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July 7, 2020

CNG/O20-03-01

Public Utility Commission of Oregon
P.O. Box 1088
201 High St SE, Suite 100
Salem, OR 97308-1088

Attn: Filing Center

Re: UG 390, Supplemental Testimony for Company Witness Archer

Cascade Natural Gas Corporation (Cascade or the Company) herein files supplemental testimony for Company Witness Archer's Exhibits 501, 503, and 504. This supplemental testimony and its accompanying exhibits are being filed as Exhibit CNGC/600 and will be uploaded on Huddle.

The reason for this supplemental testimony is that, during an informal rate case workshop with the parties in the case, it was revealed through discussions that there was an error in the Company's proposed cost of service model. This supplemental testimony corrects the error and presents an updated cost of service model. Although the cost of service model has been updated, there is no change in the overall revenue requirement being requested in the case.

If you have any questions regarding this filing, please contact me at (509) 734-4549.

Sincerely,

/s/ Christopher Mickelson

Christopher Mickelson
Manager, Regulatory Affairs
Email: christopher.mickelson@cngc.com

Attachments

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

UG 390

Cascade Natural Gas Corporation

Supplemental Testimony of Pamela J. Archer

EXHIBIT 600

July 7, 2020

EXHIBIT 600 – SUPPLEMENTAL COST OF SERVICE TESTIMONY

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1 **I. INTRODUCTION**

2 **Q. Are you the same Pamela J. Archer who filed direct testimony in Exhibit**
3 **CNGC/500?**

4 A. Yes, I am.

5 **Q. What is the purpose of your supplemental testimony?**

6 A. The purpose of this supplemental testimony is to correct an error within the
7 Company's proposed cost of service model that was revealed through discussions
8 with intervening parties during an informal rate case workshop. Cascade has
9 corrected the error and is presenting an updated cost of service model. Cascade
10 proposes to replace the impacted exhibits included with its initial filing, Exhibits
11 CNGC/501, 503, and 504, with the exhibits included with this filing, Exhibits
12 CNGC/601, 602, and 603.

13
14 **II. REVISED COST OF SERVICE MODEL**

15 **Q. What was the error that Cascade identified in the workshop?**

16 A. Cascade inadvertently included an allocation for Schedule 163 from Cascade's
17 last general rate case in Docket UG 347. In that case, Cascade proposed to
18 convert the transportation customer class, Schedule 163, from interruptible service
19 to firm service, and proposed to allocate capacity related costs to Schedule 163 to
20 create a demand rate. As a part of the settlement in that case, Cascade agreed to
21 withdraw the proposal to transition Schedule 163 to firm service. Since Cascade is
22 not proposing to create a firm Schedule 163 in this case, the cost of service model
23 should not include the allocation of capacity costs to Schedule 163.

1 **Q. Why was this error included in the Company's cost of service model?**

2 A. Cascade used the cost of service model from the previous rate case as its starting
3 point, and inadvertently failed to remove the allocation of capacity related costs to
4 Schedule 163.

5 **Q. Does the correction of this error affect the amount of the Company's original
6 overall revenue requirement as proposed in its initial filing in this case?**

7 A. No. This correction does not impact Cascade's original revenue requirement
8 proposal. The correction only impacts the cost of service model. Cascade has
9 revised its cost of service model to correct the allocation error, as shown in Exhibits
10 CNGC/601, 602, and 603.

11 **Q. What is the result of the revised cost of service analysis in comparison with
12 the originally filed cost of service?**

13 A. The revised cost of service analysis lowers costs allocated to Schedule 163 and
14 increases costs allocated to all other firm customer classes. As a result, the revised
15 exhibits show that Schedule 163 is above parity rather than below parity, as
16 originally indicated.¹

17 **Q. Please explain how the parity results in the revised cost of service analysis
18 compare to the original proposal.**

19 A. With the correction to the allocation error from the original proposal, the parity
20 ratios changed as follows:

- 21
- Schedule 101 (Residential) – parity ratio of 0.82 (original) vs. 0.80 (revised).

