



Avista's Plan was developed during a public process that included four Technical Advisory Committee (TAC) meetings<sup>1</sup> with Commission staff and other stakeholders. A prehearing conference was held on October 12, 2012, to set the procedural schedule. A workshop was held on December 12, 2012, to discuss areas of the Plan requiring further explanation. Staff and Citizens' Utility Board (CUB) provided initial comments to Avista on the Plan on January 25, 2013. The Company filed reply comments on February 25, 2013. Staff distributed its draft recommendation and its draft proposed order on the final Plan to the Company and interested parties on March 15, 2013. Avista and CUB provided comments in response to Staff's draft recommendation and draft proposed order on April 5, 2013.

A summary of the components of Avista's 2012 IRP is included in the attached proposed order. Appendix 2.2 of the Plan provides a summary of how Avista's IRP meets each of the applicable provisions of the Commission's updated IRP guidelines.

### **Staff Recommendation**

Staff concludes that Avista's 2012 IRP, together with the replacement of the Action Plan in Chapter 9, meets the Commission's substantive and procedural guidelines in Order Nos. 07-002 and 07-047. Staff does not support the suspension of Schedules 486 and 490, Residential Energy Efficiency Programs, and all prescriptive efficiency measures in Schedule 492, Commercial/Industrial Demand Side Management (DSM) Incentive Program, as filed by Avista in Advice No. 12-09-G. The continuation of the Company's Energy Efficiency Programs is addressed in the replacement Action Plan, proposed by Staff.

Avista has documented its capacity shortfalls and the resources necessary to address them. There are no near term capacity deficits in its system. Resource needs do not occur until well into the future. In Oregon, the first resource deficits occur in 2029 and in Washington and Idaho in 2030. Even under a very extreme growth scenario the first forecasted deficiency does not occur until 2018.

Avista utilized an appropriate integrated planning model to prepare its IRP. This model is SENDOUT-Vector Gas. This model combines a linear programming function with stochastic modeling. The model provides a "best choice" solution under static conditions, but also provides a means to probabilistically test scenarios and sensitivities. Avista gathered sufficient and appropriate data on resources (e.g., size, timing, cost), conditions affecting its system (e.g., economic, resource availability, political events), and expected core system demand for the model. Then, Avista appropriately input this

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<sup>1</sup> TAC meetings were held on January 17, 2012, February 21, 2012, March 20, 2012 and April 17, 2012.

information into the model. Avista identified an "average case" and an "expected case" for planning purposes. Avista then prepared several sensitivities and scenarios around these cases, testing variations in demand, weather, resource availability and price, political events, and socioeconomic events (price elasticity). The Company chose to utilize the Expected Case for peak operational planning activities.

Avista provided the full results of the SENDOUT-Vector Gas modeling to staff, as well as the full inputs provided to the model. The results were provided in a format that allowed clean and easy comparison of expected case vs. various sensitivities and scenarios in terms of net present value of revenue requirements. Avista also clearly identified which of the SENDOUT-Vector Gas modeling results it chose as its preferred case—the basis for its two-year action plan. This choice was fully explained and was based on practicable reasoning and sufficient data.

Staff agrees with Avista's plan to carefully monitor its demand trends while continually updating and evaluating all demand side and supply side alternatives. Staff recommends that Avista withdraw its proposed tariff suspension of Schedules 486 and 490, Residential Energy Efficiency Programs, and all prescriptive efficiency measures in Schedule 492, Commercial/Industrial Demand Side Management (DSM) Incentive Program, as filed in Advice No. 12-09-G, and continue Energy Efficiency Programs as detailed in the Staff-proposed Action Plan.

Avista voiced concern regarding the Staff-proposed Action Plan, in Avista's response to Staff's Final Comments. The Company indicated that Staff's recommendations, with regard to Avista's Energy Efficiency Programs, would be more appropriately addressed in UG 240/Advice No. 12-09-G versus the Company's IRP. While Avista agrees that DSM is a consideration of integrated resource planning, the Company does not agree with the evaluation of DSM at the program level versus DSM at the portfolio level, in the context of an IRP.

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Staff maintains that LC 55 is the appropriate docket to address Avista's Energy Efficiency Programs/DSM. Detailed analysis at the program level was necessary to allow for a decision to be made about the continuation of Avista's Energy Efficiency Programs/DSM, and acknowledgement of Avista's 2012 IRP.

