

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

LC 71

In the Matter of

NORTHWEST NATURAL GAS
COMPANY, dba NW NATURAL,

2018 Integrated Resource Plan.

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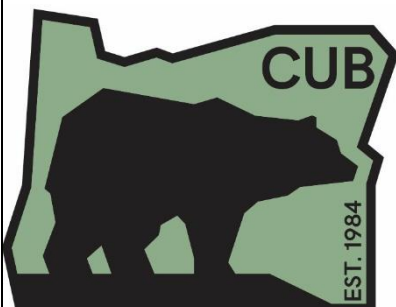
COMMENTS OF THE
OREGON CITIZENS' UTILITY
BOARD

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May 14, 2021



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I. INTRODUCTION

The Oregon Citizens' Utility Board ("CUB") hereby submits its Comments on Northwest Natural's ("NW Natural" or "NWN" or "the Company") 2018 IRP Update ("IRP") filed on March 1, 2021.

II. IRP UPDATE PROJECTS

As a general principle, CUB is willing to recommend acknowledgement of a future project in an IRP, subject to evidence that the project is necessary to provide reliable natural gas service. Having said that, CUB is careful about recommending building new gas infrastructure amid uncertainty around the future of our energy systems. If natural gas load growth does not materialize or declines, new distribution and transmission pipelines could become stranded assets as fossil fuels increasingly get eliminated from our energy systems. And worse still, electrification may result in a small and decreasing number of gas customers bearing the costs of stranded assets on NWN's system. Given this future uncertainty, CUB supports using non-pipe alternatives whenever possible to meet reliability needs.

In this IRP update, NW Natural has presented two projects:

- a) Replacement of the Cold Box at the Newport LNG Facility for an estimated cost of \$14.6 to \$18.9 million,¹ and
- b) Upgrading the North Coast feeder to be in service for the 2022-23 heating season at an estimated cost of \$5.1 to \$10.2 million².

CUB recommends that the Oregon Public Utility Commission (“Commission”) acknowledge the Newport LNG Facility Cold Box replacement action item. CUB is not recommending acknowledgement of the North Coast Feeder project at this time. CUB would appreciate more information on this matter.

A. Newport LNG Facility Cold Box Replacement

CUB would like to address the Newport LNG Facility project and address the risks associated with the facility. As noted in the Company’s filing, the Newport LNG facility is located on a peninsula, which lies on Yaquina Bay in the city of Newport, OR. NWN’s Newport LNG facility is located on the end Central Coast Feeder pipeline. NWN uses three on-system natural gas storage facilities (Mist, Portland LNG, and Newport LNG) to provide supply for wintertime peaks, emergency situations, and pipeline service interruptions. NWN also contracts off-system natural gas storage at the Jackson Prairie gas storage facility in Washington.

NWN customers in Lincoln City, Newport, McMinnville, Salem, Corvallis, and Albany rely on Newport LNG to reliably meet natural gas demands on peak days. Under Oregon’s integrated resource plan framework, the Company, Stakeholders, and the Commission evaluate

¹ LC 71 NWN 2018 IRP Update, p.4

² LC 71 NWN 2018 IRP Update, p.5

<https://edocs.puc.state.or.us/efdocs/HAD/lc71had164936.pdf>

Note that the project costs for the NorthWest Feeder Upgrade were presented to be \$7 - \$14 million at the Oregon Public Utility Commission Public Meeting on May 4, 2021 (See Slide 16 in NWN’s presentation).

<https://edocs.puc.state.or.us/efdocs/HAH/lc71hah135125.pdf>

what is the least-cost, least-risk approach for meeting customer needs. For the Newport LNG project, the Company's engineering department has determined that the Cold Box needs replacement. NW Natural evaluated alternatives to cold box replacement, such as securing additional pipeline capacity on the Northwest Pipeline or constructing a new transmission line facility between Newberg and Central Coast Feeder. Based on the Company's analysis, the Cold Box Replacement appears to be the least cost resource option for NWN customers.

CUB would like to note that the Newport LNG facility is in the tsunami inundation zone. In the event of a Cascadia earthquake or a tsunami, the Newport LNG is expected to be inundated with seawater. It is unfortunate that the Newport LNG facility, which is a critical gas capacity resource for NW Natural customers in the Central Coast and Central Willamette Valley region, is exposed to seismic risk from a tsunami. There may be a variety of approaches NW Natural could take to address this risk. One option may be for NW Natural to build another LNG storage facility away from the Tsunami inundation zone. This would be an extremely costly endeavor for NW Natural's customers. For example, Puget Sound Energy's new LNG plant had a total capital cost of around \$310 Million dollars. CUB wanted to gain more information on this topic through the IRP process, and appreciates the Company's consideration and openness to talking about this issue. Throughout the IRP process and other proceedings, NW Natural has clearly contemplated and evaluated the risk that seismic events pose to its gas system. CUB has observed that NWN is making investments in other parts of its system to address seismic risk.

