



STATE OF WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION
1300 S. Evergreen Park Dr. S.W., P.O. Box 47250 • Olympia, Washington 98504-7250
(360) 664-1160 • www.utc.wa.gov

July 8, 2019

Nicole Kivisto
President and Chief Executive Officer
Cascade Natural Gas Corporation
400 North 4th Street
Bismark, ND 58501-4092

**Re: Cascade Natural Gas Corporation
2018 Natural Gas Integrated Resource Plan
Docket UG-171186**

Dear Ms. Kivisto:

The Washington Utilities and Transportation Commission (Commission) has reviewed the 2018 Natural Gas Integrated Resource Plan (IRP or Plan) filed by Cascade Natural Gas Corporation (Cascade or Company) on December 14, 2018, and finds that it meets the requirements of Washington Administrative Code (WAC) 480-90-238.

By acknowledging compliance with WAC 480-90-238, the Commission does not signal pre-approval for ratemaking purposes of any course of action identified in the IRP. The Commission will review the prudence of the Company's actions at the time of any future request to recover costs of resources in customer rates. The Commission will reach a prudence determination after giving due weight to the information, analyses, and strategies contained in the Company's IRP along with other relevant evidence.

Because an IRP cannot pinpoint precisely the future actions that will minimize a utility's costs and risks, we expect that the Company will regularly update the assumptions that underlie the analysis within the IRP and adjust its operational strategies accordingly.

The Company's Plan reflects substantial improvements since the Commission's 2014 and 2016 IRPs. The 2018 IRP shows marked improvement in the following areas:

1. Modeling of its load forecasting
2. Enhanced stochastic analysis
3. Distribution planning analysis

4. Expanded analysis of its avoided cost calculations
5. Conservation Potential Assessment (CPA)

The Commission also recognizes that Cascade included the social cost of carbon in its expected case.

Cascade should file its next IRP work plan on or before December 14, 2019, and its final 2020 IRP on or before December 14, 2020.

Sincerely,

MARK L. JOHNSON
Executive Director and Secretary

Attachment

Attachment

Cascade Natural Gas Corporation’s 2018 Integrated Resource Plan Docket UG–171186

1. Introduction

WAC 480-90-238 directs investor-owned utilities (IOUs) to describe the mix of natural gas supply resources and conservation that will meet current and future needs at the lowest reasonable cost to the utilities and their ratepayers. The planning requirements specified in WAC 480-90-238 are intended to help each natural gas utility develop a strategic approach to navigate marketplace opportunities and risks based on that utility’s unique attributes. The rule requires IOUs to conduct a comprehensive analysis of the costs and benefits, including risk mitigation benefits, of various approaches for meeting future resource needs using the best available information.

The Commission notes that the improved quality of the IRP is a direct result of the Company’s continued progress, begun in the previous IRP cycle, to enhance its staffing, modeling capabilities, and IRP work in response to concerns the Commission expressed in previous acknowledgment letters. We expect Cascade to continue the progress it has made and to further improve its modeling in its next IRP cycle.

2. Cascade’s 2018 IRP Findings

Cascade’s IRP inputs and findings generally fulfill the requests the Commission made in its 2016 IRP acknowledgment letter and are reasonable. Table 1 summarizes some major changes in IRP inputs between the 2016 and 2018 IRPs.¹

Table 1: Comparison of IRP Inputs, 2016 IRP and 2018 IRP

	2016 IRP (2017-2036 planning period)	2018 IRP (2019-2038 planning period)
Demand forecast	1.3% annual load growth; 1.3% annual peak day load growth	1.3% annual load growth; 1.2% annual peak day load growth
Gas price forecast (excluding carbon price)	\$3.37-6.42/MMBtu	\$3.18-4.36/MMBtu
Carbon price forecast	N/A	\$42-58/metric ton CO ₂ e
Avoided costs	\$0.52-0.67/therm	\$0.29-0.81/therm
Demand side management potential (cumulative, excluding low income)	28.7 million therms	46.7 million therms

¹ Docket UG-160453 (2016 Cascade IRP), letter dated July 24, 2017.

Demand forecast

The Company forecasts 1.4 percent annual load growth among residential customers; 0.9 percent annual commercial load growth, and 0.5 percent annual industrial load growth for a combined annual system load growth of 1.3 percent during the planning period (2019-2038). Peak day load growth is forecasted to be 1.2 percent per year.² Load growth in Cascade's Oregon service territory is expected to outpace growth in its Washington service territory.³ Cascade expects the Walla Walla and Tri-Cities areas to be major drivers of load growth in Washington state.⁴

In its 2016 acknowledgment letter, the Commission requested that Cascade use a regression model to correlate demographic and employment growth with the Company's load growth.⁵ In response, Cascade has augmented its customer growth forecast formula to include population, employment, and an improved statistical modeling approach to capture time series data. The Company also incorporated wind speed into its use per customer formula, and justified its use of weather data from a source other than the National Oceanic and Atmospheric Administration.⁶ Together, these changes provided better detail on the independent variables and method of analysis, and produce an adequate determination of the expected load growth in Cascade's service territory.

