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December 18, 2020

Oregon Public Utility Commission
Attn: Filing Center
P.O. Box 1088
Salem, OR 97308-1088

RE: LC 76 Cascade Natural Gas Corporation's Response Comments

Attention: Filing Center

Enclosed for filing is Cascade Natural Gas Corporation's (Cascade or Company) Response Comments regarding LC 76. Cascade thanks OPUC for the opportunity to file Response Comments.

If there are any questions regarding this request, please contact me at (509) 734-4589 or via email at mark.sellers-vaughn@cngc.com or Brian Robertson at (509) 734-4546 or via email at Brian.Robertson@cngc.com.

Sincerely,
CASCADe NATURAL GAS CORPORATION

Mark Sellers-Vaughn
Manager, Supply Resource Planning

LC 76 CNGC Enclosed

LC 76 Cascade Response Comments 12-18-2020.pdf

**BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON**

In the Matter of

CASCADE NATURAL GAS COMPANY
dba CASCADE NATURAL GAS, 2020

2020 Integrated Resource Plan (LC 76)

Cascade Natural Gas Response
Comments

CASCADE NATURAL GAS CORPORATION

December 18, 2020

Introduction

Cascade Natural Gas (Cascade, CNG or Company) files these Response Comments regarding the Cascade 2020 Integrated Resource Plan (IRP or Plan), filed in Docket No. LC 76 in response to Opening Comments submitted by the Oregon Public Utility Commission Staff (OPUC, Commission Staff, or Staff), Oregon Citizens' Utility Board (CUB), and Alliance of Western Energy Consumers (AWEC).

Opening Remarks

Cascade appreciates all of the feedback the IRP stakeholders have provided, not only in opening comments, but during the entire IRP process as well. The ultimate goal of the IRP process is to produce a plan with the best combination of expected costs and associated risks and uncertainties for the utility and its customers. This is best accomplished with inputs from all stakeholders.

Having said that, the Company is concerned about one aspect of this IRP cycle. Cascade had three different OPUC Staff Leads: one for technical advisory group (TAG) meetings 1 through 4; followed by a new Lead for TAGs 5 and 6, and both the draft and final IRP submissions; and, finally, a third Lead was assigned to Cascade's IRP shortly after the initial pre-hearing conference. Cascade typically is pleased to assist and help with such a catch-up process.

The Company recognizes that the third lead analyst was put in a difficult position. However, this situation presented unique challenges to Cascade and the Staff. While Staff input is vital to development of the IRP, neither Cascade nor other stakeholders were able to receive the full benefit of a consistent voice regarding Staff's expectations or perspectives on the development of this IRP. The Company points to the 73 data requests on topics discussed with previous Leads. Cascade takes great pride developing the IRP in a collaborative environment involving all stakeholders. The feedback from the TAG and other IRP related workshop participants help ensure the IRP will be in compliance with Commission expectations and responsive to stakeholder concerns. Naturally, as part of that process, the Company expects any IRP will have several data requests, usually to address or clarify information previously discussed through the technical advisory meetings or outside workshops, as opposed to recreating past examinations by stakeholders. In addition, the Company is committed to always addressing data requests as fully as possible.

Cascade is concerned that in some respects, this IRP cycle required Cascade to re-present major elements of the IRP more than twice. While the Company believes it has delivered a quality IRP, the timing of new Leads was problematic to stakeholders and Cascade. The Company wants to acknowledge the difficulties and efforts encountered by each succeeding Leads throughout this IRP cycle and wishes to make clear it recognizes the Company doesn't have a say in Commission staffing. However, the Company would be remiss to not express Cascade's concerns about the unusual

challenges of this IRP cycle.

Cascade's Response to Staff's Opening Comments

The following bullets are recommendations made by Commission Staff in Staff's opening comments along with the Company's response to each recommendation:

- *The Company should consider including a price variable in its next IRP;*

Response: The Company has explored including price in the past and is open to future exploration of the impact that a price variable could have on a forecast. Cascade looks forward to having those discussions with stakeholders.

- *The Company should provide its load forecasting workpapers that support its initial filing;*

Response: The Company provided this information in response to Data Request 24. The Company will work with Staff regarding the timing and specific type of supporting workpapers needing to be filed in future IRPs.

- *The Company should address why the new methodology is better overall. Specifically, the Company should show that its forecasts can capture the impact of extreme weather events given that it is only using four years of weather data. One method of comparison between potential models would be to compute measures of out-of-sample model accuracy for both Cascade's current forecasting model versus a forecasting model similar to the one used in its last IRP (which used additional years of data but which was less granular).*

Response: The new methodology is better overall due to many factors. The old methodology was based on fitting linear models using a program called SAS while the new methodology, called R, actually begins by applying a linear model, similar to the old process in SAS. Then the model is improved upon by taking the residuals and testing for structure, and if found, the model is enhanced using ARIMA terms.

