

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
SPECIAL PUBLIC MEETING DATE: April 27, 2021**

REGULAR X CONSENT _____ EFFECTIVE DATE _____ N/A _____

DATE: March 26, 2021

TO: Public Utility Commission

FROM: Nadine Hanhan

THROUGH: Bryan Conway, JP Batmale, and Kim Herb **SIGNED**

SUBJECT: CASCADE NATURAL GAS CORPORATION:
(Docket No. LC 76)
Acknowledgement of the 2020 Integrated Resource Plan.

STAFF RECOMMENDATION:

Acknowledge Cascade Natural Gas Corporation's 2020 IRP and, subject to certain revisions, acknowledge Cascade's 2020 Integrated Resource Action Plan. Commission Staff recommends certain action and additional requirements on pages 28-32 of this Staff Report.

SUMMARY OF STAFF RECOMMENDED ACTIONS:

Below Staff presents a summary recommended actions on each Action Item, along with additional recommendations to the Company.

Action Item No. 1 (2021-2022) – Resource Planning:

Cascade will:

- Attend other regional Local Distribution Companies' (LDC) IRP meetings;
- Work with Northwest Pipeline (NWP) on realigning Maximum Daily Delivery Obligation (MDDOs);
- Determine if the temporary Jackson Prairie contract should be made permanent;
- Develop modeling scenarios that represent Pipeline Operational Flow Orders (OFOs);
- Improve the alignment of resource/costs between the Purchased Gas Adjustment (PGA) and the IRP;
- Develop more scenarios that address changing Canadian Markets;

- Add Renewable Natural Gas (RNG) as a candidate portfolio; and
- Work with Staff and Stakeholders to develop a more effective presentation for the severity of negative outcomes. Cascade will report on the status of this action item when filing the 2021 OR IRP Update.

Recommendation: Acknowledge

Additional Recommendation: Provide an update on Action Item No. 1 in the 2020 IRP Update.

Action Item No. 2 (2021-2022) - Demand:

Cascade will look into making adjustments to a few methodologies on the demand forecast and scenarios. Those adjustments include:

- Adding wind in the stochastic weather analysis; and
- A new methodology for peak day.

Recommendation: Acknowledge

Additional Recommendations for the 2022 IRP:

- Include price as an explanatory variable in its demand forecast.
- Publish variables included in the model as part of an appendix.

Action Item No. 3 (2021-2022) – Environmental Policy:

Cascade will either begin or continue to participate/monitor the following items:

- Continue to support the City of Bend's Climate Action Plan;
- Participate in City of Bellingham Climate Action Plan discussions;
- Monitor service areas for potential GHG reduction goal development relating to energy delivery and supply;
- Monitor carbon pricing and policy developments nationally and statewide;
- Monitor federal and state GHG regulation development for energy industry; and
- Continuation of current emission reduction and monitoring endeavors.

Recommendation: Acknowledge

Action Item No. 4 (2021-2022) – Demand Side Management (DSM)/Energy Efficiency (EE):

The Company will execute the Demand Side Management action items as described on page 11-3 and 11-4.

Recommendation: Acknowledge

Additional Recommendation for the 2022 IRP:

- Provide an update to the Company's current and proposed future efforts to use DSM in avoiding infrastructure upgrades and hold a workshop to describe these efforts in the next IRP cycle.

Action Item No. 5 (2021-2022) – Renewable Natural Gas:

Cascade will continue to develop and update the cost-effective evaluation tool.

Recommendation: Acknowledge

Additional Recommendation for the 2020 IRP Update:

- Provide potential RNG program revenue from Washington voluntary RNG Service program, and, as applicable, any and all other revenue related to RNG activities.
- As applicable, provide RNG revenues that could be derived from participation in California's LCFS market and/or Oregon's Clean Fuels Program.
- Include an RNG case scenario that reflects DEQ's Climate Protection Program design elements, insofar as program details are available.

Additional Recommendation for the 2022 IRP:

- Include an explanation of how the Washington RNG program may interact with programs being developed for customers in Oregon and whether RNG programs developed in Oregon might be used to comply with laws in other states.

Action Item No. 6 – Distribution System Planning (2022-2024):

These projects are budgeted over the next five years:

- FP-306990 - PENDLETON 4" IP REINFORCEMENT
- FP-306991 - PENDLETON 4" HP REINFORCEMENT
- FP-306992 - PENDLETON KORVOLA ROAD 4"
- FP-316851 - South Hermiston to Feedville
- FP-316854 - BEND GATE REBUILD
- FP-316863 - Prineville Gate Rebuild
- FP-317586 - RF-REDM-6"S-4,750'-VETERANS WY
- FP-318466 - RF-Baker-GT-NW Baker Gate
- FP-318468 - RF-Baker-GT-NW Baker Regulation
- FP-318469 - RF-Baker-GT-NW Baker Gate Odorizer
- FP-318475 - RF-Baker-GT-NW Baker GT Line
- FP-318682 - RF-BEND-6"S-1100'-SHEVLIN PK
- FP-318733 - RF-BEND-6"S-2MI-SHEVLIN PK
- FP-318737 - RF-BEND-R-SHEVLIN PK RD 2"
- FP-318741 - RF-BEND-6"PE-1200'-PONDEROSA ST
- FP-318744 - RP-PRINEVILLE-GT-TRANSCANADA
- FP-318745 - RP-BEND-GT-TRANSCANADA
- FP-318770 - RF-REDM-R-VETERANS WAY-2" STD

Recommendation: Remove from Action Plan

Additional Recommendation for the 2020 IRP Update:

- Host at least one workshop to present distribution upgrade information to Staff and stakeholders, and additional workshops as necessary.

Following is a list of additional Staff Recommendations based on analysis in this Staff Report.

Additional Staff Recommendations for the 2022 IRP:

- Revisit the stochastic modeling and reduce the frequency of Enbridge rupture-type events in its Sumas gas price forecasts.
- In a 2022 IRP Technical Advisory Group (TAG) meeting, incorporate gas price forecasts and price shocks into the discussion and work with Staff and stakeholders to potentially update its methodology.
- Continue to work with Staff and stakeholders through UM 1893 on refining distribution costs avoided through energy efficiency for use in its 2022 IRP.

- Host a workshop with Staff prior to or at the beginning of the 2022 cycle to consider options for improved communication among the Company and stakeholders.

DISCUSSION:

Issue

Whether the Commission should acknowledge Cascade's 2020 Action Plan and IRP, acknowledge specific portions of the IRP with or without certain conditions, or decline to acknowledge the IRP.

Applicable Law or Rule

The Commission adopted least-cost planning as the preferred approach to utility resource planning in 1989.¹ In 2007, the Commission updated its existing least-cost planning principles and established a comprehensive set of "IRP Guidelines" to govern the IRP process. The IRP Guidelines, found in Order Nos. 07-002 (corrected by 07-047), 08-339, and 12-013, clarify the procedural steps and substantive analysis required of Oregon's regulated utilities in order for the Commission to consider acknowledgement of a utility's resource plan.²

The IRP Guidelines and Commission rules require a utility to file an IRP with a planning horizon of at least 20 years within two years of its previous IRP acknowledgment order, or as otherwise directed by the Commission.³ Further, the IRP must also include an "Action Plan" with resource activities that the utility intends to take over the next two to four years.⁴ The ultimate goal of the IRP is to select the "portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers."⁵ This is often referred to as the "least cost/least risk portfolio."