¹ Exhibit CNGC/501, Archer/2; Exhibit CNGC/601, Archer/2

- 1 • Schedule 104 (Commercial Service) – parity ratio of 0.98 (original) vs. 0.93
2 (revised).
- 3 • Schedule 105 (Industrial Service) – parity ratio of 0.72 (original) vs. 0.69
4 (revised).
- 5 • Schedule 111 (Large Volume Service) – parity ratio of 0.98 (original) vs. 0.93
6 (revised).
- 7 • Schedule 163 (General Transportation) – parity ratio of 0.85 (original) vs. 1.38
8 (revised).
- 9 • Schedule 170 (Interruptible) – parity ratio of 1.62 (original) vs. 1.56 (revised).

10 **Q. How did Cascade propose to address revenue allocation and rate design in**
11 **its original proposal?**

12 A. Although based on incorrect cost of service results, Cascade’s original revenue
13 allocation and rate design proposals were intended to move rate classes toward
14 cost parity, while the rate design proposal was intended to optimally balance the
15 increase between the basic service charges and delivery charges. Cascade’s
16 proposal was to increase overall gas margin revenue by 12.2 percent, as follows:

- 17 • Schedule 101 (Residential), gets an average increase of 16.0 percent.
- 18 • Schedule 104 (Commercial Service) gets an increase of 2.4 percent.
- 19 • Schedule 105 (Industrial Service) gets an increase of 40.2 percent.
- 20 • Schedule 111 (Large Volume Service) gets an increase of 1.8 percent.
- 21 • Schedule 163 (General Transportation) gets an increase of 17.1 percent.
- 22 • Schedule 170 (Interruptible) gets no increase.

1 **Q. As a result of the revised cost of service analysis, is Cascade proposing a**
2 **change to the revenue allocation or rate design as originally proposed?**

3 A. No. While the foundation for Cascade's original revenue allocation and rate design
4 proposal included an error, Cascade is nonetheless proposing to continue with its
5 original revenue allocation and rate design proposals. As corrected, the
6 Company's revenue allocation proposal has moved the resulting parity ratios as
7 follows:

- 8 • Schedule 101 (Residential) – parity ratio of 0.80 (revised) to 0.92.
- 9 • Schedule 104 (Commercial Service) – parity ratio of 0.93 (revised) to 0.95.
- 10 • Schedule 105 (Industrial Service) – parity ratio of 0.69 (revised) to 0.97.
- 11 • Schedule 111 (Large Volume Service) – parity ratio 0.93 (revised) to 0.95.
- 12 • Schedule 163 (General Transportation) – parity ratio of 1.38 (revised) to 1.62.
- 13 • Schedule 170 (Interruptible) – parity ratio of 1.56 (revised) to 1.56.

14 As can be seen from above, Schedule 101 (Residential) customers and
15 Schedule 105 (Industrial Service) are taking a large step toward parity, while
16 Schedule 104 (Commercial Service) and Schedule 111 (Large Volume Service)
17 customers are taking a smaller step toward parity. The Schedule 170 (Interruptible)
18 customers remain over parity and do not move further from parity, but progress
19 was made closer to parity from Cascade's original cost of service results. The
20 Schedule 163 (General Transportation) customers are moving away from parity,
21 but this disparity is similar in magnitude with other interruptible customer classes.

22 **Q. Can you explain further why Cascade is not proposing a change?**

1 A. Considering the revised cost of service, in order to move toward cost parity,
2 Cascade would need to reduce the impact to Schedule 163 and increase the
3 impacts felt by all other customer classes, especially the residential and small
4 commercial customers. Given the current economic environment, where
5 residential and small commercial classes generally appear to be more significantly
6 impacted by COVID-19 events, as reflected in Cascade's arrearage data and
7 regional unemployment data, it does not seem appropriate to further burden these
8 customer classes, at least not at this time, for the sake of moving toward parity.