- *The Company should address Staff's comments around the ADM.*

Response: Cascade appreciates Staff comments related to the ADM (age dampening methodology). The Company has taken Staff's feedback and modified the ADM based on Staff's concern. A new version of the ADM has been sent to Staff on December 18, 2020, and Cascade looks forward to discussing these improvements further with Staff.

- *The natural gas price forecast should be updated to address Staff's concerns.*

Response: Cascade appreciates Staff comments related to the price forecast and has updated the forecast to address the concerns raised in Staff's opening comments. A new version of the price forecast has been sent to Staff on December 18, 2020, and Cascade looks forward to discussing these improvements further with Staff and other stakeholders.

Further, the Company would like to respond to Staff's opening comments, where Staff states:

In the first month, the Company models NYMEX gas prices as randomly above or below their forecasted price. In the second month, the price is randomly above or below its first month price. Thus from month two onwards, the price can randomly move farther and farther away from its expected price, although on average the quantity of positive and negative price shocks should roughly balance out. The fact that prices build upon each other over time can create odd results. For example, the Company's stochastic analysis has a price above \$25 per dekatherm in some Monte Carlo draws. This is significantly above 99th percentile of a normal distribution since there is relatively low variance and a mean of about \$3 per dekatherm.

Response: Cascade is concerned that Staff's comment is an oversimplification and misrepresentation of the Company's stochastic pricing model. From page 9-12 of Cascade's IRP filing:

For each of its 10,000 draws, the month over month price change is determined by two elements: a drift term and a shock term. The drift term is the expected movement of NYMEX, derived from the Company's price forecast. The shock term is the main stochastic element, which takes the month over month return variance and multiplies it by a random normal variable to create a normal distribution of price movements for a given month, and a lognormal distribution of prices as illustrated above.

Staff's comments seem to only account for the shock term of Cascade's model, and while it is factual to say that the model can randomly move a draw farther and farther away from the expected price, the drift term does help tether the draws somewhat to expected results. Additionally, Staff's comments seem to mistakenly imply that prices follow a normal distribution; while it is well documented that while returns are normally distributed, prices follow a lognormal distribution¹. While prices in excess of \$20/dth would certainly be extreme, it is the Company's position that its stochastic pricing is appropriate for modeling the extreme pricing that could occur during a black swan event.

¹ See Gettings 2015 Whitepaper "NATURAL GAS UTILITY HEDGING PRACTICES AND REGULATORY OVERSIGHT, Page 17.", <https://www.utc.wa.gov/regulatedIndustries/utilities/Documents/UG-132019%20Natural%20Gas%20Hedging%20Practices%20White%20Paper%20July%202015.pdf>

- *The Company should submit an updated description of their voluntary renewable natural gas program for City of Bend. This should include the design elements, pricing structure, level of customer interest, and whether it anticipates that the program would be limited to customers in Bend.*

Response: Cascade Natural Gas maintains an interest in developing a voluntary renewable natural gas program to serve the City of Bend (City). In the draft of our IRP, Cascade indicated it was considering the development of a voluntary program to offset fossil gas usage. This is consistent with discussions Cascade has had with City Staff regarding how we could best support Bend's Climate Action planning efforts.

To date, Cascade has had several conversations with City Staff on how such a program might operate, and to assess general community interest. Preliminary thoughts have centered on possible offsets for City owned facilities, as well as a possible program for residential and commercial customers on a voluntary basis.

Because the State of Washington has recently mandated the development of voluntary carbon offset programs for natural gas customers, the Company will use this program as a model for the program we will develop in Oregon.

Cascade is currently in the process of selecting a vendor to determine available RNG supply and support the acquisition of RNG resources. This effort will support the ramp-up of our Washington program, while paving the way for Oregon offsets.

In the first half of 2021, Cascade will also be developing the structure for its Washington offset program. This will provide the model for the program that Cascade will make available to customers in Bend, and elsewhere in the State of Oregon. Ramp up will include an assessment of customer interest in order to size the program appropriately. When program participation size and the required volume of RNG is determined, Cascade will work with the OPUC, City of Bend and other Oregon entities to finalize offset program structure and operation. Cascade will provide a status update of the offset program in the IRP Update.

- *The Company should reconsider whether RNG projects are really outside of the planning horizon given potential cost effectiveness due to potential rises in carbon costs.*

Response: As discussed during TAG 4 of Cascade's IRP Process, Cascade did include carbon costs when modeling RNG projects. As provided in DR 67, Cascade shows the Company utilized California Energy Commission's real mid-price projections to model the example RNG project that was provided in the 2020 OR IRP. Cascade is aware of EO 20-04 that came out late in Cascade's IRP process and will incorporate the executive order to model future RNG projects.

