

November 15, 2022

Dear Co-Chairs Senator Lieber and Representative Marsh, fellow members of the Joint Task Force on Resilient Efficient Buildings, and SSG modeling staff,

We appreciate the opportunity to participate in this process on behalf of our utility customers. We acknowledge and appreciate the work from the co-chairs, Legislative Policy and Research Office (LPRO) staff and the SSG staff to identify common threads as the Task Force Policy model is being built.

NW Natural is committed to Oregon's transition to a low-carbon, renewable-energy future while ensuring energy dependability for Oregonians. I take my participation in this effort seriously, as I know the recommendations this Task Force makes could affect millions of Oregonians, including the 2.5 million people NW Natural serves and the many more who want access to natural gas and increased renewable gasses in the future.

Many participants on the Task Force have advocated for electrification of natural gas space heating with electric heat pumps as a policy priority the Task Force should recommend, and yet it is unclear how the initial SSG modeling informs the potential impacts of that recommendation. I offer the following information to further this work in the hope of a sound and well-informed outcome.

### **The Starting Point**

NW Natural delivers more energy than any other utility in Oregon through one of the newest, tightest distribution systems in the country that has vast, seasonal storage capability. Natural gas use in our customers' homes and businesses accounts for 6% of the state's emissions – far lower than the electric system at 29%.<sup>1</sup> Electric utilities in Oregon rely on about as much natural gas for power generation each year as all the state's natural gas utilities combined<sup>2</sup> – and they still rely on coal for existing power deliveries.<sup>3</sup> At the same time, electric resistance heat is the most prevalent heating source on the electric grid in Oregon – emitting and costing up to about twice as much as a high efficiency natural gas furnace.

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<sup>1</sup> Oregon DEQ In-Boundary GHG Inventory 2019 data, available at:  
<https://www.oregon.gov/deq/ghgp/Pages/GHG-Inventory.aspx>

<sup>2</sup> In 2021, Oregon's natural gas deliveries for electric power was 140.1 Bcf. Natural gas deliveries for residential, commercial and industrial sectors was 134.5 Bcf. Source: EIA annual natural gas deliveries to consumers, Oregon, 2021, available at:  
<https://www.eia.gov/beta/states/states/or/data/dashboard/consumption>

<sup>3</sup> Oregon Department of Energy, "Electricity Mix in Oregon," 2020, available at:  
<https://www.oregon.gov/energy/energy-oregon/pages/electricity-mix-in-oregon.aspx>

A decarbonization analysis<sup>4</sup> by the well-respected California environmental consultant, E3 identified that widespread electrification in our area with electric heat pumps, including cold climate heat pumps, would mean a five to 10 times increase (17,000 – 37,000 MW) in winter peak electricity demands, relative to comparable gas system utilization scenarios. **And that increase already assumes the conversion of all existing electric resistance space heating to electric heat pumps.** To put those numbers into context, the entire hydroelectric system provides our region 33,000 MW of energy.

With nearly half of Oregon's electricity still generated by fossil fuels, it is uncertain how the grid will meet 100% clean energy targets assuming *existing* loads. It is even more unclear how any of the existing or new gas space heating loads, along with transportation sector demands, would be served with only renewable electricity sources – even over the next three decades.

The cost and community impacts of policies that push the Oregon grid to replicate what our existing gas infrastructure already does will be borne by electric customers – requiring additional electric distribution system upgrades in neighborhoods and buildings, and high voltage transmission lines over mountains and through forests, along with the need for even more wind, solar and battery projects – all that have yet to be sited, permitted and built. And, unfortunately, some of the same environmental activist groups that are advocating for electrification of natural gas space heat are also loudly opposing electric renewable energy projects and transmission lines, potentially cancelling, or delaying these projects for years or decades.<sup>5</sup>

