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Washington Utilities and Transportation Commission  
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**Re: The Commission’s examination of energy decarbonization impacts and pathways for electric and gas utilities to meet state emissions targets, Docket U-210553**

On behalf of RMI (formerly Rocky Mountain Institute), we respectfully submit this comment in Docket U-210553.

**About RMI:** RMI is an independent, non-partisan, non-profit organization whose mission is to transform the global energy system to secure a clean, prosperous, zero-carbon future for all. Since our founding in 1982, we have grown to over 300 staff working on four continents with a global reach. Our initiatives include researching the business models, policies, technologies, and financing mechanisms necessary to decarbonize the buildings and power sectors and advance an equitable clean energy transition. RMI has served as an advisor to several state utilities commissions, including in Oregon and Hawaii.

**Summary:** Decarbonizing Washington’s energy sector raises important questions around utility regulation and the future business models of the utilities that deliver gas and electricity to Washington customers. In its July 26, 2021 Notice of Opportunity to File Written Comments, the Washington State Utilities and Transportation Commission (UTC) called for public comment on a number of questions about how to decarbonize the state’s energy system. In order to set utilities on a path to meet state emissions reduction targets, the Commission should consider the following factors in response to the considerations it is required, by law, to examine:

**1a. How natural gas utilities can decarbonize:** The Commission must recognize the major role electrification will play in decarbonizing Washington’s natural gas utilities.

**1b. & 1c. The impacts of increased electrification on the ability of electric utilities to deliver services to current natural gas customers reliably and affordably, [and] the ability of electric utilities to procure and deliver electric power to reliably meet that load:** The Commission must integrate gas and electric system planning in order to maintain each system’s ability to deliver reliable and affordable service as Washington decarbonizes its economy.

**1d. The impact on regional electric system resource adequacy:** The Commission should explore strategies to mitigate the peak demand impacts of widespread electrification.

**1e. The costs and benefits to residential and commercial customers, including environmental, health, and economic benefits:** The Commission should take into account the significant environmental, health, and economic benefits to customers of electrifying buildings.

**1f. Equity considerations and impacts to low-income customers and highly impacted communities:** The Commission will need to take an active role in facilitating a managed transition of the gas system in order to both protect highly impacted communities and to ensure these communities receive an equitable share of the benefits of the energy transition.



**1g. Potential regulatory policy changes to facilitate decarbonization of the services that gas companies provide while ensuring customer rates are fair, just, reasonable, and sufficient:**

The Commission must reevaluate the regulatory framework governing investment in gas infrastructure.

**2. Additional issues Commission should consider during the development of the study and consultant engagement:** The Commission should run an inclusive and equitable public process.

**1a. How natural gas utilities can decarbonize:** *The Commission must recognize the major role electrification will play in decarbonizing Washington’s natural gas utilities.*

Washington’s 2021 State Energy Strategy explicitly recommends replacing “the direct consumption of fossil fuels, primarily natural gas, with high-efficiency electric heat pumps for space and water heating” based on analysis that electrification is the least-cost pathway to decarbonizing the vast majority of residential and commercial buildings in Washington.<sup>1</sup> In Seattle, all-electric new construction is already cost-effective and reduces emissions by 93% over a 15-year period, compared to a new mixed-fuel home.<sup>2</sup> Further, as the Washington makes even further progress toward grid decarbonization, the electrification of end uses currently served by gas will have even more of an impact in reducing the state’s overall emissions.

While renewable natural gas (RNG) will likely have a role in natural gas utilities’ decarbonization pathways, its role in serving end uses in residential and commercial buildings should be limited to only the most difficult-to-electrify cases. Supplies of truly emissions-reducing sources of RNG will be limited, and most cost-efficiently used in sectors like heavy industry that cannot easily electrify heat-intensive processes.<sup>3</sup> Alternative clean fuels such as renewable hydrogen remain expensive and face blending limits when injected into current gas infrastructure.<sup>4</sup> The safety issues and the significant climate impacts of methane leakage that plague current gas systems are not solved by substituting alternative combustible fuels for natural gas. Further, replacing natural gas with RNG in heating and cooking end uses fails to address the health and air quality impacts of burning fuels in buildings. In order to minimize societal costs and maximize the benefits of Washington’s energy transition, electrification will need to be the primary pathway for decarbonization of commercial and residential buildings.