The Commission reviews the utility's plan for adherence to the procedural and substantive IRP Guidelines and generally acknowledges the overall plan if it is reasonable based on the information available at the time.⁶ However, the Commission

¹ Order No. 89-507.

² Order Nos. 07-002 and 07-047. Additional refinements to the process have been adopted: See Order No. 08-339 (IRP Guideline 8 was later refined to specify how utilities should treat carbon dioxide (CO₂) risk in their IRP analysis); Order No. 12-013 (guideline added directing utilities to evaluate their need and supply of flexible capacity in IRP filings).

³ Order No. 07-002 (Guidelines 1(c) and 3(a)) and OAR 860-027-0400.

⁴ Order No. 14-415 at 3.

⁵ Order No. 07-002 at 1-2.

⁶ Order No. 07-002 at 1.

also explains: “We may also decline to acknowledge specific action items if we question whether the utility’s proposed resource decision presents the least cost and risk option for its customers.”⁷ The Commission may also decline to acknowledge specific Action Items if they are complete or substantially complete by the time the Commission issues its acknowledgment order.⁸

Also applicable to review of Cascade’s 2020 IRP is whether it complies with all of the Commission requirements in its previously acknowledged IRP. Accordingly, Staff reviewed whether Cascade complied with the Commission’s order in its previous IRP, LC 69.

Analysis

Procedural History

Prior to the initial IRP filing, Cascade held five Technical Advisory Group (TAG) meetings leading up to the submission of the 2020 IRP. Those invited to the TAG meetings included interested customers, regional upstream pipelines, other LDCs in the Pacific Northwest, Commission Staff, and stakeholder representatives.⁹ The TAG meetings covered various aspects of the IRP development, including the resource stack, resource portfolio considerations, and risk analyses. Staff appreciated the involved stakeholder process and Cascade’s time and energy in fulfilling the public input component of the Company’s IRP process.

Since the initiation of the IRP filing, Staff submitted 60 information requests (IR). In addition to the TAG meetings, the Company agreed to host additional informal and collaborative phone and web meetings for further clarification of information on the record.

Cascade filed its 2020 IRP on July 31, 2020; the Company’s filing included the IRP and 11 appendices.¹⁰ On August 21, 2020, the Commission hosted a prehearing conference to determine the procedural schedule.

The Commission held a virtual Special Public Meeting on August 27, 2020, so that the Company could present its IRP.

On November 20, 2020, Staff, the Citizens’ Utility Board of Oregon (“CUB”) and the Alliance of Western Energy Consumers (“AWEC”) filed Opening Comments.

⁷ Order No. 07-002 at 1.

⁸ Order No. 14-252 at 7.

⁹ LC 76, 2020 IRP, page 1-11.

¹⁰ Appendices A-K.

Upon request from Staff to undesignate certain confidential information as confidential, Cascade filed an errata to Appendix I, the Distribution System Planning (DSP) Appendix.

Cascade filed Response Comments on December 18, 2020, followed by an Addendum to its Response Comments on December 22.

On January 20, 2021, Staff filed an Errata to its Opening Comments.

Staff filed Final Comments on January 21, 2021. Despite filing Opening Comments, both CUB and AWEC each filed a letter stating that they would not be filing Final Comments.

This Staff Report discusses the near-term Action Plan, formal comments by stakeholders and the Company, and other issues raised throughout this docket. This report first discusses the Action Items in the Action Plan, then follows with additional issues raised by parties.

Action Item Discussion

Below is a summary of Cascade’s Action Plan Items in the 2020 IRP.

Summary of Cascade’s 2020 Action Plan Items by Category	
Category	2020 Action Plan Item
Resource Planning	1. Cascade will: <ul style="list-style-type: none"> • Attend other regional Local Distribution Companies’ (LDC) IRP meetings; • Work with Northwest Pipeline (NWP) on realigning Maximum Daily Delivery Obligation (MDDOs); • Determine if the temporary Jackson Prairie contract should be made permanent; • Develop modeling scenarios that represent Pipeline Operational Flow Orders (OFOs); • Improve the alignment of resource/costs between the Purchased Gas Adjustment (PGA) and the IRP; • Develop more scenarios that address changing Canadian Markets; • Add Renewable Natural Gas (RNG) as a candidate portfolio; and • Work with Staff and Stakeholders to develop a more effective presentation for the severity of negative

	<p>outcomes. Cascade will report on the status of this action item when filing the 2021 OR IRP Update.</p>
Demand	<p>2. Cascade will look into making adjustments to a few methodologies on the demand forecast and scenarios. Those adjustments include:</p> <ul style="list-style-type: none"> • Adding wind in the stochastic weather analysis; and • A new methodology for peak day.
Environmental Policy	<p>3. Cascade will either begin or continue to participate/monitor the following items:</p> <ul style="list-style-type: none"> • Continue to support the City of Bend's Climate Action Plan; • Participate in City of Bellingham Climate Action Plan discussions; • Monitor service areas for potential GHG reduction goal development relating to energy delivery and supply; • Monitor carbon pricing and policy developments nationally and statewide; • Monitor federal and state GHG regulation development for energy industry; and • Continuation of current emission reduction and monitoring endeavors.
DSM (Energy Efficiency)	<p>4. The Company will execute the Demand Side Management action items as described on page 11-3 and 11-4.</p>
Renewable Natural Gas	<p>5. Cascade will continue to develop and update the cost-effective evaluation tool.</p>
Distribution System Planning	<p>6. These projects are budgeted over the next five years:</p> <ul style="list-style-type: none"> • FP-306990 - PENDLETON 4" IP REINFORCEMENT • FP-306991 - PENDLETON 4" HP REINFORCEMENT • FP-306992 - PENDLETON KORVOLA ROAD 4" • FP-316851 - South Hermiston to Feedville • FP-316854 - BEND GATE REBUILD • FP-316863 - Prineville Gate Rebuild • FP-317586 - RF-REDM-6"S-4,750'-VETERANS WY • FP-318466 - RF-Baker-GT-NW Baker Gate • FP-318468 - RF-Baker-GT-NW Baker Regulation • FP-318469 - RF-Baker-GT-NW Baker Gate Odorizer • FP-318475 - RF-Baker-GT-NW Baker GT Line • FP-318682 - RF-BEND-6"S-1100'-SHEVLIN PK • FP-318733 - RF-BEND-6"S-2MI-SHEVLIN PK • FP-318737 - RF-BEND-R-SHEVLIN PK RD 2"

	<ul style="list-style-type: none">• FP-318741 - RF-BEND-6"PE-1200'-PONDEROSA ST• FP-318744 - RP-PRINEVILLE-GT-TRANSCANADA• FP-318745 - RP-BEND-GT-TRANSCANADA• FP-318770 - RF-REDM-R-VETERANS WAY-2" STD
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Resource Planning (Action Item No. 1)

Action Item No. 1 includes a variety of studies and data the Company indicated it would gather to include in the next IRP cycle. In Opening Comments, Staff reflected that this Action Item did not represent resource decisions, but rather studies or data initiatives for the 2022 cycle. Staff appreciated the inclusion of these initiatives, including the addition of an RNG candidate portfolio.