Further, when considering cost ramifications, it is important to note that the study<sup>6</sup> cited by Task Force members in a letter dated October 10, 2022, to justify the widespread deployment of electric heat pumps was conducted for California. In fact, that study specifically directed readers to take care in applying its conclusions outside of California: “This study finds that electrification in buildings is likely to be the lowest cost means of dramatically reducing GHG emissions from California's buildings. However, this finding is influenced, in part, by California's relatively mild winter climate.”<sup>7</sup> There are meaningful differences between Oregon and California that render the referenced study inadequate for modeling purposes. Among those

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<sup>4</sup> E3, *Pacific Northwest Pathways to 2050* (Nov. 2018), available at: [https://www.ethree.com/wp-content/uploads/2018/11/E3\\_Pacific\\_Northwest\\_Pathways\\_to\\_2050.pdf](https://www.ethree.com/wp-content/uploads/2018/11/E3_Pacific_Northwest_Pathways_to_2050.pdf)

<sup>5</sup> For example,

- Sierra Club is advocating for the removal of the Snake River Dams in Washington, <https://www.sierraclub.org/oregon/blog/2022/08/decision-time-near-for-snake-river-salmon-removing-dams>
- Organizations are opposing a proposed lithium mine in California, <https://www.latimes.com/local/california/la-me-death-valley-lithium-mine-california-environment-20190507-story.html>
- Organizations are opposing a proposed transmission line in Maine, <https://addup.sierraclub.org/campaigns/say-no-to-the-cmp-transmission-corridor>

<sup>6</sup> E3, *The Challenge of Retail Gas in California's Low-Carbon Future*, Apr. 2020, available at: <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2019-055-F.pdf>

<sup>7</sup> E3, *The Challenge of Retail Gas in California's Low-Carbon Future* at 15.

many differences, heating demands and Oregon's electric sector are far more emissions-intensive than California's, particularly where the electric and gas systems overlap.<sup>8</sup>

These are all essential considerations that should inform effective policy recommendations.

### **Myth Busting the Emissions Benefit of Electrification**

Some Task Force members have repeatedly raised the emissions benefit of electric heat pumps and electrification of natural gas heating, which has become an area of focus for this committee. And yet, at the local level, policies that seek to force or *further* incent electrification in new homes and businesses aren't supported by the local governments' own analyses.

For example, **the City of Eugene's own climate action planning analysis<sup>9</sup> showed a ban on natural gas in new construction would result in a net carbon savings on the residential side of 0.1%, and for commercial 1.7% by 2037.** It should be noted that those numbers are for a community that uniquely gets most of its current power from the hydro system.<sup>10</sup> That analysis also does not include the gas system emission reductions required by the Climate Protection Program (CPP).

The City of Portland did similar climate planning analysis to assess the impact of electrification of all new construction and a ban on natural gas; **that analysis<sup>11</sup> projected a 1% carbon savings by 2050.**

In the face of this local government analysis, we are left to wonder why this Task Force would have *additional* heat pump incentives and electrification as a continual priority recommendation to discuss. We are also confused why SSG modeling would yield such different results when compared to both our cleanest City and our largest City.

### **Prioritizing Energy Efficiency**

The proposed targets and qualitative discussion for Policy Action U2 (Modify Energy Trusts of Oregon's Mission) lacks awareness of current Energy Trust operations, program development and expertise. Energy

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<sup>8</sup> NW Natural Reply Testimony of Kimberly A. Heiting and Ryan J. Bracken Before the Public Utility Commission of Oregon, UG 435/UG 411 at 31-32, June 6, 2022, available at: <https://olis.oregonlegislature.gov/liz/202111/Downloads/CommitteeMeetingDocument/256099>

<sup>9</sup> Eugene City Council Agenda Packet, July 25, 2022, at 10, Figure 2, available at: [https://ompnetwork.s3-us-west-2.amazonaws.com/sites/134/documents/cc\\_agenda\\_packet\\_7-25-22\\_ws\\_council\\_post.pdf?dzuxWhxtl.J3SweKK9.FhkIOEW5w4\\_e](https://ompnetwork.s3-us-west-2.amazonaws.com/sites/134/documents/cc_agenda_packet_7-25-22_ws_council_post.pdf?dzuxWhxtl.J3SweKK9.FhkIOEW5w4_e)

