w/o Endus	0	29333.90625	29812.13715	30324.83374	30826.01831	31321.46625	31835.13733	32392.96	32933.49	33415.99	33928.44	34501.56	35050.9	35611.56	36181.39	36786.78	37388.78	38001.22	38617.4
		Total System Cost	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total System Cost w/ Un	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost	0	-59922.01977	-61621.00092	-63370.44341	-65171.85708	-67026.79518	-68936.85848	-70903.7	-72929.01	-75014.54	-77162.09	-79373.52	-81650.73	-83995.7	-86410.46	-88897.09	-91457.73	-94094.62	-96810.02
		Total Transport Var Cost	0	-1152.414562	-1109.536526	-1190.356941	-1187.7117	-1250.163775	-1282.169991	-1306.505	-1331.973	-1349.621	-1346.117	-1328.232	-1412.85	-1426.343	-1442.486	-1358.1	-1277.948	-1309.399	-1330.97
		Total Storage Fix Cost	0	-6054.604737	-6227.485243	-6406.962153	-6593.938449	-6779.571465	-6970.773454	-7167.712	-7370.558	-7579.489	-7794.689	-8016.345	-8244.65	-8479.804	-8722.013	-8971.488	-9228.448	-9493.116	-9765.725
		Total Storage Var Cost	0	-562.8500848	-524.994893	-591.5738161	-604.4354871	-548.5649356	-585.3677998	-594.5612	-580.0888	-620.638	-618.2704	-583.8979	-566.6578	-593.5362	-614.8388	-639.6652	-652.3127	-633.8504	-637.3784
		Total System Cost w/ Unserved Cost		-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost		0.319690188	0.316240162	0.321519359	0.320037577	0.314367179	0.311218919	0.303166	0.306347	0.296539	0.297832	0.301166	0.292019	0.287362	0.288422	0.294028	0.294505	0.305218	0.306716
		Total Transport Var Cost		0.006148251	0.005694163	0.006039453	0.005832462	0.005863483	0.005788421	0.005586	0.005595	0.005335	0.005196	0.00504	0.005053	0.00488	0.004815	0.004492	0.004115	0.004247	0.004217
		Total Storage Fix Cost		0.032301944	0.031959574	0.032506674	0.032380665	0.031797354	0.031469908	0.030647	0.030961	0.029962	0.030086	0.030416	0.029487	0.029011	0.029112	0.029673	0.029717	0.030793	0.03094
		Total Storage Var Cost		0.003002864	0.002694284	0.003001438	0.002968184	0.002572864	0.002642672	0.002542	0.002437	0.002453	0.002386	0.002215	0.002027	0.002031	0.002052	0.002116	0.002101	0.002056	0.002019
		Commodity Costs		0.638856754	0.643411817	0.636933076	0.638781112	0.64539912	0.64888008	0.658058	0.65466	0.66571	0.664499	0.661163	0.671415	0.676718	0.675598	0.669692	0.669562	0.657686	0.656107

OREGON AVOIDED COSTS LAYERS (dollars in therms)

	Total Avoided Cost	Commodity	Transport Fixed	Transport Commodity	Storage Fixed	Storage Commodity
2015	$ 0.457700	$ 0.306657	$ 0.146322	$ 0.002814	$ 0.000532	$ 0.001374
2016	$ 0.492900	$ 0.330241	$ 0.157575	$ 0.003030	$ 0.000573	$ 0.001480
2017	$ 0.525100	$ 0.351815	$ 0.167869	$ 0.003228	$ 0.000611	$ 0.001577
2018	$ 0.531300	$ 0.355969	$ 0.169851	$ 0.003267	$ 0.000618	$ 0.001595
2019	$ 0.557000	$ 0.373188	$ 0.178067	$ 0.003425	$ 0.000648	$ 0.001673
2020	$ 0.561400	$ 0.376136	$ 0.179474	$ 0.003452	$ 0.000653	$ 0.001686
2021	$ 0.563300	$ 0.377409	$ 0.180081	$ 0.003463	$ 0.000655	$ 0.001692
2022	$ 0.607800	$ 0.407224	$ 0.194308	$ 0.003737	$ 0.000707	$ 0.001825
2023	$ 0.622400	$ 0.417005	$ 0.198975	$ 0.003827	$ 0.000724	$ 0.001869
2024	$ 0.626400	$ 0.419685	$ 0.200254	$ 0.003851	$ 0.000728	$ 0.001881
2025	$ 0.609100	$ 0.408095	$ 0.194723	$ 0.003745	$ 0.000708	$ 0.001829
2026	$ 0.646600	$ 0.433219	$ 0.206712	$ 0.003975	$ 0.000752	$ 0.001942
2027	$ 0.669600	$ 0.448629	$ 0.214065	$ 0.004117	$ 0.000779	$ 0.002011
2028	$ 0.670700	$ 0.449366	$ 0.214416	$ 0.004124	$ 0.000780	$ 0.002014
2029	$ 0.661900	$ 0.443470	$ 0.211603	$ 0.004070	$ 0.000770	$ 0.001988
2030	$ 0.674600	$ 0.451979	$ 0.215663	$ 0.004148	$ 0.000784	$ 0.002026
2031	$ 0.645400	$ 0.432415	$ 0.206328	$ 0.003968	$ 0.000750	$ 0.001938
2032	$ 0.646500	$ 0.433152	$ 0.206680	$ 0.003975	$ 0.000752	$ 0.001941
2033	$ 0.685600	$ 0.459349	$ 0.219180	$ 0.004215	$ 0.000797	$ 0.002059
2034	$ 0.691500	$ 0.463302	$ 0.221066	$ 0.004252	$ 0.000804	$ 0.002076
2035	$ 0.709479	$ 0.475348	$ 0.226813	$ 0.004362	$ 0.000825	$ 0.002130
2036	$ 0.727925	$ 0.487707	$ 0.232711	$ 0.004475	$ 0.000846	$ 0.002186
2037	$ 0.746852	$ 0.500388	$ 0.238761	$ 0.004592	$ 0.000868	$ 0.002243
2038	$ 0.766270	$ 0.513398	$ 0.244969	$ 0.004711	$ 0.000891	$ 0.002301
2039	$ 0.786193	$ 0.526746	$ 0.251338	$ 0.004834	$ 0.000914	$ 0.002361
2040	$ 0.806634	$ 0.540441	$ 0.257873	$ 0.004959	$ 0.000938	$ 0.002422
2041	$ 0.827606	$ 0.554493	$ 0.264578	$ 0.005088	$ 0.000962	$ 0.002485
2042	$ 0.849124	$ 0.568910	$ 0.271457	$ 0.005221	$ 0.000987	$ 0.002550
2043	$ 0.871201	$ 0.583701	$ 0.278514	$ 0.005356	$ 0.001013	$ 0.002616
2044	$ 0.893852	$ 0.598877	$ 0.285756	$ 0.005496	$ 0.001039	$ 0.002684
2045	$ 0.917093	$ 0.614448	$ 0.293185	$ 0.005639	$ 0.001066	$ 0.002754
2046	$ 0.940937	$ 0.630424	$ 0.300808	$ 0.005785	$ 0.001094	$ 0.002826
2047	$ 0.965401	$ 0.646815	$ 0.308629	$ 0.005936	$ 0.001122	$ 0.002899
2048	$ 0.990502	$ 0.663632	$ 0.316654	$ 0.006090	$ 0.001152	$ 0.002974
2049	$ 1.016255	$ 0.680887	$ 0.324887	$ 0.006248	$ 0.001182	$ 0.003052
2050	$ 1.042677	$ 0.698590	$ 0.333334	$ 0.006411	$ 0.001212	$ 0.003131
2051	$ 1.069787	$ 0.716753	$ 0.342000	$ 0.006577	$ 0.001244	$ 0.003212
2052	$ 1.097601	$ 0.735389	$ 0.350892	$ 0.006748	$ 0.001276	$ 0.003296
2053	$ 1.126139	$ 0.754509	$ 0.360016	$ 0.006924	$ 0.001309	$ 0.003382
2054	$ 1.155419	$ 0.774126	$ 0.369376	$ 0.007104	$ 0.001343	$ 0.003470
2055	$ 1.185460	$ 0.794253	$ 0.378980	$ 0.007289	$ 0.001378	$ 0.003560
2056	$ 1.216282	$ 0.814904	$ 0.388833	$ 0.007478	$ 0.001414	$ 0.003652
2057	$ 1.247905	$ 0.836091	$ 0.398943	$ 0.007672	$ 0.001451	$ 0.003747
2058	$ 1.280350	$ 0.857830	$ 0.409315	$ 0.007872	$ 0.001489	$ 0.003845
2059	$ 1.313640	$ 0.880133	$ 0.419958	$ 0.008077	$ 0.001527	$ 0.003945

Supply	Supply Group	Data Item	Draw	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		Total Served w/o Endus	0	29333.90625	29812.13715	30324.83374	30826.01831	31321.46625	31835.13733	32392.96	32933.49	33415.99	33928.44	34501.56	35050.9	35611.56	36181.39	36786.78	37388.78	38001.22	38617.4
		Total System Cost	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total System Cost w/ Un	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost	0	-59922.01977	-61621.00092	-63370.44341	-65171.85708	-67026.79518	-68936.85848	-70903.7	-72929.01	-75014.54	-77162.09	-79373.52	-81650.73	-83995.7	-86410.46	-88897.09	-91457.73	-94094.62	-96810.02
		Total Transport Var Cost	0	-1152.414562	-1109.536526	-1190.356941	-1187.7117	-1250.163775	-1282.169991	-1306.505	-1331.973	-1349.621	-1346.117	-1328.232	-1412.85	-1426.343	-1442.486	-1358.1	-1277.948	-1309.399	-1330.97
		Total Storage Fix Cost	0	-217.9384601	-225.9662553	-231.798132	-237.9916978	-243.7572365	-249.6957414	-255.8124	-262.1126	-268.6017	-275.2856	-282.1699	-289.2608	-296.5644	-304.0872	-311.8356	-319.8164	-328.0367	-336.5036
		Total Storage Var Cost	0	-562.8500848	-524.994893	-591.5738161	-604.4354871	-548.5649356	-585.3677998	-594.5612	-580.0888	-620.638	-618.2704	-583.8979	-566.6578	-593.5362	-614.8388	-639.6652	-652.3127	-633.8504	-637.3784
		Total System Cost w/ Unserved Cost		-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost		0.319690188	0.316240162	0.321519359	0.320037577	0.314367179	0.311218919	0.303166	0.306347	0.296539	0.297832	0.301166	0.292019	0.287362	0.288422	0.294028	0.294505	0.305218	0.306716
		Total Transport Var Cost		0.006148251	0.005694163	0.006039453	0.005832462	0.005863483	0.005788421	0.005586	0.005595	0.005335	0.005196	0.00504	0.005053	0.00488	0.004815	0.004492	0.004115	0.004247	0.004217
		Total Storage Fix Cost		0.001162724	0.001159663	0.001176062	0.001168699	0.001143263	0.001127264	0.001094	0.001101	0.001062	0.001063	0.001071	0.001035	0.001015	0.001015	0.001031	0.00103	0.001064	0.001066
		Total Storage Var Cost		0.003002864	0.002694284	0.003001438	0.002968184	0.002572864	0.002642672	0.002542	0.002437	0.002453	0.002386	0.002215	0.002027	0.002031	0.002052	0.002116	0.002101	0.002056	0.002019
		Commodity Costs		0.669995973	0.674211728	0.668263688	0.669993078	0.676053211	0.679222724	0.687611	0.68452	0.694611	0.693523	0.690509	0.699867	0.704714	0.703696	0.698333	0.698249	0.687415	0.685981

WASHINGTON AVOIDED COSTS LAYERS (dollars in therms)

	Total Avoided Cost	Commodity	Transport Fixed	Transport Commodity	Storage Fixed	Storage Commodity
2015	$ 0.461700	$ 0.304478	$ 0.147601	$ 0.002839	$ 0.005396	$ 0.001386
2016	$ 0.496200	$ 0.327229	$ 0.158630	$ 0.003051	$ 0.005800	$ 0.001490
2017	$ 0.528200	$ 0.348332	$ 0.168860	$ 0.003248	$ 0.006174	$ 0.001586
2018	$ 0.534000	$ 0.352157	$ 0.170715	$ 0.003283	$ 0.006241	$ 0.001604
2019	$ 0.560400	$ 0.369567	$ 0.179154	$ 0.003445	$ 0.006550	$ 0.001683
2020	$ 0.564900	$ 0.372535	$ 0.180593	$ 0.003473	$ 0.006602	$ 0.001696
2021	$ 0.567100	$ 0.373986	$ 0.181296	$ 0.003487	$ 0.006628	$ 0.001703
2022	$ 0.611800	$ 0.403464	$ 0.195586	$ 0.003762	$ 0.007151	$ 0.001837
2023	$ 0.627000	$ 0.413488	$ 0.200446	$ 0.003855	$ 0.007328	$ 0.001883
2024	$ 0.630900	$ 0.416060	$ 0.201693	$ 0.003879	$ 0.007374	$ 0.001895
2025	$ 0.614800	$ 0.405443	$ 0.196546	$ 0.003780	$ 0.007186	$ 0.001846
2026	$ 0.651900	$ 0.429909	$ 0.208406	$ 0.004008	$ 0.007619	$ 0.001958
2027	$ 0.674200	$ 0.444615	$ 0.215535	$ 0.004145	$ 0.007880	$ 0.002025
2028	$ 0.675200	$ 0.445275	$ 0.215855	$ 0.004151	$ 0.007892	$ 0.002028
2029	$ 0.664700	$ 0.438350	$ 0.212498	$ 0.004087	$ 0.007769	$ 0.001996
2030	$ 0.673300	$ 0.444022	$ 0.215247	$ 0.004140	$ 0.007869	$ 0.002022
2031	$ 0.641300	$ 0.422919	$ 0.205017	$ 0.003943	$ 0.007495	$ 0.001926
2032	$ 0.646500	$ 0.426348	$ 0.206680	$ 0.003975	$ 0.007556	$ 0.001941
2033	$ 0.685600	$ 0.452133	$ 0.219180	$ 0.004215	$ 0.008013	$ 0.002059
2034	$ 0.691500	$ 0.456024	$ 0.221066	$ 0.004252	$ 0.008082	$ 0.002076
2035	$ 0.709479	$ 0.467881	$ 0.226813	$ 0.004362	$ 0.008292	$ 0.002130
2036	$ 0.727925	$ 0.480046	$ 0.232711	$ 0.004475	$ 0.008508	$ 0.002186
2037	$ 0.746852	$ 0.492527	$ 0.238761	$ 0.004592	$ 0.008729	$ 0.002243
2038	$ 0.766270	$ 0.505332	$ 0.244969	$ 0.004711	$ 0.008956	$ 0.002301
2039	$ 0.786193	$ 0.518471	$ 0.251338	$ 0.004834	$ 0.009189	$ 0.002361
2040	$ 0.806634	$ 0.531951	$ 0.257873	$ 0.004959	$ 0.009428	$ 0.002422
2041	$ 0.827606	$ 0.545782	$ 0.264578	$ 0.005088	$ 0.009673	$ 0.002485
2042	$ 0.849124	$ 0.559972	$ 0.271457	$ 0.005221	$ 0.009924	$ 0.002550
2043	$ 0.871201	$ 0.574532	$ 0.278514	$ 0.005356	$ 0.010183	$ 0.002616
2044	$ 0.893852	$ 0.589470	$ 0.285756	$ 0.005496	$ 0.010447	$ 0.002684
2045	$ 0.917093	$ 0.604796	$ 0.293185	$ 0.005639	$ 0.010719	$ 0.002754
2046	$ 0.940937	$ 0.620520	$ 0.300808	$ 0.005785	$ 0.010998	$ 0.002826
2047	$ 0.965401	$ 0.636654	$ 0.308629	$ 0.005936	$ 0.011284	$ 0.002899
2048	$ 0.990502	$ 0.653207	$ 0.316654	$ 0.006090	$ 0.011577	$ 0.002974
2049	$ 1.016255	$ 0.670190	$ 0.324887	$ 0.006248	$ 0.011878	$ 0.003052
2050	$ 1.042677	$ 0.687615	$ 0.333334	$ 0.006411	$ 0.012187	$ 0.003131
2051	$ 1.069787	$ 0.705493	$ 0.342000	$ 0.006577	$ 0.012504	$ 0.003212
2052	$ 1.097601	$ 0.723836	$ 0.350892	$ 0.006748	$ 0.012829	$ 0.003296
2053	$ 1.126139	$ 0.742656	$ 0.360016	$ 0.006924	$ 0.013162	$ 0.003382
2054	$ 1.155419	$ 0.761965	$ 0.369376	$ 0.007104	$ 0.013504	$ 0.003470
2055	$ 1.185460	$ 0.781776	$ 0.378980	$ 0.007289	$ 0.013856	$ 0.003560
2056	$ 1.216282	$ 0.802102	$ 0.388833	$ 0.007478	$ 0.014216	$ 0.003652
2057	$ 1.247905	$ 0.822957	$ 0.398943	$ 0.007672	$ 0.014585	$ 0.003747
2058	$ 1.280350	$ 0.844354	$ 0.409315	$ 0.007872	$ 0.014965	$ 0.003845
2059	$ 1.313640	$ 0.866307	$ 0.419958	$ 0.008077	$ 0.015354	$ 0.003945

Supply	Supply Group	Data Item	Draw	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		Total Served w/o Endus	0	29333.90625	29812.13715	30324.83374	30826.01831	31321.46625	31835.13733	32392.96	32933.49	33415.99	33928.44	34501.56	35050.9	35611.56	36181.39	36786.78	37388.78	38001.22	38617.4
		Total System Cost	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total System Cost w/ Un	0	-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost	0	-59922.01977	-61621.00092	-63370.44341	-65171.85708	-67026.79518	-68936.85848	-70903.7	-72929.01	-75014.54	-77162.09	-79373.52	-81650.73	-83995.7	-86410.46	-88897.09	-91457.73	-94094.62	-96810.02
		Total Transport Var Cost	0	-1152.414562	-1109.536526	-1190.356941	-1187.7117	-1250.163775	-1282.169991	-1306.505	-1331.973	-1349.621	-1346.117	-1328.232	-1412.85	-1426.343	-1442.486	-1358.1	-1277.948	-1309.399	-1330.97
		Total Storage Fix Cost	0	-2190.752886	-2246.228156	-2307.214498	-2371.958715	-2432.306539	-2494.464798	-2558.488	-2624.432	-2692.354	-2762.313	-2834.372	-2908.592	-2985.039	-3063.779	-3144.882	-3228.417	-3314.459	-3403.082
		Total Storage Var Cost	0	-562.8500848	-524.994893	-591.5738161	-604.4354871	-548.5649356	-585.3677998	-594.5612	-580.0888	-620.638	-618.2704	-583.8979	-566.6578	-593.5362	-614.8388	-639.6652	-652.3127	-633.8504	-637.3784
		Total System Cost w/ Unserved Cost		-187437.7822	-194855.0762	-197096.8203	-203638.1406	-213211.8096	-221506.002	-233877.2	-238060.1	-252967.2	-259079.1	-263554.5	-279607.5	-292299.8	-299597.1	-302342.7	-310546.9	-308286.8	-315633.6
		Total Transport Fix Cost		0.319690188	0.316240162	0.321519359	0.320037577	0.314367179	0.311218919	0.303166	0.306347	0.296539	0.297832	0.301166	0.292019	0.287362	0.288422	0.294028	0.294505	0.305218	0.306716
		Total Transport Var Cost		0.006148251	0.005694163	0.006039453	0.005832462	0.005863483	0.005788421	0.005586	0.005595	0.005335	0.005196	0.00504	0.005053	0.00488	0.004815	0.004492	0.004115	0.004247	0.004217
		Total Storage Fix Cost		0.011687894	0.011527686	0.011705996	0.01164791	0.011407935	0.011261387	0.010939	0.011024	0.010643	0.010662	0.010754	0.010402	0.010212	0.010226	0.010402	0.010396	0.010751	0.010782
		Total Storage Var Cost		0.003002864	0.002694284	0.003001438	0.002968184	0.002572864	0.002642672	0.002542	0.002437	0.002453	0.002386	0.002215	0.002027	0.002031	0.002052	0.002116	0.002101	0.002056	0.002019
		Commodity Costs		0.659470804	0.663843705	0.657733755	0.659513867	0.665788539	0.669088601	0.677766	0.674597	0.68503	0.683924	0.680825	0.690499	0.695516	0.694484	0.688963	0.688883	0.677728	0.676266

Avoided costs are the unit cost to serve the next unit of demand with a supply-side resource option.

- Cascade's SENDOUT® model produces a marginal cost report which shows the daily incremental cost to serve the next unit of demand.
- The computed marginal cost includes
  - price of natural gas
  - fixed and variable transportation charges
  - fixed and variable charges related to storage
- Distribution costs are not currently included in Cascade's avoided cost.
- The draft 2012 IRP cost effectiveness tests use the avoided costs from the most developed (as of September 2012) IRP for the base case portfolio resources. Non-energy benefit percentages are consistent with Cascade's most recently approved 2011 IRP.

The high and low natural gas price sensitivities that are being developed for the 2012 IRP are used to scale the base case avoided cost up or down to produce the high and low avoided cost sensitivities.