9 **Q. What exhibits were impacted due to the allocation error?**

10 A. The following exhibits have a flow-through impact due to the capacity cost
11 allocation error:

12 Exhibit No. CNGC/501 Summary of LRIC Study

13 Exhibit No. CNGC/503 Incremental Plant Carrying Costs

14 Exhibit No. CNGC/504 Incremental O&M Costs

15 **Q. Have you provided revised exhibits to correct the allocation error?**

16 A. Yes. The revised exhibits included are Exhibit CNGC/601 (Summary of LRIC
17 Study), Exhibit CNGC/602 (Incremental Plant Carrying Costs), and Exhibit
18 CNGC/603 (Incremental O&M Costs).

19 **Q. Do the revised exhibits show where the allocation correction is made and
20 subsequent flow-through impacts?**

21 A. Yes. Cascade shows the allocation correction in green shading with red font, as
22 reflected in digital format (or dark gray shading in print format) which is on Exhibit
23 CNGC/602 (Incremental Plant Carrying Costs). All flow-through impacts are shown

1 in light orange shading with red font, as reflected in digital format (or light gray
2 shading in print format) throughout all the revised exhibits.

3 **Q. Does this conclude your supplemental testimony?**

4 A. Yes.

CNGC/601
Archer

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON
DOCKET NO. UG 390

Pamela J. Archer
Exhibit No. 601

Supplemental Summary of LRIC

Cascade Natural Gas Corp.
Oregon Jurisdiction
Long Run Incremental Cost (LRIC) Study
Sch 1, Summary