<sup>10</sup> See, <https://www.eweb.org/about-us/power-supply>

<sup>11</sup> City of Portland Bureau of Planning and Sustainability, Portland Decarbonization Pathways Tool and Analysis, Available at: <https://www.portland.gov/bps/climate-action/pathways-tool>

Trust develops cost-effective programs to forecast and capture energy efficiency that **already incorporate GHG emissions – in its avoided cost calculations.**<sup>12</sup>

Energy Trust is also already beginning to consider GHG emissions in the programs it prioritizes for gas customers, and is developing an emissions calculation for the electric programs. These calculations should be based on source emissions, not site emissions to account for the climate impacts of electricity generation. The proposal in Policy Action U2 focuses on electrification instead of focusing on **source emissions**.

The assertion that changing the mission of the Energy Trust will result in more positive results is an opinion that is not supported by quantitative analysis, or consideration for funding sources or implementation.

Any revisiting of the role and mission of the Energy Trust should occur with the body that regulates natural gas efficiency programs, the Oregon Public Utility Commission.

The stated role of the Task Force is to identify opportunities for Oregonians to live in and build efficient and resilient buildings. The Energy Trust is funded by and serves only the customers of investor-owned utilities, leaving big questions as to how all Oregonians, many of whom are served by public power providers and other energy efficiency programs, would be impacted.

### **The Importance of Peak**

We appreciate the efforts of the co-chairs and SSG staff to explore peak energy needs and impacts in assessing the relationship between resource needs and potential policy solutions. Accounting for peak conditions and explicitly modeling the supply and capacity needed to maintain reliable service during extreme weather events when service interruptions are most dangerous to Oregonians is essential. The recognition of peak needs in the model by SSG is a step in the right direction. However, based on what we know of SSG's approach, they do not have the proper modeling tools or access to necessary gas and electric utility data and equipment performance information to do the necessary modeling accurately or effectively.

For example, what are SSG's modeling assumptions for electric heat pump performance in Oregon and the impact on peak energy requirements? This is unclear. Most analysis used to support electrification in buildings either has a limited accounting for heat pump efficiencies under extreme weather or assumes very aggressive improvements in heat pump efficiency at cold temperatures (and some do not recognize the importance of these performance assumptions at all). This is a critical piece of the modeling that can't be overlooked to accurately assess the expected peak load increase on the electric system of widespread electrification of buildings. For example, inaccurate modeling for some decarbonization studies completed for the Pacific Northwest assume i) all heat pumps that would be installed under electrification are 470% efficient, and ii) this efficiency rate is not dependent upon temperature (making the modeling simpler, but far less

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<sup>12</sup> See NW Natural 2022 IRP, at figure 4.4, available at: <https://www.nwnatural.com/about-us/rates-and-regulations/resource-planning>

realistic), and requires no supplemental heat source (i.e., back-up resistance heating).

When you combine all these aggressive assumptions, along with the assumption of eliminating all resistance heating, these studies used to justify electrification of gas heating loads then show there is very limited peak impact. **This creates unrealistic results and expectations and is a very large contributor to a common misconception that electrification of space heating is cost-effective, because the real costs have been artificially depressed.**

For accurate analysis to be done, we request SSG engage PGE, Pacific Power, NW Natural, Cascade and Avista energy system planners, charged by Oregon regulators with the accountability for system reliability, in this modeling.

For example, SSG can access electric usage of homes that have received an incentive to install a high efficiency heat pump (more efficient than code) over the last few years during peak times to transparently examine their contribution to peak load. Gas utilities can show actual peak energy use during those same conditions so that a clear understanding of electrification policy recommendations can be analyzed – using real data, not theoretical assumptions. **This is data that is easily accessible by Energy Trust of Oregon and all utilities.** It is frankly unfair to SSG and the quality of their work product to do otherwise; thus, avoiding a well-intentioned exercise without the substance or merit to inform policy recommendations to lawmakers.

