Exh. BLR-1T
Docket UG-21____
Witness: Brian L. Robertson

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. CASCADE NATURAL GAS CORPORATION, Respondent.	DOCKET UG-21____

CASCADE NATURAL GAS CORPORATION

DIRECT TESTIMONY OF BRIAN L. ROBERTSON

September 30, 2021

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LIST OF EXHIBITS

I. INTRODUCTION

Q. Please state your name and business address for the record.

A. My name is Brian L. Robertson. My business address is 8113 W Grandridge Blvd., Kennewick, WA 99336.

Q. By whom are you employed and what are your title and job duties?

A. I am employed by Cascade Natural Gas Corporation ("Cascade" or "Company") as Supervisor of Resource Planning. My job duties include supervising two analysts as well as performing long-term forecasting, market research, upstream modeling, and other duties regarding the Integrated Resource Plan.

Q. Please describe your educational background and professional experience.

A. I graduated from Central Washington University with a degree in Actuarial Science. After graduating, I joined Cascade in February 2014 as a Regulatory Analyst. I joined the Gas Supply department in March 2015 as a Resource Planning Analyst II. In July 2016, I was promoted to Senior Resource Planning Analyst. In June 2019, I was promoted to Supervisor of Resource Planning.

Q. Have you previously submitted written testimony to or testified before the Washington Utilities and Transportation Commission ("Commission") or another regulatory commission?

A. Yes. I previously testified before this Commission in Cascade's most recent Washington rate cases: Dockets UG-152286, UG-170929, UG-190210, and UG-200568. I have also testified before the Public Utility Commission of Oregon in Cascade's Oregon rate cases: Dockets UG 347 and UG 305.

II. SCOPE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. My testimony presents the results of Cascade's weather normalization study that I performed for this case. Based on this analysis, I show the adjustments necessary to establish the normalized level of therm sales that would have occurred during this proceeding's test year (calendar year 2020) if Cascade had experienced normal weather during this period. The adjustments that I recommend here only apply to the Company's Residential and Commercial Schedules 503 and 504, respectively.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes, I sponsor the following exhibits:

Exh. BLR-2 Weather Normalization Results

III. WEATHER NORMALIZATION

Q. Generally speaking, why does Cascade perform weather normalization?

A. Weather normalization is performed to adjust the Company's test year sales volumes to represent what the test year sales volumes would have been had the weather during the test year been normal. This stabilizes delivery service gas revenues and reduces the impact of extreme weather on gas bills. The Company's billing determinants used to set rates in this case are based on weather-normalized volumes from the test year. Without adjusting the test year volumes to account for weather, the test year volumes used to calculate revenues may be distorted, potentially resulting in the over- or under-collection of revenues. Please see Company witness Isaac Myhrum's Direct Testimony, Exh. IDM-

1T, for a discussion of the Company's use of weather-normalized volumes for the test year in this case.

Q. As background, please explain the recent history leading to adoption of the Weather Normalization methodology performed by Cascade for this case.

A. In Docket UG-152286, and pursuant to Order 04 in that proceeding, Cascade and Commission Staff worked together to formulate the Company's Weather Normalization methodology in use today.[1] This same methodology was subsequently approved by the Commission and used to set rates in Dockets UG-170929 and UG-190210.[2]

Q. Please briefly describe the weather normalization model.

A. In the agreed-upon methodology, Cascade uses a linear regression model to examine ten years of National Oceanic and Atmospheric Administration ("NOAA") weather data and ten years of historical therm usage per customer per month for residential and commercial customers. Cascade then applies monthly heating degree days[3] ("HDDs") for Cascade's four weather locations: Bellingham, Bremerton, Walla Walla, and Yakima.[4] The model produces an intercept that indicates the "base load" therms per customer. The model also provides a best fit coefficient of use per customer for each month and weather location for both the residential and commercial customer classes. The best fit coefficient

[1] *WUTC v. Cascade Natural Gas Corporation*, Docket UG-152286, Order 04 at ¶¶ 13 and 32 (July 7, 2016); *See also*, Exh. JT-1T at 24:14-25:5.