For many years, The Northwest Power and Conservation Council (NPCC) has utilized a 10% cost advantage for electric utilities acquiring conservation resources to realize the benefits of not using supply side resources. Such electric utility benefits include reduced fish and wildlife impacts, load stability, load predictability and improved air quality. As discussed in Section 7, when calculating the avoided cost figures, the company includes an incremental cost advantage for conservation resources. Historically, Cascade has included the 10% cost advantage for conservation resources which was consistent with regon's requirements for gas utilities for mandated residential weatherization programs. For this plan, the company developed a graduated scale ranging from 5% for short-term measures up to a 20% factor for longer-lived measures. The use of a graduated scale is an attempt to recognize non-quantifiable benefits associated with conservation, such as price certainty and a hedge value against future carbon costs.
At the time of this writing, specific details on the level of carbon allowances and how they may be allocated to the gas utilities under a cap and trade program are still unknown. Therefore, in an effort to create a more realistic and robust assumption with regard to potential Carbon legislation, Cascade utilized the most recent draft legislation, the Kerry- Lieberman proposal.

Admin Adder	5.00%
Conservation Credit	10.00%
Electric: Carbon Adder	20.00%
Gas: Carbon Adder	10.00%

To develop avoided cost figures associated with the reduction of incremental natural gas usage, a demand forecast, existing and future supply-side resources and demand-side resources are required. Cascade utilizes SENDOUT® model results to produce avoided costs, using the Marginal Cost of Gas report, with a the Company's Weighted Averger Cost of Capital (8.7%) discount rate across the planning horizon. Starting with year 21 we assume and apply a flat price forecast with the the DSM discount applied through the end of the 45 year period.

The company assumes the Expected Average Cost as the appropriate data set for the analysis of avoided costs and calculation of the cost-effectiveness limits (CELs). However, Appendix H includes tables that provide the avoided costs and CEL calculations expected minimum and expected maximum Monte-Carlo results as well as the various Carbon Cost scenarios included in the Plan. This will allow the company to further analyze its Conservation potential curves and the magnitude of the measures that could be deemed cost-effective depending on the outcome of the Carbon Cost proposals.

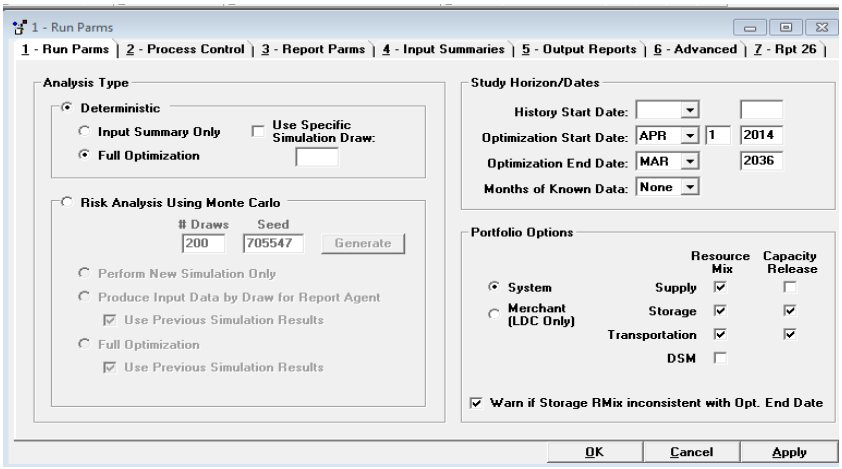
EIA ECONOMIC GROWTH FACTORS (EIA ANNUAL ENERGY OUTLOOK 2013, TABLE E-1)

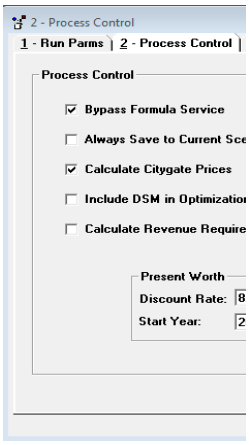
Case name	Description	Integration mode	Reference in text	Reference in Appendix E
Reference	Baseline economic growth (2.7 percent per year from 2009 through 2035), world oil price, and technology assumptions. Complete projection tables in Appendix A. World light, sweet crude oil prices rise to about $125 per barrel (2009 dollars) in 2035. Assumes RFS target to be met as soon as possible.	Fully integrated	--	--
Low Economic Growth	Real GDP grows at an average annual rate of 2.1 percent from 2009 to 2035. Other energy market assumptions are the same as in the Reference case. Partial projection tables in Appendix B.	Fully integrated	p. 58	p. 213
High Economic Growth	Real GDP grows at an average annual rate of 3.2 percent from 2009 to 2035. Other energy market assumptions are the same as in the Reference case. Partial projection tables in Appendix B.	Fully integrated	p. 58	p. 213

FACTORS USED IN PRICE FORECAST

Low Case	2.1	-0.6000	-0.0600	0.9400
Reference Case	2.7			
High Case	3.2	0.5000	0.0500	1.0500

Important to note about EIAs forecast methodology: The variation among published projections of natural gas consumption, production, imports, and prices (Table 16) can be significant. It results from differences in the assumptions that underlie the projections. For example, the natural gas projection in the *AEO2013 Reference case assumes, for the most part, that current laws and regulations will continue through the projection period, whereas other natural gas projections may include anticipated policy developments over the next 25 years. In particular, AEO2013 does not assume the implementation of regulations limiting CO2 emissions or other types of emissions beyond those already in effect.*



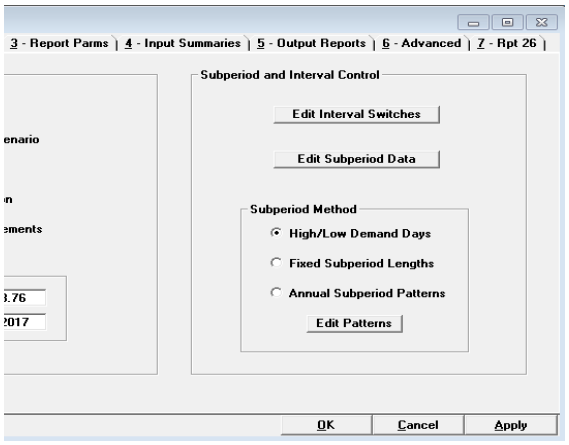


Data Item	Area	Scenario	2015	2016	2017	2018
Peak Day Marginal Cost by Area	Zone 10	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 11	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 20	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 24	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 26	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 30-S	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone 30-W	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone GTN	2941-2014 IRP Start - All Resources	-4.170798	-4.139073	-4.058195	-3.778247
Peak Day Marginal Cost by Area	Zone ME-OR	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664
Peak Day Marginal Cost by Area	Zone ME-WA	2941-2014 IRP Start - All Resources	-4.245073	-4.19493	-4.105552	-3.816664

System AVOIDED COST	***Converted to therms***	***0.423765***	***0.418934***	***0.410082***	***0.381282***
Oregon AVOIDED COST	***Converted to therms***	***0.420794***	***0.4167***	***0.408187***	***0.379746***
Washington AVOIDED COST	***Converted to therms***	***0.424507***	***0.419493***	***0.410555***	***0.381666***

Oregon compared to System Avoided	99.30%	99.47%	99.54%	99.60%	
Washington compared to System Avoided	100.18%	100.13%	100.12%	100.10%	

Data Item	Scenario	Area	2015	2016	2017	2018	2019
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 10	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 11	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 20	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 24	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 26	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 30-S	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone 30-W	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone GTN	-4.132425804	-4.096144	-4.106604	-4.167047	-4.416697
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone ME-OR	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788
Daily Marginal Cost by Area	2941-2014 IRP Start -	Zone ME-WA	-4.209077825	-4.16313	-4.173716	-4.232581	-4.489788

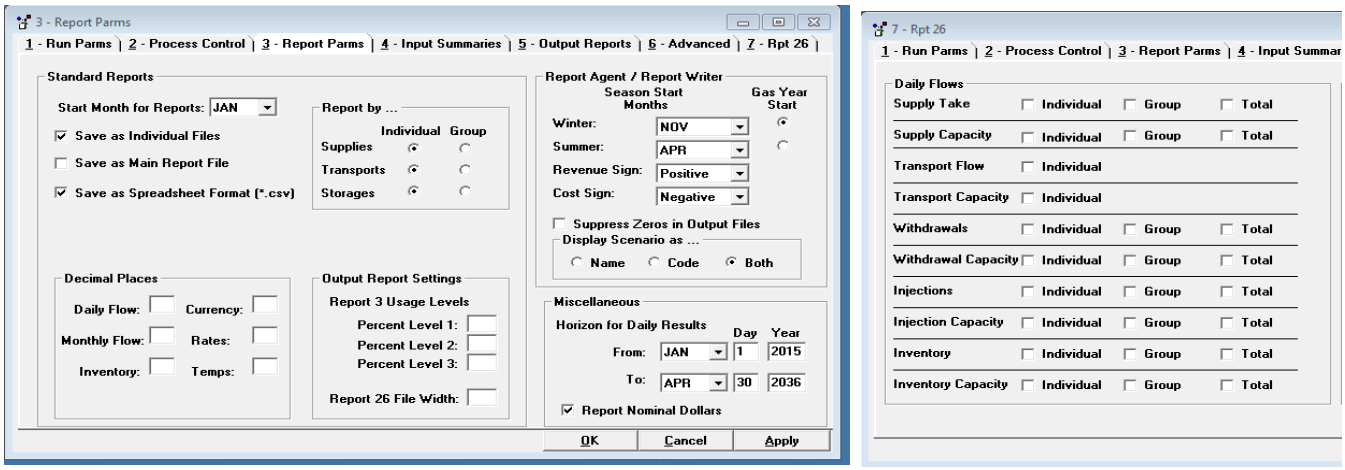


2019	2020	2021	2022	2023	2024
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.638432	-3.370584	-3.10856	-3.084716	-2.901731	-2.685695
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501
-3.682346	-3.413187	-3.150444	-3.124828	-2.944556	-2.724501

0.367795	***0.340893***	***0.314626***	***0.312082***	***0.294027***	***0.272062***
0.366039	***0.339189***	***0.31295***	***0.310477***	***0.292314***	***0.27051***
0.368235	***0.341319***	***0.315044***	***0.312483***	***0.294456***	***0.27245***

99.52%	99.50%	99.47%	99.49%	99.42%	99.43%
100.12%	100.12%	100.13%	100.13%	100.15%	100.14%

2020	2021	2022	2023	2024	2025
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.114822
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.486846	-4.53257	-4.89411	-4.989568	-5.045046	-5.014819
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742
-4.560688	-4.607494	-4.973091	-5.078764	-5.138991	-5.110742

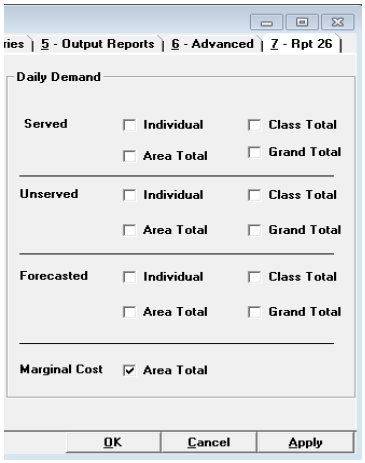


2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.482081	-2.402001	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.209844	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.401286	-2.344237	-2.232183	-2.056241	-1.870162	-1.763387	-1.558294	-1.425927	-1.390355	-1.289414	-1.186433	-1.092086
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894
-2.435299	-2.376539	-2.262906	-2.08396	-1.886209	-1.756622	-1.538502	-1.425927	-1.390355	-1.289414	-1.186433	-1.102894

0.243658	***0.237585***	***0.225983***	***0.208119***	***0.18846***	***0.17573***	***0.154048***	***0.142593***	***0.139035***	***0.128941***	***0.118877***	***0.110181***
0.241829	***0.236039***	***0.224754***	***0.20701***	***0.187819***	***0.176***	***0.15484***	***0.142593***	***0.139035***	***0.128941***	***0.118643***	***0.109749***
0.244115	***0.237972***	***0.226291***	***0.208396***	***0.188621***	***0.175662***	***0.15385***	***0.142593***	***0.139035***	***0.128941***	***0.118936***	***0.110289***

99.25%	99.35%	99.46%	99.47%	99.66%	100.15%	100.51%	100.00%	100.00%	100.00%	99.80%	99.61%
100.19%	100.16%	100.14%	100.13%	100.09%	99.96%	99.87%	100.00%	100.00%	100.00%	100.05%	100.10%

2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.448548	-5.643893	-5.682	-5.595846	-5.67862	-5.409469	-5.46264	-5.605385	-5.668212	-5.77423	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.361574	-5.549102	-5.582259	-5.504082	-5.656678	-5.377347	-11.15288	-11.85266	-6.551073	-6.082582	-4.468186
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668
-5.445842	-5.640675	-5.680552	-5.591276	-5.673622	-5.385738	-5.436834	-5.574785	-5.632877	-5.730732	-4.609668


ries | 5 - Output Reports | 6 - Advanced | 7 - Rpt 26 |
Daily Demand
Served
Individual
Class Total
Area Total
Grand Total
Unserved
Individual
Class Total
Area Total
Grand Total
Forecasted
Individual
Class Total
Area Total
Grand Total
Marginal Cost
Area Total
OK
Cancel
Apply