Look no further than California to see the impact on citizens of poor energy system peak planning. This summer, in the face of yet another series of outages, California passed emergency grid reliability legislation that provides over \$2 billion for *new* gas-fired power generation – despite California also having a 100% clean electricity law similar to Oregon.<sup>13</sup> This is in addition to almost \$200 million spent for additional gas electric generation under a 2021 emergency declaration.<sup>14</sup> The cost of these efforts will be borne by California residents and businesses – already paying among the highest electric rates in the country<sup>15</sup> – **and it is a direct result of poor peak planning in the context of California's decarbonization efforts.**

The Northwest grid is already facing capacity limitations – even before electrifying any existing gas space heating load.<sup>16</sup> And what about growing electric vehicle loads? Electric vehicle loads can add to peak energy requirements because passenger vehicles typically charge at night when heating demands are already high.

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<sup>13</sup> See California Assembly Bill 205, [https://leginfo.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220AB205](https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB205) and Budget Act of 2022, <https://sbud.senate.ca.gov/sites/sbud.senate.ca.gov/files/Final%20Version%20Preliminary%20Summary4.YS.pdf>

<sup>14</sup> California Department of Water Resources, Temporary Power Generators Now Online to Support California's Electricity Grid, Sep 29, 2021, available at: <https://water.ca.gov/News/News-Releases/2021/Sept-21/Temporary-Power-Generators>

<sup>15</sup> [https://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.php?t=epmt\\_5\\_6\\_a](https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a)

<sup>16</sup> Oregon Public Utility Commission, Resource Adequacy, available at: <https://www.oregon.gov/puc/utilities/Pages/ResourceAdequacy.aspx>; Steve Wright, Resource-Adequacy Challenge in the West Seems to Grow Bigger and Bigger, Clearing Up (July 15, 2022) available at: [https://www.newsdata.com/california\\_energy\\_markets/bottom\\_lines/resource-adequacy-challenge-in-the-west-seems-to-grow-bigger-and-bigger/article\\_5575a6a0-047d-11ed-8100-a78de76fc8fb.html](https://www.newsdata.com/california_energy_markets/bottom_lines/resource-adequacy-challenge-in-the-west-seems-to-grow-bigger-and-bigger/article_5575a6a0-047d-11ed-8100-a78de76fc8fb.html) and attached

Without understanding the ability of the electric system to reliably serve with clean energy the significant new loads that would result from building electrification policies along with transportation electrification we put reliability and emission reductions at risk.

People have died without the energy they need in extreme weather, which is why electric and natural gas utilities are required to have adequate energy supply and capacity to meet the most extreme conditions that are possible in our area. Making accurate peak analyses to inform energy policy recommendations is the only responsible way to proceed.

### **Clarification on Oregon's Energy System Emission Reduction Requirements**

While HB 2021 lays out the target of 100% clean electric grid by 2045, **it does not** contemplate the amount of energy that would be required to achieve this while also electrifying gas space heating loads. Importantly, under HB 2021, electric utilities have no penalties for not achieving renewable supply targets. There are also offramps that allow for fossil fuel generation if costs get too high or the grid can't provide reliable power.<sup>17</sup>

Conversely, the CPP is an absolute requirement for all natural gas utilities, **with defined compliance tools and steep penalties for noncompliance**. In other words, the CPP is a more stringent state requirement than the 100% clean electric bill.

There have been suggestions that there is ambiguity on how NW Natural and other gas utilities will comply with CPP. This is false. There are compliance tools defined under the Department of Environmental Quality's (DEQ) program which include energy efficiency, renewables for the pipeline and Community Climate Investments (CCIs).

It is also worth noting that NW Natural has provided analysis on how it intends to comply with emission reduction requirements while maintaining reliability in our most recent Integrated Resource Plan (IRP) submitted to regulators.<sup>18</sup> That same analysis has yet to be done for 100% clean electricity requirements with load projections by electric utilities.