Staff appreciates Avista's efforts, working with Staff and stakeholders throughout this process. To ensure that the Commission and stakeholders have sufficient information to evaluate the reasonableness of the Company's planned actions, Staff recommends that the Commission acknowledge the 2012 IRP, and the replacement of the Action Plan in Chapter 9, with the Staff-proposed Action Plan.

**PROPOSED COMMISSION MOTION:**

Avista's 2012 IRP be acknowledged subject to replacement of the Action Plan found in Chapter 9, with the following:

**2013-2014 ACTION PLAN**

The Company will extend the energy efficiency measures identified in Tables 2, 3 and 4, the residential regular income program at the program level, and the residential low-income program at the program level.

Continue DSM programs in Oregon and achieve a minimum savings of 225,000 therms in 2013 and 250,000 therms in 2014.

Two years from the date of acknowledgement of this IRP, Avista will provide the results of the following:

- Savings and cost effectiveness of the DSM program.
- Actions taken to reduce delivery costs, including administration costs and audit costs.
- Actions taken to increase the number of cost effective efficiency measures in the portfolio.
- An analysis of non-natural gas benefits of existing and proposed DSM measures.
- An analysis of measure lives for all measures.

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Within six months of the date of acknowledgement of this IRP, Avista will develop a potential mechanism for allocating funding for a separate low-income energy efficiency program, and will submit a report to Staff outlining the mechanism.

Attachment

ORDER NO.  
ENTERED

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

LC 55

In the Matter of  
AVISTA UTILITIES  
2012 Integrated Resource Plan

DRAFT PROPOSED ORDER

DISPOSITION: PLAN ACKNOWLEDGED WITH MODIFICATION

**INTRODUCTION**

On August 31, 2012, Avista Utilities (Avista or Company) filed its 2012 Natural Gas Integrated Resource Plan (IRP or Plan).

**Jurisdiction**

On April 20, 1989, pursuant to its authority under ORS 756.515, the Public Utility Commission of Oregon (Commission) issued Order No. 89-507 in Docket UM 180 adopting least-cost planning for all energy utilities in Oregon. On January 8, 2007, the Commission updated its resource planning guidelines in Order No. 07-002 (Docket UM 1056). This order was corrected in Order No. 07-047, entered February 9, 2007. Avista is a public utility in Oregon, as defined by ORS 757.005, providing natural gas service to or for the public. Avista filed its 2012 IRP in accordance with the Commission's integrated resource planning requirements adopted in Order Nos. 07-002 and 07-047.

**Requirements for Integrated Resource Planning**

The Commission requires regulated energy utilities to prepare integrated resource plans within two years of acknowledgment of the last plan. Utilities must involve the Commission and the public in their planning process and prior to resource decision-making. Substantively, the Commission requires that energy utilities: (1) evaluate resources on a consistent and comparable basis; (2) consider risk and uncertainty; (3) make selecting a portfolio of resources with the best combination of expected costs

and associated risks and uncertainties for the utility and its customers the primary goal of the process; and (4) create a plan that is consistent with the long-run public interest as expressed in Oregon and federal energy policies. *See* Order No. 07-002.

The Commission “acknowledges” resource plans that satisfy the procedural and substantive requirements and that seem reasonable at the time acknowledgment is given.

### **OVERVIEW OF AVISTA’S INTEGRATED RESOURCE PLAN**

Avista’s 2012 IRP describes the components of the Company’s planning process. The plan includes forecasts of future customer demand and identification of resource needs over the 20-year planning period; assessments of demand-side and supply-side resource options and distribution system enhancements; consideration of planning risks and uncertainties; analysis and selection of resource options for meeting future needs; and identification of actions to be accomplished over 2013 and 2014 to carry out Avista’s resource strategy and to complete additional planning activities. A summary of the plan is provided below:

- Demand Forecast. Avista’s demand forecasts were produced using the Company’s SENDOUT® resource optimization model. Daily demand forecasts were developed for residential, commercial, and firm industrial customers (core market) in four demand areas in Avista’s South Operating Division (Oregon) and North Operating Division (Washington and Idaho). Starting with a baseline Reference Case, the Company developed five alternate demand scenarios: Average Demand, Expected Demand - Peak, High Growth/Low Price, Low Growth/High Price, and Alternate Weather Standard. These scenarios included combinations of growth projections, price forecasts, alternative weather-planning, carbon adders, exported liquefied natural gas, and compressed natural gas (CNG) – natural gas vehicle (NGV) growth.