Staff's Analysis and Recommendation:

Staff continues to support these efforts and believes they will improve the quality of the IRP. However, the Company should provide its plan for each of these study initiatives in the 2020 IRP Update, and include descriptions of how it will incorporate the learned information into the 2022 IRP. This would allow Staff and stakeholders to have an opportunity to provide input prior to the 2022 cycle. Staff recommends including an update to all of these initiatives in the 2020 Update.

Staff Recommendation:

Acknowledge Resource Planning Action Item No. 1:

- **Attend other regional Local Distribution Companies' (LDC) IRP meetings;**
- **Work with Northwest Pipeline (NWP) on realigning Maximum Daily Delivery Obligation (MDDOs);**
- **Determine if the temporary Jackson Prairie contract should be made permanent;**
- **Develop modeling scenarios that represent Pipeline Operational Flow Orders (OFOs);**
- **Improve the alignment of resource/costs between the Purchased Gas Adjustment (PGA) and the IRP;**
- **Develop more scenarios that address changing Canadian Markets;**
- **Add Renewable Natural Gas (RNG) as a candidate portfolio; and**
- **Work with Staff and Stakeholders to develop a more effective presentation for the severity of negative outcomes. Cascade will report on the status of this action item when filing the 2021 OR IRP Update. (2021-2022)**

Recommendation for the 2020 IRP Update:

- **Provide an update on Action Item No. 1 in the 2020 IRP Update.**
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Demand/Load Forecast (Action Item No. 2)

Action Item No. 2 states that Cascade will look into making adjustments to methodologies demand forecast and scenarios, including adding wind in the stochastic weather analysis and incorporating a new methodology for peak day forecasting.

Cascade's Analysis

Regarding the *peak* forecast, the Company determined system-wide maximum peak heating degree days (HDDs) by selecting the single coldest day recorded in its system for the past 30 years. It discovered the coldest day through a process of collecting data from its seven weather stations and determined this day to be December 21, 1990.¹¹ In the 2020 IRP, the Company indicated that it calculated wind values through collecting daily average wind speed. The Company's Demand Action Item 2 indicates that it will incorporate wind into its stochastic weather analysis for the 2022 IRP.

Regarding *non-peak* demand forecasts, Cascade made a variety of modifications in its 2020 IRP, including shortening the span of its historical data set to four years (2015-2018). In Appendix K, Cascade states that its residuals are tested for autocorrelation using the auto.arima functionality within the "forecast" package of RStudio, which is a stepwise regression function. The Company also incorporated cross-validation techniques to test its forecasting models. For example, the Company used different sets of training data to compare to actual historic usage. The Company also compared the final model's performance to recent historical usage with data exogenous to the model. In this way, the Company was able to "check" its forecasting methodology on real-world data.

¹¹ LC 76, Cascade 2020 IRP, page 3-7.

Stakeholder Comments

CUB

In CUB's Opening comments, it expressed concerns with including certain variables that might introduce multicollinearity into the forecast. In particular, CUB observed that two of these variables, employment and population, possessed a high correlation coefficient of 0.994. Because of the high correlation coefficient, CUB was concerned that this effectively introduced the same variable into the model twice and suggested that Cascade should remove one of these variables to remedy potential multicollinearity problems. CUB also requested that the Company conduct sensitivities to gas use-per-customer (UPC) dependent on the adoption of high efficiency furnaces.

Staff's Position

In Opening Comments, Staff indicated that it was pleased with the improvements the Company made in its load forecast and supported the changes. Staff also believed that the Company's improvements satisfied Staff's 2018 IRP recommendations for load forecasting, and Staff supported incorporating wind data into its peak forecast methodology. However, Staff did make several requests, including that the Company experiment with using retail price as an explanatory variable in its demand forecast. Staff also requested that the Company show why four years of historical data in the demand forecast was sufficient, and that the Company use data spanning more than four years in its forecast. Staff suggested using out-of-sample testing to compare the methods for accuracy.

In Final Comments, Staff again recognized Cascade's forecast improvements, though Staff maintained that a model with longer historical series of weather data provides a more robust measure of the relationship between gas usage and weather.¹² Further, the Company's forecast used 2018 data as the most recent data input. Staff believed it would be worthwhile to compare outputs from the weather-adjusted new methodology and the old forecasts to actuals after 2018. Staff asked the Company to compare outputs from both the weather-adjusted new methodology and the old forecasts to post-2018 actuals. Staff believed that this would provide insight to help answer the question of whether just four years of historical weather data is enough for a 20-year forecast.

Cascade's Position

Regarding multicollinearity, the Company responded to CUB that it did test its model for multicollinearity, which led the Company to avoid potential causes of multicollinearity identified by CUB. It also responded that population and employment were not utilized in the same model.

¹² LC 74, Staff Opening Comments, page 4.

In response to Staff, Cascade said that it is open to exploring the use of a price variable in future forecasts. Regarding the number of years used for data, the Company reiterated that its new load forecast methodology was better overall because 1) it was using a new statistical program and 2) the new approach to forecasting is improved upon by analyzing residual data through using an autoregressive integrated moving average (ARIMA) model.¹³

In Final Comments, the Company indicated that it no longer had the ability to perform out-of-sample testing or rerun its old models to compare it to the newer model because it ended its SAS subscription.¹⁴ However, it did attempt to provide comparisons with a table containing Mean Absolute Percentage Errors (MAPE) of the old model vs. the new model. Ultimately, the Company stated that despite its MAPE analysis, because it used two different models, it could not be certain that “more data is better.” However, it agreed with Staff that more historical data would provide better results and would continue to work with the Company’s information technology group to gather more historical data.

Staff’s Analysis and Recommendations

Staff appreciates the Company’s additional analysis and openness to including retail prices as a variable in its future load forecast. However, Staff continues to be concerned with the limited years of data (2015-2018) the Company used in the 2020 IRP for its non-peak demand forecast. Staff emphasizes the importance of additional data to Cascade’s IRP team for the next IRP. Staff encourages the Company to continue to pursue consistency as it organizes its data and makes continued improvements in its future load forecasts.

Staff Recommendation:

Acknowledge Demand Action Item 2:

Cascade will look into making adjustments to a few methodologies on the demand forecast and scenarios. Those adjustments include:

- **Adding wind in the stochastic weather analysis; and**
- **A new methodology for peak day.**

Additional Recommendations for the 2022 IRP:

¹³ LC 76, Cascade Final Comments, page 3.