As a precursor to our IRP modeling, we issued a Destination Zero Report,<sup>19</sup> which is an in-depth scenario analysis of possible pathways to becoming a provider of carbon neutral fuel for our residential and commercial customer use by 2050. The scenarios we analyzed incorporated varying applications of enhanced energy efficiency coupled with new equipment technologies, renewable natural gas, clean hydrogen, and verified offsets. The report analyzes three different views of the policy future and demonstrates how it is possible to achieve carbon neutrality by leveraging our existing natural gas system. While this work was done prior to the CPP requirements, much of it is applicable now.

All this is to say, modeling designed to support recommendations on energy policy that automatically assumes the Oregon electric system reaches its 100% clean target and the natural gas system does not is

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<sup>17</sup> See H.B. 2021, 81st Legislative Assembly, Regular Session at 6-7

<sup>18</sup> See <https://www.nwnatural.com/about-us/rates-and-regulations/resource-planning>

<sup>19</sup> See <https://www.nwnatural.com/about-us/the-company/carbon-neutral-future>

unjustified. Biased modeling inputs yield biased recommendations that will affect millions of Oregonians, and therefore, we request the Task Force revise the modeling to fully include CPP requirements to uphold the integrity and usefulness of the results. It is important that SSG incorporate the CPP emissions reductions in the modelling, not just draw the trajectory on Figure 3 of each policy document. By not including CPP reductions in the modelling, the emissions savings from each policy are misrepresented.

Additionally, NW Natural's IRP projections regarding renewable energy integration on the natural gas system are also more appropriate for inclusion than an assumed national proportional share used in the SSG model. We appreciate that an even spread approach is the simplest method, but it's not appropriate given renewable gas policy that positions Oregon as a first mover and leader on renewable natural gas (RNG) supply through SB98 and CPP, therefore warranting a more nuanced analysis.

The applicability of this consideration can be seen in how stakeholders consider Oregon's electric grid progress. While nationally wind and solar energy represent 12% of electric generation,<sup>20</sup> Oregon policy has been the catalyst to acquire a higher proportionate share of that available renewable energy. Policy and decarbonization mandates require it, and there is nothing to dispute this assertion.

### **Corrections and Clarifications about Renewable Natural Gas**

**RNG is not a fossil fuel and does not add more carbon dioxide into the atmosphere when used.** It is biogenic, and therefore, RNG combustion and lifecycle emissions **do not** contribute any net greenhouse gases into the atmosphere.

RNG is a resource produced from gases that are emitted during the breakdown of organic materials such as food, agricultural and forestry waste, wastewater, and landfill material. Decomposition of this material is already taking place organically and, if left unchecked, produces methane that would be emitted into the atmosphere. Instead of allowing these emissions to occur, the methane can be captured and conditioned to pipeline quality gas (RNG) where it can be used in existing appliances and equipment. This process reduces GHG emissions while alleviating an existing waste problem.

The important role of RNG in decarbonizing our region is recognized in Executive Order 20-04, the CPP, and SB98, which authorizes Oregon natural gas utilities to procure RNG.<sup>21</sup> There is vast renewable natural gas supply potential nationwide. Unfortunately, claims that suggest there is not meaningfully sufficient RNG to help meet NW Natural's RNG and GHG reduction targets rely solely on a study<sup>22</sup> that was performed five years ago, and was a much narrower look at the potential for RNG than is available today, given the major growth of the industry.

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<sup>20</sup> U.S. Energy Information Administration, "Electricity Explained" Available at: <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

<sup>21</sup> See ORS 757.396 (5) limits the amount that gas utilities can spend on their RNG investments, unless the OPUC otherwise approves.