Avista selected the Expected Case as the most likely scenario for its planning activities. The selected case reflects the effect of the change in the economic conditions since the last IRP. It represents moderate growth rates and price projections. For the Expected Case, Avista projects average core market demand will grow at an annual average rate of 1.1 percent over the 20-year planning horizon. Peak day core market demand for the Expected Case is projected to grow at an annual rate of 1.3 percent over the period.

The Company indicated in the Action Plan section that it will closely monitor actual demand for indications or signs of higher-than-expected growth rates to adequately and timely address resource deficiencies as necessary.

- Demand-Side Resources. For the 2012 IRP, Avista’s Demand Side Management (DSM) Business Plan forecasted non-cost-effective natural gas using the avoided

costs from the 2009 IRP. A subsequent study<sup>1</sup> completed in February 2012 projected that, with substantial modifications, the natural gas DSM portfolio could potentially be marginally cost-effective using a presumed 25 percent reduction in avoided cost. This originally anticipated assumption of 25 percent lower natural gas avoided costs was replaced with current IRP avoided costs, which is a decrease of approximately 50 percent. Avista filed to suspend its natural gas DSM. The Company acknowledges the importance of DSM and remains committed to the continued analysis and the pursuit of potentially cost-effective programs as the natural gas market changes.

- Supply-Side Resources. Avista's existing supply-side resources are divided into three categories: supply, transportation, and storage. The Company described the specific existing resources under each category. Avista's gas supplies are from the two largest natural gas producing regions in North America: The Western Canadian Sedimentary Basin and the Rocky Mountain basins. The major supply points, i.e. hubs, for Avista are AECO, Sumas, Rockies, and Malin. Gas procurement is typically done via contracts. For modeling purposes, SENDOUT<sup>®</sup> assumes that all of Avista's supply contracts are firm, physical, and fixed-price contracts. In reality, the Company may enter into other types of contracts such as financial hedging, non-firm, or non-fixed price contracts. The Company's gas costs are reviewed during the annual Purchased Gas Adjustment (PGA) filing.

Avista has contracted with the interstate pipelines serving the region for firm deliveries and sufficient capacity to meet peak day demand. Interstate pipelines also offer interruptible services, which Avista does not rely on to meet design day core demand requirements. The 2012 IRP provides information on the Company's current available firm transportation by pipeline, time of year, and daily volume (Dtherms/day).

Avista's storage resources consist of the Jackson Prairie facility where it is one-third owner of approximately 25 Bcf of the facilities working gas capacity. Its current share of this capacity for core customers is approximately 8.5 Bcf and includes 398,667 Dth of daily deliverability rights. In addition to the Company's ownership rights, it has leased an additional 95,565 Dth of Jackson Prairie capacity with 2,623 Dth of deliverability from Northwest Pipeline, to serve Oregon customers. .

Avista has no immediate need to acquire incremental supply side resources to meet peak day demands. The Company indicates, in the Action Plan section, that it will continue to monitor supply resource trends including the availability and price of natural gas to the regions, exporting LNG, Canadian natural gas imports, regional plans for gas fired generation and its affect on pipeline availability, as well as future regional pipeline and storage infrastructure plans.

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<sup>1</sup> The study completed was the Review of Prospects and Strategies for the 2012 Avista Regular Income Natural Gas DSM Portfolio.

Avista developed three alternate supply scenarios utilizing the different types of supply resources described above. These scenarios were characterized as: existing resources, existing plus expected available resources, and GTN fully subscribed. The supply scenarios were developed so that they address the deficiencies exhibited by the different demand scenarios.

- Resources Integration Strategies. Avista's IRP indicates resource shortages occur well into the future. In the Expected Demand Case, the first unserved year in Medford/Roseburg is in 2029 and is followed by the first unserved year in Klamath Falls occurring in 2030. No additional resources are needed for La Grande within the 20-year planning period. The Company's analyses in this Plan demonstrate that the surplus resource situation provides adequate time to monitor, plan, and act on potential resource additions.

Avista identified a risk in its previous IRP associated with its aggregated methodology for supply and demand forecasting. The identified risk had the potential to mask deficiencies at individual gate stations. A gate-by-gate analysis was developed outside of SENDOUT<sup>®</sup> to address this concern.