¹⁴ SAS is a statistical program. The Company now uses R, a free statistical software.

- **Include price as an explanatory variable in its demand forecast.**
 - **Publish variables included in the model as part of an appendix.**
-

Environmental Policy – (Action Item No. 3) and RNG (Action Item No. 5)

Environmental Policy Action Item No. 3 involves Cascade participating in or monitoring a series of discussions, including climate change dialogues in Bend and Bellingham, federal policies, and state policies. RNG Action Item No. 5 states that Cascade will continue to develop and update the cost-effective evaluation tool.

Cascade's Analysis

The Company devotes Chapter 7 of its IRP to discussing various environmental policies it is monitoring, including Oregon Senate Bill (SB) 98, the City of Bend Climate Action Plan, and the Company's own RNG goals. Cascade indicates that it is committed to developing programs that allow Cascade to acquire RNG under SB 98 and Washington House Bill 1257. It also states that it has met with various companies and producers that could sponsor RNG projects. Cascade also developed a preliminary RNG cost effectiveness methodology, which it presents in Chapter 7. The Company has been in discussions with several RNG producers¹⁵ and indicated that its current strategy is to gather RNG market intelligence through meeting with RNG producers and other regional LDCs, as well as following RNG legislation. In Chapter 6 of the IRP, Cascade summarized additional environmental policies it is monitoring, such as Oregon Governor Kate Brown's EO 20-04.

Stakeholder Positions

CUB

CUB also noted the City of Bend's Climate Action Plan, stating that it was possible that Bend may initiate various programs targeted towards meeting its climate goals, such as modified franchise agreements that could decrease future gas demand in Cascade's service territory. Due to these local climate goals, CUB recommended that the Company conduct sensitivity analyses for highly efficient gas furnaces in areas projected to have high economic and population growth.

¹⁵ LC 76, Cascade 2020 IRP, page 7-2.

AWEC

AWEC was supportive of voluntary RNG and other low-carbon fuel programs so long as gas quality would not be degraded, and costs of such programs are reasonable. It also encouraged Cascade to pursue RNG and renewable hydrogen projects to help mitigate the Company's carbon footprint. AWEC also noted that while Cascade had met with various RNG developers, it proposed no RNG projects in the foreseeable future.

AWEC also commented on Cascade's new RNG cost effectiveness methodology, remarking that while it is appropriate to develop a mechanism to evaluate RNG, such a framework is limited and does not replace a prudence review.

Staff's Position

In Opening Comments, Staff recommended that the Company explore how it will consider complying with applicable emission targets associated with the Oregon Department of Environmental Quality's (DEQ) Cap and Reduce program (now called the Climate Protection Program) in the next IRP Update. Staff generally supported the Company's need for RNG goals and the development of long-term strategies to manage regional RNG policies and programs. However, Staff was concerned about the Company's ability to track the benefits of RNG projects supported by Oregon ratepayers. Staff requested that the Company provide cash flow scenarios that illustrate potential strategies in managing costs and revenues. Staff also provided a series of recommendations, stating that the Company's RNG assumption of \$13.40 per dekatherm of RNG was an appropriate starting place, but that the Company's methodology may mask the cost effectiveness of projects with especially low carbon intensity.

Staff provided feedback on Cascade's RNG Cost-Effective Evaluation Model, stating that Cascade's model did a good job capturing the main cost elements of an RNG project, but that it should also consider NW Natural's cost-effectiveness methodology developed in UM 2030. Staff was supportive of Cascade's studies on the rate impacts of RNG projects.

In Final Comments, Staff recommended that Cascade consider which elements from Section 1.1 of the Commission's EO 20-04 work plan could be addressed in the IRP Update and that the Company engage stakeholders on how it plans to address EO 20-04. Regarding Cascade's voluntary RNG program, Staff stated that despite the fact that the Company continued to refer to its voluntary RNG program in Washington as an "offset" program designed to provide offsets would not appear to meet the requirements of Washington law. Staff believed that the Company is aware of this differentiation and that the term "offset" seems to have been misused in the IRP.

Staff also reviewed Cascade's confidential models and reemphasized that the Company could add detail to its Cost Effectiveness Evaluation Model, in particular 1) a more sophisticated valuation of carbon intensity that would represent the types of projects anticipated, and 2) detail on rate impacts. Staff continued to see great value in the work that Cascade undertook.

Cascade's Response

In its Response Comments, Cascade stated that it has had conversations with City of Bend staff on how a voluntary RNG program might operate, and to assess general community interest. Discussions centered on offsets for city owned facilities and voluntary residential and commercial customers, though it does not appear that a concrete program has yet emerged. Cascade reiterated that because the State of Washington mandated provision of renewable natural gas voluntary programs for natural gas customers, the Company would use this program as a model for the program it plans to develop in Oregon. It also indicated that it is currently in the process of selecting a vendor to determine available RNG supply. Cascade also referenced its RNG Cost Effective Evaluation Model, and that it could address several Staff recommendations regarding cost, benefits, cash flow, and modeling impacts, and the ability to identify RNG projects that could benefit Oregon ratepayers.

In Final Comments, Cascade stated that it has not yet identified an RNG project for the voluntary Washington RNG service program, but it would keep stakeholders informed about development of any voluntary RNG programs through its regular PGA quarterly meetings. It also stated it would provide updates to various aspects of RNG programs in its IRP Update, including potential revenues from California's Low Carbon Fuel Standard market and any RNG case scenarios that reflect DEQ's Climate Protection Program. For the 2022 IRP, the Company stated it would continue to work towards developing RNG programs that could meet the requirements of both Washington and Oregon jurisdictions.

Staff's Analysis and Recommendations

As stated in its Final Comments, Staff appreciates and is satisfied with Cascade's suggestion to provide an update of its RNG program and how it is planning to apply its program to its Bend customers. The Company should continue to apprise the Commission on these activities in the 2020 IRP Update. Staff requests that the Company provide potential RNG revenue, including from RNG revenues from participation in California's LCFS market and/or Oregon's Clean Fuels Program. Staff also requests that the Company include an RNG case scenario that reflects DEQ's Climate Protection Program design elements. For the 2022 IRP, Cascade should include an explanation of how the Washington RNG program may interact with

programs being developed for customers in Oregon and whether RNG programs developed in Oregon might be used to comply with laws in other states.

Staff sees great value in the Company's initial rate impact work and its Cost Effectiveness Evaluation Model. Staff believes these will provide continued value in the Natural Gas Fact-Finding efforts envisioned in the Commission's EO 20-04 work plan.

Staff Recommendation:

Acknowledge Environmental Policy Action Item No. 3:

Cascade will either begin or continue to participate/monitor the following items:

- **Continue to support the City of Bend's Climate Action Plan;**
- **Participate in City of Bellingham Climate Action Plan discussions;**
- **Monitor service areas for potential GHG reduction goal development relating to energy delivery and supply;**
- **Monitor carbon pricing and policy developments nationally and statewide;**
- **Monitor federal and state GHG regulation development for energy industry;**
and
- **Continuation of current emission reduction and monitoring endeavors.**

Acknowledge RNG Action Item No. 5:

Cascade will continue to develop and update the [RNG] cost-effective evaluation tool.