<sup>22</sup> ICF, Energy Design Principles for Renewable Natural Gas, 2017

The RNG industry in the United States has rapidly shown significant growth over the last few years, with billions of dollars of development now flooding the U.S. Indeed, five years ago there were about 40 operating RNG projects, but project development has increased substantially in recent years. The number of RNG projects grew 33.5 percent just from 2020 to 2021 alone,<sup>23</sup> and number over 260 projects operating today and another 114 under construction.<sup>24</sup>

Numerous studies have identified the tremendous potential RNG supply, including a recent study by ICF that found by 2050 the total potential for RNG produced from organic sources in our country is about 6,645 trillion btus/year – a large increase even from ICF’s 2019 study that found the potential to be just under 4,000 trillion btus/year by 2040.<sup>25</sup>

Continued advancements in digester technology are driving additional supply and lowering costs. For instance, a process called “recuperative thickening” allows an existing digester to handle a much greater volume of biosolids, allowing the digester to generate significantly more renewable gas supply. Another technology now allows RNG production from very dry waste streams that had previously not been able to be used in digesters.

A testament to these advancements and supply potential is Denmark. With supportive policies, **Denmark has already displaced 25% of their conventional natural gas use with RNG**, with new targets to raise it to 75% by 2030.<sup>26</sup> By doing so, they are leveraging a system in place to significantly reduce emissions, finding a cost-effective solution to waste, and retaining energy system diversification and resiliency.

### **Role of Resiliency**

The Task Force’s own name emphasizes the need for building resiliency in the state. However, resilient buildings have yet to be the topic of measurable discussion. With the significant impacts of weather events and natural disasters in Oregon – and beyond – this is an especially important consideration. A study by

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<sup>23</sup> BioMass Magazine, “Analysis shows rapid growth in US RNG production,” March 7, 2022 available at: <https://biomassmagazine.com/articles/18778/analysis-shows-rapid-growth-in-us-rng-production#:~:text=The%20number%20of%20RNG%20production,80%20new%20projects%20in%20planning>.

<sup>24</sup> The Coalition for Renewable Natural Gas, RNG Facilities, Sept. 2022, available at: <https://www.rngcoalition.com/infographic>

<sup>25</sup> ICF, Net-Zero Emissions Opportunities for Gas Utilities 2021, available at: <https://www.aga.org/globalassets/research--insights/reports/aga-net-zero-emissions-opportunities-for-gas-utilities.pdf>; Also see, ICF slide deck at NW Natural/2101 Chittum/Page 9-12, <https://edocs.puc.state.or.us/efdocs/HTB/ug435htb162723.pdf>

<sup>26</sup> S&P Global, “Denmark hikes proportion of biogas in grid to 25%: grid operator” available at: <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/natural-gas/011022-denmark-hikes-proportion-of-biogas-in-grid-to-25-grid-operator#:~:text=Denmark%20is%20a%20leader%20in,consumption%20on%20an%20annual%20basis>.

Portland State University's Center for Public Service suggests the natural gas system could be a crucial resource in the event of a major disaster that disrupts power to the Pacific Northwest.<sup>27</sup>

Both electric and natural gas utilities inherently face risks that each must work hard to mitigate every day: extreme weather, system and equipment failures, wildfires, cyber threats, technical outages, and the potential for earthquakes. Neither system is without risk. Complimentary energy systems serving buildings with their respective strengths ensures that buildings can be resilient in times of challenges and outages.

Two energy systems – one delivering electrons over wires and one delivering molecules underground – offers the best in resiliency and reliability. Conversely, there are significant reliability risks to depending on one above ground energy system more susceptible to wildfires and extreme weather to serve all the future energy needs of homes, businesses, and passenger vehicles. Again, look to California. With the repeated threat of power outages, officials this summer sent out statewide alerts asking consumers to lower building electric use and to not charge their electric cars to avoid large sections of the state losing power outright.<sup>28</sup> Is this a fate we want for Oregon? How might this affect consumer acceptance of electric vehicles?