Line No.	Description	101		104		105		111		163		902-2		170		9xx	
		Total	Residential Service	Commercial Service	Industrial Service	Large Volume Service	General Transportation	Special Contract	Interruptible	Special Contracts	Special Contracts						
			core	core	core	core	non-core	non-core	core	non-core							
1	Billing Determinants																
2	Peak Day Forecast	100,164	59,525	35,631	3,210	1,799	-	-	-	-	-	-	-	-	-	-	-
3	Customer Count	78,148	67,704	10,228	151	20	37	1	4	3							
4	Throughput	31,653,582	4,791,605	3,093,191	319,679	301,533	3,765,729	16,600,080	191,760	2,590,005							
5	O&M Costs																
6	<i>Gas Supply Related</i>																
7	Gas Planning	\$ 106,046	\$ 48,629	\$ 29,572	\$ 2,748	\$ 1,792	\$ 3,758	\$ 16,566	\$ 395	\$ 2,585							
8	Gas Supply	\$ 51,310	\$ 25,105	\$ 16,206	\$ 1,675	\$ 1,580	\$ 941	\$ 4,150	\$ 1,005	\$ 648							
9	Gas Control	\$ 94,768	\$ 35,850	\$ 23,143	\$ 2,392	\$ 2,256	\$ 13,491	\$ 11,520	\$ 1,435	\$ 4,682							
10	<i>Customer Related</i>																
11	Meter Reading	\$ 252,256	\$ 212,744	\$ 32,138	\$ 474	\$ 2,123	\$ 3,927	\$ 106	\$ 425	\$ 318							
12	Customer Account Records And Collection	\$ 1,326,179	\$ 1,144,926	\$ 172,959	\$ 2,554	\$ 338	\$ 4,442	\$ 120	\$ 480	\$ 360							
13	Billing Postage & Printing	\$ 298,103	\$ 258,264	\$ 39,015	\$ 576	\$ 76	\$ 141	\$ 4	\$ 15	\$ 11							
14	Uncollectible	\$ 301,876	\$ 268,155	\$ 33,721	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							
15	Subtotal: O&M Costs	\$ 2,430,539	\$ 1,993,673	\$ 346,754	\$ 10,419	\$ 8,166	\$ 26,701	\$ 32,467	\$ 3,755	\$ 8,604							
16	Customer Investment Carrying Costs																
17	Meter	\$ 7,021,646	\$ 4,067,595	\$ 2,242,698	\$ 147,193	\$ 90,999	\$ 380,135	\$ 33,405	\$ 33,887	\$ 25,734							
18	Service	\$ 15,648,124	\$ 13,246,145	\$ 2,188,247	\$ 83,669	\$ 20,451	\$ 92,368	\$ 158	\$ 11,217	\$ 5,869							
19	Mains	\$ 12,968,302	\$ 8,185,284	\$ 1,567,967	\$ 1,004,059	\$ 285,156	\$ 1,054,633	\$ 652,195	\$ 144,619	\$ 74,390							
20	Subtotal: Customer Investment Carrying Costs	\$ 35,638,072	\$ 25,499,023	\$ 5,998,912	\$ 1,234,921	\$ 396,606	\$ 1,527,136	\$ 685,758	\$ 189,723	\$ 105,993							
21	System Core Main Carrying Costs																
22	Capacity	\$ 29,688,937	\$ 17,643,310	\$ 10,561,183	\$ 951,334	\$ 533,110	\$ -	\$ -	\$ -	\$ -							
23	Commodity	\$ 9,268,033	\$ 3,563,105	\$ 2,300,141	\$ 237,718	\$ 224,224	\$ 2,800,250	\$ -	\$ 142,595	\$ -							
24	Subtotal: System Core Main Carrying Costs	\$ 38,956,970	\$ 21,206,415	\$ 12,861,324	\$ 1,189,052	\$ 757,334	\$ 2,800,250	\$ -	\$ 142,595	\$ -							
25	LRIC - Distribution	\$ 77,025,580	\$ 48,699,112	\$ 19,206,990	\$ 2,434,392	\$ 1,162,105	\$ 4,354,087	\$ 718,225	\$ 336,073	\$ 114,597							
26	Functional Cost Assignment By LRIC																
27	Scheduling & Planning	\$ 252,125	\$ 109,584	\$ 68,922	\$ 6,815	\$ 5,628	\$ 18,191	\$ 32,237	\$ 2,835	\$ 7,914							
28	Meter Reading, Billing, Etc.	\$ 2,178,414	\$ 1,884,089	\$ 277,833	\$ 3,604	\$ 2,537	\$ 8,511	\$ 230	\$ 920	\$ 690							
29	Meters & Services	\$ 22,669,770	\$ 17,313,739	\$ 4,430,945	\$ 230,862	\$ 111,450	\$ 472,503	\$ 33,563	\$ 45,104	\$ 31,603							
30	Mains Extensions	\$ 12,968,302	\$ 8,185,284	\$ 1,567,967	\$ 1,004,059	\$ 285,156	\$ 1,054,633	\$ 652,195	\$ 144,619	\$ 74,390							
31	System Core Mains	\$ 38,956,970	\$ 21,206,415	\$ 12,861,324	\$ 1,189,052	\$ 757,334	\$ 2,800,250	\$ -	\$ 142,595	\$ -							
32	Total	\$ 77,025,580	\$ 48,699,112	\$ 19,206,990	\$ 2,434,392	\$ 1,162,105	\$ 4,354,087	\$ 718,225	\$ 336,073	\$ 114,597							

Cascade Natural Gas Corp.
Oregon Jurisdiction
Long Run Incremental Cost (LRIC) Study
Sch 1, Summary