Additional Recommendations for the 2020 IRP Update:

- **Provide potential RNG program revenue from Washington voluntary RNG Service program, and, as applicable, any and all other revenue related to RNG activities.**
- **As applicable, provide RNG revenues that could be derived from participation in California's LCFS market and/or Oregon's Clean Fuels Program.**
- **Include an RNG case scenario that reflects DEQ's Climate Protection Program design elements, insofar as program details are available.**

Additional Recommendation for the 2022 IRP:

- **Include an explanation of how the Washington RNG program may interact with programs being developed for customers in Oregon and whether RNG programs developed in Oregon might be used to comply with legislation in other states.**
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DSM Energy Efficiency (Action Item No. 4)

Cascade's DSM Energy Efficiency Action Item No. 4 is that the Company will execute the Demand Side Management action items as described on page 11-3 and 11-4 in its IRP.

Cascade's Analysis

For the 2020 IRP, the Company worked with the Energy Trust of Oregon (ETO) in devising separate scenarios to model various energy efficiency (EE) potential cases. ETO performed the technical potential analysis that informed the IRP savings targets in Oregon. In response to Staff recommendations from the 2018 IRP, the EE scenarios represented a range of carbon scenarios and also a "low" energy efficiency scenario, represented through a slower ramp rate. The different ramp rates created a range of variation in potential savings across scenarios at roughly 9 percent above and 11 percent below the base case.

Stakeholder Comments

CUB

CUB stated that demand reductions could be achieved through targeted energy efficiency and provided a series of EE and demand response (DR) recommendations. CUB indicated that the Company should incorporate targeted energy efficiency in its Bend service area and subsidize conversion of existing lower efficiency condensing furnaces to higher efficiency non-condensing ones. CUB also recommended subsidizing smart thermostat installation and designing winter demand response pilots.

AWEC

AWEC provided many positive comments for Cascade's IRP, applauding Cascade's "dedication to demand side management,"¹⁶ and the Company's estimated savings of

¹⁶ LC 76, AWEC's Opening Comments, page 1.

approximately 62 million therms over the 20-year planning horizon, including 12.09 million therms of Oregon savings. If accurate, AWEC indicated this would be a “significant achievement.”¹⁷ AWEC found it noteworthy that for the first time in recent Cascade IRP history, the only new resource selected by the SENDOUT model for the Preferred Portfolio was incremental energy efficiency.

Staff’s Position

In Staff’s Opening Comments, Staff attested to the Company’s participation in numerous meetings with Energy Trust, and that it fulfilled Staff’s recommendations from the 2018 IRP, which included modeling the impact of lower than projected energy efficiency savings on supply availability. The Company also followed through with its plan to model different carbon scenarios as part of its EE potential cases. Staff noted that several of the scenarios modeled clustered close to the base case, so there seemed to be little impact between using the base case carbon scenario, social cost of carbon, and market cost of carbon. In comparing the 2018 and 2020 IRP EE forecasts, Staff realized that the 2020 forecast began at a lower starting point than in the 2018 IRP, but the projections still suggested increased savings potential overall. The 2020 EE forecast was also created in 2019, so it did not reflect COVID-19 impacts.

In Final Comments, Staff recognized that as the energy efficiency industry continues to adapt to the COVID-19 pandemic response, enhanced coordination between Energy Trust and the Company would be important for the acquisition of cost-effective savings. Staff also responded to CUB’s recommendations, indicating that Staff was open to exploring EE opportunities as long as they are cost-effective or have the potential to be cost-effective in the future. ETO confirmed with Staff that there was a meeting scheduled to discuss targeted EE in Bend and that the Company already funds incentives for high efficiency non-condensing furnaces and smart thermostats. Staff also recommended that the Company report on efforts explored and undertaken to avoided infrastructure upgrades in Bend, Oregon through DSM value. Staff indicated that the Company could base this cost on a contract quote for a 20-year contract provided by its Asset Management Agreement partner.

Cascade’s Response

In Cascade’s Response Comments, the Company stated that it would engage with the City of Bend and ETO to determine how to best target energy efficiency efforts to help the community meet its carbon reduction goals. It explained that as part of its meetings with ETO in 2021, the Company would include discussions on rebates for higher-efficiency furnaces and smart thermostats.

¹⁷ LC 76, AWEC’s Opening Comments, page 1.

Staff Analysis and Recommendations

Overall, Staff concludes that the Company has improved its understanding and coordination with Energy Trust over the last few years, with the benefit of improved scenario modeling. It is unclear whether forecasting has also improved due to these efforts, but Staff expects it will over time. Staff will be following up to review the longer term trends with Energy Trust, and compare the 2020 IRP Action Plan with the 2021 Energy Trust action plan once it is finalized in early December. Further, while Staff acknowledges the Company's current and proposed future efforts to use DSM in avoiding infrastructure upgrades, Staff would like to see updates on the outcomes of these efforts, particularly in the Bend area.

In Final Comments, the Company agreed to provide an update to avoid infrastructure upgrades, but it was "unclear about the connection to the infrastructure upgrades and a 20 year contract quote"¹⁸ from its Asset Manager. However, the Company committed to further discussions with stakeholders to discuss this item further. Staff finds this response reasonable and requests instead that the Company hold a workshop to describe the scope of the infrastructure need in Bend, OR and how much could be met with localized energy efficiency activities.

Staff's Recommendation:

Acknowledge DSM Energy Efficiency Action Item No. 4:

- **The Company will execute the Demand Side Management action items as described on page 11-3 and 11-4.**

Additional Recommendation for the 2022 IRP:

- **Provide an update to the Company's current and proposed future efforts to use DSM in avoiding infrastructure upgrades and hold a workshop to describe these efforts in the next IRP cycle.**

Distribution System Planning (Action Item No. 6)

DSP Action Item No. 6 involves a series of upgrades in Cascade's distribution system across its service territory.

¹⁸ LC 76, Cascade's Final Comments, page 5.

