

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
SPECIAL PUBLIC MEETING DATE: September 2, 2021**

REGULAR X CONSENT EFFECTIVE DATE Upon Approval

DATE: July 12, 2021

TO: Public Utility Commission

FROM: Rose Anderson

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

SUBJECT: NORTHWEST NATURAL:
(Docket No. LC 71)
Staff Final Report on Northwest Natural's update to its 2018 Integrated Resource Plan.

STAFF RECOMMENDATION:

Acknowledge in part and decline to acknowledge in part Northwest Natural's (Company, NW Natural, or NWN) third update to its 2018 Integrated Resource Plan (IRP Update). Decline to acknowledge NWN's distribution capacity and risk reduction avoided costs for purposes of its next avoided cost filing, and direct NW Natural to include the updated avoided cost data in its next avoided cost filing, with a supporting explanation for use of the data.

DISCUSSION:

Issue

Whether the Commission should acknowledge NW Natural's update to its 2018 Action Plan and Integrated Resource Plan, acknowledge specific portions of the IRP Update, or decline to acknowledge.

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

¹ Order No. 89-507.

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 (OAR 860-027-0400) require a utility to file an annual IRP Update, due on or before the acknowledgment order anniversary date of its most recently acknowledged IRP. The update may request acknowledgement of changes to the action plan in the most recent IRP. The update must describe what actions the utility has taken to implement its IRP action plan, assess changes since the IRP acknowledgement decision, and justify any deviations from the IRP action plan. An IRP update is also required as soon as a utility anticipates a significant deviation from its acknowledged IRP, unless the utility is within six months of filing its next IRP.

Under OAR 860-030-0011(2), relevant data for energy efficiency avoided costs may be taken from the utility's most recently acknowledged IRP, acknowledged IRP update, or general rate case. At the Commission's discretion, more recent data may be used if the utility submits its data "with a supporting explanation as to why the Commission should approve its avoided costs based on such data."

Analysis

Procedural History

NW Natural filed its 2018 IRP on August 24, 2018, and the IRP was acknowledged at the public meeting on February 26, 2019. Subsequent informational IRP updates were filed on April 17, 2019 and November 7, 2019. No Commission action on these updates was requested. On December 1, 2020, NW Natural filed a petition for exemption from OAR 860-027-0400(3) in order to allow more time for EO 20-04 proceedings to run their course before making major long-term decisions in an IRP. The petition requested to change the filing date of its next IRP from March 4, 2021 to July 2022. This request was accepted in a Commission Order on January 13, 2021.

In its waiver petition, the Company committed to filing an update to the 2018 IRP by March 1, 2021, that involved more public process and analysis than is typical for IRP updates. Pursuant to this goal, the third update to the 2018 IRP (Third Update) was filed on March 1, 2021.

² Order Nos. 07-002 and 07-047. Additional refinements to the process have been adopted: See Order No. 08-339 (IRP Guideline 8 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).

Comments on the IRP Update Action Plan and Staff Recommendations

Newport Cold Box

Staff's Opening Comments on the third 2018 IRP Update describe the Company's request for acknowledgement of the Newport Cold Box and conclude that replacing the cold box is a reasonable step to providing safe and reliable service at a reasonable cost.

In Opening Comments, CUB states that it is careful about recommending building new gas infrastructure given uncertainty about the future of Oregon's energy systems, noting that it supports non-pipe alternatives where possible. After reviewing NWN's analysis of the cold box versus alternatives, CUB recommends acknowledgement of the Cold Box replacement. However, CUB notes that the Newport LNG facility is in a tsunami inundation zone. CUB recommends that moving forward, NW Natural prohibit new supply side resources such as renewable natural gas (RNG) projects and gas storage being installed in areas vulnerable to seismic events.

NWN Reply Comments respond that it fully considers risks associated with siting new resources in seismically vulnerable areas, and considers options to manage risk in project design when avoiding construction in these areas is not possible.