Month	Henry Hub	Katy	Houston Sl	Carthage	Perryville	Permian	Midcontine	Opal	Cheyenne	San Juan	SoCal	Malin	PG&E Cityg	Sumas	AECO	Chicago	Dawn	Ventura	MichCon
6/1/2014	4.9	-0.03287	-0.01302	-0.08224	-0.07598	-0.10021	-0.14428	-0.09581	-0.09581	-0.12005	0.180333	-0.0647	0.349695	-0.1728	-0.3902	0.037036	0.143904	-0.02494	0.074817
7/1/2014	5.1	-0.03607	-0.0134	-0.08128	-0.07644	-0.0898	-0.14764	-0.09571	-0.09571	-0.12162	0.183039	-0.04965	0.351147	-0.17416	-0.39322	0.035828	0.14357	-0.02705	0.0738
8/1/2014	5.1	-0.03354	-0.01003	-0.07825	-0.07858	-0.08521	-0.14889	-0.09765	-0.09765	-0.11818	0.184308	-0.04886	0.35269	-0.17559	-0.39626	0.033781	0.143054	-0.02872	0.072857
9/1/2014	4.9	-0.02843	-0.01014	-0.06899	-0.07245	-0.08889	-0.14007	-0.08662	-0.08662	-0.11267	0.19709	-0.03987	0.36491	-0.12687	-0.38798	0.044718	0.154362	-0.01846	0.083538
10/1/2014	4.6	-0.02334	-0.00913	-0.06276	-0.07023	-0.08242	-0.13805	-0.06416	-0.06416	-0.09579	0.203562	0.008476	0.371953	-0.00747	-0.36182	0.049585	0.159265	-0.01386	0.090627
11/1/2014	4.5	-0.03715	-0.01854	-0.08702	-0.07374	-0.08781	-0.11891	0.017685	0.016713	-0.02483	0.223188	0.118649	0.455247	0.218399	-0.28501	0.134235	0.26728	0.075866	0.16037
12/1/2014	4.4	-0.05643	-0.03687	-0.07996	-0.0642	-0.07142	-0.11665	-0.0312	-0.03287	-0.01115	0.189593	0.017431	0.354347	0.158165	-0.39992	0.079605	0.155208	0.027597	0.103377
1/1/2015	4.2	-0.03891	-0.02292	-0.0642	-0.04673	-0.07281	-0.11928	-0.03208	-0.03378	-0.03049	0.193761	0.019473	0.362692	0.161849	-0.40943	0.081398	0.158759	0.028138	0.105742
2/1/2015	4.1	-0.03866	-0.02264	-0.06418	-0.04822	-0.08241	-0.11989	-0.06409	-0.06308	-0.0649	0.076209	-0.02726	0.184415	0.017421	-0.42148	0.082293	0.160056	-0.00125	0.106782
3/1/2015	3.9	-0.01984	-0.0141	-0.04882	-0.04099	-0.07853	-0.10993	-0.04214	-0.04115	-0.05752	0.070202	-0.00618	0.234122	0.021788	-0.31962	0.113411	0.289539	0.031403	0.145919
4/1/2015	3.85	-0.01574	-0.00181	-0.05088	-0.05542	-0.0983	-0.15006	-0.10534	-0.10495	-0.10736	0.088525	-0.07539	0.260608	0.014915	-0.40102	0.034682	0.155921	-0.04657	0.080088
5/1/2015	3.8	-0.01599	0.000811	-0.0453	-0.05344	-0.09997	-0.15175	-0.12866	-0.12827	-0.11823	0.085465	-0.10018	0.258786	-0.09392	-0.4209	0.033855	0.148458	-0.04817	0.075732
6/1/2015	3.75	-0.01505	-0.00113	-0.03882	-0.05514	-0.10252	-0.15908	-0.14159	-0.1412	-0.14158	0.081324	-0.10987	0.253918	-0.31574	-0.49728	0.027248	0.140586	-0.05494	0.06799
7/1/2015	3.75	-0.01597	-0.00596	-0.04151	-0.05843	-0.10725	-0.17157	-0.15666	-0.15626	-0.14173	0.085756	-0.11306	0.24081	-0.33023	-0.51697	0.011793	0.128222	-0.06851	0.052808
8/1/2015	3.8	-0.01816	-0.00041	-0.0472	-0.06588	-0.11423	-0.18285	-0.16496	-0.16496	-0.14929	0.089133	-0.11955	0.234841	-0.28703	-0.52803	0.002695	0.120773	-0.07933	0.043868
9/1/2015	3.85	-0.01667	0.003874	-0.0275	-0.05293	-0.10209	-0.15917	-0.13823	-0.13823	-0.12478	0.095727	-0.09303	0.263967	-0.17361	-0.50322	0.030883	0.149604	-0.05223	0.07295
10/1/2015	3.85	-0.01717	0.002467	-0.03264	-0.05304	-0.10243	-0.16228	-0.11152	-0.11152	-0.11872	0.099439	-0.0725	0.265656	0.022842	-0.47379	0.033665	0.150431	-0.05251	0.07803
11/1/2015	3.9	-0.01814	0.004128	-0.04085	-0.0363	-0.07844	-0.11533	-0.04782	-0.04782	-0.04493	0.161207	-0.01019	0.333631	0.155113	-0.5061	0.102246	0.285809	0.016682	0.136617
12/1/2015	4	-0.03609	-0.02388	-0.04288	-0.03907	-0.05938	-0.1452	-0.12625	-0.1252	-0.06163	0.060619	-0.08794	0.214123	0.026655	-0.63755	0.062757	0.159706	-0.04891	0.094262
1/1/2016	4.338382	-0.03822	-0.02469	-0.04654	-0.03832	-0.05965	-0.14899	-0.13035	-0.12928	-0.05679	0.130525	-0.09105	0.219519	0.026606	-0.60213	0.064268	0.163684	-0.05031	0.096596
2/1/2016	4.36461	-0.05517	-0.04186	-0.05623	-0.05218	-0.11502	-0.19983	-0.23438	-0.18237	-0.15646	-0.00553	-0.19579	0.051275	-0.10558	-0.70718	0.064649	0.164596	-0.05685	0.097048
3/1/2016	3.942059	-0.02561	-0.01714	-0.05604	-0.04452	-0.10252	-0.16724	-0.15043	-0.14946	-0.11437	0.017386	-0.11543	0.183187	-0.0166	-0.55274	0.045915	0.232409	-0.03515	0.090115
4/1/2016	3.878257	-0.00924	0.000391	-0.01391	-0.03458	-0.06793	-0.16369	-0.14742	-0.14704	-0.10667	0.057139	-0.10797	0.23344	-0.01789	-0.5768	0.02886	0.174743	-0.05579	0.080435
5/1/2016	3.90823	-0.00792	0.014741	-0.02637	-0.03092	-0.07437	-0.16684	-0.16994	-0.16898	-0.1268	0.056321	-0.14461	0.232839	-0.40499	-0.58915	0.029598	0.153918	-0.0629	0.067983
6/1/2016	3.937129	-0.00817	0.012875	-0.01408	-0.03158	-0.07908	-0.18008	-0.18373	-0.18276	-0.14844	0.046264	-0.15782	0.222484	-0.53341	-0.66106	0.016651	0.142401	-0.07631	0.055685
7/1/2016	3.965045	-0.00894	0.013461	-0.00815	-0.03531	-0.0564	-0.20329	-0.19182	-0.19085	-0.12696	0.139096	-0.16395	0.201822	-0.50655	-0.68718	-0.00677	0.120028	-0.09948	0.033064
8/1/2016	3.992752	-0.00845	0.016246	-0.00882	-0.03973	-0.05312	-0.20835	-0.20968	-0.20871	-0.1247	0.171202	-0.18014	0.218142	-0.51227	-0.6953	-0.01264	0.116104	-0.10477	0.028649
9/1/2016	3.996102	-0.0089	0.013861	-0.01455	-0.0301	-0.0486	-0.17243	-0.17575	-0.17477	-0.11856	0.139499	-0.14672	0.260167	-0.46485	-0.66003	0.027483	0.156705	-0.06531	0.068343
10/1/2016	4.016345	-0.00824	0.015371	-0.00924	-0.03052	-0.04608	-0.17462	-0.16163	-0.16064	-0.1047	0.092878	-0.13053	0.26265	-0.119	-0.6311	0.032095	0.16227	-0.0523	0.075505
11/1/2016	4.101773	-0.01062	0.006821	-0.01406	-0.04153	-0.05289	-0.15549	-0.12625	-0.12524	-0.06729	0.096585	-0.08951	0.259503	0.007524	-0.61284	0.039903	0.133581	-0.05573	0.077124
12/1/2016	4.227821	-0.02511	-0.01864	-0.0251	-0.0519	-0.06326	-0.17851	-0.16825	-0.16311	-0.06817	0.102256	-0.13079	0.198192	-0.0345	-0.71452	0.031043	0.036209	-0.07347	0.035778
1/1/2017	4.281784	-0.0233	-0.0219	-0.03641	-0.04899	-0.06625	-0.21995	-0.1992	-0.19403	-0.0845	0.04906	-0.16151	0.088788	-0.08667	-0.67962	0.01298	0.073084	-0.07274	0.017969
2/1/2017	4.305395	-0.02477	-0.02374	-0.03698	-0.05093	-0.06646	-0.21592	-0.22641	-0.19869	-0.0925	0.035649	-0.18878	0.061451	-0.19588	-0.69811	0.018399	0.078141	-0.07404	0.023417
3/1/2017	4.149208	-0.01954	-0.0181	-0.03917	-0.05389	-0.07752	-0.2019	-0.19871	-0.18999	-0.1242	0.068966	-0.16206	0.125542	-0.16814	-0.63655	0.014423	0.130261	-0.07039	0.049064
4/1/2017	4.087414	-0.00741	0	-0.01021	-0.031	-0.07672	-0.20166	-0.20779	-0.20406	-0.13587	0.06188	-0.1773	0.171588	-0.24201	-0.66275	-0.0071	0.104795	-0.091	0.037351
5/1/2017	4.117901	-0.00569	0.009346	-0.00487	-0.0358	-0.07286	-0.20651	-0.2096	-0.2086	-0.14462	0.059075	-0.17737	0.167631	-0.57298	-0.67079	-0.01425	0.104655	-0.09662	0.031397
6/1/2017	4.144114	-0.00649	0.007334	0.0017	-0.03814	-0.04887	-0.21115	-0.21582	-0.2148	-0.13343	0.122664	-0.18031	0.16533	-0.62236	-0.67817	-0.01885	0.101712	-0.10064	0.027463
7/1/2017	4.164472	-0.0036	0.012299	-0.00707	-0.03337	-0.04411	-0.20454	-0.215	-0.21399	-0.12103	0.162991	-0.13878	0.209129	-0.44796	-0.6826	-0.02049	0.101161	-0.10257	0.026478
8/1/2017	4.187302	-0.00099	0.016753	-0.004	-0.03013	-0.04441	-0.2151	-0.21856	-0.21754	-0.12076	0.209906	-0.13969	0.210119	-0.4204	-0.68777	-0.02377	0.099588	-0.10515	0.022677
9/1/2017	4.203524	0.000741	0.016101	-0.02638	-0.0293	-0.04807	-0.20144	-0.20492	-0.2039	-0.13644	0.180522	-0.12052	0.228799	-0.40747	-0.67455	-0.00577	0.118008	-0.08777	0.040549
10/1/2017	4.224634	-0.00021	0.015735	-0.0184	-0.02816	-0.0613	-0.19981	-0.19845	-0.19742	-0.12386	0.146538	-0.12046	0.230964	-0.17209	-0.6683	0.003948	0.098924	-0.07885	0.049463
11/1/2017	4.354089	-0.00864	0.007063	0.004382	-0.04032	-0.04143	-0.17186	-0.15174	-0.15174	-0.07605	0.140599	-0.11269	0.244923	-0.0362	-0.63656	0.04739	0.201613	-0.05404	0.069914
12/1/2017	4.522275	-0.01799	-0.01452	-0.02193	-0.05377	-0.06104	-0.21761	-0.2272	-0.21933	-0.08224	0.096399	-0.18728	0.158462	-0.1267	-0.78627	0.010336	0.056732	-0.09879	0.015413
1/1/2018	4.641071	-0.01719	-0.01418	-0.02877	-0.05657	-0.07016	-0.24504	-0.25574	-0.24771	-0.09148	0.072892	-0.21497	0.073108	-0.13105	-0.80789	-0.00678	0.0571	-0.10241	-0.00137
2/1/2018	4.667665	-0.02217	-0.02041	-0.02945	-0.05708	-0.07071	-0.25687	-0.32056	-0.26614	-0.12466	0.039549	-0.28013	0.062803	-0.19807	-0.81277	-0.00682	0.057375	-0.10637	-0.00138
3/1/2018	4.526897	-0.00947	-0.00462	-0.0361	-0.04606	-0.06419	-0.20582	-0.21398	-0.20846	-0.1015	0.094608	-0.17371	0.156977	-0.18289	-0.69408	0.020037	0.148677	-0.07633	0.043723
4/1/2018	4.457429	-0.0055	0.000965	-0.02101	-0.03183	-0.07875	-0.22313	-0.23807	-0.22937	-0.14303	0.066962	-0.20464	0.153619	-0.21417	-0.72349	-0.00592	0.120055	-0.09931	0.045063
5/1/2018	4.49043	-0.00188	0.011414	-0.04901	-0.03101	-0.07637	-0.21982	-0.25919	-0.25492	-0.15082	0.088057	-0.22047	0.133413	-0.47434	-0.7473	-0.00685	0.118905	-0.10317	0.040009
6/1/2018	4.522584	-0.00372	0.010261	-0.02881	-0.03727	-0.05773	-0.2326	-0.29256	-0.28824	-0.13936	0.076512	-0.23166	0.122912	-0.51882	-0.76315	-0.01865	0.109251	-0.11519	0.028622
7/1/2018	4.568956	0.009919	0.022868	0.002669	-0.04253	-0.05345	-0.22654	-0.28786	-0.28328	-0.12904	0.242005	-0.21241	0.144559	-0.53197	-0.7816	-0.03487	0.094199	-0.12663	0.012106
8/1/2018	4.609308	0.012013	0.026006	-0.00055	-0.04863	-0.0482	-0.23475	-0.30099	-0.29618	-0.12294	0.311774	-0.19129	0.16801	-0.51592	-0.79704	-0.04846	0.084006	-0.1397	-0.00194
9/1/2018	4.608688	0.011446	0.026564	-0.028	-0.03419	-0.0678	-0.24644	-0.28372	-0.27896	-0.13253	0.306581	-0.17016	0.18859	-0.50076	-0.78198	-0.02837	0.104532	-0.12032	0.018902
10/1/2018	4.673693	0.006522	0.019348	-0.00238	-0.03331	-0.05156	-0.246	-0.25715	-0.25206	-0.13562	0.236408	-0.12776	0.234061	-0.22611	-0.74279	-0.01265	0.092216	-0.10729	0.038086
11/1/2018	4.917301	0.007797	0.019211	-0.00737	-0.04198	-0.04819	-0.2207	-0.20993	-0.20392	-0.07323	0.134864	-0.16587	0.203197	-0.17897	-0.84107	0.044064	0.223658	-0.07876	0.075357
12/1/2018	5.114899	-0.00596	0.000524	-0.01934	-0.06031	-0.06804	-0.27524	-0.33733	-0.27816	-0.09341	0.10009	-0.29253	0.077292	-0.24423	-1.02596	-0.00533	0.044913	-0.10999	0.00044
1/1/2019	5.260501	-0.01222	-0.00144	-0.04163	-0.07708	-0.09262	-0.33798	-0.42598	-0.34515	-0.17243	0.132103	-0.3806	-0.0037	-0.26664	-1.06882	-0.04111	0.029977	-0.16645	-0.03521
2/1/2019	5.292155	-0.02055	-0.01478	-0.05632	-0.07645	-0.1461	-0.33891	-0.4995	-0.35966	-0.22169	0.030063	-0.45451	-0.1376	-0.43592	-1.07417	-0.04027	0.031175	-0.16635	-0.03434
3/1/2019	4.996368	-0.00902	-0.00607	-0.05991	-0.07373	-0.09441	-0.27532	-0.32142	-0.30036	-0.12598	0.030401	-0.27717	0.09858	-0.28983	-0.82891	-0.00723	0.145519	-0.11215	0.019913
4/1/2019	4.918763	0.010703	0.01899	-0.01926	-0.04129	-0.08829	-0.26679	-0.31098	-0.28662	-0.16032	0.063801	-0.2471	0.121435	-0.32978	-0.85842	-0.02331	0.127471	-0.12191	0.032677
5/1/2019	4.95263	0.009008	0.017582	-0.06563	-0.04341	-0.06782	-0.26263	-0.40391	-0.35077	-0.16106	0.064057	-0.25501	0.108727	-0.62261	-0.90992	-0.02658	0.11484	-0.17808	0.027972
6/1/2019	4.986187	0.015459	0.027672	-0.00928	-0.04242	-0.06816	-0.26467	-0.43972	-0.3826	-0.16234	0.063087	-0.33449	0.109164	-0.74818	-0.99305	-0.02844	0.114976	-0.20715	0.026998
7/1/2019	5.038727	0.022615	0.038964	-0.01921	-0.06409	-0.06682	-0.27429	-0.44203	-0.3821	-0.19835	0.239737	-0.36249	0.083388	-0.77732	-1.02688	-0.05804	0.086643	-0.23704	-0.00411
8/1/2019	5.071222	0.032681	0.058318	-0.01885	-0.06789	-0.03808	-0.28652	-0.45532	-0.39382	-0.17714	0.281807	-0.37404	0.11797	-0.78897	-1.04266	-0.07043	0.076339	-0.24904	-0.01748
9/1/2019	5.065546	0.021831	0.032645	-0.01923	-0.04058	-0.05915	-0.26961	-0.41733	-0.35558	-0.15724	0.322413	-0.33699	0.159734	-0.71931	-1.00797	-0.02889	0.118359	-0.20879	0.023702
10/1/2019	5.100734	0.022594	0.031175	-0.02222	-0.04194	-0.05938	-0.28081	-0.39516	-0.32079	-0.15039	0.23446	-0.23076	0.152406	-0.62199	-0.92248	-0.02296	0.109412	-0.13377	0.029917
11/1/2019	5.264457	0.013155	0.022314	-0.0348	-0.07288	-0.08889	-0.313	-0.40311	-0.38495	-0.15697	0.080397	-0.26687	0.111395	-0.37157	-0.98623	0.028924	0.220751	-0.07627	0.08364
12/1/2019	5.513641	0.002296	0.013267	-0.04234	-0.08351	-0.09809	-0.34305	-0.5263	-0.50769	-0.16583	0.146875	-0.47926	-0.10066	-0.5305	-1.20936	-0.03961	0.004589	-0.13049	-0.0334
1/1/2020	5.665889	0.010352	0.033913	-0.05328	-0.09724	-0.11503	-0.42248	-0.65372	-0.63264	-0.24675	0.134841	-0.60638	-0.22087	-0.62156	-1.25245	-0.06199	-0.00685	-0.17329	-0.05621
2/1/2020	5.68571	-0.00144	0.013995	-0.05965	-0.09691	-0.16616	-0.41435	-0.81012	-0.80107	-0.34384	0.043151	-0.76399	-0.3797	-0.77669	-1.32983	-0.05172	0.003686	-0.16368	-0.0459
3/1/2020	5.296438	0.005479	0.024588	-0.07141	-0.09196	-0.1472	-0.36593	-0.5844	-0.57166	-0.23593	-0.02897	-0.44091	-0.0573	-0.53745	-1.05537	-0.03697	0.110228	-0.13473	-0.01225
4/1/2020	5.217655	0.032915	0.054451	-0.03751	-0.06739	-0.12997	-0.35793	-0.59775	-0.59394	-0.25233	-0.01174	-0.4086	-0.01354	-0.79056	-1.09077	-0.06158	0.085311	-0.17251	-0.01405
5/1/2020	5.244342	0.049311	0.068743	-0.02764	-0.07112	-0.08566	-0.34022	-0.83954	-0.83252	-0.25238	0.032564	-0.66652	-0.00315	-1.04892	-1.33475	-0.05638	0.079272	-0.21709	-0.01168
6/1/2020	5.286246	0.050821	0.071565	-0.0319	-0.08121	-0.09839	-0.34901	-0.87278	-0.84929	-0.26468	0.019841	-0.70336	-0.01502	-1.13761	-1.37159	-0.07059	0.067534	-0.26263	-0.02458
7/1/2020	5.338003	0.044554	0.076181	-0.03888	-0.08865	-0.10031	-0.3459	-0.90022	-0.87625	-0.26513	0.199441	-0.70925	-0.03799	-1.16339	-1.40271	-0.09537	0.043562	-0.28652	-0.05146
8/1/2020	5.371145	0.046696	0.08018	-0.04406	-0.0937	-0.06275	-0.3555	-0.90887	-0.88535	-0.22609	0.245164	-0.71618	0.004193	-1.17144	-1.4145	-0.10228	0.038776	-0.29269	-0.06151
9/1/2020	5.372901	0.056815	0.077768	-0.03343	-0.07627	-0.06751	-0.36219	-0.88282	-0.85969	-0.23136	0.255888	-0.69211	0.034926	-1.10204	-1.39243	-0.07122	0.070261	-0.26302	-0.02885
10/1/2020	5.405033	0.054856	0.081893	-0.03258	-0.07311	-0.07137	-0.36948	-0.83611	-0.83077	-0.23373	0.261434	-0.64	0.031849	-1.05965	-1.35911	-0.05996	0.065896	-0.18111	-0.03479
11/1/2020	5.556629	0.042825	0.066556	-0.05561	-0.09734	-0.10357	-0.41238	-0.59567	-0.57707	-0.22838	0.105731	-0.4154	-0.02899	-0.56351	-1.35843	-0.04024	0.107678	-0.15167	-0.01596
12/1/2020	5.765467	0.019773	0.046123	-0.06899	-0.10372	-0.11676	-0.39724	-0.64237	-0.62318	-0.24957	0.177	-0.59386	-0.20714	-0.6829	-1.54438	-0.07063	-0.06982	-0.15997	-0.07041
1/1/2021	5.912696	0.014493	0.047305	-0.07422	-0.11222	-0.12467	-0.53893	-0.93395	-0.92468	-0.26059	0.181218	-0.88667	-0.49447	-0.90112	-1.58481	-0.13656	-0.0718	-0.272	-0.13633
2/1/2021	5.890787	0.001841	0.033187	-0.08055	-0.1076	-0.14304	-0.49386	-1.01681	-0.92409	-0.30366	0.113866	-0.97039	-0.57907	-0.98395	-1.54605	-0.08909	-0.02626	-0.22571	-0.08886
3/1/2021	5.178273	0.01591	0.040179	-0.06669	-0.0982	-0.12861	-0.36597	-0.62111	-0.61621	-0.24949	-0.00802	-0.44623	-0.05739	-0.55274	-1.10412	-0.04745	0.057772	-0.13279	-0.02816
4/1/2021	5.109877	0.06346	0.093507	-0.04305	-0.08083	-0.09378	-0.37169	-0.62607	-0.62101	-0.25477	0.026809	-0.44802	-0.00131	-0.83737	-1.13461	-0.07543	0.022263	-0.18481	-0.03447
5/1/2021	5.144478	0.073025	0.108158	-0.04711	-0.08132	-0.07461	-0.36058	-0.86336	-0.85658	-0.24389	0.045989	-0.68778	0.003678	-1.07805	-1.34934	-0.07124	0.030601	-0.23127	-0.04682
6/1/2021	5.206668	0.064015	0.091411	-0.05614	-0.07791	-0.08824	-0.37698	-0.89409	-0.88695	-0.27113	0.125142	-0.71817	-0.02161	-1.29074	-1.39203	-0.0985	0.005126	-0.29105	-0.07336
7/1/2021	5.281398	0.050056	0.083546	-0.06147	-0.1022	-0.07589	-0.39573	-0.95264	-0.94551	-0.2623	0.232171	-0.7509	-0.076	-1.34975	-1.4546	-0.15521	-0.05107	-0.34666	-0.13174
8/1/2021	5.311737	0.054859	0.09298	-0.05539	-0.10326	-0.06806	-0.40892	-0.9608	-0.95342	-0.26054	0.268172	-0.75763	-0.02424	-1.3219	-1.46538	-0.16065	-0.0554	-0.35174	-0.13878
9/1/2021	5.264261	0.080785	0.110666	-0.04171	-0.07256	-0.05524	-0.37357	-0.88502	-0.87769	-0.22332	0.28888	-0.68332	0.057218	-1.2293	-1.39272	-0.07939	0.026385	-0.27195	-0.05625
10/1/2021	5.300037	0.074256	0.106112	-0.05092	-0.0888	-0.06828	-0.38873	-0.86198	-0.85432	-0.23491	0.286449	-0.65868	0.046253	-0.96052	-1.39556	-0.0816	0.01384	-0.19495	-0.04595
11/1/2021	5.561467	0.061687	0.087614	-0.07587	-0.09551	-0.06911	-0.42643	-0.61832	-0.59993	-0.24427	0.15848	-0.47551	-0.08322	-0.58547	-1.48349	-0.04976	0.043617	-0.15492	-0.03072
12/1/2021	5.760195	0.04539	0.091021	-0.06855	-0.10711	-0.07809	-0.45305	-0.69442	-0.68792	-0.23563	0.227746	-0.64677	-0.25419	-0.6693	-1.66254	-0.10883	-0.12662	-0.19644	-0.12639
1/1/2022	5.899323	0.015564	0.064168	-0.08955	-0.1208	-0.11686	-0.56932	-0.96372	-0.95461	-0.27775	0.195087	-0.91738	-0.51925	-0.93017	-1.67702	-0.15027	-0.10105	-0.28635	-0.15003
2/1/2022	5.878505	0.000953	0.033489	-0.08719	-0.11095	-0.14833	-0.51921	-1.00927	-0.94818	-0.31311	0.108812	-0.9635	-0.56596	-1.06808	-1.63359	-0.09766	-0.04822	-0.23898	-0.09743
3/1/2022	5.28375	0.021271	0.046941	-0.0695	-0.10293	-0.11974	-0.38816	-0.63512	-0.62915	-0.26138	0.097904	-0.4261	-0.02929	-0.52619	-1.08951	-0.04564	0.062944	-0.14556	-0.02597
4/1/2022	5.204525	0.068886	0.101593	-0.04737	-0.08485	-0.08019	-0.38473	-0.6344	-0.62924	-0.25173	0.049955	-0.41302	0.050189	-0.80974	-1.11432	-0.07374	0.033597	-0.19143	-0.03083
5/1/2022	5.244285	0.072533	0.117383	-0.06481	-0.07931	-0.06135	-0.37719	-0.87036	-0.86343	-0.23417	0.168443	-0.68621	0.047367	-1.08242	-1.3729	-0.08024	0.033914	-0.22557	-0.05227
6/1/2022	5.351741	0.069531	0.119967	-0.07261	-0.09077	-0.08907	-0.43779	-0.9633	-0.9563	-0.27432	0.1912	-0.75916	-0.02483	-1.16486	-1.45374	-0.15393	-0.03871	-0.34858	-0.12672