Gas price forecast

Cascade generates a natural gas price forecast by blending forecasts from a number of different sources based on the historical performance of those sources. For its Plan, Cascade altered its weighting of forecast sources to increase the weighting of sources with more recent data.⁷ The Commission supports the additional emphasis on more recent data in the formulation of Cascade's natural gas forecast.

Greenhouse gas price forecast

In the Commission's most recent Cascade IRP acknowledgment letter, we requested the Company model specific Clean Air Rule (CAR) impacts in its 2018 IRP expected case.⁸ In the intervening time, the Thurston County Superior Court invalidated the CAR as applied to natural gas companies.⁹ Instead of the CAR, Cascade modeled the social cost of carbon in its expected case. This modeling is similar to the Commission's IRP acknowledgment letters to Washington electric utilities that directed electric utilities to use the social cost of carbon in their base case

² Docket UG-171186 (2018 Cascade IRP), at 3-15 to 3-17.

³ Docket UG-171186 (2018 Cascade IRP), at 3-10.

⁴ Docket UG-171186 (2018 Cascade IRP), at 3-10.

⁵ Docket UG-160453 (2016 Cascade IRP), letter dated July 24, 2017.

⁶ Docket UG-171186 (2018 Cascade IRP), at 3-9 and 3-11; docket UG-160453 (2016 Cascade IRP), Cascade IRP Quarterly Update No. 4, at 1 and 2.

⁷ Docket UG-171186 (2018 Cascade IRP), at 4-9 to 4-12.

⁸ Docket UG-160453 (2016 Cascade IRP), letter dated July 24, 2017.

⁹ *Ass'n of Wash. Bus. v. Wash. Dep't of Ecology*, Consolidated Nos. 16-2-03923-34 & 16-2-03966-34 (Wash. Super. Ct. Apr. 27, 2018) (order granting petition for judicial review).

analyses. As a result, greenhouse gas (GHG) costs in the expected case started at around \$42 per metric ton of carbon dioxide in 2020, rising to \$58 per metric ton in 2038. Cascade also modeled three other possible carbon adders in its Plan.

With the passage of Engrossed Third Substitute House Bill (E3SHB) 1257, which required the use of the social cost of carbon in conservation planning, the Company is well positioned to set and implement conservation targets as required by law. We commend Cascade for its forethought that enables the Company to take a leading role in identifying more achievable conservation.

Avoided costs

Cascade expanded its analysis of avoided cost calculations by quantifying several additional cost streams, including a carbon adder, transport, supply and distribution resources, and a 10 percent conservation adder as requested in the Commission's 2016 IRP acknowledgment letter. With these additions, the Company's system-wide avoided costs starts at about \$0.29 per therm in 2019, the last year modeled without the social cost of carbon, and rises to slightly more than \$0.81 per therm in 2038.¹⁰ The Commission recognizes the Company's compliance with the previous IRP acknowledgment letter.

Demand side management

In its 2016 IRP acknowledgment letter, the Commission requested Cascade develop a request for proposal (RFP) for a new Conservation Potential Assessment (CPA) and to incorporate the new CPA into its 2018 IRP. The Company selected Applied Energy Group (AEG) and incorporated the CPA into its 2018 IRP. The CPA found a cumulative 46.7 million therms of technical achievable economic conservation that could be realized by 2038 under the utility cost test (UCT), and 34.5 million therms of technical achievable economic conservation under the total resource cost test (TRC).¹¹ Cascade used the UCT as its cost-effectiveness test in the 2018 IRP, as it produced a greater cumulative forecast potential throughout the planning period than the TRC.¹²

Enhancements Distribution System

As part of its 2016 IRP acknowledgment letter, the Commission requested the Company provide additional analysis on distribution system enhancements in future IRPs, concurrent with the Commission's work to promulgate new IRP transmission and distribution planning rules. Moving ahead of the rulemaking, Cascade's resource planning team worked with its engineering team and other departments to incorporate information, such as the timing of resource needs and analyses of least-cost reasonable alternatives, into its Plan. The Company also conducted a one-

¹⁰ Docket UG-171186 (2018 Cascade IRP), at 6-6.

¹¹ Docket UG-171186 (2018 Cascade IRP), at 7-24.

¹² Docket UG-171186 (2018 Cascade IRP), at 7-20.

time system-wide citygate study that aided the Company's understanding of issues that might arise at the citygate level.¹³

As a result its work, the Plan's analysis has identified potentially unserved demand in the Bremerton/Shelton load center during the planning period with an annual shortfall of up to 8,660 dekatherms per year starting in 2019. This shortfall is larger and shows up earlier than in Cascade's 2016 IRP. Unserved demand in other parts of Washington that were forecasted in its 2016 IRP are no longer forecasted in the 20-year horizon of its 2018 IRP. The Commission appreciates the leading work Cascade chose to perform on distribution planning and notes that the number of load centers with forecasted unserved demand in Washington has decreased as a result of the attention to distribution planning.