CUB Recommendation:

CUB recommends that the Commission acknowledge the Newport LNG Facility Cold Box replacement. However, moving forward, CUB recommends that NW Natural prohibit new alternative supply side resources being installed in areas that are vulnerable to seismic events

such as soil liquefaction areas or tsunamis. Over the next few decades, CUB expects that NW Natural may be evaluating a variety of new energy sources directly on the gas distribution systems such as biogas production projects and hydrogen production and/or storage. CUB uses the term alternative supply side resources to cover RNG production projects, or gas storage. From 1995 to 2019, Oregon prohibited the building of new government buildings in the tsunami inundation zone. CUB believes that a similar policy should be in place for new gas resources that serve NW Natural customers.

As an initial recommendation, CUB suggests that the Company establish a prohibition on new alternative supply side resources in seismically vulnerable areas as a prudent business practice and in response to dangers of building critical infrastructure in seismically risky portions of Washington and Oregon.

B. Uprating the North Coast/Cannon Beach Feeder

CUB appreciates the detailed analysis that the Company presented on this project but would like more information regarding alternatives that could potentially avoid or defer this feeder uprate project. CUB discusses these alternatives below.

1. Using the Walluski Regulator to address the problem

NWN identifies a need to uprate a feeder if the pressure at the regulator inlet drops by more than 40%. A pressure drop of 50.7% was recorded at the Cannon Beach regulator inlet on November 30, 2019. NWN's modeling shows that this pressure drop could be restricted to 47.5% by increasing the pressure at the Walluski regulator from 162 psig to 166 psig, all else constant, and to 34.2% under relatively lower demand conditions. CUB's understanding is that the Walluski regulator has a MAOP of 175 psig. Can the Company set the Walluski regulator at a pressure level higher than 166 psig and keep the pressure drop at the North Coast feeder limited

to less than 40% even on a high demand day? CUB would appreciate the Company's response to this query and requests for additional analysis around this issue.

2. Improving Energy Efficiency in the Service Territory

NWN's analysis suggests that demand conditions during the November 2019 event contributed significantly to the pressure drop at the North Coast feeder. NWN has also evaluated the possibility of meeting capacity needs through signing new interruptible load contracts with existing customers in the area. NWN describes the Cannon Beach feeder service area as consisting of a small number of large firm customers and found that not enough interruptible load was obtainable from this small number of customers.

CUB suggests that the Company explore opportunities to improve energy efficiency, demand response and other non-pipes alternatives in its service area. The Company should consider retrofitting measures like no-cost direct retrofitting of low efficiency commercial and residential furnaces to high efficiency ones and directly installing NWN controllable thermostats. These measures not only have the potential to reduce overall gas consumption and distribute it more evenly across hours respectively, but the costs would be lower and can be estimated with greater certainty. The estimated cost of the pipeline uprate is projected to vary approximately between \$5 - \$10 million (or \$7 - \$14 million), suggesting a long range of costs, and hence uncertainty.

CUB would therefore not recommend acknowledgement of the North Coast Feeder action item at this time and looks forward to the Company's response to CUB's concerns with this project and proposed suggestions for alternatives.

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III. Non-Action Item Related Comments

A. Hydrogen

In the IRP update, NWN explained that the natural gas industry is currently targeting a 20% blend of hydrogen, with RNG or methanated hydrogen as a future target.³ In a future integrated resource filing, CUB would like the Company to present more information on its plans to incorporate hydrogen into its system. NW Natural's gas system is designed to transport fossil natural gas from interstate pipelines to customers. NW Natural's pipe mix consists of a mix of steel and plastic underground pipe. CUB would like the Company to present on the engineering status of the interstate pipeline and NWN's distribution system to handle various blends of unmethylated hydrogen, methanated hydrogen and natural gas. In a future IRP, CUB would also like an evaluation of the Company's four storage facilities and how these facilities are able to accommodate non-fossil gas, including what, if any, upgrades may be necessary. In this IRP, NW Natural indicated that specific industries may be moving to 100% hydrogen systems, and CUB would like to understand how this would work with the existing distribution system. CUB has observed gas industry experts have recommend that LDCs plan on segmenting portions of the distribution system to accommodate non-fossil fuels such as Hydrogen. CUB recommends that the Company explain whether pipeline segmentation may be needed to accommodate different mixes of fuel to server customers energy needs in a future IRP. It is also CUB's understanding that the Company is conducting trials on using hydrogen with natural gas appliances at the Company's Sherwood Operation Center. CUB would like the Company to present on the results of their trials on using hydrogen with appliances to IRP stakeholders in a future IRP meeting.