Month	Henry Hub	Katy	Houston Sl	Carthage	Perryville	Permian	Midcontine	Opal	Cheyenne	San Juan	SoCal	Malin	PG&E Cityg	Sumas	AECO	Chicago	Dawn	Ventura	MichCon
7/1/2022	5.407325	0.060544	0.109511	-0.08671	-0.11252	-0.08456	-0.44946	-0.99247	-0.9862	-0.2663	0.261533	-0.78604	-0.04928	-1.20983	-1.50347	-0.19859	-0.08979	-0.37531	-0.17227
8/1/2022	5.439934	0.059095	0.12756	-0.09048	-0.11435	-0.06997	-0.45792	-0.99894	-0.99322	-0.25747	0.555228	-0.79077	-0.04401	-1.2155	-1.5128	-0.20336	-0.09264	-0.37945	-0.17792
9/1/2022	5.359392	0.081032	0.123466	-0.05583	-0.07822	-0.05682	-0.39881	-0.88405	-0.87656	-0.2283	0.381253	-0.67796	0.078552	-1.10023	-1.39884	-0.0808	0.03015	-0.25799	-0.05466
10/1/2022	5.3891	0.074324	0.12027	-0.05592	-0.08189	-0.06044	-0.4059	-0.87427	-0.86904	-0.23045	0.388618	-0.66672	0.074227	-1.08952	-1.39252	-0.07151	0.024003	-0.19949	-0.05145
11/1/2022	5.791577	0.064483	0.100799	-0.07526	-0.09996	-0.05417	-0.46491	-0.65401	-0.64743	-0.23535	0.176749	-0.4668	-0.06551	-0.62052	-1.59303	-0.02525	0.095045	-0.14679	-0.00591
12/1/2022	6.102672	0.034994	0.086226	-0.09549	-0.1268	-0.07508	-0.52733	-0.81489	-0.80515	-0.22829	0.142109	-0.76514	-0.36354	-0.8577	-1.89987	-0.1288	-0.12818	-0.22233	-0.1288
1/1/2023	6.262819	-0.01428	0.022609	-0.11097	-0.14101	-0.14861	-0.59956	-0.83657	-0.82678	-0.44214	0.072919	-0.78552	-0.37558	-0.94263	-1.90258	-0.13311	-0.13224	-0.27441	-0.13294
2/1/2023	6.282311	-0.0328	0.000646	-0.13166	-0.15977	-0.22957	-0.59352	-0.93219	-0.92034	-0.53644	-0.1041	-0.88182	-0.47257	-1.03857	-1.89715	-0.11706	-0.11626	-0.2592	-0.11689
3/1/2023	5.865518	-0.01891	0.000839	-0.11723	-0.13548	-0.19431	-0.47205	-0.68959	-0.68007	-0.39143	-0.05195	-0.64107	-0.12572	-1.09622	-1.42618	-0.0832	0.022392	-0.18966	-0.05749
4/1/2023	5.753287	0.018384	0.035958	-0.09928	-0.10481	-0.17154	-0.46399	-0.66647	-0.65917	-0.36935	0.051773	-0.626	0.029175	-1.11007	-1.42619	-0.07658	0.02004	-0.21685	-0.05565
5/1/2023	5.796674	0.027724	0.049121	-0.10057	-0.11576	-0.12666	-0.45918	-0.86246	-0.85595	-0.47366	0.066008	-0.76404	0.026039	-1.18827	-1.4957	-0.08513	0.020419	-0.2266	-0.0634
6/1/2023	5.904946	0.021259	0.053159	-0.11942	-0.13065	-0.13445	-0.50202	-0.95908	-0.95248	-0.57006	-0.00899	-0.63613	0.059641	-1.40858	-1.65644	-0.16344	-0.05683	-0.32795	-0.14183
7/1/2023	5.956022	0.02809	0.061352	-0.12449	-0.13143	-0.1144	-0.50682	-0.96882	-0.96192	-0.57908	0.15823	-0.65389	0.044686	-1.37452	-1.68516	-0.18627	-0.07951	-0.33477	-0.16569
8/1/2023	5.988416	0.038761	0.072503	-0.11953	-0.13551	-0.10829	-0.50986	-0.97428	-0.9671	-0.5815	0.535827	-0.67734	0.042342	-1.38052	-1.69504	-0.19017	-0.08138	-0.34143	-0.17056
9/1/2023	5.92078	0.031248	0.05724	-0.10362	-0.10962	-0.11659	-0.46402	-0.8704	-0.86328	-0.4781	0.274663	-0.83136	0.039043	-1.28165	-1.59569	-0.08091	0.028412	-0.23279	-0.06047
10/1/2023	5.950291	0.037203	0.057726	-0.10287	-0.10087	-0.12088	-0.46828	-0.64823	-0.64049	-0.32207	0.331722	-0.46322	0.298016	-1.23417	-1.55437	-0.07158	0.018033	-0.17388	-0.04958
11/1/2023	6.401361	0.056635	0.084221	-0.09773	-0.1095	-0.08802	-0.39909	-0.51324	-0.50252	-0.2854	0.358347	-0.34936	0.065546	-0.99318	-1.82821	-0.01609	0.112708	-0.14525	-0.00054
12/1/2023	6.697868	0.009152	0.039283	-0.15335	-0.16605	-0.14361	-0.48004	-0.67374	-0.66277	-0.34137	0.228102	-0.61748	-0.20223	-0.77731	-2.10691	-0.12096	-0.14287	-0.22232	-0.14263
1/1/2024	6.878373	-0.00168	0.052228	-0.17087	-0.17413	-0.16033	-0.57795	-0.83149	-0.8182	-0.42519	0.251691	-0.77493	-0.35221	-0.93753	-2.17496	-0.16046	-0.1597	-0.30992	-0.16046
2/1/2024	6.88356	-0.02993	0.015337	-0.17956	-0.18901	-0.23806	-0.54256	-1.03482	-1.02195	-0.62944	-0.11008	-0.98093	-0.56007	-1.26516	-2.14916	-0.12258	-0.12189	-0.27293	-0.12258
3/1/2024	6.194976	0.016915	0.049705	-0.17007	-0.15751	-0.19731	-0.45844	-0.71178	-0.7031	-0.4128	-0.03405	-0.66047	-0.03381	-1.1249	-1.46817	-0.08746	0.014573	-0.19841	-0.06183
4/1/2024	6.127854	0.021972	0.053835	-0.15717	-0.16692	-0.22218	-0.47622	-0.75421	-0.74653	-0.42895	0.025655	-0.71157	0.001147	-1.24729	-1.57396	-0.12219	-0.03123	-0.26966	-0.10042
5/1/2024	6.172697	0.020134	0.057685	-0.15271	-0.1659	-0.20978	-0.46754	-0.96969	-0.96219	-0.57185	0.043921	-0.93388	-0.16724	-1.47592	-1.78919	-0.13993	-0.03202	-0.31583	-0.11879
6/1/2024	6.278828	0.005445	0.059499	-0.20125	-0.14855	-0.17895	-0.55701	-1.06721	-1.06029	-0.66177	-0.01562	-1.03071	-0.23981	-2.0821	-2.32327	-0.21412	-0.10421	-0.42176	-0.19301
7/1/2024	6.371521	0.030521	0.089123	-0.21747	-0.17981	-0.16677	-0.57786	-1.10448	-1.09561	-0.66366	0.115485	-1.06521	-0.29506	-2.08575	-2.3905	-0.27153	-0.16034	-0.45327	-0.25217
8/1/2024	6.409344	0.03072	0.089725	-0.20412	-0.18745	-0.13252	-0.57042	-1.08808	-1.0805	-0.63084	0.546543	-1.04612	0.027677	-2.09847	-2.40708	-0.27873	-0.1654	-0.43447	-0.25925
9/1/2024	6.352514	0.042123	0.087678	-0.1827	-0.16307	-0.15955	-0.54501	-1.01242	-1.00489	-0.60675	0.280157	-0.97114	0.109693	-2.0318	-2.33977	-0.19747	-0.08395	-0.37957	-0.17672
10/1/2024	6.393539	0.036545	0.080785	-0.18514	-0.16239	-0.17926	-0.53827	-0.72761	-0.71936	-0.3893	0.374918	-0.6577	0.119904	-2.04414	-2.35634	-0.18288	-0.09024	-0.28835	-0.15965
11/1/2024	6.771517	0.022676	0.065739	-0.19718	-0.18984	-0.17559	-0.52406	-0.6527	-0.64159	-0.37697	0.344534	-0.55081	-0.05944	-1.65209	-2.49023	-0.1216	-0.01329	-0.24446	-0.09508
12/1/2024	7.002799	0.008674	0.071608	-0.24173	-0.2104	-0.16253	-0.59739	-0.75603	-0.74466	-0.36402	0.411032	-0.69772	-0.27322	-0.86123	-2.71789	-0.19769	-0.2268	-0.30253	-0.22656
1/1/2025	7.202808	0.021377	0.054819	-0.17905	-0.20218	-0.18623	-0.7184	-0.93543	-0.92233	-0.43518	0.236687	-0.87696	-0.44499	-1.04321	-2.49605	-0.27324	-0.24305	-0.4261	-0.3273
2/1/2025	7.148691	-0.02888	0.005075	-0.2157	-0.21263	-0.25324	-0.64383	-1.11743	-1.1048	-0.61951	-0.12271	-1.06191	-0.63205	-1.52416	-2.4222	-0.18608	-0.15578	-0.33985	-0.24046
3/1/2025	6.438309	-0.00685	0.01828	-0.19496	-0.19799	-0.23782	-0.52104	-0.78343	-0.77447	-0.44302	-0.06714	-0.73053	-0.08032	-1.32755	-1.67566	-0.1418	-0.03846	-0.25532	-0.11705
4/1/2025	6.375105	0.007456	0.045869	-0.18955	-0.18423	-0.28633	-0.56398	-0.82572	-0.81778	-0.49149	-0.02699	-0.78164	-0.02674	-1.41361	-1.74656	-0.19204	-0.10017	-0.34303	-0.1696
5/1/2025	6.425109	0.016407	0.061647	-0.17077	-0.17917	-0.24271	-0.56803	-1.03405	-1.02696	-0.55548	-0.00663	-0.99693	-0.03079	-1.48573	-1.81026	-0.2119	-0.10085	-0.37083	-0.18976
6/1/2025	6.536213	-0.00848	0.040436	-0.20236	-0.1753	-0.22321	-0.62446	-1.12916	-1.12198	-0.61174	-0.05631	-1.09131	-0.10117	-1.7161	-1.97977	-0.28423	-0.17205	-0.47628	-0.26273
7/1/2025	6.599572	0.007041	0.061516	-0.19757	-0.19908	-0.18968	-0.63195	-1.14728	-1.13977	-0.60012	0.076797	-1.10659	-0.13293	-1.69946	-2.02259	-0.32027	-0.20647	-0.48371	-0.29939
8/1/2025	6.643307	-0.00041	0.0573	-0.19246	-0.20969	-0.17009	-0.6275	-1.16072	-1.1529	-0.53365	0.165065	-1.11744	-0.02164	-1.70982	-2.04155	-0.33234	-0.21634	-0.49483	-0.31313
9/1/2025	6.580363	0.003047	0.055597	-0.17894	-0.16924	-0.19393	-0.60746	-1.03111	-1.02332	-0.43421	0.259185	-0.98831	0.084366	-1.61655	-1.94789	-0.22745	-0.1109	-0.39063	-0.20657
10/1/2025	6.613306	0.018228	0.064403	-0.18599	-0.1822	-0.16895	-0.61085	-0.86655	-0.85819	-0.38498	0.230714	-0.70785	0.085711	-1.62136	-1.95714	-0.22584	-0.13074	-0.33367	-0.20197
11/1/2025	6.94373	0.022603	0.059745	-0.20774	-0.19415	-0.1756	-0.65092	-0.72673	-0.71686	-0.38105	0.302352	-0.58027	-0.10615	-1.24447	-2.08588	-0.15054	-0.02237	-0.27834	-0.13044
12/1/2025	7.244176	0.023131	0.062886	-0.22345	-0.22966	-0.1899	-0.67091	-0.83438	-0.82426	-0.39545	0.390886	-0.77444	-0.34098	-0.91362	-2.33213	-0.22547	-0.24499	-0.33376	-0.24571
1/1/2026	7.432938	-0.00597	0.051446	-0.26475	-0.22939	-0.20348	-0.7624	-0.91086	-0.90056	-0.41316	0.379587	-0.84986	-0.40787	-0.93735	-1.5877	-0.28121	-0.25136	-0.42339	-0.33736
2/1/2026	7.355116	-0.03891	0.00569	-0.26781	-0.2415	-0.23796	-0.65647	-0.87116	-0.8629	-0.45283	0.227293	-0.74056	-0.29818	-0.8336	-1.48504	-0.17069	-0.14073	-0.31371	-0.22717
3/1/2026	6.814703	-0.00199	0.032447	-0.22906	-0.22056	-0.21767	-0.55707	-0.62013	-0.61065	-0.40381	0.245772	-0.25762	0.184111	-0.37116	-0.93127	-0.15568	-0.05433	-0.25859	-0.13703
4/1/2026	6.730076	-8.7E-05	0.055481	-0.2195	-0.18708	-0.18897	-0.58315	-0.71314	-0.7064	-0.39837	0.211666	-0.22905	0.235573	-0.6235	-1.03108	-0.20044	-0.10395	-0.31846	-0.17904
5/1/2026	6.785821	0.002354	0.063408	-0.21517	-0.18453	-0.18413	-0.61589	-0.80182	-0.79397	-0.38644	0.339651	-0.46769	0.232534	-0.76097	-1.15307	-0.21936	-0.10524	-0.37301	-0.19747
6/1/2026	6.894458	-0.02109	0.051822	-0.24366	-0.18573	-0.22004	-0.67605	-0.91965	-0.91172	-0.46899	0.114323	-0.55147	0.154976	-0.9387	-1.27123	-0.3005	-0.18521	-0.45155	-0.27868
7/1/2026	6.955883	-0.00397	0.065114	-0.25185	-0.21348	-0.14657	-0.68852	-0.89737	-0.88904	-0.40767	0.302716	-0.56732	0.177237	-0.94872	-1.30374	-0.33036	-0.2127	-0.46543	-0.30837
8/1/2026	7.001105	-0.00841	0.066872	-0.25769	-0.21603	-0.15054	-0.70241	-0.89801	-0.89801	-0.41477	0.449381	-0.53882	0.256925	-0.91147	-1.31816	-0.34186	-0.22188	-0.47981	-0.321
9/1/2026	6.941018	0.021534	0.06913	-0.22506	-0.19038	-0.18421	-0.6408	-0.8118	-0.8118	-0.40109	0.462184	-0.40983	0.370923	-0.8075	-1.21345	-0.2307	-0.11016	-0.38223	-0.20806
10/1/2026	6.975763	0.028183	0.075007	-0.22292	-0.19631	-0.15892	-0.64633	-0.78481	-0.7758	-0.36844	0.467367	-0.34286	0.374802	-0.7387	-1.1541	-0.2242	-0.12336	-0.34091	-0.19895
11/1/2026	7.144733	0.030523	0.087236	-0.26624	-0.22314	-0.14945	-0.64607	-0.68614	-0.67433	-0.33262	0.370308	-0.25606	0.357623	-0.42784	-1.11834	-0.15491	-0.02545	-0.28607	-0.13445
12/1/2026	7.390479	0.014284	0.085797	-0.26992	-0.2438	-0.12523	-0.64462	-0.76515	-0.75468	-0.33493	0.484428	-0.39167	0.054269	-0.56398	-1.33017	-0.18815	-0.2309	-0.31781	-0.2309
1/1/2027	7.557282	-0.02787	0.044984	-0.31442	-0.23569	-0.21906	-0.78203	-0.78437	-0.78437	-0.43292	0.24492	-0.67249	-0.21993	-0.6701	-1.34171	-0.2909	-0.21377	-0.42532	-0.30286
2/1/2027	7.49643	-0.05261	0.005285	-0.3158	-0.2493	-0.26606	-0.74161	-0.95034	-0.95034	-0.55163	0.021698	-0.88917	-0.43939	-0.89009	-1.50545	-0.17194	-0.08214	-0.337	-0.17168
3/1/2027	6.599895	-0.03437	0.011475	-0.27173	-0.23104	-0.25813	-0.60451	-0.69595	-0.69595	-0.45997	0.079434	-0.37566	0.070519	-0.49316	-1.0453	-0.14668	-0.04224	-0.26418	-0.12304
4/1/2027	6.50898	-0.01574	0.051731	-0.2636	-0.20647	-0.23464	-0.60088	-0.70187	-0.70187	-0.44807	0.065496	-0.3749	0.061712	-0.73228	-1.13071	-0.17961	-0.07351	-0.30347	-0.1576
5/1/2027	6.573763	0.001822	0.063861	-0.25007	-0.18762	-0.2471	-0.62132	-0.77316	-0.77316	-0.46056	0.35012	-0.4836	-0.02535	-0.85999	-1.24491	-0.21702	-0.10259	-0.37913	-0.19454
6/1/2027	6.702475	-0.02525	0.052362	-0.30238	-0.21036	-0.23874	-0.70283	-0.85123	-0.85123	-0.51483	0.176794	-0.56206	-0.09984	-1.00168	-1.32684	-0.29355	-0.17796	-0.45579	-0.27114
7/1/2027	6.748009	-0.0229	0.065682	-0.29447	-0.21096	-0.18309	-0.67019	-0.85788	-0.85788	-0.44285	0.264387	-0.57875	-0.00205	-0.95717	-1.35101	-0.31469	-0.19712	-0.46092	-0.29311
8/1/2027	6.791878	-0.01314	0.06773	-0.29883	-0.21515	-0.14779	-0.66612	-0.83453	-0.83453	-0.41848	0.46338	-0.58654	0.088603	-0.96562	-1.36554	-0.3259	-0.20606	-0.47471	-0.30541
9/1/2027	6.722105	-4.4E-05	0.064553	-0.26381	-0.19724	-0.15853	-0.63721	-0.76785	-0.76785	-0.37208	0.453517	-0.46126	0.187832	-0.87549	-1.27472	-0.22802	-0.108	-0.38857	-0.20599
10/1/2027	6.759411	0.018654	0.076893	-0.26278	-0.20377	-0.1547	-0.64869	-0.69861	-0.69949	-0.36826	0.47073	-0.34273	0.184596	-0.75392	-1.16449	-0.22678	-0.12772	-0.34095	-0.205
11/1/2027	7.044941	0.006632	0.081031	-0.27794	-0.22101	-0.15458	-0.65501	-0.65881	-0.65881	-0.36827	0.469338	-0.38441	0.066138	-0.54527	-1.21279	-0.15423	-0.04032	-0.28888	-0.13322
12/1/2027	7.290353	0.008032	0.071531	-0.30852	-0.24851	-0.1674	-0.66229	-0.75272	-0.75272	-0.38118	0.412657	-0.58939	-0.13846	-0.71602	-1.42476	-0.1911	-0.24553	-0.33239	-0.24626
1/1/2028	7.429459	-0.03581	0.030356	-0.33953	-0.24141	-0.24019	-0.81686	-0.82523	-0.82523	-0.46904	0.225864	-0.71163	-0.25296	-0.71269	-1.3882	-0.26626	-0.17821	-0.40961	-0.26651
2/1/2028	7.356622	-0.04277	0.011324	-0.32231	-0.24234	-0.27732	-0.7247	-0.99436	-0.99436	-0.56878	-0.00274	-0.93474	-0.4788	-0.93904	-1.55789	-0.14892	-0.05981	-0.31462	-0.14855
3/1/2028	6.588227	-0.04881	0.000674	-0.30122	-0.22623	-0.2835	-0.61184	-0.81748	-0.81748	-0.50116	0.055015	-0.46906	-0.01612	-0.65713	-1.20814	-0.14754	-0.03923	-0.27631	-0.12016
4/1/2028	6.505184	-0.01851	0.050086	-0.28634	-0.20717	-0.30128	-0.62003	-0.81531	-0.81615	-0.51573	-0.00096	-0.48991	-0.02806	-0.90423	-1.29965	-0.1887	-0.07934	-0.34385	-0.16617
5/1/2028	6.560262	-0.00605	0.065233	-0.28622	-0.20045	-0.29819	-0.62241	-0.85693	-0.85693	-0.51582	0.374727	-0.55966	-0.03896	-0.95191	-1.33622	-0.19688	-0.08662	-0.38261	-0.18016
6/1/2028	6.693664	-0.02021	0.058005	-0.31645	-0.20929	-0.25416	-0.69948	-0.94115	-0.94115	-0.59933	0.350765	-0.6566	-0.12956	-1.11146	-1.4347	-0.28933	-0.17793	-0.48438	-0.27279
7/1/2028	6.74318	-0.03522	0.067112	-0.32403	-0.22113	-0.19019	-0.68104	-0.9788	-0.9788	-0.55549	0.46395	-0.69089	-0.10978	-1.08196	-1.47502	-0.32686	-0.21317	-0.51752	-0.3115
8/1/2028	6.78493	-0.00586	0.07154	-0.33	-0.22679	-0.18702	-0.69335	-0.96943	-0.96943	-0.47018	0.494866	-0.66008	-0.01631	-1.08858	-1.48759	-0.33551	-0.21957	-0.52211	-0.32257
9/1/2028	6.703751	0.002671	0.071564	-0.29793	-0.21238	-0.18883	-0.63524	-0.84428	-0.84428	-0.40878	0.477637	-0.53324	0.120531	-0.9609	-1.35924	-0.20007	-0.08333	-0.38989	-0.18521
10/1/2028	6.737317	0.015533	0.077405	-0.30361	-0.21385	-0.19441	-0.63849	-0.76599	-0.76599	-0.41837	0.486721	-0.32675	0.1214	-0.73833	-1.15148	-0.20125	-0.10187	-0.32402	-0.17896
11/1/2028	7.227884	0.00913	0.081875	-0.30836	-0.22688	-0.17527	-0.65608	-0.74278	-0.74278	-0.39323	0.477952	-0.45155	0.007634	-0.6173	-1.29756	-0.13669	0.000552	-0.27984	-0.1228
12/1/2028	7.48364	-0.00104	0.070052	-0.35093	-0.26005	-0.19869	-0.69882	-0.84586	-0.84586	-0.41956	0.461544	-0.66337	-0.2038	-0.79233	-1.51653	-0.20589	-0.21093	-0.34238	-0.21167
1/1/2029	7.659342	-0.02088	0.068571	-0.35751	-0.26941	-0.21598	-0.81942	-0.90973	-0.90973	-0.47496	0.348992	-0.84657	-0.37912	-0.84936	-1.53705	-0.27809	-0.19741	-0.42618	-0.28707
2/1/2029	7.570844	-0.03984	0.014251	-0.35094	-0.25295	-0.28135	-0.74645	-1.03507	-1.03507	-0.58115	0.399409	-0.97373	-0.50815	-0.97751	-1.61036	-0.15796	-0.07624	-0.32716	-0.16636
3/1/2029	6.930552	-0.04246	0.006378	-0.34441	-0.25407	-0.25201	-0.63937	-0.83261	-0.83261	-0.47411	0.301305	-0.45786	0.006204	-0.56302	-1.22443	-0.14807	-0.0332	-0.28128	-0.12059
4/1/2029	6.841524	-0.02288	0.053509	-0.31349	-0.21433	-0.30538	-0.63899	-0.87207	-0.87207	-0.52742	0.348864	-0.47338	0.000224	-0.89489	-1.30623	-0.17731	-0.06052	-0.33662	-0.15443
5/1/2029	6.900322	-0.00172	0.069322	-0.31555	-0.22066	-0.30107	-0.63487	-0.91146	-0.91146	-0.52314	0.500277	-0.58076	-0.00953	-0.97697	-1.37537	-0.18433	-0.06652	-0.37607	-0.17436
6/1/2029	7.021105	-0.00326	0.074112	-0.34891	-0.23369	-0.24662	-0.73119	-1.05151	-1.05151	-0.61992	0.387691	-0.68208	-0.10406	-1.14199	-1.47819	-0.28058	-0.16183	-0.50384	-0.26994
7/1/2029	7.135529	-0.02335	0.073158	-0.40647	-0.28309	-0.2217	-0.76948	-1.04268	-1.04268	-0.60128	0.487251	-0.75335	-0.14345	-1.19083	-1.55594	-0.35542	-0.23425	-0.57776	-0.34344
8/1/2029	7.186585	-0.00747	0.077343	-0.41778	-0.30456	-0.23022	-0.78662	-1.01424	-1.01424	-0.50363	0.544704	-0.74584	0.029701	-1.16405	-1.57798	-0.37383	-0.25069	-0.59243	-0.36345
9/1/2029	7.116773	-0.00206	0.076443	-0.35532	-0.2444	-0.19796	-0.71616	-0.94689	-0.94689	-0.437	0.536744	-0.62079	0.152664	-1.053	-1.46621	-0.25439	-0.13067	-0.47543	-0.2429
10/1/2029	7.158004	-0.00175	0.077135	-0.36065	-0.25167	-0.20157	-0.72488	-0.86232	-0.86232	-0.42911	0.60395	-0.36158	0.14932	-0.7853	-1.21784	-0.26179	-0.15809	-0.39833	-0.23916
11/1/2029	7.429973	0.019256	0.091708	-0.36249	-0.25187	-0.17132	-0.7523	-0.75625	-0.75625	-0.39366	0.528022	-0.40022	0.068907	-0.53196	-1.22125	-0.1452	0.00089	-0.29138	-0.12337
12/1/2029	7.690779	-0.02743	0.079135	-0.40332	-0.29	-0.19358	-0.73906	-0.85414	-0.85414	-0.41922	0.482895	-0.61812	-0.14859	-0.75006	-1.44618	-0.2018	-0.20077	-0.34977	-0.20153
1/1/2030	7.871243	-0.02282	0.066803	-0.41427	-0.29685	-0.21443	-0.8586	-0.89118	-0.89118	-0.44755	0.472392	-0.75524	-0.27721	-0.75814	-1.46351	-0.26709	-0.18562	-0.43051	-0.27749
2/1/2030	7.7955	-0.03782	0.014004	-0.37188	-0.25304	-0.25474	-0.76696	-0.99779	-0.99779	-0.55459	0.420403	-0.81262	-0.33564	-0.81399	-1.43413	-0.16521	-0.08268	-0.33822	-0.17502
3/1/2030	7.229509	-0.04032	0.004256	-0.36656	-0.25429	-0.26107	-0.68362	-0.8545	-0.8545	-0.48769	0.304865	-0.35481	0.121089	-0.35903	-1.02626	-0.13299	-0.01371	-0.26425	-0.10432
4/1/2030	7.162023	-0.01997	0.054612	-0.34503	-0.22777	-0.29772	-0.71365	-0.91832	-0.91832	-0.52429	0.355852	-0.37351	0.091958	-0.71917	-1.1533	-0.20079	-0.07878	-0.35801	-0.17755
5/1/2030	7.22414	-0.009	0.067601	-0.35938	-0.24407	-0.30342	-0.71322	-0.95566	-0.95566	-0.53	0.518893	-0.46036	-0.00224	-0.75078	-1.17281	-0.2105	-0.08666	-0.37465	-0.20284
6/1/2030	7.377999	-0.02323	0.069629	-0.44367	-0.27541	-0.26589	-0.8206	-1.07556	-1.07556	-0.63484	0.396997	-0.5639	-0.1047	-0.92368	-1.28245	-0.31491	-0.19007	-0.50983	-0.30775
7/1/2030	7.492012	-0.02179	0.080384	-0.47813	-0.32118	-0.24467	-0.86619	-1.10503	-1.10503	-0.60843	0.515694	-0.62034	-0.13773	-0.93588	-1.36918	-0.39921	-0.27454	-0.56385	-0.39363