A 2021 report,<sup>29</sup> prepared by Guidehouse, outlines a number of incidents in recent years that support why two decarbonizing energy systems will be important to resiliency and energy system recovery in the years to come. One recent example punctuates this point. In 2021, in Oregon, an ice storm severely impacted the power grid and hundreds of thousands of electric customers lost power during a time of very cold temperatures. NW Natural was able to continue serving customers with much-needed heat, hot water, and the ability to cook.

To address questions raised about gas appliances working in a power outage during previous Task Force meetings, included below is a list of gas equipment and appliances that can be safely operated during an outage:

- Water heaters – either natural draft (no power connection) or tankless (with optional battery backup)
- Cooktops – can be manually lit even if they have electric ignition (not recommended for ranges)

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<sup>27</sup> Portland State University's Center for Public Service, Renewable/Compressed Natural Gas (R/CNG) for Transportation System Resilience, Oct. 2019, available at: <https://www.pdx.edu/center-for-public-service/nw-natural-energy-system-resilience-initiative>

<sup>28</sup> Kathleen Ronayne, "Record heat wave puts California in fossil fuel conundrum" Associated Press September 7, 2022, available at: <https://www.opb.org/article/2022/09/07/record-heat-wave-puts-california-in-fossil-fuel-conundrum/#:~:text=Gavin%20Newsom's%20administration%20moves%20toward,use%20of%20oil%20and%20gas>

<sup>29</sup> American Gas Foundation Study prepared by Guidehouse, Building a Resilient Energy Future: How the Gas System Contributes to US Energy System Resilience, Jan. 2021, available at: <https://gasfoundation.org/2021/01/13/building-a-resilient-energy-future/>

- Fireplaces – most (inserts and zero-clearance models sold and installed since 2014) have an option for battery ignition; gas log sets can be match lit
- Generators— can keep critical circuits live and have been increasingly installed for homes and businesses on our system

### **Indoor Air Quality**

We note that various Task Force members encourage the consideration of modeling co-benefits, including air quality in a letter dated October 10, 2022. In suggesting there are air quality benefits of widespread heat pump distribution they cite a poorly constructed study<sup>30</sup> about gas cooking, not space heating. Central heat pumps *and* gas furnaces can both support good indoor air quality – depending on what filters are used. It is possible to remove dust, viruses and even odors with the right filters for gas furnaces. Compare that with ductless heat pumps that typically only have ‘lint filters’ – a far cry from the indoor air quality benefits of central systems.

As it relates to cooking, NW Natural agrees indoor air quality is an important issue that needs to be thoughtfully considered with sound science. What multiple scientific studies<sup>31</sup> show is that ventilation plays a key role in mitigating cooking-related air emissions that come from both gas and electric stoves. This is why kitchen exhaust has been required for all new homes in Oregon for many years, whether they have gas or electric cooking.

No study we are aware of has found health effects associated with the use of gas stoves under proper ventilation conditions. In fact, the most robust **global study** conducted on this topic, The International Study

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<sup>30</sup>See letter from Gradient, an environmental and risk sciences consulting firm, <https://www.aga.org/globalassets/research--insights/gradient-ama-resolution-439-letter.pdf>, (“This study had a number of important limitations, including heavy reliance on older cross-sectional study data and the use of data from a heterogeneous set of studies in terms of locations, home characteristics, and ventilation, without any assessment of study quality.”)

<sup>31</sup>Logue, JM; Klepeis, NE; Lobscheid, AB; Singer, BC. "Pollutant exposures from natural gas cooking burners: A simulation-based assessment for Southern California." Environ. Health Perspect.(2014) available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3888569/>; Singer, BC; Pass, RZ; Delp, WW; Lorenzetti, DM; Mallalena, RL. "Pollutant concentrations and emission rates from natural gas cooking burners without and with range hood exhaust in nine California homes." Building Environ. (2017) available at: <https://www.sciencedirect.com/science/article/abs/pii/S036013231730255X>; Dobbin, NA; Sun, L; Wallace, L; Kulka, R; You, H; Shin, T; Aubin, D; St. Jean, M; Singer, BC.