³ LC 71 NWN 2018 IRP Update, p19 of 59
<https://edocs.puc.state.or.us/efdocs/HAD/lc71had164936.pdf>

B. Demand Management Programs in Future IRP

While distribution system upgrades are needed to reliably and safely deliver gas to an existing and growing customer base, there are serious cost and risk implications of these projects for customers, especially in the wake of Governor Brown's EO 20-04 in Oregon. The EO sets goals to reduce GHG emissions by 45% from 1990 levels by 2035, and at least by 80% from 1990 levels by 2050. Gas utilities would need to aggressively reduce carbon emissions under the Cap and Reduce program of the EO. Future high electrification scenarios could also make present investments in gas infrastructure highly risky and inequitable for customers, as the ones who cannot afford to electrify will bear the brunt of these stranded costs.

It is therefore important to explore alternatives that can produce the same safety and reliability outcomes at a lower cost and with a lower stranded cost risk. These alternatives could reduce or defer the need for such system enhancements.

CUB recommends that NWN evaluate non-pipe distribution programs, such as implementing demand management programs to achieve peak load reductions. CUB believes that demand reductions can be achieved through targeted energy efficiency, and peak reductions could be achieved through demand response ("DR") programs.

A study by Brattle Group discusses multiple values that could be obtained from having a gas DR program for winter and severe weather (similar to a polar vortex) peaks. The study shows that on a severe weather day when both wholesale natural gas and electricity markets experience price increases, natural gas DR can prevent price hikes in both markets as DR relieves gas supply constraints. Gas DR also has the potential to prevent or defer long-term

investments in gas infrastructure resulting in substantial savings for gas customers.⁴ CUB sees demand side resources, such as DR, as impacting the Company's Peak Day Forecast Methodology.

For example, several gas utilities in California, including SoCalGas, Con Edison and National Grid, have each implemented innovative DR pilots that contributed to reduced winter peak demand and relieved constraints on their distribution systems. Per the Brattle group study, "SoCalGas's Seasonal Savings program for residential customers with a smart thermostat resulted in 8% gas heating savings during the winter of 2016-17. The MA DOER Nest Seasonal Savings programs resulted in a 3.5% heating savings in the winter of 2014-15 (73% of participants had gas fueled heating furnaces) – including significant results on the 10 peak days."⁵

A recent study by Auffhammer and Rubin (2018)⁶ on natural gas price elasticities in California shows that winter price elasticity is higher and has a greater statistical significance compared to summer elasticity, with low income households having a higher winter price sensitivity compared to higher income groups.⁷ This finding has several policy implications, including the potential for price-based demand response programs and subsidizing smart thermostats for low income households in order to implement these programs.

While CUB believes that innovative DR programs for gas customers are vital to NWN's future resource planning, CUB is also aware of the challenges that the Company could face in

⁴ Details of this study can be found at

http://files.brattle.com/files/13929_demand_response_for_natural_gas_distribution.pdf

⁵ http://files.brattle.com/files/13929_demand_response_for_natural_gas_distribution.pdf

⁶ Maximilian Auffhammer, Edward Rubin. NBER Working Paper No. 24295. Issued in February 2018. NBER Program(s): Environment and Energy Economics.

⁷ Specifically, the authors estimate that "the "wintertime" price elasticity of demand for natural gas is -0.523 (0.142) for CARE households and -0.317(0.150) for non-CARE households." CARE are the low-income households.

implementing them. Deployment of smart thermostats could be critical to having these programs in place. Gas customers may be less flexible compared to electric in their usage. Customer response rates to existing DR programs have generally been low.⁸

IV. CONCLUSION

CUB appreciates the opportunity to participate in Northwest Natural Gas Company's 2018 IRP process. CUB commends the Company on presenting a detailed description of its analysis of the two proposed projects in the IRP update. While CUB recommends acknowledgement of the Newport Cold Box Replacement Project, CUB still has some concerns regarding the North Coast Feeder project and therefore is not recommending acknowledgement of this action item at this time. CUB believes that there are non-pipe alternatives that the Company should seriously explore and either avoid new pipeline investments or at least defer these until all options have been evaluated in a fair manner.

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⁸ *Id.*

Dated this 14th day of May, 2021.

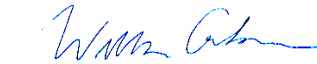
Respectfully submitted,

Sudeshna Pal



Economist
Oregon Citizens' Utility Board
610 SW Broadway, Ste. 400
Portland, OR 97205

William Gehrke



Economist
Oregon Citizens' Utility Board
610 SW Broadway, Ste. 400
Portland, OR 97205