Month	Henry Hub	Katy	Houston Sl	Carthage	Perryville	Permian	Midcontine	Opal	Cheyenne	San Juan	SoCal	Malin	PG&E Cityg	Sumas	AECO	Chicago	Dawn	Ventura	MichCon
8/1/2030	7.54797	-0.0139	0.078392	-0.48322	-0.33092	-0.24355	-0.88522	-1.04265	-1.04265	-0.52044	0.634532	-0.59276	0.040409	-0.95253	-1.39181	-0.41895	-0.29286	-0.58367	-0.41571
9/1/2030	7.463458	-0.00683	0.085418	-0.42953	-0.28299	-0.20603	-0.80511	-0.99706	-0.99706	-0.48036	0.564884	-0.39789	0.173108	-0.829	-1.26727	-0.28817	-0.16149	-0.45379	-0.28317
10/1/2030	7.51143	-0.00563	0.080668	-0.42648	-0.28297	-0.21688	-0.82436	-0.90094	-0.90094	-0.45853	0.653487	-0.24209	0.317877	-0.66652	-1.12135	-0.29467	-0.18672	-0.429	-0.27642
11/1/2030	7.881352	0.011464	0.093335	-0.43103	-0.27979	-0.18732	-0.81805	-0.8424	-0.84068	-0.41423	0.613326	-0.35472	0.127432	-0.49094	-1.20563	-0.17196	-0.019	-0.32428	-0.1572
12/1/2030	8.147276	-0.0192	0.093718	-0.47004	-0.32029	-0.19955	-0.83371	-0.89769	-0.89769	-0.45326	0.505865	-0.56966	-0.08709	-0.70581	-1.42783	-0.23536	-0.23428	-0.38941	-0.23509
1/1/2031	8.327079	-0.03953	0.076193	-0.4932	-0.35401	-0.27385	-0.93898	-1.04999	-1.04999	-0.52718	0.496297	-0.69636	-0.20511	-0.69212	-1.42358	-0.29707	-0.1989	-0.47677	-0.30346
2/1/2031	8.215908	-0.03892	0.016021	-0.42572	-0.27264	-0.29514	-0.81753	-1.06995	-1.06995	-0.6173	0.428481	-0.88214	-0.39357	-0.88109	-1.5573	-0.14876	-0.04339	-0.33361	-0.14848
3/1/2031	7.546003	-0.0465	0.00077	-0.44256	-0.27636	-0.27485	-0.74424	-0.89165	-0.89165	-0.50607	0.307375	-0.31991	0.167556	-0.33966	-1.02718	-0.14762	-0.0185	-0.28412	-0.11771
4/1/2031	7.480692	-0.02501	0.05652	-0.42026	-0.24688	-0.29117	-0.79594	-0.97997	-0.97997	-0.52945	0.364044	-0.35375	0.122718	-0.71764	-1.17017	-0.22789	-0.09531	-0.3902	-0.20426
5/1/2031	7.540772	-0.01694	0.070899	-0.45693	-0.27876	-0.3214	-0.79678	-1.00237	-1.00237	-0.5526	0.567128	-0.4226	0.046307	-0.7583	-1.19697	-0.24303	-0.10779	-0.40773	-0.23851
6/1/2031	7.642929	-0.05737	0.061677	-0.47197	-0.30102	-0.27758	-0.84155	-1.09312	-1.09312	-0.606	0.444965	-0.46278	0.007283	-0.87058	-1.24363	-0.28451	-0.14821	-0.45004	-0.28232
7/1/2031	7.696462	-0.04313	0.057749	-0.47694	-0.30628	-0.22477	-0.83721	-1.04569	-1.04569	-0.51468	0.549003	-0.45859	0.015187	-0.81197	-1.26185	-0.30042	-0.16259	-0.46452	-0.29829
8/1/2031	7.760706	-0.08717	0.073233	-0.4892	-0.33636	-0.2147	-0.85315	-1.03093	-1.03093	-0.49765	0.671384	-0.4359	0.233299	-0.82985	-1.28745	-0.32441	-0.18397	-0.48748	-0.32365
9/1/2031	7.767848	-0.01126	0.079063	-0.47655	-0.30286	-0.23515	-0.85374	-1.03778	-1.03778	-0.51565	0.652333	-0.36484	0.275081	-0.79822	-1.25478	-0.2851	-0.14444	-0.4495	-0.28296
10/1/2031	7.820907	-0.00699	0.083671	-0.47339	-0.29905	-0.2321	-0.86193	-0.91821	-0.91821	-0.46654	0.678387	-0.20966	0.288254	-0.63423	-1.10588	-0.28624	-0.1596	-0.42071	-0.26348
11/1/2031	8.592068	0.005779	0.095193	-0.48631	-0.3173	-0.21937	-0.87044	-0.90509	-0.90509	-0.45102	0.666702	-0.27777	0.219777	-0.40669	-1.15443	-0.19207	-0.02952	-0.34295	-0.17724
12/1/2031	8.887414	-0.01734	0.101501	-0.49286	-0.36937	-0.22635	-0.89582	-0.97429	-0.97429	-0.50765	0.556467	-0.53163	-0.03362	-0.66361	-1.41542	-0.24661	-0.21205	-0.41621	-0.24634

Month	Henry Hub	Lebanon	Appalachia	Dominion !	Tetco M-2	Tetco M-3	Transco Z6	Transco Z6	Transco Z5	Algonquin
6/1/2014	4.9	-0.02144	-0.03871	-0.94189	-0.94189	-0.74003	-0.76217	-0.73972	0.11862	-0.61949
7/1/2014	5.1	-0.02326	-0.04143	-0.94937	-0.94937	-0.74412	-0.74412	-0.71988	0.126943	-0.62485
8/1/2014	5.1	-0.02501	-0.04406	-0.9622	-1.05389	-0.83688	-0.86143	-0.83659	0.132644	-0.71839
9/1/2014	4.9	-0.0146	-0.03353	-0.95536	-1.09663	-0.88048	-0.90451	-0.88048	0.130471	-0.71114
10/1/2014	4.6	-0.01094	-0.03083	-0.95305	-0.97329	-0.74182	-0.75237	-0.72535	0.142423	-0.50313
11/1/2014	4.5	0.029865	-0.04789	-0.58557	-0.48433	-0.07143	-0.05017	0.118384	0.185034	0.455706
12/1/2014	4.4	0.018302	-0.11602	-0.52406	-0.36054	0.335409	0.697746	2.434015	0.4978	3.624412
1/1/2015	4.2	0.018619	-0.11894	-0.53674	-0.36934	0.81674	1.37339	5.366948	1.009587	6.384315
2/1/2015	4.1	0.018937	-0.17413	-0.53953	-0.37119	0.658743	1.026909	3.334411	0.771077	4.688182
3/1/2015	3.9	0.046928	-0.07167	-0.40219	-0.33339	0.295794	0.441485	1.378783	0.324251	1.816771
4/1/2015	3.85	0.0019	-0.06515	-0.55243	-0.50444	-0.18012	-0.18012	-0.14768	0.141448	-0.05772
5/1/2015	3.8	-0.00459	-0.06411	-0.7692	-0.72285	-0.49264	-0.51809	-0.49229	0.123802	-0.37246
6/1/2015	3.75	-0.01072	-0.07149	-0.78014	-0.78437	-0.50193	-0.50193	-0.47534	0.127217	-0.37845
7/1/2015	3.75	-0.02071	-0.08859	-0.79867	-0.80828	-0.51878	-0.44734	-0.41826	0.134498	-0.32604
8/1/2015	3.8	-0.03146	-0.09864	-0.81544	-0.82432	-0.52882	-0.51775	-0.48732	0.142123	-0.37753
9/1/2015	3.85	-0.00429	-0.07076	-0.79218	-0.8013	-0.50692	-0.50692	-0.4771	0.140335	-0.38277
10/1/2015	3.85	-0.00225	-0.07323	-0.79733	-0.80678	-0.49707	-0.49707	-0.46511	0.149703	-0.29823
11/1/2015	3.9	0.040682	-0.11154	-0.40142	-0.39539	-0.04773	-0.07188	0.070969	0.190282	0.741462
12/1/2015	4	0.005943	-0.19406	-0.42721	-0.308	0.356111	0.524707	1.606641	0.382556	4.293519
1/1/2016	4.338382	0.005973	-0.19882	-0.43847	-0.31616	0.695114	1.069073	4.44325	0.806228	7.079856
2/1/2016	4.36461	0.005593	-0.21169	-0.44108	-0.31811	0.54623	0.788127	2.646996	0.601218	5.542008
3/1/2016	3.942059	0.017632	-0.13482	-0.31792	-0.29218	0.318109	0.37469	1.010544	0.277455	2.371044
4/1/2016	3.878257	-0.00338	-0.07916	-0.45174	-0.35939	-0.02349	-0.02349	0.009789	0.138632	0.145257
5/1/2016	3.90823	-0.02013	-0.07703	-0.48745	-0.40637	-0.11344	-0.14121	-0.11306	0.123694	-0.04739
6/1/2016	3.937129	-0.03222	-0.09456	-0.50436	-0.42167	-0.12628	-0.15382	-0.12501	0.126404	-0.05767
7/1/2016	3.965045	-0.05684	-0.11913	-0.48708	-0.3982	-0.14592	-0.14592	-0.1148	0.133801	-0.04777
8/1/2016	3.992752	-0.06125	-0.12709	-0.5346	-0.4416	-0.15294	-0.18538	-0.15255	0.141023	-0.0855
9/1/2016	3.996102	-0.02343	-0.08761	-0.51231	-0.42102	-0.1495	-0.18111	-0.14911	0.138548	-0.24167
10/1/2016	4.016345	-0.02014	-0.08931	-0.52056	-0.42384	-0.13688	-0.17077	-0.13649	0.146632	-0.24301
11/1/2016	4.101773	-0.05573	-0.3193	-0.31968	-0.32007	0.108409	0.083253	0.229485	0.190929	0.374997
12/1/2016	4.227821	-0.03512	-0.3199	-0.32069	-0.25491	0.415302	0.582856	1.658475	0.441217	3.400497
1/1/2017	4.281784	-0.06122	-0.32757	-0.32837	-0.20581	0.921861	1.333699	3.980692	1.048243	5.924133
2/1/2017	4.305395	-0.05624	-0.32418	-0.32499	-0.20176	0.676187	0.926523	2.513584	0.734685	4.304396
3/1/2017	4.149208	-0.02957	-0.26464	-0.26543	-0.26543	0.312135	0.393646	1.033051	0.293831	1.673413
4/1/2017	4.087414	-0.07922	-0.28344	-0.30428	-0.30428	0.036299	0.036299	0.072052	0.14617	0.126377
5/1/2017	4.117901	-0.07864	-0.28304	-0.36429	-0.35799	-0.05302	-0.08291	-0.05261	0.129083	-0.15251
6/1/2017	4.144114	-0.08134	-0.28783	-0.37151	-0.36427	-0.05664	-0.08723	-0.05623	0.132555	-0.15891
7/1/2017	4.164472	-0.08326	-0.29086	-0.35387	-0.35387	-0.02027	-0.02027	0.013499	0.084114	0.098262
8/1/2017	4.187302	-0.08779	-0.29494	-0.38519	-0.37866	-0.05466	-0.06498	-0.02942	0.088428	0.038918
9/1/2017	4.203524	-0.07879	-0.27781	-0.37365	-0.37364	-0.05223	-0.08647	-0.05181	0.064057	-0.06471
10/1/2017	4.224634	-0.07885	-0.2797	-0.3812	-0.38119	-0.04419	-0.05448	-0.01717	0.069299	0.003097
11/1/2017	4.354089	-0.05404	-0.33396	-0.38873	-0.38873	0.103414	0.075875	0.22693	0.136047	0.786224
12/1/2017	4.522275	-0.08433	-0.3454	-0.39718	-0.39718	0.256302	0.298165	1.021448	0.310362	4.401389
1/1/2018	4.641071	-0.09556	-0.35552	-0.40601	-0.35638	0.417267	0.685049	3.344661	0.608998	7.10271
2/1/2018	4.667665	-0.09613	-0.35764	-0.40843	-0.35851	0.322181	0.445367	1.252584	0.452149	5.595628
3/1/2018	4.526897	-0.0557	-0.31472	-0.39641	-0.39641	0.181972	0.173218	0.458254	0.224831	2.409549
4/1/2018	4.457429	-0.08467	-0.29132	-0.39874	-0.39156	0.032437	0.032437	0.071689	0.094796	0.159
5/1/2018	4.49043	-0.08329	-0.29057	-0.41765	-0.41497	-0.09557	-0.12816	-0.09512	0.012668	-0.08219
6/1/2018	4.522584	-0.08583	-0.30104	-0.43151	-0.42276	-0.10026	-0.13279	-0.09893	0.085879	0.000592
7/1/2018	4.568956	-0.10176	-0.31499	-0.45554	-0.40656	-0.03496	-0.03496	0.002247	0.091558	0.093134
8/1/2018	4.609308	-0.11556	-0.32964	-0.47205	-0.42832	-0.04538	-0.04538	-0.00577	0.097941	0.070527
9/1/2018	4.608688	-0.09848	-0.31047	-0.45711	-0.41847	-0.07959	-0.11731	-0.07912	0.083918	-0.07618
10/1/2018	4.673693	-0.09388	-0.32232	-0.46174	-0.41528	-0.04812	-0.04812	-0.00626	0.090413	0.07542
11/1/2018	4.917301	-0.07876	-0.32386	-0.44328	-0.44328	0.079868	0.046883	0.205904	0.114755	0.308656
12/1/2018	5.114899	-0.10176	-0.28967	-0.41208	-0.43471	0.261803	0.294588	1.027695	0.315467	0.818691
1/1/2019	5.260501	-0.12474	-0.30001	-0.44912	-0.44912	0.396093	0.626818	2.625824	0.538232	1.871066
2/1/2019	5.292155	-0.1244	-0.30079	-0.45072	-0.45072	0.273412	0.328413	1.172709	0.341336	1.215302
3/1/2019	4.996368	-0.09119	-0.30975	-0.45239	-0.45239	0.139747	0.127178	0.424346	0.184945	0.622223
4/1/2019	4.918763	-0.0996	-0.32221	-0.44776	-0.42866	0.024288	-0.01855	0.024799	0.049406	0.067513
5/1/2019	4.95263	-0.09582	-0.32073	-0.45337	-0.45337	-0.11547	-0.15179	-0.11497	-0.02947	-0.14187
6/1/2019	4.986187	-0.09523	-0.32276	-0.45886	-0.45613	-0.11496	-0.15117	-0.11349	0.015585	-0.11341
7/1/2019	5.038727	-0.12578	-0.35405	-0.49406	-0.49406	-0.05335	-0.09018	-0.04907	0.015712	-0.08105
8/1/2019	5.071222	-0.13879	-0.36738	-0.51564	-0.51375	-0.05858	-0.09765	-0.05388	0.016778	-0.10686
9/1/2019	5.065546	-0.09955	-0.32682	-0.47857	-0.47142	-0.11301	-0.15473	-0.11249	0.014317	-0.10989
10/1/2019	5.100734	-0.10552	-0.33886	-0.49183	-0.49054	-0.04802	-0.0897	-0.04393	0.010214	-0.09832
11/1/2019	5.264457	-0.07627	-0.40779	-0.51375	-0.51375	0.068419	0.03198	0.197005	0.104921	0.207486
12/1/2019	5.513641	-0.13049	-0.38314	-0.48415	-0.48415	0.244577	0.297688	1.039111	0.322237	0.891019
1/1/2020	5.665889	-0.16201	-0.35344	-0.53732	-0.50827	0.401448	0.638448	2.673274	0.547364	2.068084
2/1/2020	5.68571	-0.16345	-0.34491	-0.52988	-0.50065	0.272272	0.344068	1.203718	0.360686	1.182935
3/1/2020	5.296438	-0.11735	-0.32621	-0.47404	-0.47404	0.147407	0.132558	0.437426	0.194144	0.653632
4/1/2020	5.217655	-0.12941	-0.36824	-0.49478	-0.4648	0.005913	-0.03931	0.006452	0.032037	0.131848
5/1/2020	5.244342	-0.14637	-0.37294	-0.48448	-0.47622	-0.11205	-0.1505	-0.11152	-0.04515	-0.12625
6/1/2020	5.286246	-0.15856	-0.37415	-0.48827	-0.48827	-0.08164	-0.1203	-0.08009	0.012309	-0.1056
7/1/2020	5.338003	-0.18037	-0.40033	-0.52179	-0.52179	-0.06383	-0.07312	-0.02946	0.016724	-0.08882
8/1/2020	5.371145	-0.18334	-0.40823	-0.53668	-0.53668	-0.06345	-0.08815	-0.04178	0.018742	-0.08995
9/1/2020	5.372901	-0.16011	-0.3835	-0.50995	-0.50995	-0.09703	-0.1414	-0.09648	9.49E-05	-0.11545
10/1/2020	5.405033	-0.16134	-0.39107	-0.52506	-0.52506	-0.03926	-0.08409	-0.03556	-0.00897	-0.09239
11/1/2020	5.556629	-0.15167	-0.42887	-0.58419	-0.58419	0.007911	-0.03069	0.139084	0.04561	0.172767
12/1/2020	5.765467	-0.15997	-0.37522	-0.53771	-0.53771	0.249996	0.324196	1.101006	0.34988	0.728959
1/1/2021	5.912696	-0.22741	-0.44262	-0.73909	-0.73909	0.370566	0.677058	2.820261	0.57812	1.520147
2/1/2021	5.890787	-0.20036	-0.39697	-0.69521	-0.69521	0.270626	0.360003	1.259849	0.376572	0.892992
3/1/2021	5.178273	-0.13278	-0.33195	-0.4852	-0.4852	0.163546	0.150835	0.458548	0.210335	0.62866
4/1/2021	5.109877	-0.14266	-0.38614	-0.50903	-0.50903	-0.00553	-0.02958	0.014975	0.040407	-0.08541
5/1/2021	5.144478	-0.16324	-0.40453	-0.51276	-0.51276	-0.11834	-0.15569	-0.11783	-0.00303	-0.15477
6/1/2021	5.206668	-0.18902	-0.43186	-0.54234	-0.54234	-0.10416	-0.10416	-0.06484	0.010704	-0.13265
7/1/2021	5.281398	-0.24218	-0.48641	-0.60402	-0.60402	-0.15027	-0.15027	-0.10805	0.016313	-0.18366
8/1/2021	5.311737	-0.24483	-0.49695	-0.62121	-0.62121	-0.15289	-0.15289	-0.10795	0.017397	-0.18784
9/1/2021	5.264261	-0.16564	-0.41864	-0.54105	-0.54105	-0.11082	-0.15381	-0.11029	0.005405	-0.13592
10/1/2021	5.300037	-0.175	-0.43387	-0.56376	-0.56376	-0.08316	-0.08316	-0.03594	-0.00596	-0.11932
11/1/2021	5.561467	-0.15492	-0.42296	-0.56465	-0.56465	0.075608	0.037056	0.209395	0.113792	0.247415
12/1/2021	5.760195	-0.19643	-0.38531	-0.57452	-0.57452	0.248337	0.333329	1.15004	0.354892	0.809103
1/1/2022	5.899323	-0.24085	-0.47655	-0.87246	-0.87246	0.37247	0.719027	3.007042	0.60587	1.681864
2/1/2022	5.878505	-0.21402	-0.44764	-0.82416	-0.82416	0.261727	0.368917	1.313495	0.380389	0.989617
3/1/2022	5.28375	-0.13617	-0.32626	-0.50037	-0.50037	0.193331	0.179946	0.492644	0.241027	0.687273
4/1/2022	5.204525	-0.14831	-0.4249	-0.54446	-0.54446	-0.0319	-0.0319	0.013422	0.039323	-0.12087
5/1/2022	5.244285	-0.17904	-0.46753	-0.55819	-0.55819	-0.15585	-0.19267	-0.15434	0.008808	-0.19846
6/1/2022	5.351741	-0.25206	-0.54224	-0.6352	-0.6352	-0.1924	-0.1924	-0.15262	0.015117	-0.2372