"The benefit of kitchen exhaust fan use after cooking - An experimental assessment." Building Environ (2018) available at:

<https://www.sciencedirect.com/science/article/pii/S0360132318301112#:~:text=The%20results%20showed%20that%20while,specific%20fan%20used%20during%20cooking>

of Asthma and Allergies in Childhood, evaluated over half a million children from 47 countries, including the U.S., over 5 years – **finding no association between gas cooking and asthma in children.**<sup>32</sup>

It has been alarming to see the extent to which some organizations will go to make misleading or inaccurate claims based on poorly constructed studies that are used to justify sweeping conclusions to support electrification. This diminishes the importance of rooting policy in sound science.

For over 163 years, safety has been NW Natural's priority. A focus on objective technical information is key to safety. To this point, NW Natural fully supports the Task Force ensuring proper ventilation is accessible and consistently used by consumers and businesses, regardless of the fuel type.

Considering complete data and all the facts is essential to making informed decisions regarding how to promote kitchen safety.

### **Additional Modeling Considerations**

Finally, we offer the following feedback for consideration in the development of the modeling:

- To address climate change, real measurable and verifiable emission reductions are essential. It would benefit the process to have more clarity regarding the avoided emissions measures being utilized by SSG and what is both in and outside the scope of these measures. The use of operational emissions is a good start but, unless thoughtfully addressed, has significant risk for expressing an incomplete picture. We recommend the use of “avoided source emissions” and/or “avoided source energy” as defined by ASHRAE 105-2021.
- We encourage including offsets in the definition of “carbon neutral.” In 2007, NW Natural launched its Smart Energy program, becoming the first stand-alone gas utility to offer our customers a voluntary carbon offset program. This program has rigorous third-party verification processes and has funded over one million metric tons of verifiable emissions reductions.
- It is important that modeling to inform near-term policies be based on realistic scenarios. We hope the Task Force and SSG carefully consider whether 100% of buildings can in fact be retrofitted by 2035. This scenario does not seem possible given the short timeline and likely high costs.

We believe multiple strategies are needed to safely, quickly and comprehensively decarbonize Oregon's economy and to hedge risks, opportunities and challenges both energy systems inherently face. We must clearly define what it is we are trying to achieve so we can determine what tactics and solutions should be

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<sup>32</sup> Wong, GW; Brunekreef, B; Ellwood, P; Anderson, HR; Asher, MI; Crane, J; Lai, CK. 2013. "Cooking fuels and prevalence of asthma: A global analysis of phase three of the International Study of Asthma and Allergies in Childhood (ISAAC)." ISAAC Phase Three Study Group, available at <https://pubmed.ncbi.nlm.nih.gov/24429203/>

deployed. We also hope Task Force recommendations will not be overly prescriptive – that could ultimately result in the costly policy failures already playing out in Europe and in parts of the U.S.<sup>33</sup>

I appreciate the opportunity to raise these points and welcome continued engagement with the Task Force.

Sincerely,



Kim Rush  
REBuilding Task Force Member  
Sr VP, Operations  
NW Natural

Enclosure:

- Wong, GW; Brunekreef, B; Ellwood, P; Anderson, HR; Asher, MI; Crane, J; Lai, CK. “Cooking fuels and prevalence of asthma: a global analysis of phase three of the International Study of Asthma and Allergies in Childhood (ISAAC)”
- Letter from Gradient dated, August 11, 2022
- Letter from American Gas Association dated, August 26, 2022
- Tormey, D; Huntley, S “Issues that Render the Sierra Club/UCLA Study of Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California Not Useful for Decision-Making Purpose”

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<sup>33</sup> Scott Tinker, “Reducing energy options doesn’t work. Just ask Europe-and the U.S. states where gas prices are rising,” Fortune, Oct.18, 2022, available at: <https://fortune.com/2022/10/18/reducing-energy-options-work-europeand-us-states-gas-prices-rising-scott-tinker/>