Line No.	Description	Total	101	104	105	111	163	902-2	170	9xx
			Residential Service core	Commercial Service core	Industrial Service core	Large Volume Service core	General Transportation non-core	Special Contract non-core	Interruptible core	Special Contracts non-core
33	Non-Gas Revenue At Current Rates	\$ 36,963,252	\$ 21,789,745	\$ 9,076,921	\$ 776,259	\$ 507,266	\$ 2,812,224	\$ 1,363,759	\$ 251,722	\$ 385,356
34	Non-Gas Revenue Requirement									
35	Scheduling And Planning	\$ 478,879	\$ 208,140	\$ 130,908	\$ 12,944	\$ 10,690	\$ 34,551	\$ 61,229	\$ 5,384	\$ 15,032
36	Meter Reading & Billing	\$ 3,950,564	\$ 3,416,805	\$ 503,851	\$ 6,536	\$ 4,601	\$ 15,434	\$ 417	\$ 1,669	\$ 1,251
37	Meters & Services	\$ 14,144,854	\$ 10,802,946	\$ 2,764,698	\$ 144,047	\$ 69,539	\$ 294,819	\$ 20,942	\$ 28,143	\$ 19,719
38	Mains	\$ 22,930,285	\$ 12,908,668	\$ 6,337,263	\$ 963,202	\$ 457,856	\$ 1,693,042	\$ 286,440	\$ 126,143	\$ 157,672
39	Total LRIC Based Non-Gas Rev Req	\$ 41,504,582	\$ 27,336,559	\$ 9,736,719	\$ 1,126,729	\$ 542,687	\$ 2,037,847	\$ 369,029	\$ 161,338	\$ 193,674
40	Revenue To Cost Ratio	0.89	0.80	0.93	0.69	0.93	1.38	3.70	1.56	1.99
41	Incremental Non-Gas Revenue Requirement	\$ 4,507,842								
42	Step 1									
43	Increase Relative To System Average			0.20	3.30	0.15	1.40	-	-	-
44	Percent Increase	12.20%		2.44%	40.25%	1.83%	17.07%	0.00%	0.00%	0.00%
45	Increase Step 1	\$ 1,023,229		\$ 221,395	\$ 312,406	\$ 9,280	\$ 480,149	\$ -	\$ -	\$ -
46	Step 2									
47	Remainder Allocated On Current Revenue	\$ 21,789,745	\$ 21,789,745	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
48	Increase Step 2	\$ 3,484,613	\$ 3,484,613	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
49	Total Increase	\$ 41,504,581								
50	Total Non-Gas Revenue Increase	\$ 4,507,842	\$ 3,484,613	\$ 221,395	\$ 312,406	\$ 9,280	\$ 480,149	\$ -	\$ -	\$ -
51	Non-Gas Revenue After Revenue Increase	\$ 41,471,094	\$ 25,274,358	\$ 9,298,316	\$ 1,088,664	\$ 516,546	\$ 3,292,373	\$ 1,363,759	\$ 251,722	\$ 385,356
52	Percent Increase	12.2%	16.0%	2.4%	40.2%	1.8%	17.1%	0.0%	0.0%	0.0%
53	Revenue To Cost Ratio	1.00	0.92	0.95	0.97	0.95	1.62	3.70	1.56	1.99
54	Final Increase Relative To System Average		1.31	0.20	3.30	0.15	1.40	-	-	-
55	LRIC Supported Customer Cost Per Month									
56	Cust O&M Plus Meter & Service Carrying Charge	\$ 23.63	\$ 38.37	\$ 129.40	\$ 474.95	\$ 1,083.36	\$ 2,816.11	\$ 958.84	\$ 897.03	
57	Cust O&M	\$ 2.32	\$ 2.26	\$ 1.99	\$ 10.57	\$ 19.17	\$ 19.17	\$ 19.17	\$ 19.17	
58	Proposed Cust Charge	\$ 6.00	\$ 12.00	\$ 35.00	\$ 144.00	\$ 719.00	\$ 719.00	\$ 300.00	\$ 625.00	
59	Proposed Percent Increase	25.39%	31.28%	27.05%	30.32%	66.37%	25.53%	31.29%	69.67%	
60	Parity Ratios									
61	Before	0.89	0.80	0.93	0.69	0.93	1.38	3.70	1.56	1.99
62	After	1.00	0.92	0.95	0.97	0.95	1.62	3.70	1.56	1.99
63	Difference	0.11	0.13	0.02	0.28	0.02	0.24	-	-	-

