COMMENTS OF THE

OREGON CITIZENS' UTILITY BOARD

ON

OREGON PUBLIC UTILITY COMMISSION

EXECUTIVE ORDER 20-04 WORK PLANS

October 28, 2020

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The draft work plans developed by the PUC Staff are generally comprehensive, and thoughtful. However, CUB is concerned that the natural gas section is not fully developed and not adequate to protect natural gas customers as the Department of Environmental Quality implements Oregon's new Cap-and-Reduce Program. Oregon gas utilities are experiencing climbing greenhouse gas emissions, while DEQ is developing requirements for a drastic cut in emissions by 2035. The present inability of natural gas utilities to significantly reduce natural gas emissions places customers at significant risk and may lead to problems associated with stranded costs and affordability.

1. The Problem.

CUB believes there is a significant risk facing natural gas customers:

1. Oregon's Cap-and-Reduce program will require significant reductions in GHG emissions by 2035.
2. Oregon's natural gas utilities are adding thousands of new customers each year, which leads to growing demand for natural gas and increasing emissions, thus increasing the necessary reductions in GHG.
3. The available tools, Renewable Natural Gas (RNG) under SB 98, carbon reduction investments under SB 844, and enhanced energy efficiency programs, may not be adequate to deal with the scope.
4. The conflict between expansion of the gas system and regulations requiring reductions in gas emissions creates significant financial risk, particularly for low income customers who do not have the financial means to leave the gas system.

Cap-and-Reduce.

Oregon Executive Order 20-04 sets GHG emission reduction goals that will reduce Oregon carbon emissions by at least 45% below 1990 levels by 2035 and at least 80% by 1990. DEQ is expressly directed to cap and reduce GHG emissions from all liquid and gaseous fuel, including natural gas, consistent with the carbon reduction goals of the EO.

Reducing GHG emissions from natural gas consistent with the carbon reduction goals will require reducing GHG by 45% below 1990 levels in just 15 years. However, GHG emissions in the state have grown by 11% since 1990[1]. Based on the work that went into developing a Cap-and-Trade legislation, CUB expects that DEQ will update the 1990 baseline and reallocate the carbon reduction, which will require sectors to reduce emissions by 53% from 2017 emission levels[2].

[1] See attached worksheet
[2] See attached worksheet

CUB expects that a state program will rely on emission allowances and that such allowances will be tradable. This means that gas utilities could meet the emission reduction targets through the purchase of allowances which will help fund GHG reductions in other sectors. In a full Cap-and-Trade system, Oregon could auction emission allowances and ensure allowances are priced at reasonable levels. Under this Cap and Reduce Program, however, the state will not auction allowances and will not have the same ability to stabilize the price of allowances. In addition, because this program will not allow Oregon to join a larger carbon market, there are risks related to liquidity of an allowance market. CUB expects that entities that fail to purchase enough allowances would accrue penalties for noncompliance.

The DEQ program may also allow for offsets, where entities can comply by offsetting their GHG emissions with investments that reduce carbon emissions. To maintain integrity of the emissions reduction program, offsets will likely be limited and require real demonstrated emissions reductions. This is likely to be a continuous part of the DEQ rulemaking.

What is clear is that DEQ is required to establish a cap and reduce program for natural gas usage, and that, with the growth in statewide emissions, the carbon reduction required by 2035 will be about 53% of 2017 emissions. Relying on allowances and offsets to meet these goals has an economic risk, but meeting these goals directly through actual emission reductions within the gas system is difficult in the face of growing emissions.

Growth in Emissions, Load and Customers

Working against the ability to meet these goals by reducing emissions is the year-on-year growth of our natural gas systems. Based on DEQ reporting, GHG emissions by Oregon gas utilities have increased emissions by 18% over the last 5 years, or more than 3% per year. Loads have increased even more, by 26% over last 5 years. The number of customers has grown less, by 6% in the last 5 years, but this still amounts to more than 10,000 new customers per year[3].

Decreasing emissions associated with natural gas only gets harder if the system is growing. One way to view this is that Oregon's natural gas utilities will need to decrease current emissions by about 53%. Additionally, we will have to reduce 100% of emissions associated with expanding the system. If gas utilities can limit annual emission growth to 1.5% (half its current level), then they will have to reduce 2017 emissions by 81% by 2035 to ensure that current emissions are reduced by 53% and new emissions are fully eliminated[4].

2. Tools to Manage Natural Gas GHG.

The EO implementation plans contain 4 tools to reduce GHG emissions: SB 844, SB 98, Enhanced Energy Efficiency, and DEQ's Cap and Reduce program.

- ***SB 844.*** SB 844 is legislation that allows a utility to earn a reward for voluntary emissions reduction projects. No projects have successfully come to fruition under the program. With a Cap and Reduce program that mandates significant GHG reduction, it is not clear whether there is a need to provide a reward for voluntary GHG reduction.