Month	Henry Hub	Lebanon	Appalachia	Dominion !	Tetco M-2	Tetco M-3	Transco Z6	Transco Z6	Transco Z5	Algonquin
7/1/2022	5.407325	-0.29234	-0.5878	-0.6842	-0.6842	-0.22328	-0.22328	-0.18056	0.022387	-0.25165
8/1/2022	5.439934	-0.29299	-0.59352	-0.70027	-0.70027	-0.22461	-0.22461	-0.17914	0.025334	-0.27455
9/1/2022	5.359392	-0.17289	-0.47206	-0.57843	-0.57843	-0.15147	-0.1949	-0.15094	0.012008	-0.1879
10/1/2022	5.3891	-0.16924	-0.48117	-0.59309	-0.59309	-0.10486	-0.10486	-0.05705	0.004226	-0.16376
11/1/2022	5.791577	-0.14679	-0.46507	-0.61481	-0.61481	0.05821	0.017999	0.194682	0.097449	0.217092
12/1/2022	6.102672	-0.22233	-0.59649	-0.70679	-0.70679	0.239963	0.347649	1.18927	0.37224	0.908051
1/1/2023	6.262819	-0.23435	-0.61897	-0.79995	-0.79995	0.426067	0.77726	3.537221	0.676856	2.196081
2/1/2023	6.282311	-0.22756	-0.63783	-0.78788	-0.78788	0.269028	0.409185	1.378877	0.425148	1.377098
3/1/2023	5.865518	-0.17044	-0.42106	-0.5348	-0.5348	0.200405	0.18184	0.505558	0.250641	0.672008
4/1/2023	5.753287	-0.1592	-0.46072	-0.59747	-0.59747	0.018232	0.018232	0.068823	0.096608	0.042401
5/1/2023	5.796674	-0.18305	-0.50401	-0.62358	-0.62358	-0.15692	-0.15692	-0.1141	0.016264	-0.20402
6/1/2023	5.904946	-0.24997	-0.58349	-0.70605	-0.70605	-0.23359	-0.23359	-0.18978	0.018298	-0.28241
7/1/2023	5.956022	-0.25601	-0.60738	-0.73781	-0.73781	-0.20807	-0.20807	-0.16074	0.018419	-0.27197
8/1/2023	5.988416	-0.26195	-0.61239	-0.75036	-0.75036	-0.24299	-0.24299	-0.1929	0.026817	-0.27828
9/1/2023	5.92078	-0.17805	-0.51343	-0.64917	-0.64917	-0.17098	-0.17098	-0.12202	0.020156	-0.22442
10/1/2023	5.950291	-0.15635	-0.51241	-0.65661	-0.65661	-0.09196	-0.09196	-0.03897	0.019543	-0.19245
11/1/2023	6.401361	-0.14525	-0.52475	-0.6995	-0.6995	0.055533	0.074935	0.260587	0.163119	0.304112
12/1/2023	6.697868	-0.22232	-0.66523	-0.82398	-0.82398	0.238757	0.364167	1.222533	0.395796	0.984253
1/1/2024	6.878373	-0.28574	-0.76026	-0.76152	-0.76152	0.435498	0.783356	3.747707	0.693235	2.383452
2/1/2024	6.88356	-0.25665	-0.72603	-0.72729	-0.72729	0.266076	0.415331	1.405074	0.437995	1.499651
3/1/2024	6.194976	-0.17889	-0.58682	-0.58796	-0.58796	0.171963	0.151553	0.485183	0.223893	0.65956
4/1/2024	6.127854	-0.21403	-0.59348	-0.69355	-0.69355	-0.03207	-0.03207	0.021244	0.050122	-0.16961
5/1/2024	6.172697	-0.24391	-0.59321	-0.7557	-0.7557	-0.27393	-0.27393	-0.22923	-0.0113	-0.32298
6/1/2024	6.278828	-0.3176	-0.66784	-0.83226	-0.83226	-0.34476	-0.34476	-0.29899	-0.00089	-0.39509
7/1/2024	6.371521	-0.37259	-0.72737	-0.89624	-0.89624	-0.32488	-0.32488	-0.27522	0.000408	-0.42425
8/1/2024	6.409344	-0.35297	-0.73585	-0.91341	-0.91341	-0.34546	-0.34546	-0.29275	0.025366	-0.43191
9/1/2024	6.352514	-0.30686	-0.65603	-0.83335	-0.83335	-0.31528	-0.31528	-0.26386	-0.00667	-0.37125
10/1/2024	6.393539	-0.26225	-0.66585	-0.84114	-0.84114	-0.2481	-0.2481	-0.19252	-0.00966	-0.33442
11/1/2024	6.771517	-0.21689	-0.74402	-0.81121	-0.81121	-0.04489	-0.02509	0.165567	0.127842	0.077791
12/1/2024	7.002799	-0.29963	-0.77476	-0.77603	-0.77603	0.216041	0.349149	1.240432	0.382006	1.044209
1/1/2025	7.202808	-0.37729	-0.78805	-0.84354	-0.84354	0.393296	0.753087	3.936564	0.659895	2.706667
2/1/2025	7.148691	-0.3382	-0.75855	-0.75985	-0.75985	0.261589	0.416141	1.441028	0.43944	1.639752
3/1/2025	6.438309	-0.23704	-0.65715	-0.71968	-0.71968	0.055645	0.100731	0.444451	0.175112	0.687134
4/1/2025	6.375105	-0.29694	-0.67802	-0.79247	-0.79247	-0.10515	-0.10515	-0.05025	-0.02063	-0.31014
5/1/2025	6.425109	-0.31988	-0.67761	-0.98371	-0.98371	-0.39379	-0.39379	-0.34805	-0.0235	-0.53606
6/1/2025	6.536213	-0.39032	-0.75133	-1.06123	-1.06123	-0.46559	-0.39345	-0.34609	-0.00775	-0.60502
7/1/2025	6.599572	-0.40124	-0.78863	-1.10763	-1.10763	-0.49392	-0.40127	-0.35032	0.010087	-0.62483
8/1/2025	6.643307	-0.41157	-0.80202	-1.12983	-1.12983	-0.49885	-0.43016	-0.37609	0.008558	-0.63369
9/1/2025	6.580363	-0.33987	-0.69826	-1.02813	-1.02813	-0.40197	-0.40197	-0.34942	-0.01327	-0.54195
10/1/2025	6.613306	-0.31906	-0.70332	-1.01743	-1.01743	-0.37075	-0.37075	-0.31433	-0.01732	-0.53349
11/1/2025	6.94373	-0.27834	-0.79588	-0.98547	-0.86282	-0.07755	-0.09889	0.095815	-0.0051	-0.01571
12/1/2025	7.244176	-0.33055	-0.81214	-0.93187	-0.76655	0.192566	0.41451	1.853351	0.399267	1.076553
1/1/2026	7.432938	-0.41127	-0.92013	-1.1149	-0.92078	0.475586	0.992617	5.349479	0.813083	2.847336
2/1/2026	7.355116	-0.31371	-0.82733	-1.00942	-0.81414	0.372116	0.710744	2.868772	0.632244	1.758095
3/1/2026	6.814703	-0.25858	-0.71692	-0.88909	-0.71816	0.134268	0.227282	1.062659	0.261859	0.65442
4/1/2026	6.730076	-0.30707	-0.7135	-0.92181	-0.81254	-0.11156	-0.11156	-0.05351	-0.02266	-0.29127
5/1/2026	6.785821	-0.32834	-0.71367	-1.10214	-1.03203	-0.42095	-0.42095	-0.37261	-0.02351	-0.58967
6/1/2026	6.894458	-0.38556	-0.79634	-1.18346	-1.11869	-0.50155	-0.50114	-0.45167	0.000455	-0.67137
7/1/2026	6.955883	-0.4143	-0.82759	-1.2122	-1.15953	-0.52328	-0.51681	-0.4637	0.012284	-0.68663
8/1/2026	7.001105	-0.42784	-0.84054	-1.23657	-1.18176	-0.54257	-0.54257	-0.48619	0.011736	-0.70358
9/1/2026	6.941018	-0.34613	-0.73064	-1.13011	-1.0711	-0.44196	-0.44196	-0.38658	-0.01724	-0.59733
10/1/2026	6.975763	-0.33298	-0.73501	-1.13797	-1.0813	-0.43646	-0.43646	-0.37724	-0.03055	-0.5908
11/1/2026	7.144733	-0.28607	-0.8427	-1.05168	-0.93908	-0.13863	-0.11823	0.0807	-0.02213	-0.00602
12/1/2026	7.390479	-0.31781	-0.84189	-0.99389	-0.82512	0.262321	0.493063	1.988266	0.47609	1.392865
1/1/2027	7.557282	-0.42532	-1.05929	-1.25457	-1.05994	0.526489	1.065841	5.776599	0.876251	3.317146
2/1/2027	7.49643	-0.337	-0.93122	-1.12906	-0.93335	0.382755	0.734698	2.975817	0.650555	2.07721
3/1/2027	6.599895	-0.24932	-0.69745	-0.87612	-0.69865	0.15097	0.263092	1.109619	0.294145	0.777589
4/1/2027	6.50898	-0.28748	-0.68772	-0.92299	-0.80447	-0.10344	-0.10344	-0.04734	-0.01174	-0.2972
5/1/2027	6.573763	-0.32544	-0.71583	-1.11562	-1.06485	-0.45712	-0.42336	-0.37659	-0.01035	-0.62677
6/1/2027	6.702475	-0.38588	-0.79389	-1.19833	-1.147	-0.53345	-0.49052	-0.4426	0.000428	-0.69929
7/1/2027	6.748009	-0.40948	-0.8164	-1.23079	-1.17893	-0.54703	-0.50217	-0.45075	0.012346	-0.7172
8/1/2027	6.791878	-0.42246	-0.82905	-1.2543	-1.20073	-0.55128	-0.525	-0.4704	0.012001	-0.72567
9/1/2027	6.722105	-0.34177	-0.73283	-1.16117	-1.10407	-0.45937	-0.45051	-0.39698	-0.00066	-0.6352
10/1/2027	6.759411	-0.34095	-0.74322	-1.17391	-1.10215	-0.43679	-0.43679	-0.37942	-0.0126	-0.61643
11/1/2027	7.044941	-0.28888	-0.81754	-1.03003	-0.8433	-0.03383	-0.01283	0.188826	0.083542	0.102029
12/1/2027	7.290353	-0.33239	-0.84979	-1.02762	-0.83393	0.29428	0.534439	2.086884	0.51154	1.439627
1/1/2028	7.429459	-0.40961	-1.04629	-1.23838	-1.04693	0.477974	0.869464	6.196072	0.763246	3.39871
2/1/2028	7.356622	-0.31462	-0.93298	-1.12613	-0.93363	0.377947	0.712435	3.600211	0.636908	2.129787
3/1/2028	6.588227	-0.25274	-0.70149	-0.89675	-0.72002	0.137314	0.259555	1.122218	0.289034	0.796949
4/1/2028	6.505184	-0.30375	-0.70185	-0.92132	-0.7995	-0.09017	-0.09017	-0.03402	-0.00325	-0.30361
5/1/2028	6.560262	-0.31693	-0.70822	-1.03563	-0.96241	-0.34428	-0.30075	-0.2533	-0.00526	-0.51702
6/1/2028	6.693664	-0.3995	-0.80224	-1.13395	-1.06029	-0.43628	-0.39256	-0.344	0.000424	-0.61008
7/1/2028	6.74318	-0.43639	-0.84118	-1.186	-1.10831	-0.46571	-0.38941	-0.33706	0.01291	-0.64233
8/1/2028	6.78493	-0.44713	-0.8513	-1.2093	-1.12719	-0.46681	-0.41808	-0.36256	0.012252	-0.64709
9/1/2028	6.703751	-0.322	-0.71693	-1.07166	-0.99437	-0.33894	-0.32613	-0.27189	0.000419	-0.51854
10/1/2028	6.737317	-0.32207	-0.72274	-1.07187	-0.95371	-0.27562	-0.27562	-0.21721	-0.01062	-0.45914
11/1/2028	7.227884	-0.27375	-0.81478	-1.03218	-0.84069	-0.0128	0.008627	0.214714	0.107448	0.134718
12/1/2028	7.48364	-0.34238	-0.86136	-1.05984	-0.86203	0.302028	0.549615	2.149438	0.525035	1.523543
1/1/2029	7.659342	-0.42618	-1.0707	-1.29177	-1.09514	0.494678	0.725207	6.505455	0.715718	3.477074
2/1/2029	7.570844	-0.32716	-0.95589	-1.17697	-0.97925	0.449492	0.78243	3.884971	0.712041	2.197478
3/1/2029	6.930552	-0.25476	-0.72622	-0.91352	-0.72748	0.159397	0.29088	1.170904	0.324244	0.929051
4/1/2029	6.841524	-0.30922	-0.71003	-0.93232	-0.77986	-0.03855	-0.03855	0.020806	0.052844	-0.18849
5/1/2029	6.900322	-0.32628	-0.71507	-1.04083	-0.90488	-0.26284	-0.23912	-0.1888	-0.0108	-0.44038
6/1/2029	7.021105	-0.40768	-0.81325	-1.14422	-1.00638	-0.35808	-0.31661	-0.26499	-0.00434	-0.53715
7/1/2029	7.135529	-0.48305	-0.88958	-1.23099	-1.09199	-0.42388	-0.37985	-0.32446	0.000462	-0.60622
8/1/2029	7.186585	-0.5039	-0.90996	-1.26156	-1.11727	-0.43001	-0.38382	-0.32478	0.068066	-0.61588
9/1/2029	7.116773	-0.38374	-0.79191	-1.15156	-1.00156	-0.31964	-0.31491	-0.25726	-0.01586	-0.50518
10/1/2029	7.158004	-0.38703	-0.80332	-1.09238	-0.94336	-0.19106	-0.19106	-0.12832	-0.01801	-0.41438
11/1/2029	7.429973	-0.29128	-0.79054	-1.0123	-0.8152	0.033138	0.054989	0.265901	0.156707	0.276593
12/1/2029	7.690779	-0.34977	-0.89927	-1.10252	-0.90064	0.309234	0.563032	2.202849	0.537583	1.576623
1/1/2030	7.871243	-0.43051	-0.94487	-1.30571	-1.1041	0.839794	1.660197	6.789776	1.316427	3.547284
2/1/2030	7.7955	-0.33822	-0.84539	-1.20929	-1.00656	0.458589	0.793454	4.078423	0.725012	2.339153
3/1/2030	7.229509	-0.26425	-0.71726	-0.9135	-0.71858	0.197003	0.330656	1.227475	0.367608	1.019823
4/1/2030	7.162023	-0.34197	-0.73523	-0.95466	-0.79041	-0.02152	-0.02011	0.04232	0.075592	-0.22739
5/1/2030	7.22414	-0.35665	-0.74194	-0.98735	-0.84297	-0.1758	-0.12969	-0.07601	-0.01316	-0.359
6/1/2030	7.377999	-0.44962	-0.84826	-1.09858	-0.95121	-0.2773	-0.19617	-0.14096	0.000481	-0.46172
7/1/2030	7.492012	-0.53201	-0.93514	-1.19258	-1.03567	-0.34011	-0.20864	-0.14892	0.000491	-0.4846

Month	Henry Hub	Lebanon	Appalachia	Dominion !	Tetco M-2	Tetco M-3	Transco Z6	Transco Z6	Transco Z5	Algonquin
8/1/2030	7.54797	-0.55001	-0.95748	-1.23063	-1.06481	-0.34893	-0.23575	-0.17229	0.080516	-0.50352
9/1/2030	7.463458	-0.42031	-0.82806	-1.09702	-0.93356	-0.22319	-0.15315	-0.09113	-0.01651	-0.40205
10/1/2030	7.51143	-0.429	-0.83737	-1.09979	-0.92554	-0.13436	-0.1153	-0.04857	-0.01396	-0.35267
11/1/2030	7.881352	-0.31768	-0.80159	-1.0462	-0.83597	0.049389	0.071676	0.29042	0.180186	0.291701
12/1/2030	8.147276	-0.38941	-0.95672	-1.18227	-0.95819	0.321383	0.580355	2.257035	0.5589	1.636068
1/1/2031	8.327079	-0.47677	-1.01951	-1.26148	-1.23206	0.853203	1.684081	7.073542	1.341147	3.654872
2/1/2031	8.215908	-0.33361	-0.87973	-1.11054	-1.08262	0.468864	0.804426	4.271877	0.741774	2.494794
3/1/2031	7.546003	-0.28412	-0.74659	-0.97798	-0.74797	0.249223	0.384909	1.298054	0.426008	1.089078
4/1/2031	7.480692	-0.3902	-0.74874	-0.97874	-0.80684	-0.01311	0.021387	0.087046	0.121604	-0.22291
5/1/2031	7.540772	-0.40773	-0.78411	-1.04692	-0.89649	-0.20912	-0.09673	-0.04026	-0.00861	-0.38784
6/1/2031	7.642929	-0.45004	-0.82755	-1.09166	-0.93801	-0.24344	-0.0898	-0.03167	0.0005	-0.37821
7/1/2031	7.696462	-0.45946	-0.84612	-1.12511	-0.96166	-0.24483	-0.05661	0.006061	0.039674	-0.33392
8/1/2031	7.760706	-0.48558	-0.87171	-1.16144	-0.98857	-0.25024	-0.08825	-0.02167	0.133088	-0.35697
9/1/2031	7.767848	-0.44774	-0.8342	-1.11885	-0.94842	-0.21582	-0.07697	-0.01171	0.02271	-0.36535
10/1/2031	7.820907	-0.42071	-0.84572	-1.12578	-0.94426	-0.12904	-0.07877	-0.00896	0.026899	-0.33627
11/1/2031	8.592068	-0.34063	-0.83933	-1.09024	-0.86127	0.071365	0.090359	0.296229	0.210687	0.297535
12/1/2031	8.887414	-0.41621	-0.98836	-1.07608	-1.07473	0.336793	0.59885	2.302176	0.58601	1.66879