**1b. & 1c. The impacts of increased electrification on the ability of electric utilities to deliver services to current natural gas customers reliably and affordably, [and] the ability of electric utilities to procure and deliver electric power to reliably meet that load:** *The Commission must integrate gas and electric system planning in order to maintain each system’s ability to deliver reliable and affordable service as Washington decarbonizes its economy.*

As outlined by the 2021 State Energy Strategy, Washington’s least-cost pathway to economy-wide decarbonization will require high levels of building electrification and investment in deep energy

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<sup>1</sup> Washington State 2021 Energy Strategy, page 8. <https://www.commerce.wa.gov/wp-content/uploads/2020/11/WA-2021-State-Energy-Strategy-FIRST-DRAFT-2.pdf>

<sup>2</sup> The New Economics of Electrifying Buildings. <https://rmi.org/insight/the-new-economics-of-electrifying-buildings/>

<sup>3</sup> The Challenge of Retail Gas in California’s Low-Carbon Future, page 1. <https://www.ethree.com/wp-content/uploads/2021/06/CEC-500-2019-055-F.pdf>

<sup>4</sup> Ibid., page 4.



efficiency retrofits of existing buildings. These strategies will cause gas demand to fall significantly over the coming decades. Failing to account for falling gas demand in planning processes poses significant risks to gas ratepayers, utilities, and utility employees as revenue falls due to reduced throughput yet fixed system costs remain largely stagnant.<sup>5</sup> The simultaneous trends of electrification and falling demand for gas should be reflected in resource planning for both the gas and electric systems and should impact how continued investment in the gas system is evaluated by the Commission. On the electric side, mitigating costs and the need for infrastructure buildout to serve newly electrified end uses will require investment in energy efficiency, demand flexibility, and innovative rate design. Ensuring new electric loads are as demand-flexible, efficient, and smart as possible will further help to mitigate costs both to individual customers and to the system as a whole.

Misalignment of the gas and electric systems poses a significant stranded asset risk to utilities and cost burden on ratepayers if a gas utility overbuilds its distribution system for future demand that never materializes. As the regulator of both systems, the Commission has the unique ability to integrate planning across both systems in order to, for example, ensure adequate grid capacity exists for a targeted electrification project implemented as a non-pipe solution to a leak-prone pipe. As Washington decarbonizes its energy systems, the Commission will need to take an active role in facilitating cross-system coordination and planning.

**1d. The impact on regional electric system resource adequacy:** *The Commission should explore strategies to mitigate the peak demand impacts of widespread electrification.*

Electrification will add significant load to the electric system and consequently has the potential to impact regional system resource adequacy. However, thoughtful planning and mitigation strategies—such as coupling electrification with energy efficiency and demand flexibility and enhancing the grid interactivity of buildings—can help limit these impacts to a manageable level.

Demand forecasting from the Northwest Power & Conservation Council’s 2021 Power Plan projects that electrifying all non-electric energy demand in buildings at equipment end-of-life would result in only a 3% increase in peak load over the baseline scenario in 2050.<sup>6</sup> This would indicate that thoughtfully implemented electrification that maximizes demand flexibility could improve grid efficiency and load factors. The Commission should, in its examination of resource adequacy impacts, consider the benefits of deploying significant peak mitigation strategies to maximize the overall system benefits of electrification.

**1e. The costs and benefits to residential and commercial customers, including environmental, health, and economic benefits:** *The Commission should take into account the significant environmental, health, and economic benefits to customers of electrifying buildings.*

Due to Washington’s existing low-carbon electric energy mix, an electric heat pump installed today already produces lower emissions over the equipment’s lifetime than an equivalent gas furnace, delivering

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<sup>5</sup> Regulatory Solutions for Building Decarbonization: Tools for Commissions and Other Government Agencies, page 37. <https://rmi.org/insight/regulatory-solutions-for-building-decarbonization/>

<sup>6</sup> Emissions, Peak and Average Loads – Supplemental to May 18 2021 Demand Forecast Advisory Committee, Northwest Power & Conservation Council. <https://nwcouncil.app.box.com/s/lzn63dech4wu6ipl5u1ph4oyiw964j5d>



a significant environmental benefit and contributing to the state’s progress in reducing emissions.<sup>7</sup> In Seattle, an all-electric new home costs less to build than a mixed-fuel home, and through innovative rate design or enhanced energy efficiency incentives, the Commission could further maximize the economic (as well as environmental and societal) benefits of electrification.<sup>8</sup>