[2] *WUTC v. Cascade Natural Gas Corporation*, Docket UG-170929, Order 06 at ¶ 81 (July 20, 2018); *WUTC v. Cascade Natural Gas Corporation*, Docket UG-190210, Exh BLR-1T at 2 (Mar. 29, 2019).

[3] A heating degree day is a measure of how cold the temperature was on a given day or during a given period relative to a base temperature. An HDD is calculated by taking the average of the high and low temperature for a given day and subtracting it from 60, the reference temperature. If that gives you a value below zero, that value is replaced with 0.

[4] *WUTC v. Cascade Natural Gas Corporation*, Docket UG-152286, Joint Settlement Agreement at ¶ 44 (May 13, 2016).

represents the heat sensitivity[5] use per customer per HDD. Finally, the model includes a trend term that captures changes in customer therm usage behavior not related to weather. Cascade modified the methodology slightly in its most recent rate case, Docket UG-200568,[6] by changing the final calculation of the weather normalized therms.

Q. Please describe the final calculation of the weather normalization methodology.

A. The final calculation utilizes the regression models with normal HDDs, actual customer counts, and trend variables to calculate the weather normalized usage. The final calculation method used in cases prior to Docket UG-200568 was to use only the model coefficients to adjust actual usage. The normal HDD is multiplied by the respective month's heat sensitive coefficient to calculate the usage that is affected by temperatures. The trend variable is multiplied by the trend coefficient.

In the case of this year's weather normalization, none of the trend coefficients were statistically significant, so there was no trend impact in the final usage calculation. The baseload, and the two prior values discussed, are added together then multiplied by the number of days in the month and by the actual customers in the month to calculate the final weather normalized usage.

Q. Is Cascade using the same methodology in this proceeding?

A. Yes, with one improvement. In this proceeding's methodology, the Company used updated NOAA 30-year actual historical temperature data based on the most recent thirty

[5] Heat Sensitivity means that when temperatures get colder, HDDs rise, and usage rises. For example, a coefficient of 0.05 therms per HDD would mean that for each increase in HDD, usage would increase by 0.05 therms.

[6] *WUTC v. Cascade Natural Gas Corporation,* Docket UG-200568, Exh. BLR-1T at 20 (July 19, 2020).

years, 1991-2020, for the Normal HDDs. Previously, Cascade used NOAA 30-year data from 1981-2010. The new normals are provided in Table 1, below.

Table 1

		Weather Location			
		Yakima	Walla Walla	Bremerton	Bellingham
Month	1	876	735	535	615
	2	654	569	459	512
	3	515	410	442	460
	4	309	236	339	311
	5	113	83	214	154
	6	26	14	100	50
	7	2	0	32	7
	8	3	1	23	7
	9	54	20	64	73
	10	323	222	236	279
	11	659	529	422	467
	12	910	756	558	626

Q. Why did Cascade use 1991-2020 data instead of the previous data, 1981-2010?

A. Cascade updates the normal HDDs with updated data at the beginning of each decade when new normals are available. Given that normals are based on a 30-year average of weather, using normals based on the most recent 30-years of weather history gives the most accurate representation of current expect temperatures and HDDs.

Q. What impact do the new normal HDDs have on the results?

A. In terms of HDDs, Cascade saw a decrease in normal HDDs (warmer normals) for all four Washington weather locations. Under the old normals, the weather normalized therms for the residential and commercial customers are 133,192,845 and 90,995,004 therms, respectively. Under the new normals, the weather normalized therms for the

residential and commercial customers are 127,428,857 and 87,678,186 therms, respectively.

Q. Please provide the results of Cascade's weather normalization study for the Test Year.

A. The proposed methodology described above produced the following conclusions and test year weather normalized therms: residential therm usage is calculated to be 127,428,857 therms and commercial therm usage is calculated to be 87,678,186 therms. These are provided on tab two of Exh. BLR-2. The 2020 actual therms for residential and commercial are 124,568,552 and 79,600,775, respectively. This is an adjustment upwards of 2,860,305 therms for residential and 8,077,411 therms for commercial.

Q. Does this conclude your testimony?

A. Yes.