- Two-Year Action Plan. Avista's 2013-2014 Action Plan describes the near-term actions the Company will take to implement its optimal resource strategy and to support and improve IRP planning. Avista's key action items are:
  - Monitor actual demand for indications of growth exceeding forecast to aggressively address accelerated resources deficiencies arising from the risk of "flat-demand" in the current forecast.
  - Pursue the possibility of a regional elasticity study through the Northwest Gas Association or possibly the American Gas Association.
  - Assess potential demand impact from NGV/CNG vehicles and other new uses of natural gas.
  - Continue to monitor supply resource trends, including the availability and price of natural gas to the regions, exporting LNG, Canadian natural gas imports and interprovincial consumption, regional plans for gas-fired generation and its effect on pipeline availability, as well as regional pipeline and storage infrastructure plans.
  - Monitor new resources lead time requirements relative to when resources are needed to preserve resource option flexibility.
  - Regularly meet with Commission Staff members to provide information on market activities and significant changes in assumptions and/or status of Avista activities related to the IRP or natural gas procurement practices.

### **Comments of the Parties**

Avista solicited initial comments from parties through its Technical Advisory Group (TAG) meetings prior to distributing its 2012 IRP for external review on August 31, 2012. On December 12, 2012, a workshop was held to discuss areas of the Plan requiring



further explanation, including the suspension of its energy efficiency programs, and the Action Plan. Staff and Citizens' Utility Board (CUB) provided comments on Avista's Plan on January 25, 2013. Avista provided reply comments on February 25, 2013. Staff distributed its draft recommendation and draft proposed order on the Plan to the company and interested parties on March 15, 2013.

CUB's Comments. CUB's comments on Avista's 2012 IRP focused on Energy Efficiency, Hedging, and Distribution. CUB recommends the continuation of Avista's energy efficiency programs, giving consideration to the cost effectiveness at not just a point in time, but over the lifetime of the investment of the programs, the hedge value of energy efficiency, and the impact on climate change, among other points. CUB recommends Avista further investigate long-term hedges during its next planning cycle. CUB recommends that Avista provide more detail with regard to possible investments in its distribution system in its next IRP.

Avista's Comments. Avista explains that its IRP is a starting point for a comprehensive evaluation of a natural gas DSM portfolio. The Company further states that it does not include measure-by-measure evaluation or program implementation and management; rather it provides an end use portfolio analysis inclusive of all available resources. Avista remains committed to the ongoing evaluation of its DSM programs. Avista states that it is awaiting Staff's guidance and recommendations on the future of its DSM programs.

Staff Comments. Based on its review of Avista's 2012 IRP and participation in the planning process, Staff determined that the Plan meets the Commission's guidelines in Order Nos. 07-002 and 07-047. Procedural requirements were met as described above. Substantive IRP requirements were addressed throughout the Plan, with supporting data in an appendix to the Plan. Staff also concluded the supply-side resources identified to fill the deficiencies expected in Avista's Oregon service territory beginning in 2013 are appropriate. However, Staff recommends that Avista continue its DSM measures and programs for a two year period, by exception, before they are substantively downsized or suspended. This is consistent with the approach the Commission has taken with Energy Trust of Oregon's (ETO or the Trust) gas DSM programs.<sup>2</sup>

Staff, recommends that Avista continue to offer the following measures and programs based on the following Order 94-590 Exception Criteria:

- Windows, residential and low income - Historically windows have not had a TRC greater than one, but are used as an incentive for attracting customers to the other cost effective programs, such as insulation and home envelope improvements. Staff recommends windows be continued under Order 94-590 Exception Criterion D, (*Inclusion of the measure helps to increase participation in a cost-effective program*). The Company's DSM tariff also states that it will continue to offer windows, even if cost-effective, as long as the measure is part of the overall package being installed.

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<sup>2</sup> Docket No. UM 1622, Order No. 12-394.