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2015	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.44648	-4.54332	-4.54332
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2015	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.40261	-4.50037	-4.50037
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2015	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.24364	-4.33871	-4.33871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2015	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-3.99919	-4.09012	-4.09012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2015	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.00824	-4.07154	-4.07154
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2015	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.93283	-3.99485	-3.99485
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2015	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-3.93932	-4.00145	-4.00145
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2015	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.05629	-4.12041	-4.12041
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2015	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.06479	-4.12905	-4.12905
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2015	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.89745	-3.95888	-3.95888
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2015	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.11952	-4.21249	-4.21249
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2015	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.42428	-4.52114	-4.52114
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2016	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.46734	-4.56325	-4.56325
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2016	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.3913	-4.48764	-4.48764
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2016	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.06693	-4.15777	-4.15777
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2016	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-3.99426	-4.08387	-4.08387
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2016	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-3.96328	-4.02473	-4.02473
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2016	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.89265	-3.9529	-3.9529
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2016	-3.899	-3.899	-3.899	-3.899	-3.899	-3.899	-3.899	-3.91122	-3.899	-3.899
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2016	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.8397	-3.89905	-3.89905
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2016	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.90037	-3.96076	-3.96076
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2016	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.03878	-4.1015	-4.1015
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2016	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.17327	-4.26591	-4.26591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2016	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.47694	-4.57342	-4.57342
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2017	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.54001	-4.63225	-4.63225
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2017	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.43184	-4.52759	-4.52759
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2017	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.04686	-4.13609	-4.13609
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2017	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.01715	-4.10588	-4.10588
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2017	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-3.96555	-4.02591	-4.02591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2017	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.87523	-3.93406	-3.93406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2017	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.85027	-3.90868	-3.90868
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2017	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.78187	-3.83912	-3.83912
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2017	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.88448	-3.94346	-3.94346
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2017	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.05741	-4.11933	-4.11933
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2017	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.19193	-4.28361	-4.28361
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2017	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.51816	-4.61403	-4.61403
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2018	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.58693	-4.67849	-4.67849
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2018	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.53671	-4.63293	-4.63293
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2018	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.11075	-4.19976	-4.19976
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2018	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.05478	-4.14283	-4.14283
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2018	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.00625	-4.06613	-4.06613
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2018	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.89439	-3.95238	-3.95238
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2018	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.88152	-3.92656	-3.92656
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2018	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.86314	-3.9206	-3.9206
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2018	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.93651	-3.99521	-3.99521
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2018	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.07406	-4.1351	-4.1351
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2018	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.25987	-4.3514	-4.3514
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2018	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.65093	-4.7477	-4.7477
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2019	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.77572	-4.79583	-4.79583
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2019	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.65309	-4.74993	-4.74993
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2019	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.58734	-4.68306	-4.68306
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2019	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.44262	-4.5359	-4.5359
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2019	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.32751	-4.39164	-4.39164
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2019	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.17252	-4.23403	-4.23403
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2019	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.09904	-4.1593	-4.1593
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2019	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.03788	-4.0971	-4.0971
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2019	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.12919	-4.18996	-4.18996
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2019	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.32005	-4.38406	-4.38406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2019	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.7145	-4.81238	-4.81238
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2019	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.77446	-4.87192	-4.87192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2020	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.86153	-4.90189	-4.90189
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2020	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.7513	-4.84842	-4.84842
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2020	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.66491	-4.76056	-4.76056
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2020	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.50196	-4.59485	-4.59485
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2020	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.29338	-4.3557	-4.3557
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2020	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.22404	-4.28519	-4.28519
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2020	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.14069	-4.20043	-4.20043
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2020	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.12628	-4.18577	-4.18577
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2020	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.24995	-4.31153	-4.31153
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2020	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.41817	-4.4826	-4.4826
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2020	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.82456	-4.92292	-4.92292
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2020	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.83586	-4.93293	-4.93293
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2021	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.92574	-4.97361	-4.97361
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2021	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.78912	-4.88545	-4.88545
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2021	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.83211	-4.92916	-4.92916
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2021	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.50671	-4.59825	-4.59825
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2021	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.32708	-4.38871	-4.38871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2021	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.29746	-4.35859	-4.35859
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2021	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.19903	-4.25848	-4.25848
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2021	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.16849	-4.22743	-4.22743
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2021	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.21791	-4.27769	-4.27769
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2021	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.42924	-4.4926	-4.4926
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2021	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.88437	-4.98231	-4.98231
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2021	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.88142	-4.97362	-4.97362
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2022	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.20143	-5.2223	-5.2223
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2022	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.15044	-5.2514	-5.2514
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2022	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.03656	-5.1356	-5.1356
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2022	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.85344	-4.94938	-4.94938
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2022	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.73985	-4.80715	-4.80715
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2022	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.73399	-4.8012	-4.8012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2022	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.53599	-4.59984	-4.59984
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2022	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.50177	-4.56505	-4.56505
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2022	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.60538	-4.67041	-4.67041
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2022	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.87955	-4.94922	-4.94922
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2022	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.31252	-5.41623	-5.41623
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2022	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.32578	-5.42816	-5.42816
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2023	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.25615	-5.38782	-5.38782
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2023	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.25224	-5.35342	-5.35342

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2023	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.1721	-5.27192	-5.27192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2023	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-4.9538	-5.04992	-5.04992
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2023	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.83982	-4.90748	-4.90748
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2023	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.83052	-4.89802	-4.89802
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2023	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.60951	-4.67326	-4.67326
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2023	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.56996	-4.63305	-4.63305
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2023	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.68001	-4.74496	-4.74496
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2023	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.01193	-5.0825	-5.0825
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2023	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.37415	-5.49103	-5.49103
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2023	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.41267	-5.53021	-5.53021
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2024	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.28382	-5.45285	-5.45285
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2024	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.25691	-5.3566	-5.3566
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2024	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.10164	-5.19871	-5.19871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2024	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.01604	-5.11165	-5.11165
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2024	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.90398	-4.97133	-4.97133
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2024	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.90957	-4.97702	-4.97702
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2024	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.76284	-4.8278	-4.8278
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2024	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.67198	-4.73541	-4.73541
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2024	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.7698	-4.83489	-4.83489
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2024	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.07647	-5.14675	-5.14675
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2024	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.40068	-5.51806	-5.51806
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2024	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.43659	-5.55457	-5.55457
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2025	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.26934	-5.38233	-5.38233
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2025	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.10181	-5.19727	-5.19727
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2025	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-4.91729	-5.02655	-5.02655
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2025	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-4.98681	-5.08031	-5.08031
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2025	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.92869	-4.99504	-4.99504
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2025	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-4.93773	-5.00422	-5.00422
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2025	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.78859	-4.85256	-4.85256
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2025	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.62258	-4.68374	-4.68374
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2025	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.70091	-4.7634	-4.7634
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2025	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.0168	-5.08464	-5.08464
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2025	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.44946	-5.56771	-5.56771
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2025	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.53784	-5.63306	-5.63306
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2026	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.51467	-5.60629	-5.60629
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2026	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.44235	-5.54191	-5.54191
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2026	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.3668	-5.48371	-5.48371
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2026	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.39584	-5.49462	-5.49462
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2026	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.29349	-5.36454	-5.36454
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2026	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.30494	-5.37619	-5.37619
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2026	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.11629	-5.18434	-5.18434
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2026	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-4.95787	-5.02323	-5.02323
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2026	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.08308	-5.15057	-5.15057
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2026	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.45285	-5.5266	-5.5266
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2026	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.70354	-5.80753	-5.80753
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2026	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.73102	-5.83371	-5.83371
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2027	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.69251	-5.8114	-5.8114
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2027	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.68662	-5.78861	-5.78861
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2027	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.5807	-5.70128	-5.70128
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2027	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.56818	-5.66817	-5.66817
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2027	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.423	-5.49473	-5.49473
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2027	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.41109	-5.48262	-5.48262
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2027	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.32996	-5.40012	-5.40012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2027	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.19407	-5.26192	-5.26192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2027	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.2927	-5.36222	-5.36222
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2027	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.6092	-5.68409	-5.68409
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2027	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.88238	-5.98768	-5.98768
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2027	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.85088	-5.95384	-5.95384
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2028	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.83011	-5.95253	-5.95253
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2028	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.72807	-5.82901	-5.82901
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2028	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.57706	-5.69763	-5.69763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2028	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.59238	-5.69102	-5.69102
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2028	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.46548	-5.53637	-5.53637
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2028	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.50914	-5.58077	-5.58077
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2028	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.31007	-5.37833	-5.37833
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2028	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.17546	-5.24144	-5.24144
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2028	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.28038	-5.34814	-5.34814
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2028	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.61335	-5.68674	-5.68674
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2028	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.04752	-6.15387	-6.15387
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2028	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.82572	-5.92644	-5.92644
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2029	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-5.89819	-6.02174	-6.02174
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2029	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.56115	-5.75002	-5.75002
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2029	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.34489	-5.62534	-5.62534
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2029	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.44257	-5.53685	-5.53685
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2029	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.56392	-5.58543	-5.58543
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2029	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.44924	-5.47054	-5.47054
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2029	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.25442	-5.27538	-5.27538
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2029	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.04691	-5.10911	-5.10911
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2029	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.151	-5.19203	-5.19203
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2029	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.4467	-5.51567	-5.51567
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2029	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-5.99403	-6.09765	-6.09765
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2029	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.71174	-5.80866	-5.80866
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2030	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-5.97492	-6.09974	-6.09974
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2030	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.6449	-5.76672	-5.76672
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2030	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.39649	-5.77282	-5.77282
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2030	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.54949	-5.57098	-5.57098
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2030	-5.585	-5.585	-5.585	-5.585	-5.585	-5.585	-5.585	-5.76887	-5.585	-5.585
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2030	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.67879	-5.47564	-5.47564
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2030	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.47803	-5.34552	-5.34552
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2030	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.21173	-5.20158	-5.20158
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2030	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.37375	-5.27713	-5.27713
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2030	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.58436	-5.60591	-5.60591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2030	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.13168	-6.23577	-6.23577
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2030	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.89093	-5.98897	-5.98897
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2031	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.77811	-5.89957	-5.89957
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2031	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.45282	-5.89475	-5.89475
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2031	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.08518	-5.46481	-5.46481
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2031	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.26311	-5.28409	-5.28409

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2031	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.45597	-5.26375	-5.26375
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2031	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.37295	-5.16138	-5.16138
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2031	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.23692	-5.09763	-5.09763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2031	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.93598	-4.92378	-4.92378
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2031	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-5.04886	-4.97433	-4.97433
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2031	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.21596	-5.23686	-5.23686
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2031	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.79663	-5.89312	-5.89312
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2031	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.55187	-5.64218	-5.64218
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2032	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.83734	-5.95978	-5.95978
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2032	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.50836	-5.71282	-5.71282
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2032	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.13704	-5.52067	-5.52067
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2032	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.31676	-5.33783	-5.33783
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2032	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.51292	-5.31759	-5.31759
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2032	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.42907	-5.21419	-5.21419
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2032	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.29167	-5.14982	-5.14982
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2032	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.98894	-4.97423	-4.97423
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2032	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.10255	-5.02498	-5.02498
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2032	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.26944	-5.29043	-5.29043
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2032	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.85772	-5.95326	-5.95326
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2032	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.6084	-5.69763	-5.69763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2033	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-5.89715	-6.02058	-6.02058
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2033	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-5.56446	-6.01566	-6.01566
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2033	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.18943	-5.57708	-5.57708
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2033	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.46936	-5.55629	-5.55629
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2033	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.43637	-5.40248	-5.40248
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2033	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.48579	-5.26754	-5.26754
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2033	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.34701	-5.20252	-5.20252
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2033	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.04246	-5.05568	-5.05568
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2033	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.15681	-5.13011	-5.13011
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2033	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.35391	-5.41929	-5.41929
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2033	-6.014	-6.014	-6.014	-6.014	-6.014	-6.014	-6.014	-5.91945	-6.014	-6.014
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2033	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.6655	-5.75359	-5.75359
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2034	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-5.95757	-6.08199	-6.08199
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2034	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-5.62112	-6.07702	-6.07702
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2034	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.24234	-5.63406	-5.63406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2034	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.52699	-5.61279	-5.61279
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2034	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.49914	-5.45741	-5.45741
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2034	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.54311	-5.32143	-5.32143
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2034	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.40294	-5.25575	-5.25575
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2034	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.09656	-5.10714	-5.10714
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2034	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.21165	-5.18196	-5.18196
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2034	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.40846	-5.44695	-5.44695
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2034	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-5.98184	-6.07535	-6.07535
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2034	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.72318	-5.81007	-5.81007
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.04703	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.67835	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.29578	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2035	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.58524	-5.66986	-5.66986
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2035	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.55939	-5.51289	-5.51289
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2035	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.60104	-5.37585	-5.37585
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2035	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.45947	-5.30952	-5.30952
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2035	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15123	-5.15911	-5.15911
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2035	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.26708	-5.23433	-5.23433
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2035	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.46357	-5.5914	-5.5914
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.07994	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2035	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.78142	-5.86708	-5.86708
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.04706	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.78142	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.78142	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2036	0	0	0	0	0	0	0	0	0	0

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2015	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.54332	-4.44648	-4.54332	-4.54332
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2015	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.50037	-4.40261	-4.50037	-4.50037
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2015	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.33871	-4.24364	-4.33871	-4.33871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2015	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-4.09012	-3.99919	-4.09012	-4.09012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2015	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.07154	-4.00824	-4.07154	-4.07154
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2015	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.99485	-3.93283	-3.99485	-3.99485
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2015	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-4.00145	-3.93932	-4.00145	-4.00145
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2015	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.12041	-4.05629	-4.12041	-4.12041
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2015	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.12905	-4.06479	-4.12905	-4.12905
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2015	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.95888	-3.89745	-3.95888	-3.95888
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2015	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.21249	-4.11952	-4.21249	-4.21249
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2015	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.52114	-4.42428	-4.52114	-4.52114
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2016	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.56325	-4.46734	-4.56325	-4.56325
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2016	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.48764	-4.3913	-4.48764	-4.48764
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2016	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.15777	-4.06693	-4.15777	-4.15777
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2016	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-4.08387	-3.99426	-4.08387	-4.08387
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2016	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-4.02473	-3.96328	-4.02473	-4.02473
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2016	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.9529	-3.89265	-3.9529	-3.9529
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2016	-3.899	-3.899	-3.899	-3.899	-3.899	-3.899	-3.899	-3.91122	-3.899	-3.899
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2016	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.89905	-3.8397	-3.89905	-3.89905
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2016	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.96076	-3.90037	-3.96076	-3.96076
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2016	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.1015	-4.03878	-4.1015	-4.1015
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2016	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.26591	-4.17327	-4.26591	-4.26591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2016	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.57342	-4.47694	-4.57342	-4.57342
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2017	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.63225	-4.54001	-4.63225	-4.63225
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2017	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.52759	-4.43184	-4.52759	-4.52759
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2017	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.13609	-4.04686	-4.13609	-4.13609
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2017	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.10588	-4.01715	-4.10588	-4.10588
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2017	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-4.02591	-3.96555	-4.02591	-4.02591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2017	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.93406	-3.87523	-3.93406	-3.93406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2017	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.90868	-3.85027	-3.90868	-3.90868
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2017	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.83912	-3.78187	-3.83912	-3.83912
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2017	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.94346	-3.88448	-3.94346	-3.94346
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2017	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.11933	-4.05741	-4.11933	-4.11933
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2017	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.28361	-4.19193	-4.28361	-4.28361
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2017	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.61403	-4.51816	-4.61403	-4.61403
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2018	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.67849	-4.58693	-4.67849	-4.67849
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2018	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.63293	-4.53671	-4.63293	-4.63293
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2018	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.19976	-4.11075	-4.19976	-4.19976
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2018	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.14283	-4.05478	-4.14283	-4.14283
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2018	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.06613	-4.00625	-4.06613	-4.06613
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2018	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.95238	-3.89439	-3.95238	-3.95238
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2018	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.92656	-3.88152	-3.92656	-3.92656
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2018	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.9206	-3.86314	-3.9206	-3.9206
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2018	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.99521	-3.93651	-3.99521	-3.99521
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2018	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.1351	-4.07406	-4.1351	-4.1351
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2018	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.3514	-4.25987	-4.3514	-4.3514
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2018	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.7477	-4.65093	-4.7477	-4.7477
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2019	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.79583	-4.77572	-4.79583	-4.79583
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2019	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.74993	-4.65309	-4.74993	-4.74993
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2019	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.68306	-4.58734	-4.68306	-4.68306
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2019	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.5359	-4.44262	-4.5359	-4.5359
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2019	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.39164	-4.32751	-4.39164	-4.39164
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2019	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.23403	-4.17252	-4.23403	-4.23403
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2019	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.1593	-4.09904	-4.1593	-4.1593
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2019	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.0971	-4.03788	-4.0971	-4.0971
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2019	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.18996	-4.12919	-4.18996	-4.18996
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2019	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.38406	-4.32005	-4.38406	-4.38406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2019	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.81238	-4.7145	-4.81238	-4.81238
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2019	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.87192	-4.77446	-4.87192	-4.87192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2020	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.90189	-4.86153	-4.90189	-4.90189
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2020	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.84842	-4.7513	-4.84842	-4.84842
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2020	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.76056	-4.66491	-4.76056	-4.76056
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2020	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.59485	-4.50196	-4.59485	-4.59485
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2020	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.3557	-4.29338	-4.3557	-4.3557
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2020	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.28519	-4.22404	-4.28519	-4.28519
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2020	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.20043	-4.14069	-4.20043	-4.20043
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2020	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.18577	-4.12628	-4.18577	-4.18577
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2020	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.31153	-4.24995	-4.31153	-4.31153
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2020	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.4826	-4.41817	-4.4826	-4.4826
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2020	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.92292	-4.82456	-4.92292	-4.92292
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2020	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.93293	-4.83586	-4.93293	-4.93293
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2021	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.97361	-4.92574	-4.97361	-4.97361
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2021	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.88545	-4.78912	-4.88545	-4.88545
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2021	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.92916	-4.83211	-4.92916	-4.92916
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2021	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.59825	-4.50671	-4.59825	-4.59825
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2021	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.38871	-4.32708	-4.38871	-4.38871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2021	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.35859	-4.29746	-4.35859	-4.35859
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2021	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.25848	-4.19903	-4.25848	-4.25848
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2021	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.22743	-4.16849	-4.22743	-4.22743
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2021	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.27769	-4.21791	-4.27769	-4.27769
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2021	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.4926	-4.42924	-4.4926	-4.4926
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2021	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.98231	-4.88437	-4.98231	-4.98231
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2021	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.97362	-4.88142	-4.97362	-4.97362
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2022	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.2223	-5.20143	-5.2223	-5.2223
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2022	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.2514	-5.15044	-5.2514	-5.2514
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2022	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.1356	-5.03656	-5.1356	-5.1356
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2022	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.94938	-4.85344	-4.94938	-4.94938
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2022	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.80715	-4.73985	-4.80715	-4.80715
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2022	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.8012	-4.73399	-4.8012	-4.8012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2022	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.59984	-4.53599	-4.59984	-4.59984
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2022	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.56505	-4.50177	-4.56505	-4.56505
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2022	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.67041	-4.60538	-4.67041	-4.67041
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2022	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.94922	-4.87955	-4.94922	-4.94922
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2022	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.41623	-5.31252	-5.41623	-5.41623
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2022	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.42816	-5.32578	-5.42816	-5.42816
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2023	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.38782	-5.25615	-5.38782	-5.38782
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2023	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.35342	-5.25224	-5.35342	-5.35342