[3] See attached worksheet
[4] See attached worksheet

- ***SB 98.*** SB 98 allows gas utilities to invest and/or purchase renewable natural gas, including hydrogen gas derived from renewable energy. Under SB 98 a large gas utility ***may*** make investments such that 20% of its portfolio ***may*** be renewable natural gas in 2035. While SB 98 takes a significant step forward in bringing RNG and hydrogen to the gas supply, it does not have enforceable goals, and its targets are not significant enough to meet the expected requirement of the Cap and Reduce program. Based on an Oregon Department of Energy inventory, the gross potential RNG from anaerobic digesters has limited availability in the state (10 billion cubic feet)[5]. The 2018 ODOE RNG Inventory estimated that Oregon's entire RNG potential could meet 22 of Oregon's current annual natural gas consumption needs. RNG from thermal gasification has a more significant potential, but there are no commercial-scale thermal gasification plants in the US that produce methane. Even if this potential can be developed, the economics of collecting the biomass is unknown. Finally, Oregon utilities face intense competition for RNG from utilities in California and Washington. Currently the volume of RNG that is distributed to retail gas customers in Oregon is zero, or close to zero.

  Northwest Natural (NWN) should be commended for its work attempting to develop renewable gas. Its recently announced project in Eugene to develop hydrogen from renewable sources is innovative and could help develop the technologies and experience necessary to make progress towards the SB 98 voluntary goals.
- ***Enhanced Energy Efficiency.*** The EO discusses using the social cost of carbon in determining the cost effectiveness of energy efficiency. This would more fully recognize the GHG benefits associated with EE. The Commission could consider other changes to cost effectiveness, such as changing the discount rate so that long life EE measures have greater value, recognizing the long-term challenges of climate change. Oregon already has some of the strongest natural gas energy efficiency programs in the country; CUB expects that these programs alone will not offset the growth in emissions associated with expanding gas systems.
- ***DEQ Cap and Reduce Program.*** The Cap and Reduce program will require emissions reductions. CUB expects that it will create additional compliance tools such as allowances and offsets. As discussed above, relying on these for compliance exposes customers to significant risk.

In addition to these tools there are three additional tools that are not cited in the work plans.

- ***Cap System Growth.*** A significant volume of GHG emissions that will need to be reduced has yet to connect to the gas system. Capping or limiting growth allows the gas system to focus on reducing emissions from current gas usage without being overwhelmed with additional gas demand.
- ***Electrification.*** The Rocky Mountain Institute claims that "the lowest-cost pathway to eliminate direct emissions from commercial and residential buildings it to electrify[6]." The California Energy Commission reached a similar conclusion, finding that an electric heat

[5] https://www.oregon.gov/energy/Data-and-Reports/Documents/2018-RNG-Inventory-Report.pdf

[6] Mark Dyson, Courtney Fieldman, Stephanie Greene, Mike Henchen, and Charles Teplin. Rocky Mountain Institute, Building Electrification: A Key to a Safe Climate Future, October 20, 2020

pump would cost $34 to $53 per month to operate while RNG in a gas furnace would cost 5 times as much, $160 to $263 per month to operate[7].

- ***Portfolio Approach.*** An additional tool for meeting GHG requirements is to use a portfolio approach, which attempts to minimize risk by employing multiple pathways. When confronted with various investment options which have significant financial, and technical risks, one option is to choose a mixture of the options. The choice is not necessarily between these tools, but how to engage all of them to minimize the risks associated with choosing a single option. Under a portfolio approach, the choice is not electrification or RNG, nor is it between capping system growth and enhancing energy efficiency. All options are applied in a manner to create the best balance. For example, enhanced energy efficiency and targeted electrification could be used to avoid having to upgrade distribution networks that are near peak usage. This would reduce the risk of stranded costs associated with new pipeline investment. Capping new customer hook ups when those hook up require new distribution investments also could reduce the risk of stranded costs while reduce carbon compliance costs.

3. Equity and Environmental Justice Concerns

The California Energy Commission suggests that the energy cost of RNG is about five times more expensive than heat pumps. If this is true, then a emission reduction strategy built around RNG will increase the cost of gas to a level which incentivizes customers to electrify and move away from the gas system. But this path only works for customers who have the resources to invest in a heat pump Based on national data, the average cost to install a heat pump in home is $6,000. CUB could foresee a future in which higher gas commodity costs associated with RNG drive load reductions, which cause the system distribution, transmission, and storage costs to be reallocated to a smaller system, raising prices even higher. Low income customers who are renters are unable to electrify their load without the Landlord paying to convert the heating system. Since renters' utility bills are a passthrough expense to renters, there is not an incentive for the Landlord to replace an expensive heating system. Low income customers who own their residence often lack the access to capital to finance the installation of a heat pump in their home. In the face of increased natural gas costs, CUB expects customers to turn to electric resistance heaters, which have a lower upfront cost, but a higher operating cost. In the end, the natural gas system customer base would shrink with a higher portion of low-income customers. When environmental regulations create a disproportionate burden on low income customers – who are also more likely to be communities of color – there is an environmental justice concern.