CNGC/602
Archer

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON
DOCKET NO. UG 390

Pamela J. Archer
Exhibit No. 602

Supplemental Plant Carrying Costs

Cascade Natural Gas Corp.
Oregon Jurisdiction
Long Run Incremental Cost (LRIC) Study
Sch 3, Plant Carrying Costs

Line No.	Description	Unit	Total	101	104	105	111	163	902-2	170	9xx	Source	
				Residential Service	Commercial Service	Industrial Service	Large Volume Service	General Transportation	Special Contract	Interruptible	Special Contracts		
				core	core	core	core	non-core	non-core	core	non-core		
1	Billing Determinants												
2	Peak Day Forecast	Dth-Day	100,164	59,525	35,631	3,210	1,799					IDM-WP1	
3	Customer Count	#	78,148	67,704	10,228	151	20	37	1	4	3	IDM-WP1	
4	Throughput	Dth	31,653,582	4,791,605	3,093,191	319,679	301,533	3,765,729	16,600,080	191,760	2,590,005	IDM-WP1	
5													
6	Service Installation												
7	Typical Size	in.		0.5	1	2							
8	Material			Plastic	Plastic	Plastic							
9	Average Cost	\$		1,223	1,338	3,464						PIA-WP1	
10	Total Investment	\$	97,824,038	82,808,097	13,679,800	523,055	127,848	577,440	988	70,123	36,687	PIA-WP5	
11	Economic Carryin Charge Rate	%		16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%		
12	Annual Carrying Charge Per Customer	\$		195.65	213.95	554.10							
13	Class Annual Carrying Charge	\$	15,648,124	13,246,145	2,188,247	83,669	20,451	92,368	158	11,217	5,869		
14													
15	Meters & Regulators												
16	Average Cost	\$		373	1,361	6,050						PIA-WP2	
17	Total Investment	\$	43,576,766	25,243,741	13,918,320	913,488	564,747	2,359,139	207,315	210,307	159,709	PIA-WP5	
18	Economic Carryin Charge Rate	%		16.11%	16.11%	16.11%	16.11%	16.11%	16.11%	16.11%	16.11%		
19	Annual Carrying Charge Per Customer	\$		60.08	219.28	974.79							
20	Class Annual Carrying Charge	\$	7,021,646	4,067,595	2,242,698	147,193	90,999	380,135	33,405	33,887	25,734		
21													
22	Mains Investment												
23	Customer Mains Investment												
24	Typical Size	in.		2	2	2							
25	Material			Plastic	Plastic	Steel							
26	Avg. Mains Extension Per Cust	ft		86.27	109.39	899.14						PIA-WP 3C & 3D	
27	Average Cost Per Ft	\$/ft		9.22	9.22	48.66						PIA-WP 3B	
28	Customer Mains Investment Per Customer	\$		795	1,009	43,751							
29	Customer Mains Investment By Class	\$	85,328,104	53,857,072	10,316,819	6,606,451	1,876,251	6,939,213	4,291,277	951,555	489,466	PIA-WP5	
30													
31	Long-Run System Replacement Investment												
32	Mains System Replacement Cost	\$	341,654,988									PIA-WP 3A	
33	Less: Customer Mains Investment	\$	(85,328,104)										
34	Long-Run System Replacement Investment	\$	256,326,885										
35													
36	Capacity	%	76%										
37	Investment Per Peak Day Capacity	\$/Dth-Day	1,950										
38	Investment By Class	\$	195,345,603	116,088,462	69,489,880	6,259,534	3,507,726						
39	Investment Per Customer	\$		1,715	6,794	41,454	175,386						
40													
41	Commodity	%	24%										
42	System Replacement Investment Per Dth	\$/Dth	4.89										
43	Investment By Class	\$	60,981,282	23,444,320	15,134,338	1,564,122	1,475,338	18,424,925		938,240			
44	Investment Per Customer	\$		346	1,480	10,358	73,767	497,971		234,560			
45													
46	Total Mains Investment By Class	\$	341,654,988	193,389,855	94,941,037	14,430,107	6,859,315	25,364,137	4,291,277	1,889,795	489,466		
47	Economic Carryin Charge Rate	%		15.20%	15.20%	15.20%	15.20%	15.20%	15.20%	15.20%	15.20%		
48	Class Annual Carrying Charge	\$	51,925,271	29,391,699	14,429,291	2,193,111	1,042,490	3,854,882	652,195	287,214	74,390		
49													
50	Total Carrying Costs	\$	74,595,042	46,705,439	18,860,236	2,423,973	1,153,940	4,327,385	685,758	332,318	105,993		