After reviewing stakeholder comments, Staff continues to find the Newport Cold Box to be a reasonable investment and recommends acknowledgement.

North Coast Feeder

Staff's Opening Comments describe the company's request for acknowledgement of the North Coast Feeder and find this action item to be reasonable. Staff also notes that it would continue to investigate whether the North Coast feeder uprate would be able to safely accommodate hydrogen gas.

In Opening Comments, CUB requests more information on the possibility of raising the pressure at the Walluski regulator and limiting the pressure drop at the North Coast feeder.³ Further, CUB suggests NWN explore improving efficiency options in its service area. CUB writes that future scenarios could make present investments in gas infrastructure highly risky and inequitable for customers, and therefore NW Natural should explore alternatives with lower stranded cost risk, such as demand response through smart thermostats.

NWN Reply Comments respond to CUB's question about the Walluski regulator, stating that it could not be legally set to a pressure that would alleviate the need for a

³ CUB opening comments page 4.

reinforcement project. Regarding non-pipeline solutions and demand response, NWN responds that it is not appropriate to wait for the development of options “with uncertain impact, costs, and timelines to address current distribution system constraints.”⁴ NWN notes that it has a current pilot for geographically targeted Demand Side Management (DSM), and plans to explore geographically targeted demand response in its next IRP, as well as including a detailed demand response study.

In response to Staff’s question regarding hydrogen, NWN reports that the updated pipeline will be able to accommodate hydrogen-blended gas without fears of hydrogen leakage. NWN will provide a detailed write up regarding hydrogen blending in its 2022 IRP.

Comments on Other Topics in the IRP Update and Staff Recommendations

RNG and Hydrogen Projects

Staff’s Opening Comments note that RNG, hydrogen, and other low-carbon service options are likely to be an important part of NW Natural’s portfolio moving forward. Staff requested that NW Natural respond in Reply Comments regarding whether there may be a resiliency value attributable to RNG located near to Oregon load that has not yet been considered. Staff also requested that NWN reach out to Staff and parties regarding rate recovery options if plans to request its hydrogen methanation pilot be recovered through Oregon rates.

In Opening Comments, CUB writes that it would like more information on NW Natural’s plans to incorporate hydrogen into its system, including a presentation on the ability of the system to handle various blends of hydrogen through methods such as pipeline segmentation as well as a presentation on the Company’s trials blending hydrogen with natural gas appliances at the Company’s Sherwood Operation Center.

AWEC commends NWN for its aggressive approach to greening the gas system with RNG and hydrogen, and encourages NWN to prioritize cost-effective regional projects that directly inject gas into NW Natural’s system.

NWN Reply Comments respond that it would be open to discussing a resiliency value for local RNG in stakeholder workshops. The Company also notes that the resiliency value of RNG will be connected to the assumption that capacity resources are assumed to be 100 percent reliable.

⁴ NW Natural Reply Comments filed June 14, 2021. Reply Comments. P 3.

Staff finds that a stakeholder process to discuss resiliency in Oregon's natural gas supply could lead to valuable information, including an agreed-upon definition of resiliency and any appropriate credit for the resiliency value of local RNG projects capable of providing supply during a pipeline outage. Staff will consider whether to facilitate the beginning of such a process at an appropriate time. Additionally, Staff expects that NWN will engage Staff and stakeholders on discussions of this issue as part of the development process of the next IRP.

Avoided Costs

As mentioned in Staff's Opening Comments, the Company has provided new calculations for avoided costs in the IRP update that indicate a roughly 50 percent increase in total avoided costs over values provided in the 2018 IRP, primarily driven by increases in greenhouse gas reduction value and distribution capacity value. Since Opening Comments, Staff has spent time reviewing the methodology and values for the supply capacity value, the distribution capacity value, and the risk reduction value.