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- Residential floor insulation - Staff recommends an exception under Order 94-590 for floor insulation. This measure fits the criteria of Order 94-590 Exception Criterion B (*Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure*), Exception Criterion C (*The measure is included for consistency with other DSM program in the region*), and Exception Criterion D (*Inclusion of the measure helps to increase participation in a cost-effective program*). A significant amount of lost opportunity will be avoided by including this measure. Frequently, installation of DSM measures takes place at the same time. Auditors and contractors are already in the home installing insulation and have the opportunity to more easily add floor insulation at that time rather than returning at a much later date to specifically install floor insulation. Because of this lost opportunity, a TRC value of close to one (0.88), and the Order 94-590 exception criteria, Staff fully supports including floor insulation during the two-year period.
- Residential regular income at the program level - Although some measures within the residential program are cost effective, because audit costs are added in at the program level, the overall regular residential program is not cost effective from a TRC perspective. Staff recommends that a two-year exception be approved by the Commission at the program level, under Order 94-590 Exception Criteria B and E. Exception Criterion B is *Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure* and Exception Criterion E is *The package of measures cannot be changed frequently and the measure will be cost-effective during the period the program is offered*. Over the two-year exception period, Avista will work to reduce administrative costs and look for ways to increase total program savings. These numbers will be evaluated again at the end of two years.
- Residential low income at the program level - For the low-income DSM program, Avista indicates that rebates paid for residential energy efficiency weatherization measures as described in the Company's tariffs that are completed by Low-Income Agencies would not be subject to cost-effectiveness testing. Staff recommends exception for each of the measures in the low-income program and comments that these measures and the overall program also meet Order 94-590 Exception Criterion A (*significant non-energy benefits*) and Exception Criterion C (*Inclusion of the measure is consistent with other programs in the region*). For low-income programs, non-energy benefits relate to equity and social benefits. Consistency with other programs in the region relates to the fact that other IOUs in the state have separate low-income programs that are not subject to standard cost effectiveness requirements.

As shown in Table 2 and in Table 4, attic insulation, wall insulation and duct sealing continue to be cost effective and should continue. Also, the mandated measures of water pipes, weather stripping and caulking should be continued.

## Commercial Program

In the Company's draft revision of the 2012 IRP Action Plan, Avista stated "The Company's Recommendation is to run all commercial measures through the site-specific program." Staff takes the position that these should remain as prescriptive<sup>3</sup> measures in order to induce customer participation in the DSM program, similar to the way that windows are used in the residential programs to attract customers to other measures. Staff also contends that prescriptive programs will reduce transaction costs, audit costs, and administration costs.

Table 4 contains the TRC information relating to the commercial DSM program. Staff has organized the commercial program into a cooking equipment section, a dishwasher section, and a weatherization section purely for ease of the reader. As can be seen in the table, multiple measures pass the TRC test as is. Staff believes that measures that pass the TRC test should be offered as prescriptive. Staff recommends that the furnace measure be continued by incentives offered on a site-specific basis if analysis shows it is cost effective. Staff takes the position that in order to maintain a comprehensive DSM program, to keep a certain level of market capacity, and to avoid lost opportunities, the best route would be to seek exceptions for the cost-ineffective measures under Order 94-590.

In the cooking equipment subset, Staff proposes exceptions for gas fryers, gas griddles, convection ovens, and single-rack ovens under Order 94-590 Exception Criteria B, D, and E. In each case there is lost opportunity if not installed as part of a larger remodel, continuance of programs may lead to reduced costs, and the measures cannot be changed frequently and may become cost effective within the measure life. In the dishwasher subset, Staff proposes exceptions for all of the measures under Order 94-590 Exception Criteria B, D, and E for the same reasons as cooking equipment. In the weatherization subset, Staff proposes exceptions for R0 and R11 attic insulation under Order 94-590 Exception Criterion D. Staff recommends discontinuing incentives for attic insulation where the current conditions are R19 or better. All other commercial measures are cost effective and should continue.

During this period, Staff encourages the Avista to work to reduce delivery costs and increase savings, where possible, and to collect detailed data regarding customer utilization of programs, costs, etc., that can be used for a more detailed analysis at the end of the two-year exception period.

To ensure that the Company's next IRP Update and next IRP will contain sufficient analyses regarding the actions undertaken pursuant to the Company's Action Plan, Staff recommends the Commission acknowledge the 2012 IRP, subject to replacement of the Action Plan found in Chapter 9 of Avista's 2012 IRP, with the following:

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<sup>3</sup> Prescriptive measures are predetermined measures and incentives for the installation of various energy efficient improvements versus site-specific incentives that are determined on a case-by-case basis.

**2013-2014 ACTION PLAN**

The Company will extend the energy efficiency measures identified in Tables 2, 3 and 4, the residential regular income program at the program level, and the residential low-income program at the program level.