CNGC/603
Archer

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON
DOCKET NO. UG 390

Pamela J. Archer
Exhibit No. 603

Supplemental Incremental O&M Costs

Cascade Natural Gas Corp.
Oregon Jurisdiction
Long Run Incremental Cost (LRIC) Study
Sch 4, O&M Costs

Line No.	Description	Total	101	104	105	111	163	902-2	170	9xx	Source
			Residential Service	Commercial Service	Industrial Service	Large Volume Service	General Transportation	Special Contract	Interruptible	Special Contracts	
			core	core	core	core	non-core	non-core	core	non-core	
1	Billing Determinants										
2	Peak Day Forecast	100,164	59,525	35,631	3,210	1,799	-	-	-	-	
3	Customer Count	78,148	67,704	10,228	151	20	37	1	4	3	
4	Throughput	31,653,582	4,791,605	3,093,191	319,679	301,533	3,765,729	16,600,080	191,760	2,590,005	
5	Sales	8,697,767	4,791,605	3,093,191	319,679	301,533			191,760		
6											
7	Peak & Average	100%	37.3%	22.7%	2.1%	1.4%	5.9%	26.2%	0.3%	4.1%	
8											
9	Customer Count (Small Customers)	78,083	67,704	10,228	151						
10	Customer Count (Large Customers)	65				20	37	1	4	3	
11											
12	Volumes (Core)		4,791,605	3,093,191	319,679	301,533			191,760		
13	Volumes (Non-Core)						3,765,729	16,600,080		2,590,005	
14											
15	Gas Planning										
16	Core	\$ 83,137	\$ 48,629	\$ 29,572	\$ 2,748	\$ 1,792			\$ 395		PJA-4A
17	Non-Core	\$ 22,909					\$ 3,758	\$ 16,566		\$ 2,585	PJA-4A
18	Total Core + Non-Core	\$ 106,046	\$ 48,629	\$ 29,572	\$ 2,748	\$ 1,792	\$ 3,758	\$ 16,566	\$ 395	\$ 2,585	
19	Cost Per Customer		\$ 0.72	\$ 2.89	\$ 18.20	\$ 89.62	\$ 101.57	\$ 16,566.50	\$ 98.77	\$ 861.59	
20											
21	Gas Supply										
22	Core	\$ 45,571	\$ 25,105	\$ 16,206	\$ 1,675	\$ 1,580			\$ 1,005		PJA-4A
23	Non-Core	\$ 5,739					\$ 941	\$ 4,150		\$ 648	PJA-4A
24	Total Core + Non-Core	\$ 51,310	\$ 25,105	\$ 16,206	\$ 1,675	\$ 1,580	\$ 941	\$ 4,150	\$ 1,005	\$ 648	
25	Cost Per Cust		\$ 0.37	\$ 1.58	\$ 11.09	\$ 78.99	\$ 25.45	\$ 4,150.21	\$ 251.18	\$ 215.84	
26											
27	Gas Control										
28	Core	\$ 65,075	\$ 35,850	\$ 23,143	\$ 2,392	\$ 2,256			\$ 1,435		PJA-4A
29	Non-Core	\$ 29,693					\$ 13,491	\$ 11,520		\$ 4,682	PJA-4A
30	Total Core + Non-Core	\$ 94,768	\$ 35,850	\$ 23,143	\$ 2,392	\$ 2,256	\$ 13,491	\$ 11,520	\$ 1,435	\$ 4,682	
31	Cost Per Cust		\$ 0.53	\$ 2.26	\$ 15.84	\$ 112.80	\$ 364.63	\$ 11,519.90	\$ 358.68	\$ 1,560.63	
32											
33	Total Gas Supply O&M	\$ 252,125	\$ 109,584	\$ 68,922	\$ 6,815	\$ 5,628	\$ 18,191	\$ 32,237	\$ 2,835	\$ 7,914	