Cascade's Analysis

To analyze where distribution infrastructure upgrades are needed, Cascade used Geographical Information Systems (GIS) software and the Synergi program to create system models. Distribution system enhancements included analyses of pipelines, regulators, and compressor stations, and the Company also considered the impacts of proposed conservation resources on anticipated distribution constraints. In order to anticipate low pressure events or potential outages, the Company used Synergi to project “design day” conditions—peak day or worst case scenario conditions to identify problem areas where potential outages may occur. In the 2020 IRP, Cascade identified a series of enhancement projects stretching into 2023:

- FP-306990 - PENDLETON 4" IP REINFORCEMENT
- FP-306991 - PENDLETON 4" HP REINFORCEMENT
- FP-316854 - BEND GATE REBUILD
- FP-316863 - Prineville Gate Rebuild
- FP-318466 - RF-Baker-GT-NW Baker Gate
- FP-318468 - RF-Baker-GT-NW Baker Regulation
- FP-318469 - RF-Baker-GT-NW Baker Gate Odorizer
- FP-318475 - RF-Baker-GT-NW Baker GT Line Heater
- FP-318682 - RF-BEND-6"S-1100'-SHEVLIN PK
- FP-318733 - RF-BEND-6"S-2MI-SHEVLIN PK
- FP-318737 - RF-BEND-R-SHEVLIN PK RD 2" STD
- FP-318741 - RF-BEND-6"PE-1200'-PONDEROSA ST
- FP-318744 - RP-PRINEVILLE-GT-TRANSCANADA
- FP-306992 - PENDLETON KORVOLA ROAD 4" PE REINF.
- FP-316851 - South Hermiston to Feedville Rd HP
- FP-317586 - RF-REDM-6"S-4,750'-VETERANS WY
- FP-318745 - RP-BEND-GT-TRANSCANADA
- FP-318770 - RF-REDM-R-VETERANS WAY-2" STD

Stakeholder Positions

CUB

In Opening Comments, CUB stated that while distribution system upgrades were needed for reliability and delivery purposes, there remain serious cost and risk implications of these projects in considering EO 20-04. CUB believes it is important to explore alternatives that could produce the same outcomes at lower costs and risks that could ultimately reduce or defer system enhancements. CUB recommended that Cascade evaluate non-pipe distribution programs, like demand management programs. CUB also believes that peak reductions could be achieved through DR and that

“innovative DR programs for gas customers are vital to Cascade’s future resource planning.”¹⁹

Regarding the DSP Action Items, CUB noted that these projects were the result of low pressure issues on the Company’s system, but it wanted to understand the determination of low pressure from the data provided by the Company. CUB wanted Cascade to explain why the low-pressure benchmarks on its system were different from Avista’s despite serving similar geographical areas in Oregon.

Staff’s Position

In Opening Comments, Staff observed that the Bend 6” HP, Ponderosa, and Redmond programs had already been approved for rates, so Staff did not believe that recommending acknowledgment of these projects was appropriate. Staff thus recommended that the Company remove from its Action Plan any portions of projects to be completed by 2020 or the projects that would be substantially complete by the time the Commission issues its acknowledgment order.

Staff also observed that the Company failed to provide sufficient detail on many DSP Action Items. Despite Staff submitting discovery on pressure readings and additional details, Cascade did not provide enough detail for Staff to recommend acknowledgment. Staff requested that the Company provide a more comprehensive justification and description of the distribution projects and why they are least-cost/least-risk options.

When the Company filed its Response Comments, it only agreed with Staff and stated that it “has already made strides to improve the details for distribution system projects.”²⁰ The Company did not provide additional detail about DSP Action Items. As a result, Staff continued to have concerns and could not recommend acknowledgment. Staff recommended that the Company host a workshop at least one month prior to the filing date of this Staff Report, in addition to providing the requested detail in Cascade’s Final Comments.

Cascade’s Response

In its Response Comments, Cascade explained to CUB that its lowest acceptable distribution pressure is 10 psig,²¹ but when modeling reveals pressures slightly above

¹⁹ LC 76, CUB Comments, page 7.

²⁰ LC 76, Cascade Response Comments, page 6.

²¹ Pounds per square inch, as specified by a gauge (e.g., internal to a pipe and not including atmospheric pressure).

that threshold at 15-20 psig, those areas can be identified as potentially needing reinforcement. Concerns about low pressures can vary depending on the growth rate, but the Company indicated that 20 psig is the more common threshold in high growth areas to allow time for permitting and construction.

In its Final Comments, Cascade explained to Staff that its Engineering group was caught in a transitional period, which involved moving to a consistent reporting process to justify projects. This transitional period also included a small reorganization in which engineers were moved off of various IRP projects. Due to these changes, Cascade proposed to not seek any acknowledgement on its distribution system plans and indicated it would rather take the necessary amount of time to update the engineering models and re-present the Action Items in an IRP Update with the intent of seeking acknowledgment on all plans.²²

Staff's Analysis and Recommendations

Staff appreciates that the Company seeks to devote additional time to provide adequate detail on its DSP Action Items. Staff believes the Company's proposal to be appropriate and looks forward to future filings and/or workshops in which the Company will deliver supplementary materials to support its DSP projects.

The Company should strive to produce any and all information pertinent to bolstering its DSP Action Items. These include alternative project studies, explanations of why those alternatives were rejected, outage reports illustrating why original design parameters and/or current operating conditions could no longer meet demand or safety standards, pressure measurement metrics, and comprehensive accounts supporting the need for each distribution project and why they are least-cost/least-risk options. Staff recommends at least one workshop to present this information to Staff and stakeholders, and additional workshops as necessary.

Staff Recommendation:

- **Because the Company has indicated that it will re-present on these DSP Action Items in an IRP Update, the Company should still be given an opportunity for requesting acknowledgment. As a result, Staff does not recommend not acknowledging Action Item No. 6, but rather that the Company remove this Action Item from the Action Plan so it can be assessed at a later date. Staff also recommends that the Company only**

²² LC 76, Cascade Response Comments, page 4.

present on Action Items that will not be complete or substantially complete when it submits its IRP Update.

Additional Recommendation for the 2020 IRP Update:

- **Host at least one workshop to present distribution upgrade information to Staff and stakeholders, and additional workshops as necessary.**
-

Issues Outside of the Action Plan Raised by Stakeholders

Gas Prices

Chapter 4 of the 2020 IRP includes an explanation of the Company's natural gas price forecast. To summarize, the forecast is a blend of four separate price forecasts:

1. Near-term NYMEX natural gas futures prices extrapolated to the end of the planning horizon;
2. A market fundamentals-based price forecast by Wood Mackenzie;
3. The Energy Information Agency's (EIA) long term natural gas price forecast; and
4. Northwest Power and Conservation Council's (NWPCC) long term natural gas price forecast.

Each forecast is weighted based on Cascade's estimate of its historical accuracy, and the weighted forecasts are blended to create the Cascade Forecast. The Company also applies stochastic analysis to model gas price sensitivities. These sensitivities measure how the Preferred Portfolio performed in high and low price situations. In each sensitivity, the portfolio was run through a 10,000-draw Monte Carlo NYMEX price simulation.

Staff's Position

In Opening Comments, Staff had several concerns about the way in which Cascade modeled its gas prices. Staff was worried about the Company's implementation of the blended forecast, because 1) it inappropriately used an extrapolation of NYMEX futures prices as one of the long-term price forecasts, and 2) the Company introduced an Age Dampening Mechanism (ADM) that assigned an excessive weight to the NYMEX-futures based forecast.

One of the four long-term price forecasts above was based on nearer-term NYMEX futures prices. Staff did not believe that futures prices were good predictors of long-term

natural gas prices. Staff was also concerned with the Company's new ADM methodology. The ADM reduces the weight of third-party expert forecasts if they are over 12 months old and adds the detracted weights back to the NYMEX-futures-based price forecast, which increases the influence of the already problematic NYMEX forecast. Staff requested that the Company file an updated natural gas price forecast addressing these concerns.