Electrifying the end uses currently served by fuel-burning appliances further has the potential to provide significant health benefits to Washingtonians through improvements in indoor and outdoor air quality. In Washington, air pollution from burning fuels in buildings led to an estimated 559 early deaths and \$6.266 billion in health impact costs in 2017.<sup>9</sup> A 2013 fact sheet on Washington’s asthma burden noted that “cooking with gas can exacerbate asthma” and that over 100 people in the state are hospitalized every week as a direct result of asthma.<sup>10</sup> As of 2016, more than half a million adults and 120,000 youth in Washington had asthma.<sup>11</sup> Children – a population particularly vulnerable to the health impacts of air pollution – are at a 24-42% higher risk of developing asthma if their home has a gas stove.<sup>12</sup> For populations facing additional risk factors such as increased exposure due to smaller and older homes or higher rates of asthma, such as communities of color and lower-income populations, the health impacts of burning fuels in buildings may be particularly disproportionate. Building electrification thus would have a disproportionately positive impact on the air quality and attendant health issues that currently affect Washington’s most vulnerable populations.

**1f. Equity considerations and impacts to low-income customers and highly impacted communities:**

*The Commission will need to take an active role in facilitating a managed transition of the gas system in order to both protect highly impacted communities and to ensure these communities receive an equitable share of the benefits of the energy transition.*

Because highly impacted communities and lower-income customers already face disproportionate air quality and health burdens, these communities have the most to gain from the indoor and outdoor air quality improvements associated with electrifying end uses currently served by combustible fuels. Further, in light of recent extreme heat events in the Northwest, installation of heat pumps that can serve both heating and cooling needs can mitigate the dangerous heat conditions that disproportionately harm vulnerable populations living in older, less efficient housing. A recent study by RMI found that in Seattle, a heat pump can not only outperform traditional AC systems during extreme heat events, but can also save customers \$228 per year compared to a dual fuel heating and cooling system.<sup>13</sup> As customers look to install cooling systems in the aftermath of this summer’s heat waves, measures to reduce the up-front cost

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<sup>7</sup> The New Economics of Electrifying Buildings. <https://rmi.org/insight/the-new-economics-of-electrifying-buildings/>

<sup>8</sup> “All-Electric New Homes: A Win for the Climate and the Economy.” <https://rmi.org/all-electric-new-homes-a-win-for-the-climate-and-the-economy/>

<sup>9</sup> “What is the Health Impact of Buildings in Your State?” <https://rmi.org/health-air-quality-impacts-of-buildings-emissions/#WA>

<sup>10</sup> The Burden of Asthma in Washington State: 2013 Update, page iv. <https://www.doh.wa.gov/Portals/1/Documents/Pubs/345-240-AsthmaBurdenRept13.pdf>

<sup>11</sup> Asthma Data from the Washington State Behavioral Risk Factor Surveillance System: 2011-2016, page 2. <https://www.doh.wa.gov/Portals/1/Documents/Pubs/140-185-AsthmaBRFSSdata.pdf>

<sup>12</sup> “Indoor Air Pollution: the Link between Climate and Health.” <https://rmi.org/indoor-air-pollution-the-link-between-climate-and-health>

<sup>13</sup> “Why Heat Pumps are the Answer to Heat Waves.” <https://rmi.org/why-heat-pumps-are-the-answer-to-heat-waves/>



of heat pumps will be essential to ensuring that vulnerable and lower-income customers can access the benefits of these systems.

If Washington’s energy transition is not well-managed, these communities – particularly those that rent their homes – are also the most at risk of being stranded on an increasingly unaffordable gas system, as their wealthier neighbors electrify and utilities are forced to recover system costs over lower sales. It will be imperative for the Commission to manage the transition of Washington’s energy utilities in order to ensure that low-income and highly impacted communities are not left behind. Indeed, the Commission ought to ensure that these communities can achieve the economic, environmental, and health benefits of electrification. Commission strategies could include targeted electrification and energy efficiency retrofits to help low-income and impacted communities exit the gas system first, in order to eliminate the risk that these customers end up stranded on an unaffordable gas system. Other tools such as rate design for all-electric homes, pairing building envelope retrofits with electric panel upgrades, or programs to help customers ready their homes for electrification ahead of appliance burnout could also help to ensure an equitable pathway to decarbonization in Washington.