Cascade Natural Gas Corp.
Oregon Jurisdiction
Long Run Incremental Cost (LRIC) Study
Sch 4, O&M Costs

Line No.	Description	Total	101	104	105	111	163	902-2	170	9xx	Source	
			Residential Service	Commercial Service	Industrial Service	Large Volume Service	General Transportation	Special Contract	Interruptible	Special Contracts		
			core	core	core	core	non-core	non-core	core	non-core		
34												
35	Meter Reading											
36	Meter Reading Expense (Res, Small Comm.)	\$ 245,357	\$ 212,744	\$ 32,138	\$ 474	\$ -	\$ -	\$ -	\$ -	\$ -		PJA-4B
37	Meter Reading Expense (Industrial)	\$ 6,899	\$ -	\$ -	\$ -	\$ 2,123	\$ 3,927	\$ 106	\$ 425	\$ 318		PJA-4B
38	Meter Reading Expense	\$ 252,256	\$ 212,744	\$ 32,138	\$ 474	\$ 2,123	\$ 3,927	\$ 106	\$ 425	\$ 318		
39	Cost Per Customer		\$ 3.14	\$ 3.14	\$ 3.14	\$ 106.14	\$ 106.14	\$ 106.14	\$ 106.14	\$ 106.14		
40												
41	Customer Account Records And Collection											
42	Expense	\$ 1,320,776	\$ 1,144,926	\$ 172,959	\$ 2,554	\$ 338						PJA-4C
43	Expense - Manual Billing	\$ 5,403					\$ 4,442	\$ 120	\$ 480	\$ 360		PJA-4C
44	Cost Per Customer		\$ 16.91	\$ 16.91	\$ 16.91	\$ 16.91	\$ 120.06	\$ 120.06	\$ 120.06	\$ 120.06		
45												
46	Billing Postage & Printing											
47	Expense	\$ 298,103	\$ 258,264	\$ 39,015	\$ 576	\$ 76	\$ 141	\$ 4	\$ 15	\$ 11		PJA-4D
48	Cost Per Customer		\$ 3.81	\$ 3.81	\$ 3.81	\$ 3.81	\$ 3.81	\$ 3.81	\$ 3.81	\$ 3.81		
49												
50	Uncollectible											
51	Commercial	\$ 33,721		\$ 33,721								PJA-4E
52	Industrial	\$ -		\$ -								PJA-4E
53	Residential	\$ 268,155	\$ 268,155									PJA-4E
54	Total Or	\$ 301,876	\$ 268,155	\$ 33,721	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
55	Cost Per Customer		\$ 3.96	\$ 3.30	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
56												
57	Total Customer O&M	\$ 2,178,414	\$ 1,884,089	\$ 277,833	\$ 3,604	\$ 2,537	\$ 8,511	\$ 230	\$ 920	\$ 690		
58												
59												
60	Gas Control O&M Allocation To Non-Core						45.4%	38.8%		15.8%		PJA-4F