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2023	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.27192	-5.1721	-5.27192	-5.27192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2023	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-5.04992	-4.9538	-5.04992	-5.04992
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2023	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.90748	-4.83982	-4.90748	-4.90748
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2023	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.89802	-4.83052	-4.89802	-4.89802
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2023	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.67326	-4.60951	-4.67326	-4.67326
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2023	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.63305	-4.56996	-4.63305	-4.63305
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2023	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.74496	-4.68001	-4.74496	-4.74496
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2023	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.0825	-5.01193	-5.0825	-5.0825
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2023	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.49103	-5.37415	-5.49103	-5.49103
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2023	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.53021	-5.41267	-5.53021	-5.53021
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2024	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.45285	-5.28382	-5.45285	-5.45285
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2024	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.3566	-5.25691	-5.3566	-5.3566
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2024	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.19871	-5.10164	-5.19871	-5.19871
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2024	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.11165	-5.01604	-5.11165	-5.11165
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2024	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.97133	-4.90398	-4.97133	-4.97133
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2024	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.97702	-4.90957	-4.97702	-4.97702
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2024	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.8278	-4.76284	-4.8278	-4.8278
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2024	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.73541	-4.67198	-4.73541	-4.73541
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2024	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.83489	-4.7698	-4.83489	-4.83489
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2024	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.14675	-5.07647	-5.14675	-5.14675
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2024	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.51806	-5.40068	-5.51806	-5.51806
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2024	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.55457	-5.43659	-5.55457	-5.55457
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2025	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.38233	-5.26934	-5.38233	-5.38233
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2025	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.19727	-5.10181	-5.19727	-5.19727
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2025	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-5.02655	-4.91729	-5.02655	-5.02655
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2025	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-5.08031	-4.98681	-5.08031	-5.08031
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2025	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.99504	-4.92869	-4.99504	-4.99504
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2025	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-5.00422	-4.93773	-5.00422	-5.00422
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2025	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.85256	-4.78859	-4.85256	-4.85256
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2025	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.68374	-4.62258	-4.68374	-4.68374
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2025	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.7634	-4.70091	-4.7634	-4.7634
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2025	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.08464	-5.0168	-5.08464	-5.08464
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2025	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.56771	-5.44946	-5.56771	-5.56771
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2025	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.63306	-5.53784	-5.63306	-5.63306
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2026	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.60629	-5.51467	-5.60629	-5.60629
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2026	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.54191	-5.44235	-5.54191	-5.54191
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2026	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.48371	-5.3668	-5.48371	-5.48371
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2026	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.49462	-5.39584	-5.49462	-5.49462
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2026	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.36454	-5.29349	-5.36454	-5.36454
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2026	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.37619	-5.30494	-5.37619	-5.37619
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2026	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.18434	-5.11629	-5.18434	-5.18434
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2026	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-5.02323	-4.95787	-5.02323	-5.02323
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2026	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.15057	-5.08308	-5.15057	-5.15057
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2026	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.5266	-5.45285	-5.5266	-5.5266
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2026	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.80753	-5.70354	-5.80753	-5.80753
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2026	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.83371	-5.73102	-5.83371	-5.83371
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2027	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.8114	-5.69251	-5.8114	-5.8114
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2027	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.78861	-5.68662	-5.78861	-5.78861
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2027	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.70128	-5.5807	-5.70128	-5.70128
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2027	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.66817	-5.56818	-5.66817	-5.66817
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2027	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.49473	-5.423	-5.49473	-5.49473
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2027	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.48262	-5.41109	-5.48262	-5.48262
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2027	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.40012	-5.32996	-5.40012	-5.40012
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2027	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.26192	-5.19407	-5.26192	-5.26192
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2027	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.36222	-5.2927	-5.36222	-5.36222
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2027	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.68409	-5.6092	-5.68409	-5.68409
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2027	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.98768	-5.88238	-5.98768	-5.98768
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2027	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.95384	-5.85088	-5.95384	-5.95384
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2028	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.95253	-5.83011	-5.95253	-5.95253
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2028	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.82901	-5.72807	-5.82901	-5.82901
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2028	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.57706	-5.69763	-5.69763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2028	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.69102	-5.59238	-5.69102	-5.69102
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2028	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.53637	-5.46548	-5.53637	-5.53637
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2028	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.58077	-5.50914	-5.58077	-5.58077
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2028	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.37833	-5.31007	-5.37833	-5.37833
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2028	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.24144	-5.17546	-5.24144	-5.24144
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2028	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.34814	-5.28038	-5.34814	-5.34814
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2028	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.68674	-5.61335	-5.68674	-5.68674
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2028	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.15387	-6.04752	-6.15387	-6.15387
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2028	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.92644	-5.82572	-5.92644	-5.92644
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2029	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-6.02174	-5.89819	-6.02174	-6.02174
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2029	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.75002	-5.56115	-5.75002	-5.75002
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2029	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.62534	-5.34489	-5.62534	-5.62534
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2029	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.53685	-5.44257	-5.53685	-5.53685
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2029	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.58543	-5.56392	-5.58543	-5.58543
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2029	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.47054	-5.44924	-5.47054	-5.47054
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2029	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.27538	-5.25442	-5.27538	-5.27538
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2029	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.10911	-5.04691	-5.10911	-5.10911
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2029	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.19203	-5.151	-5.19203	-5.19203
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2029	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.51567	-5.4467	-5.51567	-5.51567
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2029	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-6.09765	-5.99403	-6.09765	-6.09765
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2029	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.80866	-5.71174	-5.80866	-5.80866
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2030	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-6.09974	-5.97492	-6.09974	-6.09974
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2030	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.76672	-5.6449	-5.76672	-5.76672
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2030	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.77282	-5.39649	-5.77282	-5.77282
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2030	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.57098	-5.54949	-5.57098	-5.57098
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2030	-5.585	-5.585	-5.585	-5.585	-5.585	-5.585	-5.585	-5.76887	-5.585	-5.585
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2030	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.47564	-5.67879	-5.47564	-5.47564
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2030	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.34552	-5.47803	-5.34552	-5.34552
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2030	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.20158	-5.21173	-5.20158	-5.20158
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2030	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.27713	-5.37375	-5.27713	-5.27713
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2030	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.60591	-5.58436	-5.60591	-5.60591
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2030	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.23577	-6.13168	-6.23577	-6.23577
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2030	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.98897	-5.89093	-5.98897	-5.98897
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2031	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.89957	-5.77811	-5.89957	-5.89957
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2031	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.89475	-5.45282	-5.89475	-5.89475
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2031	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.46481	-5.08518	-5.46481	-5.46481
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2031	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.28409	-5.26311	-5.28409	-5.28409

Data Item	Scenario	Date	Zone 10	Zone 11	Zone 20	Zone 24	Zone 26	Zone 30-S	Zone 30-W	Zone GTN	Zone ME-C	Zone ME-WA
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2031	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.26375	-5.45597	-5.26375	-5.26375
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2031	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.16138	-5.37295	-5.16138	-5.16138
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2031	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.09763	-5.23692	-5.09763	-5.09763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2031	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.92378	-4.93598	-4.92378	-4.92378
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2031	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-4.97433	-5.04886	-4.97433	-4.97433
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2031	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.23686	-5.21596	-5.23686	-5.23686
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2031	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.89312	-5.79663	-5.89312	-5.89312
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2031	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.64218	-5.55187	-5.64218	-5.64218
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2032	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.95978	-5.83734	-5.95978	-5.95978
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2032	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.71282	-5.50836	-5.71282	-5.71282
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2032	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.52067	-5.13704	-5.52067	-5.52067
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2032	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.33783	-5.31676	-5.33783	-5.33783
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2032	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.31759	-5.51292	-5.31759	-5.31759
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2032	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.21419	-5.42907	-5.21419	-5.21419
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2032	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.14982	-5.29167	-5.14982	-5.14982
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2032	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.97423	-4.98894	-4.97423	-4.97423
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2032	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.02498	-5.10255	-5.02498	-5.02498
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2032	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.29043	-5.26944	-5.29043	-5.29043
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2032	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.95326	-5.85772	-5.95326	-5.95326
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2032	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.69763	-5.6084	-5.69763	-5.69763
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2033	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-6.02058	-5.89715	-6.02058	-6.02058
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2033	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-6.01566	-5.56446	-6.01566	-6.01566
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2033	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.57708	-5.18943	-5.57708	-5.57708
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2033	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.55629	-5.46936	-5.55629	-5.55629
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2033	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.40248	-5.43637	-5.40248	-5.40248
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2033	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.26754	-5.48579	-5.26754	-5.26754
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2033	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.20252	-5.34701	-5.20252	-5.20252
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2033	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.05568	-5.04246	-5.05568	-5.05568
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2033	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.13011	-5.15681	-5.13011	-5.13011
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2033	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.41929	-5.35391	-5.41929	-5.41929
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2033	-6.014	-6.014	-6.014	-6.014	-6.014	-6.014	-6.014	-5.91945	-6.014	-6.014
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2033	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.75359	-5.6655	-5.75359	-5.75359
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2034	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-6.08199	-5.95757	-6.08199	-6.08199
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2034	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-6.07702	-5.62112	-6.07702	-6.07702
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2034	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.63406	-5.24234	-5.63406	-5.63406
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2034	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.61279	-5.52699	-5.61279	-5.61279
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2034	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.45741	-5.49914	-5.45741	-5.45741
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2034	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.32143	-5.54311	-5.32143	-5.32143
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2034	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.25575	-5.40294	-5.25575	-5.25575
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2034	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.10714	-5.09656	-5.10714	-5.10714
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2034	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.18196	-5.21165	-5.18196	-5.18196
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2034	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.44695	-5.40846	-5.44695	-5.44695
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2034	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-6.07535	-5.98184	-6.07535	-6.07535
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2034	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.81007	-5.72318	-5.81007	-5.81007
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.04703	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.67835	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.29578	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2035	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.66986	-5.58524	-5.66986	-5.66986
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	5/1/2035	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.51289	-5.55939	-5.51289	-5.51289
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	6/1/2035	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.37585	-5.60104	-5.37585	-5.37585
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	7/1/2035	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.30952	-5.45947	-5.30952	-5.30952
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	8/1/2035	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15911	-5.15123	-5.15911	-5.15911
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	9/1/2035	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.23433	-5.26708	-5.23433	-5.23433
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	10/1/2035	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.5914	-5.46357	-5.5914	-5.5914
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	11/1/2035	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.07994	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	12/1/2035	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.86708	-5.78142	-5.86708	-5.86708
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	1/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.04706	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	2/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.78142	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	3/1/2036	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-6.17294	-5.78142	-6.17294	-6.17294
Daily Marginal Cost by Area	2941-2014 IRP Start - All Resources	4/1/2036	0	0	0	0	0	0	0	0	0	0

Data Item	Scenario	Index	Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2014	0	0											
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	A-Basis-GD	2036			0	0	0								
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2014	3.667042	3.778117											
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2015	4.020983	4.073563	4.118846	4.095963	4.042669	3.911036	3.885993	3.847231	3.721598	3.697621	3.747869	3.824978	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2016	4.063017	4.08483	4.104882	4.085737	3.99602	3.913467	3.90383	3.882109	3.830891	3.782477	3.825796	3.935677	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2017	4.067444	4.108403	4.133565	4.097898	3.978324	3.917813	3.894875	3.86945	3.793056	3.719431	3.812396	3.959044	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2018	4.136668	4.190948	4.172231	4.153288	4.02182	3.972238	3.940211	3.892994	3.826314	3.7822	3.846974	3.9793	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2019	4.285425	4.312301	4.248938	4.230072	4.233278	4.060598	4.062836	4.002875	3.928828	3.867282	3.952495	4.13271	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2020	4.401195	4.398377	4.326204	4.30767	4.339023	4.177021	4.164903	4.095319	4.015828	3.951441	4.070632	4.233404	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2021	4.45205	4.48822	4.447469	4.417231	4.462087	4.223172	4.192793	4.157248	4.060025	4.012694	4.034196	4.244031	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2022	4.913666	4.895407	4.752293	4.736173	4.712467	4.617721	4.595379	4.603345	4.435246	4.348517	4.435592	4.699144	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2023	5.036606	5.030077	4.86358	4.856491	4.888983	4.72758	4.714999	4.731142	4.541982	4.455127	4.549369	4.827367	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2024	5.103632	5.097687	4.936216	4.927009	4.893839	4.889809	4.906191	4.816411	4.674752	4.559891	4.706475	4.909091	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2025	5.120847	5.092421	4.873582	4.85111	4.779964	4.897298	4.928644	4.882251	4.713828	4.546881	4.630329	4.901244	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2026	5.3388	5.302011	5.065357	5.049055	5.083093	5.140334	5.220992	5.154096	4.958817	4.804354	4.918224	5.179498	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2027	5.520237	5.489467	5.260363	5.257957	5.335638	5.376431	5.434414	5.367353	5.17019	5.02407	5.144914	5.380456	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2028	5.636229	5.601027	5.390381	5.370261	5.345289	5.438471	5.508764	5.408329	5.16467	5.028966	5.17025	5.504318	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2029	5.599805	5.58385	5.460271	5.361583	5.214141	5.370284	5.485459	5.420213	5.182302	4.991826	5.095883	5.385455	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2030	5.769663	5.774338	5.53737	5.518984	5.359773	5.555601	5.664052	5.574203	5.373956	5.213739	5.350709	5.602715	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2031	5.429434	5.440562	5.336255	5.329858	5.054054	5.274893	5.350203	5.267398	5.131705	4.952098	5.024904	5.24104	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2032	5.485229	5.496468	5.391118	5.384657	5.106095	5.329142	5.405205	5.321572	5.184523	5.003119	5.076653	5.29495	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2033	5.541581	5.552932	5.446529	5.440003	5.158656	5.383934	5.460757	5.376288	5.237868	5.05465	5.12892	5.3494	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2034	5.598496	5.609962	5.502494	5.495903	5.211742	5.439273	5.516864	5.431551	5.291747	5.106697	5.181709	5.404394	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2035	5.655982	5.667561	5.559019	5.552362	5.26536	5.495165	5.573533	5.487366	5.346164	5.159264	5.235026	5.459938	
First of Month Value by Index	2941-2014 IRP Start - All Resources	AECO-BASIS	2036			5.667561	5.667561	5.667561								
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2014	4.5	4.4											
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2015	3.9	4	4.2	4.1	3.9	3.85	3.8	3.75	3.75	3.8	3.85	3.85	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2016	4.101773	4.227821	4.338382	4.36461	3.942059	3.878257	3.908231	3.937129	3.965044	3.992752	3.996102	4.016345	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2017	4.354089	4.522274	4.281784	4.305395	4.149208	4.087414	4.117901	4.144114	4.164473	4.187303	4.203524	4.224634	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2018	4.917301	5.1149	4.641071	4.667665	4.526897	4.457429	4.49043	4.522584	4.568956	4.609308	4.608688	4.673693	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2019	5.264457	5.513641	5.260501	5.292155	4.996368	4.918763	4.95263	4.986187	5.038727	5.071222	5.065546	5.100734	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2020	5.556629	5.765467	5.665889	5.685709	5.296438	5.217655	5.244342	5.286246	5.338003	5.371145	5.372901	5.405033	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2021	5.561467	5.760195	5.912696	5.890787	5.178273	5.109877	5.144478	5.206668	5.281398	5.311737	5.264261	5.300036	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2022	5.791577	6.102672	5.899323	5.878505	5.283751	5.204525	5.244285	5.351741	5.407325	5.439934	5.359392	5.3891	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2023	6.401361	6.697868	6.262819	6.282311	5.865518	5.753287	5.796674	5.904946	5.956021	5.988416	5.92078	5.950291	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2024	6.771517	7.002799	6.878373	6.88356	6.194976	6.127854	6.172697	6.278828	6.371521	6.409344	6.352514	6.393538	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2025	6.94373	7.244176	7.202807	7.148691	6.438309	6.375104	6.425109	6.536213	6.599572	6.643307	6.580363	6.613306	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2026	7.144733	7.39048	7.432938	7.355116	6.814703	6.730076	6.785821	6.894458	6.955884	7.001105	6.941018	6.975763	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2027	7.044941	7.290353	7.557282	7.49643	6.599895	6.50898	6.573762	6.702475	6.748009	6.791878	6.722105	6.75941	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2028	7.227884	7.48364	7.429459	7.356622	6.588227	6.505184	6.560262	6.693664	6.74318	6.78493	6.703751	6.737317	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2029	7.429973	7.690779	7.659342	7.570844	6.930552	6.841524	6.900321	7.021105	7.135529	7.186585	7.116773	7.158004	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2030	7.881352	8.147276	7.871243	7.7955	7.229509	7.162023	7.22414	7.377998	7.492012	7.54797	7.463459	7.51143	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2031	8.592068	8.887414	8.327079	8.215908	7.546003	7.480692	7.540772	7.642929	7.696462	7.760706	7.767848	7.820907	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2032	8.909974	9.216249	8.63518	8.519897	7.825205	7.757477	7.81978	7.925717	7.981231	8.047852	8.055259	8.11028	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2033	9.239643	9.557249	8.954682	8.835133	8.114738	8.044504	8.109113	8.218968	8.276537	8.345622	8.353303	8.41036	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2034	9.581511	9.910868	9.286006	9.162033	8.414983	8.342151	8.409149	8.52307	8.582768	8.65441	8.662375	8.721543	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2035	9.936027	10.27757	9.629588	9.501028	8.726337	8.65081	8.720288	8.838424	8.900331	8.974624	8.982883	9.044241	
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX	2036			9.985883	9.852566	9.049212								
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2014	0	0											
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	NYMEX-GD	2036			0	0	0								
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2014	0	0											
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2021	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Item	Scenario	Index	Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	R-Basis-GD	2036			0	0	0								
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2014	3.893992	4.029255											
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2015	4.299984	4.387525	4.395443	4.363846	4.234883	4.107178	4.113653	4.075494	4.078199	4.073262	4.108638	4.198597	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2016	4.372328	4.435679	4.395434	4.38133	4.195727	4.170882	4.119205	4.033591	3.974146	3.948167	4.063348	4.209955	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2017	4.429737	4.479313	4.486255	4.420611	4.171332	4.19488	4.127957	4.068206	3.992908	3.931426	4.084113	4.259706	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2018	4.523232	4.60493	4.54668	4.524193	4.30197	4.326425	4.299605	4.210122	4.155028	4.110315	4.215452	4.384929	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2019	4.668971	4.729196	4.65437	4.639235	4.543489	4.42878	4.354351	4.270041	4.208016	4.153052	4.280787	4.497162	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2020	4.756862	4.769442	4.738899	4.706082	4.619688	4.486753	4.435005	4.336944	4.257035	4.202857	4.34849	4.565027	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2021	4.771298	4.829197	4.802149	4.772492	4.723658	4.49009	4.405581	4.281085	4.187826	4.140355	4.286822	4.538478	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2022	5.183148	5.196208	5.073723	5.060009	4.928733	4.835358	4.816149	4.704797	4.544299	4.457444	4.62218	4.974929	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2023	5.239023	5.281797	5.127619	5.123772	5.044826	4.934224	4.90502	4.802715	4.615517	4.524307	4.690687	5.017122	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2024	5.219941	5.305363	5.154877	5.12837	4.975426	4.994914	4.980735	4.874381	4.743712	4.624961	4.772776	5.029427	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2025	5.3005	5.405095	5.008501	4.975591	4.79383	4.964106	4.988897	4.889285	4.740156	4.574154	4.697051	4.968357	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2026	5.568326	5.595388	5.382275	5.368885	5.236613	5.371488	5.370872	5.269986	5.104795	4.954697	5.098938	5.415384	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2027	5.723536	5.713458	5.557458	5.551656	5.44732	5.542141	5.534715	5.438502	5.288598	5.144071	5.291303	5.557795	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2028	5.715253	5.688673	5.61746	5.59249	5.443732	5.56461	5.576709	5.474652	5.267903	5.122542	5.229467	5.560408	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2029	5.569327	5.576398	5.524401	5.428057	5.215032	5.41302	5.460792	5.347819	5.155912	4.970875	5.073959	5.392189	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2030	5.639989	5.75291	5.52739	5.510559	5.265861	5.416576	5.460363	5.35283	5.224878	5.073232	5.157631	5.480925	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2031	5.298463	5.41892	5.326175	5.321348	4.959203	5.134477	5.144477	5.043813	4.981137	4.810186	4.829895	5.118032	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2032	5.352948	5.474609	5.380937	5.376061	5.010295	5.187322	5.197423	5.095751	5.032448	4.859788	4.879694	5.170712	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2033	5.407977	5.530855	5.436246	5.431322	5.061898	5.240695	5.250896	5.148208	5.084272	4.909885	4.929991	5.22392	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2034	5.463557	5.587664	5.492109	5.487135	5.114017	5.294602	5.304905	5.20119	5.136615	4.960485	4.980791	5.277659	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2035	5.519692	5.64504	5.54853	5.543507	5.166657	5.349048	5.359455	5.254703	5.189481	5.01159	5.032099	5.331935	
First of Month Value by Index	2941-2014 IRP Start - All Resources	ROCKS-BASIS	2036			5.64504	5.64504	5.64504								
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2014	0	0											
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
First of Month Value by Index	2941-2014 IRP Start - All Resources	S-Basis-GD	2036			0	0	0								
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2014	4.034387	4.241336											
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2015	4.110771	4.428754	4.546133	4.521169	4.304874	3.99045	3.972181	3.907846	3.91326	4.074745	4.101218	3.873318	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2016	4.163302	4.479913	4.455678	4.432871	4.05697	3.984301	3.941527	3.85552	3.810343	3.81257	3.875243	4.013563	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2017	4.18071	4.511039	4.540556	4.485022	4.035648	4.00594	3.927305	3.836995	3.812036	3.743639	3.856238	4.031088	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2018	4.247364	4.646237	4.578999	4.556972	4.098255	4.05428	3.966859	3.855006	3.839624	3.823756	3.909128	4.046595	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2019	4.700647	4.771992	4.693743	4.679256	4.602416	4.473667	4.413249	4.13195	4.058474	3.997315	4.098623	4.291398	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2020	4.80934	4.819187	4.790361	4.775667	4.670313	4.549132	4.295878	4.182258	4.108912	4.084503	4.220162	4.388296	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2021	4.867733	4.90996	4.85918	4.829911	4.81548	4.583872	4.328333	4.25443	4.16371	4.135464	4.184885	4.398128	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2022	5.327281	5.317679	5.170999	5.155838	5.058499	4.951744	4.729773	4.699532	4.537902	4.470699	4.571762	4.851857	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2023	5.451595	5.452759	5.280181	5.274043	5.197342	5.053091	4.838441	4.829671	4.647058	4.57875	4.686413	4.980959	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2024	5.516493	5.51259	5.353924	5.345669	5.198459	5.213458	5.027694	4.909835	4.774545	4.680525	4.827991	5.045966	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2025	5.514535	5.507616	5.289424	5.267894	5.083168	5.220701	5.062594	4.975327	4.813267	4.667289	4.754377	5.238271	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2026	5.715248	5.723654	5.4813	5.466162	5.376763	5.446147	5.343413	5.255038	5.066397	4.917979	5.043185	5.414914	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2027	5.925806	5.919815	5.68298	5.681767	5.628498	5.668489	5.562809	5.478761	5.288602	5.152681	5.42295	5.69931	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2028	6.01973	6.035629	5.821755	5.802671	5.653399	5.715007	5.636655	5.524544	5.297736	5.162692	5.313121	5.825576	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2029	5.964452	6.018054	5.889811	5.792181	5.500033	5.64209	5.597962	5.537075	5.306355	5.122401	5.353717	5.684193	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2030	6.100263	6.186141	5.966507	5.949755	5.645048	5.773376	5.778542	5.692059	5.499043	5.345398	5.531602	5.866613	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2031	5.76334	5.856483	5.769683	5.764936	5.342182	5.494845	5.465838	5.386434	5.258042	5.085073	5.207606	5.507577	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2032	5.822473	5.916548	5.82888	5.824086	5.397104	5.551293	5.521996	5.441798	5.312123	5.137424	5.261182	5.564153	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2033	5.882198	5.977213	5.888669	5.883826	5.452575	5.608306	5.578716	5.497716	5.366744	5.190298	5.315294	5.621294	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2034	5.94252	6.038485	5.949056	5.944165	5.508601	5.665889	5.636003	5.554193	5.421912	5.243701	5.369946	5.679008	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2035	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	6.038485	
First of Month Value by Index	2941-2014 IRP Start - All Resources	SUMAS-BASIS	2036			6.038485	6.038485	6.038485								