Staff reviewed the values and methodology for the supply capacity value. The Company identified the marginal supply capacity resource for these values. In this IRP Update, the Company predicts that Mist Recall is sufficient to meet any additional supply capacity needs through the study period. In comparison, in the 2018 IRP, the Company predicted the need for North Mist II and North Mist III, which are more expensive supply capacity resources.⁵ These changes resulted in a lower cost for supply capacity avoided. Staff finds this methodology reasonable and the decrease in supply capacity value also reasonable.

Staff has received additional information on the distribution capacity value and risk reduction value methodologies during the IRP Update review process. Staff notes that the distribution capacity value has increased nearly 70 percent since the 2018 IRP and the risk reduction value methodology has changed significantly from the 2018 IRP, resulting in changes from a negative value to a positive value.⁶ Staff has not yet completed reviewing these methodologies and values, and finds additional time is needed to make a recommendation to the Commission.

Given that there is an opportunity to evaluate the avoided cost values and methodologies for distribution capacity and risk reduction in NW Natural's next avoided cost filing, Staff recommends that the Commission direct NW Natural to include the updated avoided cost data in its avoided cost filing, with the required supporting explanation for inclusion of the distribution capacity and risk reduction values, rather than expressly acknowledging these values in the IRP Update. Staff has not found

⁵ Company Response to Staff DR 126.

⁶ Company Response to Staff DR 128.

these methodologies to be definitively unreasonable, but has also not yet been able to verify that they are reasonable. Non-acknowledgement of these values at this time will help ensure the matter receives adequate attention on review of the company's next avoided cost filing. Staff looks forward to continued conversation on these values, and requests that NW Natural hold a stakeholder workshop to discuss them in Docket No. LC 71 or in Docket No. UM 1893.

DSM End Use Profiles

In Opening Comments, Staff suggests that the Company take steps to address the Staff Recommendation No. 6 from the 2018 IRP: "Work with staff to review any proposed end use load profiles that deviate from those used by other independent regional organizations".⁷

In Reply Comments, the Company argues that the end use load profile values in the IRP Update do not deviate from those in use by the Energy Trust of Oregon for avoided cost calculations, and that they have already been reviewed by stakeholders.

Staff believes there may have been a misunderstanding. There are four components to end use profiles:

1. The end uses modeled (i.e. which pattern of usage corresponds to what energy saving measures types),
2. Monthly factor,
3. Peak day factor, and
4. Peak hour factor.

Staff confirmed with Energy Trust that the Company's peak day factor and peak hour factor are combined with numbers from the Northwest Power Conservation Council and applied to the underlying monthly end use profiles for residential and commercial space heating in Oregon. Peak day and peak hour factors were applied to the underlying monthly end use profiles for residential and commercial space heating.⁸ The Company's end use categories and monthly factors, however, are not in use in Oregon. In contrast, Energy Trust uses the Company's end use categories and profiles in Washington where Energy Trust has a direct contract with the Company.

Staff notes that the peak day and peak hour methodology has been discussed with stakeholders in UM 1893 and Staff supports Energy Trust's implementation of these numbers where appropriate. However, Staff does not believe the Company has shared

⁷ Order No. 19-073, Appendix A page 8-9.

⁸ Order No. 20-464 Appendix A p. 34-35.

the methodology and research behind the monthly factors with stakeholders, particularly the Northwest Power Conservation Council, who provides the values currently in use. Staff suggests that the Company take steps to address this Staff Recommendation before the next IRP is filed. A stakeholder workshop in Docket No. LC 71 to discuss the Company's monthly factors and end use categories would be adequate.

Load Forecast

In Opening Comments, Staff expressed support for the inclusion of a warming trend in NW Natural's load forecast. Staff also encouraged the Company to follow the principle of parsimony in its load forecast by reducing the number of interaction terms in its load forecasting equations. The principle of parsimony means that simplicity should be among the model qualities valued when selecting a model. Finally, Staff expressed concern regarding the Company's capacity planning standard, arguing that its use of an unnecessarily long time horizon could mask more recent climate trends.

The Company provided a load forecasting workshop for Staff and stakeholders on June 3, 2021.