In Final Comments, Staff questioned whether the stochastic gas price forecast included numbers that were too high to be useful for planning purposes. Staff learned that the Company based some of its data on prices during the time of Enbridge's British Columbia (BC) Pipeline rupture. Based on Staff's review, Staff believed that the high prices are much more infrequent than the Company's stochastic price forecasts and that a more reasonable approach to modeling extreme events would be to include a single price shock in the planning horizon. Staff recommended that Cascade revise the stochastic modeling so that the Sumas gas price forecasts do not have multiple Enbridge rupture-type events.

Cascade's Response

Cascade provided the updated forecasts as Staff requested in an Addendum to its Response Comments and took into consideration Staff's concerns. The updated gas price forecasts phase out the use of a NYMEX futures-based price path as an input in the later years of the forecast and makes appropriate changes to the ADM. This allowed the third-party long-term forecasts to determine the price forecast in later years.

The Company did not believe that it is unrealistic for a forecast representing a 1 in 100 pricing event (e.g., such as the Enbridge rupture) to include multiple significant price shocks over the course of a 20-year planning horizon. Cascade indicated that it welcomes a robust discussion during the public process and is open to adjusting its methodology based on the results of conversations with stakeholders during the 2022 IRP process. The Company committed to including more time during the public process to present the methodology and rationale behind its stochastic modeling.

Staff's Analysis and Recommendations

Staff thanks the Company for responding to Staff's concerns and appreciates that it incorporated Staff's suggestions by updating its gas price forecast. In recognition of Cascade's arguments on the topic of stochastic modeling, Staff concedes that indeed more than one Enbridge rupture-type event could happen in a 20-year period, but nonetheless, Staff maintains that the frequent and sustained price spikes shown in Cascade's IRP Figure 9-28 overly rely on the Enbridge BC Pipeline rupture data. For

the 2022 IRP, Staff continues to believe that the Company should reconsider how heavily it relies on the Enbridge rupture as it builds its stochastic analysis.

Staff's Recommendations for the 2022 IRP:

- Revisit the stochastic modeling and reduce the frequency of Enbridge rupture-type events in its Sumas gas price forecasts.
- In a 2022 IRP TAG meeting, incorporate gas price forecasts and price shocks into the discussion and work with Staff and stakeholders to potentially update its methodology.

Avoided Costs

In the 2018 IRP, Staff made a series of recommendations to improve the Company's avoided cost estimates, including incorporating distribution, risk premium, and carbon costs. Staff subsequently recommended that these avoided cost estimates be addressed in a separate docket, UM 1893. As a result, since the 2018 IRP, the Company developed a calculation of distribution costs for both the peak day and the peak hour, as it agreed to do through the UM 1893 docket.

Cascade calculated an estimate of total avoided costs over time under expected conditions as modeled in the IRP. For the acquisition of energy efficiency resources, Energy Trust uses its own models to apply avoided costs to energy efficiency resources. In the 2020 IRP, the Company calculated separate avoided costs by natural gas end use. By looking at specific end uses, the Company was able to identify which categories of energy efficiency resources provided more value.

In working with Staff and stakeholders through UM 1893, the Company also developed avoided distribution capacity values for the peak day and the peak hour. To calculate these numbers, the Company chose the delivery charge across customer classes currently in rates, minus costs associated with operations and maintenance. The Company stated that its rationale is to represent the cost of the next marginal therm delivered at the peak that could be avoided through reduced demand.

To calculate a risk premium to represent the value of reducing risks by avoiding a future resource purchase, Cascade used a risk reduction value based on a contract quote for a 20-year contract provided by its Asset Management Agreement partner.

Finally, in considering carbon compliance, Cascade applied mid-price projections from California's 2019 Integrated Energy Policy Report and assumed that the carbon compliance cost in Oregon will scale up to that point over several years.

Staff's Position

In Final Comments, Staff indicated that it appreciated the Company's responsiveness to Staff recommendations and its substantive investment in creating its avoided cost calculations. For the 2020 IRP, Staff did not recommend any changes to its avoided cost methodology. However, Staff did revisit the Company's approach to calculating avoided distribution capacity values for the peak day and the peak hour. Cascade incorporated the delivery charge across customer classes to develop avoided distribution capacity values. This approach initially seemed reasonable to Staff, but in further examination, Staff was less certain that the delivery charge was the appropriate base for calculating avoided distribution capacity costs in this IRP and UM 1893.

The delivery charge is intended to represent the current cost of service and is not designed to represent long-term costs. Beyond the distribution system and O&M costs, it also includes the depreciation of infrastructure investments, which may result in under-valuing the cost of infrastructure upgrades. Staff indicated that it was considering other options for representing distribution capacity costs and that it intended to continue working with the Company and other stakeholders on this topic in UM 1893 and throughout 2021.

Cascade's Response

In Cascade's response comments, the Company criticized Staff for not acknowledging positive highlights of the Company's avoided cost work in this IRP.²³ In Final Comments, Cascade stated that it looked forward to working with Staff and stakeholders to enhance its avoided distribution cost calculation methodology for the 2022 IRP.

Staff's Analysis and Recommendations

As much of the dialogue pertaining to avoided cost calculations occurs under UM 1893, Staff notes that the Company readily engages in the dialogue and review process through UM 1893 as responsive and active participants. Staff does not recommend any further changes to the avoided cost calculations for this IRP. However, Staff recommends that the Company continue to work with Staff and stakeholders in UM 1893 on distribution costs avoided through energy efficiency to refine the calculation used in its 2022 IRP.

²³ LC 76, Cascade's Response Comments, page 10.

Staff's Recommendation for the 2022 IRP:

- **Continue to work with Staff and stakeholders through UM 1893 on refining distribution costs avoided through energy efficiency for use in its 2022 IRP.**
-

Portfolio Modeling and Evaluation

Through a series of iterations, Cascade's SENDOUT model selected the Preferred Portfolio, which the Company calls the "All-in" portfolio. The portfolio selected all the resources already available to Cascade (Gas purchases from the Rockies, Sumas, and AECO through bundled or unbundled contracts and storage services at the Jackson Prairie, Plymouth LNG, and Mist facilities). The Preferred Portfolio is also the least-cost portfolio (\$4.31 billion risk-adjusted) and includes contracts needed from only those resources, in addition to incremental DSM. As the Company and AWEC noted, for the first time in recent Cascade IRP history, the only "additional" resource selected by the SENDOUT model (other than the normal gas contracts and storage) for the top-ranking portfolio was incremental energy efficiency.

In general, Staff thought the Company's portfolio ranking and methodology process was reasonable and supports the Company's selection of the "All-In" Preferred Portfolio.