- *The Company should provide cash flow scenarios for RNG projects that illustrate potential strategies in managing costs and revenues, including, but not limited to costs and benefits to Oregon ratepayers.*

Response: Cascade believes the RNG Cost Effective Evaluation Model accurately captures cash flow scenarios for RNG projects. The Company will continue to expand the cash flow scenario planning for RNG projects in future IRPs.

- *The Company should continue to develop its cost-effective evaluation model so that it can identify RNG projects that benefit Oregon ratepayers. Staff supports the Company offering a voluntary RNG program to its Oregon customers similar to the one it is developing for Washington State.*

Response: Cascade believes the RNG Cost Effective Evaluation Model can currently identify RNG projects that benefit Oregon ratepayers.

- *The Company should explore cash flow scenarios for Oregon ratepayer funded RNG projects, including the Company's potential to participate in California's LCFS market.*

Response: The Company will explore cash flow scenarios in the RNG Cost Effective Evaluation Model for Oregon ratepayer funded RNG projects, including the Company's potential to participate in California's LCFS market in future IRPs

- *The Company should include modeling the impacts of qualified RNG capital investments in its study on RNG project rate impacts and share those results in the IRP update and with DEQ to inform the implementation of their Cap-and-Reduce program.*

Response: AWEC made similar remarks in their initial comments. The Company appreciates Staff and AWEC for their thoughtful comments and feedback regarding RNG projects. Cascade includes the RNG capital investment in the Cost Effective Evaluation Model. The Company will continue to update the model to include rate impacts to share in the IRP update.

- *The Company should bolster details for DSP projects in the IRP for which acknowledgment is appropriate.*

Response: Cascade agrees with this comment and has already made strides to improve the details for distribution system projects.

- *The Company's IRP update should reflect any work or report completed by the Commission as part of its EO 20-04 efforts, with a specific focus on distribution system investments.*

Response: Cascade will provide an update to this comment in the IRP Update.

- *The Company should explain the use of the 25 percent vs. 75 percent weighting in assessing portfolio ranking.*

Response: The decision to value deterministic results at 75 percent weight and stochastic results at 25 percent weight are a qualitative evaluation based on a number of factors. Conceptually, the Company takes the position that it is logical to give more credence to results based on expected inputs (price forecast, load forecast) versus stochastic results that evaluate portfolios under extreme conditions. With regards to the specific weights, Cascade looked to follow the regional best practice of another LDC that first introduced the 75/25 split. This balance was then discussed amongst internal IRP members, where it was unanimously agreed that this mix was reasonable. Finally, the 75/25 weighting was introduced to external IRP members via the TAG process, where no concerns were raised. The Company is always interested in enhancing its various processes and would be happy to incorporate any additional feedback into future IRPs.

- *The Company should explain the methodology and reasoning behind the selection of the VaR thresholds.*

Response: Quantitatively, the objective of Value at Risk analysis is to establish the maximum possible PVRR of a given portfolio with a specified degree of confidence (typically 95 or 99 percent confidence.) In conjunction with these calculations, Cascade senior management must make a qualitative business decision as to what amount of variance from Cascade's expected PVRR is considered tolerable under the extreme conditions evaluated in the Company's scenario and sensitivity analyses. For the 2020 OR IRP, the decision was made to set this limit at 1.25 times the expected PVRR. This limit was presented to external stakeholders during the TAG process, where no concerns were raised. The Company is always interested in enhancing its various processes and would be happy to incorporate any additional feedback into future IRPs.

The following bullets are recommendations made by CUB in their opening comments along with the Company's response to each recommendation:

- *Use either the employment or the population variable in its customer forecast regression model.*

Response: Cascade tested several models during the customer forecast analysis. These models included Arima, Fourier, Population and Fourier, Employment and Fourier, and Population and Employment and Fourier. In all cases, the Population and Employment and Fourier models were rejected because the analysis indicated those models indicated a multicollinearity problem. Cascade appreciates CUB's comment, but the Company would like to

reiterate that population and employment were not utilized in the same model.

- *Conduct sensitivity analyses for highly efficient gas furnaces for demand forecast for areas projected to have high economic and population growth.*

Response: Cascade will engage with the City of Bend and the Energy Trust of Oregon in 2021 to determine how to best target energy efficiency efforts to help the community meet their carbon reduction goals.

- *Conduct sensitivity analyses for city-level climate policies possibilities in areas projected to have high economic and population growth.*

Response: Cascade will include city-level climate policies in Cascade's scenario modeling in future IRPs. Cascade looks forward to having robust conversations with TAG stakeholders during the IRP process to determine the best approach of this sensitivity analysis.

- *Plan for targeted energy efficiency in its Bend service area.*

Response: Cascade will engage with the City of Bend and the Energy Trust of Oregon in 2021 to determine how to best target energy efficiency efforts to help the community meet their carbon reduction goals.