**1g. Potential regulatory policy changes to facilitate decarbonization of the services that gas companies provide while ensuring customer rates are fair, just, reasonable, and sufficient:** *The Commission must reevaluate the regulatory framework governing investment in gas infrastructure.*

In the interest of “ensuring customer rates are fair, just, reasonable, and sufficient,” the Commission will need to consider the impact of declining gas demand (and likely declining customer base) on its evaluation of proposed investments in the gas system. Because the cost of utility investments in gas infrastructure are recovered from ratepayers, the Commission is obligated to determine that such investments are prudent uses of ratepayer funds. As the costs of new investment are recovered over lower sales, the risk increases that utilities will be unable to fully recover these costs without raising rates to unsustainable levels. Mitigating or avoiding such rate increases will require the Commission and gas utilities to take advantage of every possible opportunity to implement non-pipes solutions to changing system needs. The Commission may need to more rigorously examine new investments to determine which are justifiable in light of potential stranded asset risk, unable to be avoided through non-pipes solutions, and necessary for safety and reliability.<sup>14</sup>

Policies incentivizing expansion of the gas system also merit re-examination in light of expectations of declining gas demand. Customers added to the gas system today will likely consume less gas than would be required to justify the cost of the infrastructure required to serve them, given Washington’s pursuit of high levels of electrification in the state’s building decarbonization strategy.

Increased stranded asset risk for gas infrastructure—due, at least in part, to market- and policy-driven electrification—will require utilities and the Commission to take a new approach to capacity and safety problems traditionally solved through installing new pipes. State climate policy and recent legislation reflect a new understanding of both the higher costs of new gas infrastructure investment and the greater benefits of meeting customers’ needs through non-pipes solutions, particularly for emissions reductions and public health. As the Commission conducts its examination of pathways for gas companies to decarbonize, it should consider the potential for strategies such as targeted retirement of leak-prone pipe

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<sup>14</sup> “US Can’t Meet Climate Goals While Spending Billions on Gas Infrastructure.” <https://rmi.org/us-cant-meet-climate-goals-while-spending-billions-on-gas-infrastructure>



to mitigate or otherwise draw down the stranded asset risk gas utilities face. More broadly, the Commission should develop criteria for evaluating non-pipes solutions to gas infrastructure needs that considers both energy and non-energy benefits and costs.

One potential method of incorporating stranded asset risk into Commission decisions would be to evaluate proposed infrastructure investments as being fully depreciated by 2050 to determine whether there is a significant cost to ratepayers from stranded assets. While the Commission may not necessarily require investments be depreciated on this schedule, the evaluation may serve to clarify the trade-offs inherent in comparing proposed gas infrastructure investments and non-pipes solutions.

**2. Additional issues Commission should consider during the development of the study and consultant engagement:** *The Commission should run an inclusive and equitable public process.*

Beyond engaging with the substantive questions of decarbonization impacts and pathways, it is also crucial that the Commission conduct an inclusive public process that incorporates and considers the views of the state’s diverse residents and stakeholders. Given the diversity of both geography and building stock in Washington, the impacts of transitioning gas distribution and end uses to a net-zero future will vary widely. Failure to actively solicit input from highly impacted communities, in particular, risks continuing the disproportionate health, energy burden, and unaffordability impacts of the current system while denying these communities an equitable share of the benefits of the transition to carbon-free buildings. The Commission must take an active role in facilitating an equitable process throughout its examination of the impacts of energy decarbonization in Washington, including by engaging an independent facilitator to guide the stakeholder process. RMI’s 2019 report, “Process for Purpose,” provides further guidance for running inclusive and meaningful public processes.<sup>15</sup>

**Conclusion:** Aligning electric and natural gas utilities with Washington’s climate commitments and emissions reduction goals will require both the Commission and utilities to modify traditional approaches to energy system planning. In its examination of relevant issues in this proceeding, the Commission will need to both develop inclusive processes and take a wide-ranging view of the costs and benefits of different pathways to decarbonization of Washington’s energy systems.

Sincerely,

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<sup>15</sup> Process for Purpose: Reimagining Regulatory Approaches for Power Sector Transformation, page 25.  
<https://rmi.org/insight/process-for-purpose/>