Communication Guidance

The Company's response to Staff's Opening Comments revealed a range of challenges it experienced. Primarily these challenges had to do with changes in staffing at the Commission. The Company indicated that these staffing changes led to a greater number of data requests from Staff than in previous IRPs, in addition to requiring Cascade to "represent major elements of the IRP more than twice,"²⁴ and that it was "dismayed that Staff has selectively mentioned relatively few positive highlights or notes the extraordinary effort required by Cascade in order to develop this IRP..."²⁵

In Staff's Final Comments, it acknowledged these frustrations from the Company, but also stated that the IRP process is dynamic. Assumptions, data, and final analysis can change between pre-filing working groups and the final IRP, and utilities can respond to stakeholder feedback such that the filed IRP incorporates updated elements not raised in working group meetings.

²⁴ LC 76, Cascade Response Comments, page 2.

²⁵ LC 76, Cascade Response Comments, page 10.

Staff also recognized its responsibility to communicate more in order to avoid miscommunications in future proceedings with the Company. Staff looks forward to enhanced engagement with the Cascade IRP team and to considering options for improved communication in future IRP cycles. Staff recommends a workshop prior to or at the beginning of the 2022 IRP to discuss better communication among parties moving forward.

Staff Recommendation for the 2022 IRP:

- **Host a workshop with Staff prior to or at the beginning of the 2022 cycle to consider options for improved communication among the Company and stakeholders.**

Conclusion

Staff appreciates the hard work of Cascade and each of the stakeholders participating in this IRP. Staff has presented a series of recommendations above. Below is a summary of Staff's recommendations in this proceeding.

Action Plan Recommendations

Action Item No. 1 (2021-2022) – Resource Planning:

Cascade will:

- Attend other regional Local Distribution Companies' (LDC) IRP meetings;
- Work with Northwest Pipeline (NWP) on realigning Maximum Daily Delivery Obligation (MDDOs);
- Determine if the temporary Jackson Prairie contract should be made permanent;
- Develop modeling scenarios that represent Pipeline Operational Flow Orders (OFOs);
- Improve the alignment of resource/costs between the Purchased Gas Adjustment (PGA) and the IRP;
- Develop more scenarios that address changing Canadian Markets;
- Add Renewable Natural Gas (RNG) as a candidate portfolio; and
- Work with Staff and Stakeholders to develop a more effective presentation for the severity of negative outcomes. Cascade will report on the status of this action item when filing the 2021 OR IRP Update.

Recommendation: Acknowledge

Additional Recommendation: Provide an update on Action Item No. 1 in the 2020 IRP Update.

Action Item No. 2 (2021-2022) - Demand:

Cascade will look into making adjustments to a few methodologies on the demand forecast and scenarios. Those adjustments include:

- Adding wind in the stochastic weather analysis; and
- A new methodology for peak day.

Recommendation: Acknowledge

Additional Recommendations for the 2022 IRP:

- Include price as an explanatory variable in its demand forecast.
- Publish variables included in the model as part of an appendix.

Action Item No. 3 (2021-2022) – Environmental Policy:

Cascade will either begin or continue to participate/monitor the following items:

- Continue to support the City of Bend's Climate Action Plan;
- Participate in City of Bellingham Climate Action Plan discussions;
- Monitor service areas for potential GHG reduction goal development relating to energy delivery and supply;
- Monitor carbon pricing and policy developments nationally and statewide;
- Monitor federal and state GHG regulation development for energy industry; and
- Continuation of current emission reduction and monitoring endeavors.

Recommendation: Acknowledge

Action Item No. 4 (2021-2022) – Demand Side Management (DSM)/Energy Efficiency (EE):

The Company will execute the Demand Side Management action items as described on page 11-3 and 11-4.

Recommendation: Acknowledge

Additional Recommendation for the 2022 IRP:

- Provide an update to the Company's current and proposed future efforts to use DSM in avoiding infrastructure upgrades and hold a workshop to describe these efforts in the next IRP cycle.

Action Item No. 5 (2021-2022) – Renewable Natural Gas:

Cascade will continue to develop and update the cost-effective evaluation tool.

Recommendation: Acknowledge

Additional Recommendation for the 2020 IRP Update:

- Provide potential RNG program revenue from Washington voluntary RNG Service program, and, as applicable, any and all other revenue related to RNG activities.
- As applicable, provide RNG revenues that could be derived from participation in California's LCFS market and/or Oregon's Clean Fuels Program.
- Include an RNG case scenario that reflects DEQ's Climate Protection Program design elements, insofar as program details are available.

Additional Recommendation for the 2022 IRP:

- Include an explanation of how the Washington RNG program may interact with programs being developed for customers in Oregon and whether RNG programs developed in Oregon might be used to comply with laws in other states.

Action Item No. 6 – Distribution System Planning (2022-2024):

These projects are budgeted over the next five years:

- FP-306990 - PENDLETON 4" IP REINFORCEMENT
- FP-306991 - PENDLETON 4" HP REINFORCEMENT
- FP-306992 - PENDLETON KORVOLA ROAD 4"
- FP-316851 - South Hermiston to Feedville
- FP-316854 - BEND GATE REBUILD
- FP-316863 - Prineville Gate Rebuild

- FP-317586 - RF-REDM-6"S-4,750'-VETERANS WY
- FP-318466 - RF-Baker-GT-NW Baker Gate
- FP-318468 - RF-Baker-GT-NW Baker Regulation
- FP-318469 - RF-Baker-GT-NW Baker Gate Odorizer
- FP-318475 - RF-Baker-GT-NW Baker GT Line
- FP-318682 - RF-BEND-6"S-1100'-SHEVLIN PK
- FP-318733 - RF-BEND-6"S-2MI-SHEVLIN PK
- FP-318737 - RF-BEND-R-SHEVLIN PK RD 2"
- FP-318741 - RF-BEND-6"PE-1200'-PONDEROSA ST
- FP-318744 - RP-PRINEVILLE-GT-TRANSCANADA
- FP-318745 - RP-BEND-GT-TRANSCANADA
- FP-318770 - RF-REDM-R-VETERANS WAY-2" STD

Recommendation: Remove from Action Plan

Additional Recommendation for the 2020 IRP Update:

- Host at least one workshop to present distribution upgrade information to Staff and stakeholders, and additional workshops as necessary.

Following is a list of additional Staff Recommendations based on analysis in this Staff Report.

Additional Staff Recommendations for the 2022 IRP:

- Revisit the stochastic modeling and reduce the frequency of Enbridge rupture-type events in its Sumas gas price forecasts.
- In a 2022 IRP Technical Advisory Group (TAG) meeting, incorporate gas price forecasts and price shocks into the discussion and work with Staff and stakeholders to potentially update its methodology.
- Continue to work with Staff and stakeholders through UM 1893 on refining distribution costs avoided through energy efficiency for use in its 2022 IRP.
- Host a workshop with Staff prior to or at the beginning of the 2022 cycle to consider options for improved communication among the Company and stakeholders.

PROPOSED COMMISSION MOTION:

Acknowledge Cascade Natural Gas Corporation's 2020 IRP and, subject to certain revisions, acknowledge Cascade's 2020 Integrated Resource Action Plan. Commission

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Staff recommends certain action and additional requirements on pages 28-32 of this Staff Report.

LC 76 – Cascade’s 2020 Integrated Resource Plan.