- *Subsidize conversion of existing lower efficiency condensing furnaces to higher efficiency non-condensing ones.*

Response: As part of our 2021 coordination meetings with the Energy Trust of Oregon, Cascade will include a discussion of rebates to convert from lower efficiency condensing furnaces to higher-efficiency non-condensing furnaces.

- *Subsidize smart thermostat installation or use already installed smart thermostats to remotely control home gas usage, especially during peak hours.*

Response: As part of our 2021 coordination meetings with the Energy Trust of Oregon, Cascade will include a discussion of rebate options for smart thermostats, and their overall strategic use to manage gas usage during peak hours.

Additionally, CUB indicated they would like to have a better understanding of pressure data provided by the Company. Cascade has been very consistent that the lowest distribution pressure acceptable is 10 psig. Therefore, when modeling shows pressures under approximately 15-20 psig the area is identified as an area of the Company's system that may need reinforcement. Depending on the growth rate in the area, the concern around low pressure can vary. In a high growth area, planning will begin when modeling predicts pressures less than 20 psig, that way it allows time for permitting and construction.

Concluding Remarks

Cascade requests the following be considered as Staff and stakeholders prepare final comments on the Company's 2020 IRP.

- Recognize that Cascade concurs with multiple comments for improvements noted by Staff. These include the reconsideration of the use of NYMEX as described in Staff's initial comments, as well as providing additional scenarios on managing RNG costs and benefits.
- Cascade encourages Staff to consider recharacterizing several statements concerning Cascade's approach relating to RNG and distribution projects in IRPs. Specific examples are as follows.
 - At page 16, Staff states: "...for a hypothetical average RNG project is a close approximation to ~\$21/metric ton and an appropriate starting place, but to accurately determine cost effectiveness, the calculation should consider carbon intensity. In its response to Staff IR 66, the Company explains that it is evaluating potential RNG projects from all angles." And at page 17, Staff provides several RNG recommendations. As stated in its above comments, Cascade wishes to emphasize the Company is looking at RNG from all angles and appreciates the feedback received in stakeholder comments.
 - At page 17, Staff states: "Staff encourages Cascade to consider Northwest Natural's cost-effectiveness methodology that was developed as part of UM 2030." As discussed during TAG 4, Cascade utilized much of Northwest Natural's cost-effective methodology when developing the Company's own cost-effective tool.
 - At page 18, Staff states: "Projects that are complete, substantially complete, or settled in the rate case should not be acknowledged." To be clear, Cascade is not asking for those projects to be acknowledged. The Company understands the IRP is meant to be informative. As such, there is a history of such information being included in IRPs. As stated earlier, the Company is already working to expand details of distribution projects. The Company is committed to this continued improvement and looks forward to working with stakeholders to ensure this issue is properly addressed before the next IRP cycle.
 - Cascade has described its future expectations for RNG, the City of Bend potential efforts, and following the State of Oregon's ongoing examinations into carbon issues. Additionally, Cascade has stated it is monitoring and actively participating in DEQ's processes. Compliance plans will be

provided at the appropriate time.

- Note that changes in Staffing has created processing issues. The six TAG meetings, having gone into great detail on issues raised in the Staff's comments, were not able to benefit analyses later desired by Staff, as evidenced by 73 data requests submitted to Cascade. Additionally, this processing issue may result—as stated in Staff's Initial Comments—in issues brought up by Staff for the first time in its Final Comments (e.g., avoided costs and “extremely high prices”) despite having been discussed in TAG meetings.

Finally, Cascade has sought to, from start to finish, embody all characteristics of a “best practices” IRP process and result. The Company believes it has exceeded all industry norms and standards in this regard. The advisory meetings have been transparent and responsive to all issues raised, with documentation provided in advance and prompt follow-up to all questions. Cascade's Draft IRP and voluminous appendices have covered all planning issues. In the past four years Cascade has fully developed an IRP team of three full-time analysts, reporting to a management chain committed to the IRP process, and retained an IRP consultant.

The Company is fully aware that overall acknowledgement by the Commission does not constitute approval for ratemaking purposes. However, awareness of what the Commission and its Staff sees as beneficial planning for its body of customers is appropriate. The Company is dismayed that Staff has selectively mentioned relatively few positive highlights or notes the extraordinary effort required by Cascade in order to develop this IRP with the involvement and perspectives of three different Staff Lead Analysts. Cascade recognizes this IRP cycle presented several unexpected challenges for Staff and the IRP's internal and external stakeholders. Hopefully, the next IRP will reflect a more typical process.

This concludes Cascade's comments.

Dated at Kennewick, Washington, this 18th day of December 2020.



Mark Sellers-Vaughn
Manager, Supply Resource Planning