This problem is hard to address because of a shrinking customer base. If higher costs associated with GHG compliance are nudging customers to electricity heating load, then a tool like a low-income rate class can exacerbate the problem by increasing the incentive for customers who are not part of the low income rate class to leave the system.

The Commission should consider ways to address and prevent this problem. Low income weatherization could be expanded to ensure that low income customers have the lowest possible usage. CUB would like to avoid increasing the energy burden borne by low income customers. If low income customers are electrifying heating load, it is inequitable to have them heat their homes using expensive electric resistance heat. Low income weatherization programs should

[7] ibid.

enable the installation electric heat pumps as replacements to gas equipment so that all customers can look to alternative heating sources.

4. CUB Recommendation: Open an Investigation to consider the risks to customers associated with natural gas GHG emissions reduction requirements.

There is significant risk to customers from applying GHG reduction requirements to natural gas utilities, including equity concerns. An investigation will allow the Commission to consider these risks and whether these risks require changes in policies. While the EO discusses the need for gas IRPs to explore how to meet the cap and reduce requirements, there is a need to provide more guidance to IRPs about how to consider various options for emissions reductions.

In addition, there are several other issues related to customer risk that are not associated with IRPs. A major issue is: what should be done to minimize the risk to customers? This should include minimizing stranded costs associated with reduced gas demand caused by a policy of electrification at state, local, or national levels, or with high compliance costs driving customers away from gas usage.

Below is a list of issues that such a docket could consider beyond the tools to comply with cap and reduce.

- **No Pipes Solutions**. Part of the stranded cost risk relates to the long useful lives of gas pipelines. A new natural gas main with a 65-year useful life is asking us to bet on the level of demand for natural gas in 2085. This bet is risky. Some of the new investment is due to increasing demand rising to a level which requires an upgrade of the gas system. One alternative that could reduce risk is to pursue "no pipe solutions" to these situations. There are a variety of tools that could be used as an alternative to upgrading pipelines: interruptible contracts for load that can be displaced; targeted enhanced energy efficiency in the areas that need upgrades; and even targeted electrification of peak heating load.
- **Line extension reform.** CUB believes that current line extension policies require existing customers to subsidize new customer growth. Line extension policies (LEPs) are supposed to ensure that all customers benefit from load growth, but because GHG compliance costs are not considered current LEPs fail to protect existing customers. The three gas utilities have different LEPs, but they all are based on a simple theory: the utility system can pay up to a certain threshold to hook up a new customer because the revenues from that new customer will pay the system back and contribute to shared costs. Cap and reduce changes this. The current utility systems need to pay to reduce the system's GHG by 53% from 2017 levels. But when a new customer is added, that load is in addition to the baseline, so the emissions with that new load must be reduced by 100%. But that additional compliance cost is a shared responsibility of the entire system and these costs are not considered in the LEP.
- **Useful Lives and depreciation curves.** Currently, CUB understands that gas main pipes often have useful lives of 65 years[8]. Investments today will be paid off in 2085. It is

[8] https://apps.puc.state.or.us/orders/2018ords/18-007.pdf#page=14

unclear what the state of the gas industry will be in 65 years. While 65 years represents the expected physical life of the investments, the economic usefulness may well be less than that. To reduce future stranded cost risk, the Commission should consider whether the expected economic life of gas equipment should reflect potential demand reductions due to local, state, and federal emission reduction programs. In addition, the Commission should consider whether depreciation curves should be adjusted so more of the investments are recovered in the early years when there is sufficient demand on the gas system.

- **Discourage Incentives to switch from electricity to gas.** Currently NWN offers some incentives for customers to switch from electricity to natural gas. With the need to significantly reduce emissions, this may be a misguided strategy that will increase GHG reduction costs. CUB understands that these incentives are not charged to current customers, but they are marketed along side ETO and other Commission-approved incentives, and they are also marketed using the customer-funded website. While it is unclear whether the Commission could eliminate these incentives if they are not paid for by customers, the Commission could discourage these by eliminating the ability to co-market them with customer supported programs.
- **Reallocate Investment Risk.** Currently, gas utilities have an incentive to promote load growth because the risks associated with it, including the GHG regulatory risk, falls on existing customers. But the utility incentive would change if the allocation of stranded cost risk associated with those investments was a shared responsibility.
- **Fuel Switching.** The Commission has generally taken a neutral approach to fuel switching. However, if electric heat pumps are the least cost solution to natural gas emission reduction, then the Commission should consider expressly allowing electric utility EE incentives to be used for converting natural gas heat to electric heat pumps.

Signed this 28th of October 2020.

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