Continue DSM programs in Oregon and achieve a minimum savings of 225,000 therms in 2013 and 250,000 therms in 2014.

Two years from the date of acknowledgement of this IRP, Avista will provide the results of the following:

- Savings and cost effectiveness of the DSM program.
- Actions taken to reduce delivery costs, including administration costs and audit costs.
- Actions taken to increase the number of cost effective efficiency measures in the portfolio.
- An analysis of non-natural gas benefits of existing and proposed DSM measures.
- An analysis of measure lives for all measures.

Within six months of the date of acknowledgement of this IRP, Avista will develop a potential mechanism for allocating funding for a separate low-income energy efficiency program, and will submit a report to Staff outlining the mechanism.

**OPINION**

After review of Avista's IRP and consideration of Staff's and CUB's comments on Avista's Plan, we agree with Staff's recommendations. Consequently, we acknowledge Avista's 2012 IRP, with the replacement Action Plan proposed by Staff and regarding analyses Avista should incorporate in its next IRP Update and in its next IRP.

**EFFECT OF THE PLAN ON FUTURE RATE-MAKING ACTIONS**

Order No. 89-507 sets forth the Commission's role in reviewing and acknowledging a utility's least-cost plan as follows:

Consistency of resource investments with least-cost planning principles will be an additional factor that the Commission will consider in judging prudence. When a plan is acknowledged by the Commission, it will become a working document for use by the utility, the Commission, and any other interested party in a rate case or other proceeding before the Commission[.] Consistency with the plan may be evidence in support of favorable rate-making treatment of the action, although it is not a guarantee of favorable treatment. Similarly, inconsistency with the plan will not necessarily lead to unfavorable rate-making treatment, although the utility will need to explain and justify why it took an action inconsistent with the plan.

Order No. 89-507 at 7.

The Commission affirmed this principle in Docket UM 1056. *See* Order No. 07-002 at 24.

This order does not constitute a determination on the rate-making treatment of any resource acquisitions or other expenditures undertaken pursuant to Avista's 2012 IRP. As a legal matter, the Commission must reserve judgment on all rate-making issues. Notwithstanding these legal requirements, we consider the integrated resource planning process to complement the rate-making process. In rate-making proceedings in which the reasonableness of resource acquisitions is considered, the Commission will give considerable weight to utility actions which are consistent with acknowledged integrated resource plans. Utilities will also be expected to explain actions they take that may be inconsistent with Commission-acknowledged plans.

### CONCLUSIONS

1. Avista is a public utility subject to the jurisdiction of the Commission.
2. Avista's 2012 Integrated Resource Plan, as modified in this order, reasonably adheres to the principles of integrated resource planning set forth in Order Nos. 89-507, 07-002, and 07-047 and should be acknowledged.

ORDER NO.

**ORDER**

IT IS ORDERED that the 2012 Natural Gas Integrated Resource Plan filed by Avista Utilities on August 31, 2012, as modified herein, is acknowledged in accordance with the terms of this order and Order Nos. 89-507, 07-002, and 07-047

Made, entered, and effective \_\_\_\_\_.

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**Susan K. Ackerman**  
Chair

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**John Savage**  
Commissioner

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**Stephen M. Bloom**  
Commissioner

**Table 2**

Class	Measure	Status	Annual Savings (Therms/Customer)	Measure Life	Measure TRC	Measure UCT	Program TRC (no windows)	Program TRC (w/ windows)
<b>Regular Income Residential</b>	Attic Insulation 0-18	Prescriptive	87	30	1.79	1.29		
	Attic Insulation 19-30	Recommend Suspension	39	30	0.48	1.20		
	Wall Insulation	Prescriptive	113	30	1.02	1.31		
	Floor Insulation	UM 551 Exception B, C, D	137	30	0.88	1.24		
	Windows	UM 551 Exception D	132	25	0.29	2.80		
	Ducts	Prescriptive	86	30	1.00	1.32		
	Water Pipes	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A		
	Weather-strip	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A	0.97	0.76
	Caulking	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A		
	Furnace	Recommend Suspension	70.56	25	0.86	1.87		
	Thermostats	Recommend Suspension	27	15	0.89	2.01		
	Chimney Dampers	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A		
	Tank Water Heater	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A		
	Tankless Water Heater	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A		
Direct Vent Space Heat	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A			

\*Note: Program TRCs exclude mandated, suspended, and recommended suspended measures. Measure TRC and UCT exclude audit costs. Program TRCs include audit costs.