Preferred portfolio

As its preferred portfolio, Cascade selected two primary resources that would resolve the Plan's forecasted shortfalls:

- Bremerton-Shelton realignment: By procuring additional firm lateral rights along the Interstate 5 corridor in northwest Washington, the Company could fill this forecasted shortfall and also reallocate additional gas quantities to help address its forecasted Oregon shortfall.
- Incremental Gas Transmission Northwest (GTN) capacity: The Company would purchase up to 23,824 dekatherms per day of capacity by 2038 to resolve the forecasted shortfall in central Oregon.¹⁴

Cascades' stochastic modeling also selected incremental capacity on the Nova Gas Transmission Ltd. (NGTL) pipeline in Alberta, Canada, and additional storage capacity at the Spire facility in Wyoming as part of the Company's preferred portfolio. However, the selected quantities from the NGTL pipeline were very small, and the Company has ongoing concerns about the management and reliability of the Spire storage facility. Cascade will continue to assess these resources.¹⁵ Even without Spire or NGTL capacity, Cascade's preferred portfolio addresses all unserved demand throughout the planning period.

The Commission agrees with Cascade's 2019-2020 Action Plan with respect to the new and ongoing activities planned for its 2020 IRP.

3. 2020 IRP improvements

After reviewing Staff comments on how Cascade can improve its 2020 IRP, the Commission provides these observations:

¹³ Docket UG-160453 (2016 Cascade IRP), Cascade IRP Quarterly Update No. 4, at 2 and 4.

¹⁴ Docket UG-171186 (2018 Cascade IRP), at 8-27.

¹⁵ Docket UG-171186 (2018 Cascade IRP), at 8-27 and 8-29.

Validation of methods

The Commission agrees that Cascade has made dramatic improvements in its modeling since its 2014 IRP. This is primarily the result of the expansion and increased expertise of the resource planning team. Their description in Appendix L of the Company's statistics and modeling methods, and the advantages and disadvantages of the modeling improvements, is detailed and refreshingly frank. The Commission appreciates the quality and transparency of this work. We encourage the Company to continue to review these methods for the purpose of validating whether they are producing the most accurate results possible.

Greenhouse gas emissions modeling

With the passage of E3SHB 1257, requiring the use of the social cost of carbon in conservation planning, Cascade's future plans are required to incorporate the social cost of carbon. The Commission considers Cascade well positioned to achieve compliance with the law's planning requirements and full implementation of the achievable conservation potential.

Modeling of significant emergency events

On October 9, 2018, a natural gas pipeline ruptured in northern British Columbia, Canada, causing Washington's natural gas distribution utilities (including Cascade) to take significant actions to ensure that they could continue to serve their customers. While this incident was an extreme occurrence not likely to be repeated, it was a significant enough event to warrant concern among the Commission and Washington's natural gas utilities.

The British Columbia rupture event highlights the risks inherent in depending too heavily on any one resource to meet a Company's obligations to core customers. In its Plan, Cascade modeled several scenarios that limited supply from its various resources (including British Columbia) throughout the 20-year planning horizon. These scenarios could serve as the basis for modeling short-term emergency situations. The Commission encourages Cascade to expand upon the results of these scenarios, and work with Staff to identify the appropriate parameters around any additional emergency modeling that should be presented in the 2020 IRP.

Clarify distribution system planning priorities

In Section 9, Cascade's IRP highlights three particular distribution projects and provides some details of each project. Unfortunately, these three projects are not necessarily the most important distribution projects planned by the Company. In future IRPs, we recommend that Cascade highlight projects of particular importance that would reasonably be of interest to the Commission, Staff, and the public.

Continue to monitor renewable natural gas opportunities

Cascade for the first time evaluated potential renewable natural gas (RNG) supply options. As of the filing of the final IRP, the Company does not anticipate utilizing RNG during the planning period. The enactment of E3SHB 1257 encourages the development of RNG resources and

provides guidelines to companies that opt to serve their customers with RNG. The Commission encourages Cascade to model any technically feasible RNG projects in its future IRPs. This should include a discussion of the quality of RNG, its suitability for integration into the utility's natural gas system, and quantities of RNG that the system can safely accommodate. In addition to technical modeling, Cascade should ensure the economics of a RNG project are consistent with the provisions of Section 13 of E3SHB 1257, particularly regarding cost and value of environmental attributes. We encourage Cascade to continue engagement with the Commission as well as the Department of Commerce on implementation of E3SHB 1257.

Public participation

The Commission understands that the IRP process is technical and information heavy. Still, we encourage Cascade to consider all options for engaging additional stakeholders in the process.

4. Conclusion

The Commission acknowledges that Cascades' 2018 Natural Gas IRP complies with WAC 480-90-238.