NW Natural's Reply Comments explained that the interaction terms included in its model allow the Company to include additional data in its forecast, because they allow the model to be more accurate under a wider range of conditions, and should not be removed in pursuit of parsimony. Regarding the capacity planning standard, NW Natural provided additional clarification and detail about its new probabilistic planning standard.

After reviewing information from the load forecasting workshop and stakeholder comments, Staff concurs that the value of including additional data points in the load forecast justifies the inclusion of some interaction terms, and reserves the right to make future recommendations about which interaction terms are most reasonable, consistent with the principle of parsimony.

The Company discussed the new probabilistic planning standard in its June 3 workshop. The Company explained that there is credible research indicating that extreme cold episodes will continue to occur even as temperatures generally increase with climate change.⁹ Staff appreciates the detailed additional information provided by the Company and finds that, while there is still room for discussion of the specific details of the methodology including the likelihood of extreme cold events, the use of its probabilistic methodology is generally reasonable.

⁹ NW Natural's June 3 Technical Working Group presentation. Page 14.

Moving Forward

New Technologies

In Opening Comments, Staff recommends that the 2022 IRP consider the implications of a range of potential future hydrogen blends on NWN's system. Staff also recommends that NW Natural provide a schedule of upcoming retirements of system infrastructure, and a discussion of the potential for replacement with infrastructure best suited to meet the needs of a low-carbon system, whether through improved hydrogen transport capability, locational energy efficiency, or other technologies.

In Reply Comments, NWN points out that it is working to determine how much hydrogen can be safely blended into the distribution system, as well as what system changes might be needed to implement different hydrogen blends. The Company agrees to update stakeholders on this work in each IRP, including a write-up in the 2022 IRP.

Staff finds that NW Natural is appropriately looking into current and emerging technologies to reduce greenhouse gas emissions consistent with Oregon regulations while providing reliable, affordable service to customers. Staff appreciates the Company's approach to actively providing information and opportunities for discussion with Staff and stakeholders.

Exploring Resiliency

AWEC's opening comments recommended NW Natural supplement the IRP with a special analysis of its system performance and industrial load curtailments after the rupture on the Enbridge Pipeline, including a scenario where this event happened in winter and natural gas fired generation could not have been interrupted.

In response to AWEC, NW Natural notes that there are circumstances where the Company may not be able to utilize all of its interstate pipeline capacity, and that its current assumption of 100 percent reliable pipeline capacity may not be appropriate. NW Natural is supportive of the OPUC beginning a process to investigate regional resource adequacy across the natural gas and electric systems, but not as a part of any single utility's IRP.

Staff is interested in a future process to define and evaluate resiliency value in gas utility IRPs, and will consider whether to facilitate the beginning of such a process at an appropriate time.

Oregon Department of Environmental Quality's (DEQ) Climate Protection Program (CPP)

In Order No. 21-013, NW Natural was directed to commence its 2022 IRP technical working group meetings upon release of the Oregon DEQ's draft rules for its Climate Protection Program. Staff looks forward to participating in these conversations toward a CPP compliance plan that minimizes costs and risks to ratepayers.

Conclusion

Staff appreciates the informative and productive conversation that has taken place around the Company's IRP Update, and anticipates continuing discussion around many of these topics in the Technical Working Groups leading up to the 2022 IRP.

Staff recommends acknowledgement of NW Natural's Action Plan and most avoided cost values, but does not recommend acknowledgement of the avoided cost values for distribution capacity and risk reduction. These values have changed significantly since the last IRP. Staff requires more time to evaluate them and looks forward to reviewing them in depth and to address their use in NW Natural's next avoided cost filing.

PROPOSED COMMISSION MOTION:

Acknowledge in part and decline to acknowledge in part NW Natural's third update to its 2018 Integrated Resource Plan. Decline to acknowledge NWN's distribution capacity and risk reduction avoided costs for purposes of its use in NWN's next avoided cost filing, and direct NW Natural to include the updated avoided cost data in its next avoided cost filing, with a supporting explanation for use of the data.