**Table 3**

Class	Measure	Status	Annual Savings (Therms/Customer)	Measure Life	Measure TRC	Measure UCT	Program TRC
<b>Low Income Residential</b>	Attic Insulation 0-18	UM 551 Exception D	87	30	0.97	1.12	0.73
	Wall Insulation	UM 551 Exception D	113	30	0.88	1.14	
	Floor Insulation	UM 551 Exception D	137	30	0.49	1.15	
	Windows	UM 551 Exception D	132	25	0.26	2.67	
	Ducts	UM 551 Exception D	86	30	0.76	1.31	
	Water Pipes	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A	
	Weather-strip	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A	
	Caulking	Mandated OAR 860-030-0010	N/A	N/A	N/A	N/A	
	Furnace	UM 551 Exception D	70.56	25	0.86	1.87	
	Thermostats	Recommend Suspension	27	15	0.89	2.01	
	Chimney Dampers	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A	
	Tank Water Heater	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A	
	Tankless Water Heater	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A	
	Direct Vent Space Heater	Suspended (Advice 12-03-G)	N/A	N/A	N/A	N/A	

\*Note: Program TRCs exclude mandated, suspended, and recommended suspended measures. Measure TRC and UCT exclude audit costs. Program TRCs include audit costs.



**Table 4**

Class	Measure	Status	Annual Savings (Therms/Customer)	Measure Life	Measure TRC	Measure UCT	Program TRC
Commercial/Industrial	Gas Fryer	UM 551 Exceptions B, D, and E	505	12	0.71	1.40	1.99
	Gas Griddle	UM 551 Exceptions B, D, and E	88	12	0.51	0.94	
	Double Rack Oven	Prescriptive	2113	12	1.48	2.98	
	Convection Oven	UM 551 Exceptions B, D, and E	323	12	0.59	1.27	
	Combination Oven	Prescriptive	403	12	1.14	1.31	
	Single Rack Oven	UM 551 Exceptions B, D, and E	1034	12	0.76	2.34	
	3 Pan Steamer	Prescriptive	1042	12	4.32	3.39	
	4 Pan Steamer	Prescriptive	1389	12	5.79	3.85	
	5 Pan Steamer	Prescriptive	1737	12	4.45	3.93	
	6 Pan Steamer	Prescriptive	2084	12	4.48	3.99	
	10 Pan Steamer	Prescriptive	3473	12	4.53	4.08	
	DW Door Hi Temp	UM 551 Exceptions B, D, and E	405	10	0.57	1.12	
	DW Door Low Temp	UM 551 Exceptions B, D, and E	554	10	0.82	1.53	
	DW Single Tank Conv. High Temp	UM 551 Exceptions B, D, and E	508	10	0.51	1.11	
	DW Single Tank Conv. Low Temp	UM 551 Exceptions B, D, and E	520	10	0.52	1.14	
	DW Multi Tank Conv. High Temp	UM 551 Exceptions B, D, and E	993	10	0.76	1.46	
	DW Multi Tank Conv. Low Temp	UM 551 Exceptions B, D, and E	798	10	0.61	1.18	
	DW Under Counter High Temp	UM 551 Exceptions B, D, and E	217	10	0.60	1.06	
	Furnace	Site Specific	70.56	25	**	**	
	Attic Insulation R0 (per Sq/Ft)	UM 551 Exception D	0.12	30	0.73	1.23	
Attic Insulation R11 (per Sq/Ft)	UM 551 Exception D	0.1	30	0.84	1.24		
Attic Insulation R19 (per Sq/Ft)	UM 551 Exception D	0.08	30	0.94	1.26		
Wall Insulation (per sq ft)	Prescriptive	0.29	30	1.17	2.01		
Floor Insulation (per sq ft)	Prescriptive	0.33	30	1.55	2.59		
Display Case Night Curtains (per Ft)	Prescriptive	8	10	2.35	1.19		
Coffin Freezer Night Curtains (per Ft)	Prescriptive	2.03	10	1.28	1.22		

\*Note: Program TRCs exclude mandated, suspended, and recommended suspended measures. Measure TRC and UCT exclude audit costs. Program TRCs include audit costs.

\*\*Furnace TRC will be calculated on a site-specific basis based on installation site characteristics. Furnace costs and benefits not included in Program TRC